

Time is the Longest Distance between Objectives: Temporal Considerations for Achieving Convergence during the New Guinea and Leyte Campaigns of WWII

A Monograph

by

MAJ Joseph John Dumas
US Army



School of Advanced Military Studies
US Army Command and General Staff College
Fort Leavenworth, KS

2020

Approved for public release; distribution is unlimited

REPORT DOCUMENTATION PAGE				<i>Form Approved</i> <i>OMB No. 0704-0188</i>	
<small>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</small> PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 21-05-2020		2. REPORT TYPE Master's Thesis		3. DATES COVERED (From - To) Jun 2019-May 2020	
4. TITLE AND SUBTITLE Time is the Longest Distance between Objectives: Temporal Considerations for Achieving Convergence during the New Guinea and Leyte Campaigns of WWII				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Major Joseph John Dumas				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Advanced Military Studies Program				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for Public Release; Distribution is Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT Doctrine, training and leader development emphasized limited contingency operations (LCO) in support of the Global War on Terrorism. The Army's myopic approach to LCO and reemergence of peer-capable threats has left the US Army ill prepared to address the evolving security environment. These changes coupled with recent combat experiences provide the motive to retrain and familiarize LSCO doctrine and EAB organizations as operational formations enabling success on future battlefields. This study utilizes Dr. Robert Leonhard's theories on maneuver warfare, warfare in the information age, and application of time and spatial considerations in the application of large-scale combat operations (LSCO). Theories of war and operational art which formed the basis for ALB combined with Leonard's theories will facilitate a meaningful understanding of the MDO tenet of convergence. The monograph will study through the lens of history, General MacArthur's effort in World War II (WWII) specifically the Pacific Theater of Operations (PTO), campaigns of New Guinea, and Leyte during the period of January 1944 – July 1945.					
15. SUBJECT TERMS Convergence; Multi-Domain Operations (MDO); Large-scale Combat Operations (LSCO); AirLand Battle (ALB); Echelons Above Brigade (EAB); World War II; New Guinea; Leyte.					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT (U)	18. NUMBER OF PAGES 53	19a. NAME OF RESPONSIBLE PERSON Major Joseph John Dumas
a. REPORT (U)	b. ABSTRACT (U)	c. THIS PAGE (U)			19b. TELEPHONE NUMBER (Include area code)

Monograph Approval Page

Name of Candidate: MAJ Joseph John Dumas

Monograph Title: Time is the Longest Distance between Objectives: Temporal Considerations for Achieving Convergence during the New Guinea and Leyte Campaigns of WWII

Approved by:

_____, Monograph Director
Bruce E. Stanley, PhD

_____, Seminar Leader
David Meyer, COL

_____, Director, School of Advanced Military Studies
Brian A. Payne, COL

Accepted this 21st day of May 2020 by:

_____, Acting Director, Graduate Degree Programs
Prisco R. Hernandez, PhD

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the US Army Command and General Staff College or any other government agency. (References to this study should include the foregoing statement.)

Fair use determination or copyright permission has been obtained for the inclusion of pictures, maps, graphics, and any other works incorporated into this manuscript. A work of the US government is not subject to copyright, however further publication or sale of copyrighted images is not permissible.

Abstract

Time is the Longest Distance between Objectives: Temporal Considerations for Achieving Convergence during the New Guinea and Leyte Campaigns of WWII, by MAJ Joseph John Dumas, 53 pages.

Doctrine, training and leader development emphasized limited contingency operations (LCO) in support of the Global War on Terrorism. The Army's myopic approach to LCO and reemergence of peer-capable threats has left the US Army ill prepared to address the evolving security environment. These changes coupled with recent combat experiences provide the motive to retrain and familiarize LSCO doctrine and EAB organizations as operational formations enabling success on future battlefields. The lenses of doctrine, Army MDO concepts, history, and theory form the basis to answer my hypothesis built upon the framework of my proposed research questions. Doctrine and current MDO published concepts will be important to understand how current doctrine was informed by superseded versions and how both are informing new concepts for future application. This study utilizes Dr. Robert Leonhard's theories on maneuver warfare, warfare in the information age, and application of time and spatial considerations in the application of large-scale combat operations (LSCO). Theories of war and operational art which formed the basis for ALB combined with Leonard's theories will facilitate a meaningful understanding of the MDO tenet of convergence. The monograph will study through the lens of history, General MacArthur's effort in World War II (WWII) specifically the Pacific Theater of Operations (PTO), campaigns of New Guinea, and Leyte during the period of January 1944 – July 1945. These campaigns are instances to best contextualize temporal considerations to achieve convergence of effects during large scale combat operations.

Contents

Acknowledgments	v
Abbreviations	vi
Figures	vii
Introduction	1
Literature review	6
Methodology	15
Case study.....	18
Findings and analysis	38
Conclusions	42
Appendix A	45
Appendix B.....	49
Appendix C.....	51
Appendix D	53
Bibliography	54

Acknowledgements

First, I want to thank my family in their support of embracing the third year during our repeat offense to Fort Leavenworth. We have been living the “Interwar Period” life. Second, much appreciation goes to my monograph director, Dr. Bruce Stanley and my seminar leader, Colonel David Meyer. Their counsel extends well beyond the scope of this project.

This work is dedicated to “namesakes” and an uncle, nicknamed “Poncho,” all of whom served in the Pacific from the attack on Pearl Harbor through occupation duty in Nagasaki, Japan. This written expression of my gratitude aims to honor their service to our nation during a time of war. My own experiences in combat can never equal in importance.

Abbreviations

AAF	Army Air Force
AAN	Army After Next
ADP	Army Doctrinal Publication
ALB	AirLand Battle
CJTF	Combined Joint Task Force
COCOM	Combatant Command
EAB	Echelons Above Brigade
ETO	European Theater of Operations
INDO-PACOM	Indonesia Pacific Command
JCS	Joint Chiefs of Staff
LCO	Limited Contingency Operations
LSCO	Large Scale Combat Operations
LTG	Lieutenant General
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
MDO	Multi Domain Operations
MG	Major General
PTO	Pacific Theater of Operations
SWPA	Southwest Pacific Area
USARPAC	US Army Pacific

Figures

Figure 1. Attacking multiple system components.....	9
Figure 2. Convergence of capabilities generating cross-domain synergy and layered options.....	11
Figure 3. The New Guinea Campaign.....	23
Figure 4. Invasion of Leyte, October 1944.....	32
Figure 5. Operation KING TWO, 20 October - 2 November 1944.....	33
Figure 6. Leyte Campaign, 7 November - 31 November 1944.....	34
Figure 7. Allied Organizational Chart, New Guinea Campaign, April 1944.....	45
Figure 8. Allied Air Organizational Chart for Hollandia Invasion, April 1944.....	46
Figure 9. Allied Naval Organizational Chart for Hollandia Invasion, April 1944.....	47
Figure 10. Allied Ground Organizational Chart for Hollandia Invasion, April 1944.....	48
Figure 11. Japanese Army Operational Organization, SWPA, April 1944.....	49
Figure 12. Japanese Naval Operational Organization in Central Pacific & SWPA, APR 1944.....	50
Figure 13. Allied Operational Organization for Leyte Campaign.....	51
Figure 14. Central Philippine Attack Force Operational Organization.....	52
Figure 15. Japanese Army Major Units Organization for Leyte Operation.....	53

Introduction

Shortly after assuming his role as the 39th Chief of Staff of the Army (CSA), General Mark Milley in a 2016 speech at the annual Association of the United States Army meeting described the changes in the global environment. “To meet future challenges, the Army must rapidly adapt; reform its acquisition process to speed new technologies to the field; build future leaders who can operate on nonlinear battlefields without reliable communications with higher command; and make wise and ethical decisions. Future adversaries could end the air superiority the United States Air Force has provided since the Korean War, and anti-access, area-denial capabilities could prevent the Navy from getting to the fight. So land forces will have to enable sea forces, and the Army is definitely going to have to dominate the air above our battle space.”¹ General Milley’s comments illuminated his understanding of the strategic operating environment, but more importantly set the tone for the direction the United States Army would take under his tenure as the CSA. A focused direction following eighteen plus years of focus on contingency operations were expanding to a greater scope of conflict, one the United States Army had not trained or been organized for since 2001.

The US Army faces internal and external problems as it attempts to retain initiative in the time and space before armed conflict and during large scale combat operations (LSCO). The lessons learned during the combat experiences of the last eighteen years have been valuable for Army leaders and our adversaries.² Internally, Operations in Iraq and Afghanistan have “culturally imprinted,” a generation of our leaders in limited contingency operations (LCO), with

¹ Mark Milley. “Army Chief: Future War is Almost Guaranteed,” October 4th 2016, AUSA, accessed 29 August 2019, <https://www.ausa.org/news/army-chief-future-war-almost-guaranteed>.

² US Army Training and Doctrine Command, TRADOC Pamphlet 525-3-8, *U.S. Army Concept: Multi-Domain Combined Arms Operations at Echelons Above Brigade 2025-2045* (Washington, DC: Government Printing Office, 2018), i.

little emphasis on preparation for the scale and scope of operations beyond the LCO sphere. In order to sustain two decades of contingency operations supporting Operation Enduring Freedom and Operation Iraqi Freedom, Army organizations have been optimized for those fights exclusively.³ Reemergence of “peer-capable” threats in recent years has been the catalyst why the Army must evolve its processes regarding manning, equipping, training, and employment of its forces.⁴ Multi-Domain Operations has become the concept to refute internal and external problem sets the United States Army is attempting to counter.⁵ We have seen Multi-Domain Operations before; this is not a new method in US Army doctrine.⁶

Concepts are nebulous in nature with the need to mature with refinement. Once the Army published the 2017 version of Field Manual 3-0, *Operations*, the Army re-established its doctrinal framework to Large Scale Combat Operations (LSCO), shifting in prioritization of eighteen years of contingency operations. This action was the catalyst for a generational and experience gap within the United States Army. The transition to modular organizations in the transformation during the early 2000’s emphasized the brigade combat team as the unit of action. Rightfully so, decisions regarding force structure were made for supporting Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). Our EAB formations became headquarters to support limited contingency operations (LCO), optimized for those operations. Doctrine, training and leader development emphasized limited contingency operations in support of the Global War on Terrorism. The Army’s monotheistic approach to LCO and reemergence of peer-capable threats has left the United States Army ill prepared to address the evolving security environment. These changes coupled with recent combat experiences provide the motive to retrain and familiarize

³ US Army, TRADOC Pamphlet 525-3-8., i.

⁴ Ibid., i.

⁵ Ibid., iii.

⁶ US Department of the Army, Field Manual 3-0, *Operations* (Washington DC: Government Printing Office, 2017), 1-6.

LSCO doctrine, EAB organizations as operational, and tactical formations enabling success on future battlefields.⁷ Combined Joint Task Force (CJTF) headquarters operational planning must exploit frequency, sequencing, and opportunity to attain cumulative effects in order to achieve convergence in a given space for a given duration.

As the United States Army continues to evolve its doctrine over time, terms change along with the doctrine. In this study the utilization of proposed doctrinal definitions will be used along with reference to other military terms, common to the Army lexicon, however, might not be current in relation to today's Army doctrinal publications. The tenets of Multi-Domain Operations are proposed definitions as outlined in the current concept; calibrated force posture is defined as the combination of position and the ability to maneuver across strategic distances.⁸ "It includes but is not limited, to basing and facilities, formations and equipment readiness, the distribution of capabilities across components, strategic transport availability, interoperability, access, and authorities. Convergence is defined as rapid and continuous integration of capabilities in all domains, the electromagnetic spectrum, and information environment that optimizes effects to overmatch the enemy through cross-domain synergy and multiple forms of attack all enabled by mission command and disciplined initiative. Multi-domain formations are Army organizations possessing the combination of capacity, capability, and endurance necessary to operate across multiple domains in contested spaces against a near-peer adversary."⁹ Two terms once found in the Army's 1986 version of *Operations* are mass, and economy of force, defined as

⁷ US Army, TRADOC Pamphlet 525-3-8, i.

⁸ US Army Training and Doctrine Command, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington DC: Government Printing Office, 2018), vii.

⁹ US Army, TRADOC Pamphlet 525-3-1, GL-2, GL-7.

“concentration of combat power at the decisive place and time; allocate minimum essential combat power to secondary efforts.”¹⁰

This study utilizes Dr. Robert Leonhard’s theories on maneuver warfare, warfare in the information age, and application of time and spatial considerations in the application of LSCO.¹¹ Leonard’s work is relevant because his work is based upon LSCO framed by United States Army Field Manual 100-5, Operations, also known as AirLand Battle (ALB). ALB was scientific in approach to LSCO, framed with Napoleonic principles of warfare.¹² Specifically, ALB principles of war: mass and economy force speak to convergence, bringing some sort of effort to a single point on the field of battle. Leonhard asserts in the information age and even in past contexts the principles of war associated with the concept of convergence were invalid.¹³ Developing greater understanding on the concept of the MDO tenet of convergence into practical application in a military context will be informed from insight of Dr. Leonhard’s theories regarding the art of war and principles of war. His thoughts are underpinned by his previous professional experiences exercising ALB in training and combat operations during Operation Desert Storm.

Three hypotheses and four research questions guide the research for the historical case study supporting this academic process to develop a greater sense of context to the practical application of MDO tenet of convergence. The first hypothesis asserts If a CJTF can sustain a greater frequency of offensive operations against an adversary in one or more domains, it can build cumulative effects to allow operational opportunities within a theater of operation. Three questions seek to confirm this hypothesis. The first question is how did the CJTF exploit cross

¹⁰ US Department of the Army, Field Manual 100-5, *Operations* (Washington DC: Government Printing Office, 1986), 174.

¹¹ Leonhard, Robert R. *Fighting by Minutes: Time and the Art of War* (2d Edition, 2017), 2.

¹² Jomini, Henri Antoine. *The Art of War*. Translated by G.H. Mendell and W.P. Craighill. (Philadelphia: J. B. Lippencott & Co., 1862.) Chapter III, Strategy, 66-177.

¹³ Leonhard, Robert, R. *The Principles of War for the Information Age*, (California: Presidio Press, 2000), 12.

domain effects? Second, what was the frequency of operations in the campaign? Third, what opportunities were exploited during the campaign?

The second hypothesis states if a CJTF manages sequencing of offensive operations with superiority in more than one domain it can exploit opportunities to maintain operational tempo against an adversary. Three questions seek to confirm this. First, is how did the CJTF exploit cross domain effects? The second question asks what was the frequency of operations in the campaign? Third, what opportunities were exploited during the campaign?

The last hypothesis claims if supremacy of multiple domains is present then a CJTF can achieve convergence of effects within a space for a given amount of time. Three questions pursue this assertion. First, is how did the CJTF exploit cross domain effects? Second, what opportunities were exploited during the campaign? Finally, when did convergence of effects occur within a given operational space?

This case study does not include classified feedback from ongoing simulations, exercises, etc. Research is done on open source material, unclassified material, and historical precedence. There are ample sources available to structure the case, providing greater granularity regarding how the Army can obtain convergence in LSCO. This study focuses on General MacArthur's effort in World War II (WWII) specifically the Pacific Theater of Operations (PTO), campaigns of New Guinea, and Leyte during the period of January 1943 – July 1945. These campaigns are instances to best contextualize convergence at the operational and tactical level during large scale combat operations.

The basic premise of this study is to illuminate historical precedence within the Army, identifying challenges with training, echelon above brigade organizations, and leader development considerations during large scale combat operations. Because the case study

examines campaigns during WWII, certain technologies of the day such as radar and ULTRA¹⁴, the code deciphering system should be considered equivalent to today's cyber and space domains. Historical precedence is a primer for the current force to refine our solutions in doctrine development for the problems of the operating environment.

This study is composed of seven sections in a logical sequence: the introduction, a literature review, a methodology, a case study of World War II, case study findings and analysis, and the conclusion. The literature review provides an overview of the currently available literature concerning the study and provides the underlying theoretical foundation for the case. The methodology introduces the case and provides the framework for evaluation. The case studies of the campaigns of New Guinea and Leyte in the Pacific Theater of Operations during World War II provides a detailed examination of the five research questions. The findings and analysis compare the results of the research questions with the three hypotheses. The conclusion discusses the relevance of the cases today and recommends further considerations for maturation of the Multi-Domain Concept into Army doctrine.

Literature Review

This section covers the review of pertinent literature and provides the fundamental basis for the case study analysis. The literature review comprises three subsections. First, the theoretical subsection lays out the temporal dimensions of warfare framed in application of ALB doctrine based upon Leonhard's theories. Second, the conceptual subsection provides definitions of key terms, which are of vital importance for the hypotheses criteria. Finally, the empirical subsection examines existing empirical evidence related to the hypotheses.

The study examines theory, history, and doctrine through the lens of the foundational underpinnings found in AirLand Battle. As a starting point, this approach must focus on

¹⁴ Drea, Edward, J. *MacArthur's Ultra Codebreaking and the War against Japan, 1942-1945*, (Lawrence KS: University Press of Kansas 1992), 33.

retrospective theories on application of ALB both in training and combat environments. By design in its purpose, this approach provides historical precedence to maturation of theoretical concepts to doctrine. Refined temporally based upon professional discourse, dialogue, and application in various training environments. Application of ALB in large scale combat operations during the First Gulf War solidified these efforts, however, did not codify all its content, rather provided another opportunity to evolve its application. Dr. Leonhard's work based upon his personal experiences during this time provides useful insight as the Army finds itself once again recalibrating doctrine, organizations, and leader development initiatives to address the evolution in the current operating environment. Leonard's focus on the temporal aspects of ALB provide a starting point for the Army to contextualize application of the MDO tenet, convergence. Focus on formations and echelons of ALB have given way to nodes and systems in the MDO concept, but the language of old can enable refinement of the new.

Dr. Leonard in, *Fighting By Minutes*, suggests warfare has temporal characters: duration, frequency, sequence, and opportunity.¹⁵ Frequency and sequence will be emphasized for the purpose of this study. Their significance concerning conflict can be more important than one's comparative military technological advantages and empower or impede a commander's plan. These characteristics can define understanding of strategy aims, operational approach, and the tactics leading to planned end states of conflict.¹⁶ Frequency in doctrinal terms should be understood as tempo, which is foundationally at the heart of tactics, doctrine, and strategy.¹⁷ Conflict is often determined by the pace in which it is prosecuted, thus why consideration of event placement within a given conflict is critical to desired outcomes.¹⁸ Outcomes of individual

¹⁵ Leonhard, *Fighting By Minutes*, xii.

¹⁶ Ibid., xii.

¹⁷ Ibid., 87.

¹⁸ Ibid., 114.

battles in conflict maybe inconsequential. When individual battles are assessed to the greater scope of a campaign or conflict their placement may indeed determine success or failure..¹⁹

Appendix A of the 1986 US Army Operations manual describes and defines the nine principles of war. Those principles are mass, objective, unity of command, simplicity, economy of force, offensive, maneuver, surprise, security..²⁰ Leonard asserts that mass, objective, unity of command, simplicity, and economy of force are principles of convergence because they all logically condense variety to unity..²¹ In the context of Leonhard's book, he argued these principles or enduring realities lack utility in the information age, representing antiqued considerations in the application of warfare theory. This argument goes beyond the reach of this study's thesis. In relation to this study, they are continuities for planning considerations in the execution of LSCO, nor a check list for successful execution of LSCO. The principles of war or specifically the "principles of converge" as described by Leonard provide another relevant example of doctrinal vernacular, which commander's and staff must consider in operational application to achieve convergence during LSCO. Army Doctrine Publication (ADP) 5-0, *The Operations Process*, published in July 2019 is a current doctrinal example which describes utilization of the principles of war. As defined in ADP 5-0, *The Operations Process*, mass provides concentration of combat power effects in time and space to a decisive point..²² Unity of command as expressed in the current version of *The Operations Process*, states for every objective, unity of effort under one responsible commander must be considered..²³

¹⁹ Leonhard, *Fighting By Minutes*, 117.

²⁰ US Army, FM 100-5, *Operations*, 173-178.

²¹ Leonhard, *The Principles of War for the Information Age*, 9-10.

²² US Department of the Army Doctrine Publication (ADP) 5-0, *The Operations Process* (Washington DC: Government Printing Office, 2019), 2-3.

²³ Ibid.

Considering the human nature of conflict, no one belligerent can be robust enough or victorious indefinitely. Armed conflict at all levels be that war, campaigns, and battles seek to capitalize on failure therefore reducing conflict fundamentally to a contest of time.²⁴ Phasing in operations provides a way to compartmentalize time in relation to stages of conflict. With phasing there will be periods before belligerents are ready to fight and no longer can sustain the fight, thus exposing “time flanks.”²⁵ Association of this concept should come to mind for students of western warfare approaches during the Napoleonic, American Civil War, and both World Wars.

Based on the hypotheses, this study must define and operationalize three key terms. Those terms are cross-domain synergy, layered options, and systems warfare methodology. These three key terms convey the logical fabric to this study (see figure 1 and figure 2). A systems warfare methodology, “exploits the interconnectedness and expansiveness of a system-of- systems. It identifies critical nodes and pathways of subordinate systems that, when targeted, substantially weaken the larger system. Simultaneous attacks on multiple dependent subsystem nodes can create a cascading effect that leads to the collapse of the larger system as a whole.”²⁶

²⁴ Leonhard, *Fighting By Minutes*, 7.

²⁵ Ibid., 8.

²⁶ US Army, TRADOC Pamphlet 525-3-8, 23.

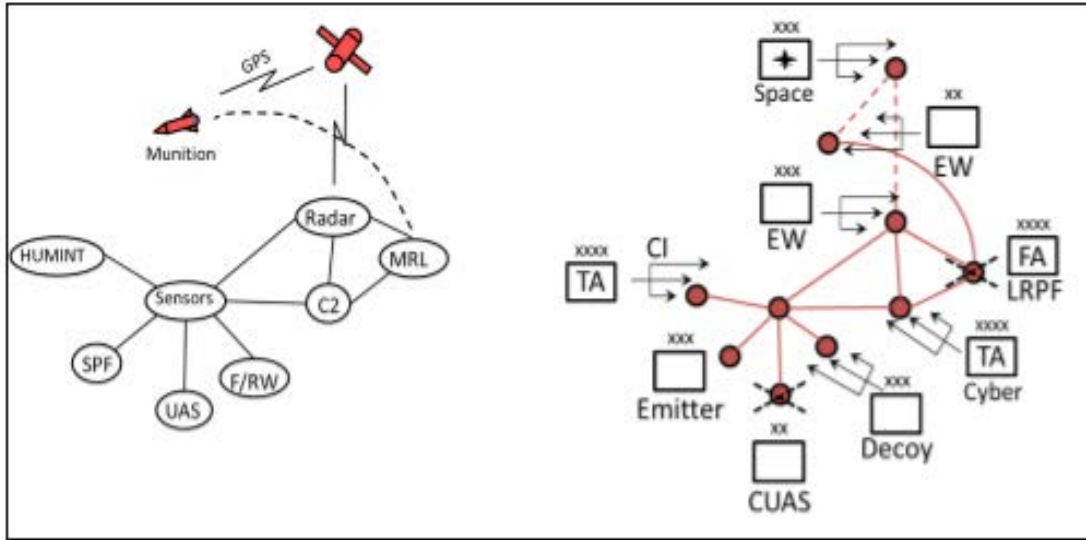


Figure 1. Attacking multiple system components. US Army Training and Doctrine Command, TRADOC Pamphlet 525-3-8, *U.S. Army Concept: Multi-Domain Combined Arms Operations at Echelons Above Brigade 2025-2045* (Washington, DC: Government Printing Office, 2018), 23.

This approach is a distinct departure from previous Army operational doctrine. Cross-domain synergy “is an idea introduced in the Joint Operational Access Concept and continued as a key idea in the Capstone Concept for Joint Operations and is defined as the complementary in contrast to additive employment of capabilities in different domains such that each enhances the effectiveness and compensates for the vulnerabilities of the others to establish superiority in some combination of domains that will provide the freedom of action required by the mission.”²⁷ Cross-domain synergy represents combined arms maneuver evolution complimented by advances in technology. The synchronization of ancillary effects complicates an adversary’s ability to act, thus resulting in a greater effect than one single component.²⁸ Layered Options refers to the “layering of multiple forms of convergence providing friendly commanders with options and imposes complexity on the enemy.” Establishment of multiple options enables organizations to target critical enemy vulnerabilities in a shocking manner and provides redundancy in observation

²⁷ US Army, TRADOC Pamphlet 525-3-1, 20.

²⁸ Ibid.

or strike capabilities. Layered options of convergence overwhelm an enemy in a manner which it may then lack the capacity to respond. Convergence synthesis while debilitating for an adversary should not be so for the force planning to execute them..²⁹

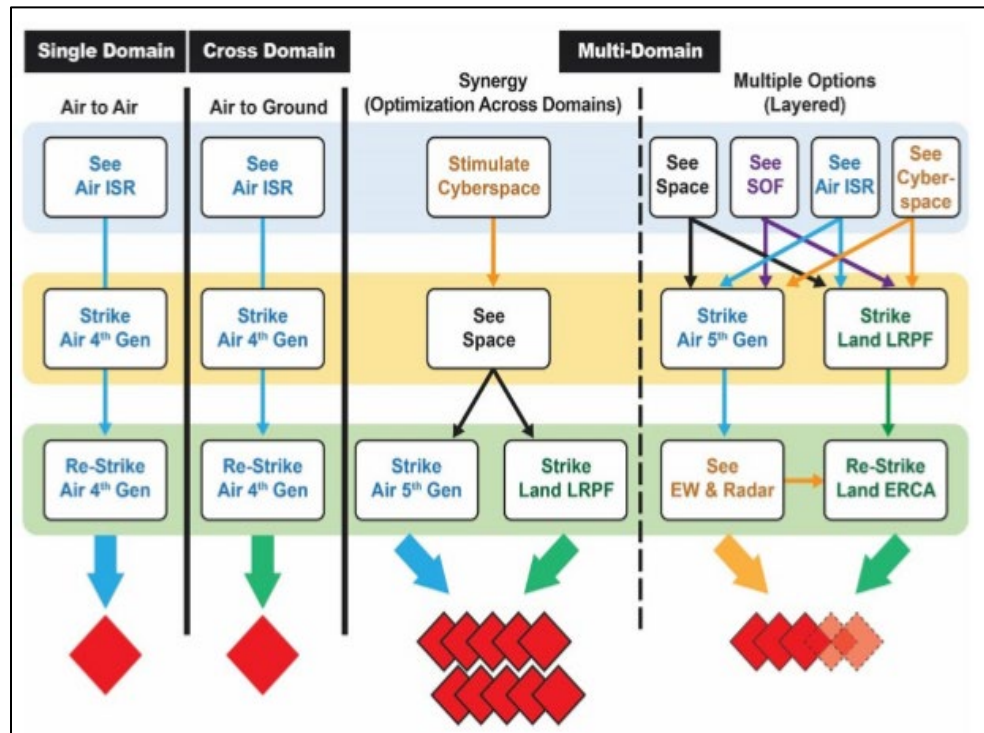


Figure 2. Convergence of capabilities generating cross-domain synergy and layered options. US Army Training and Doctrine Command, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington DC: Government Printing Office, 2018), 21.

Currently there is not a shortage of articles about Multi-domain Operations in various brick and mortar professional military journals or defense related websites. Regardless of the venue one finds themselves reading about MDO, there inevitably are trends of who, what, and why authors are writing about this subject. The subject of MDO has had peaks and valleys regarding its relevance to ongoing professional discussions since 2015. In fact, the discussion and emphasis placed upon MDO, eclipsed the 2017 publication of the Army's operational field manual, *Operations*. The relevance of this point is significant for two reasons, first, it indicates

²⁹ US Army, TRADOC Pamphlet 525-3-1, 21.

potency of MDO with Army senior leaders. Second, in an unflattering way, the lack of emphasis to the updated publication of the Army's capstone operational manual in six years passively asserts its importance to US Army at large. Since publication, a few articles have addressed the 2017 US Army Operations manual, which includes current MDO technological capabilities and reference to emerging MDO concepts the fielded force can execute now.³⁰ Current doctrinal language addresses the underpinnings of how to achieve convergence capabilities. Largely there is a gap in addressing a bridging strategy to current doctrinal approaches of episodic layered synchronization of effects found in the contents of FM 3-0 to meet the tenet of convergence. Today's doctrine provides a framework how to execute cross-domain synergy accomplished through layered options at echelon. The 2017 US Army Operations manual provides a start point for the evolutionary process towards operationalizing MDO, much like the process which lead to ALB a generation ago.

Culture change and institutional reform provide the overarching theme concerning most of the current literature about MDO. In a multi-series article regarding MDO, Albert Palazzo, an Australian defense thinker addresses these themes sequentially. Palazzo describes the origin of the idea regarding MDO, develops the operational environment the United States finds itself in and why it is important based on historical consideration, reform is necessary for the Army nested within the current National Security Strategy.³¹ His second article continues by addressing the challenges of senior Army leadership are facing internally and externally in attempts to develop

³⁰ Michael Lundy. "Meeting the Challenge of Large-Scale Combat Operations Today and Tomorrow," *Military Review*, September-October 2018, accessed 10 August 2019, <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/SO-18/Lundy-LSCO.pdf>.

³¹ Albert Palazzo. "Multi-Domain Battle: The Need for Integration with National Strategy," *The Strategy Bridge*, 14 November 2018, accessed 10 August 2019, <https://thebridge/2017/12/6/multi-domain-battle-the-need-for-integration-with-national-strategy>.

the MDO concept.³² Palazzo's articles are relevant regarding current applicable consideration of the US Army's four strategic roles as outlined in existing doctrine³³, however, lacks the substantial focus on the mechanics of the concept and a methodology to achieve described outcomes.

Along the organizational framework theme of MDO articles, retired general officer, Robert Scales, Jr asserts the MDO concept takes root in the "Army After Next" (AAN) concept of the late 1990's, a process which he was involved with while on active duty. Scales argues the AAN concept lost momentum because of world events leading to the myopic focus on contingency operations in Afghanistan and Iraq. Additionally, he stated at the time, the US Army was too quick in adopting AAN ideas. His assertion is technological advances were not mature enough in development to support those AAN conceptual ideas, thus creating a significant gap that hindered execution.³⁴ While the organizational focus of AAN in the context of transitions happening politically and militarily in the late 1990's is not quite congruent with today's environment, Scales thoughts do bear merit. Evolution of organizations regarding emerging concepts to address changes in the operating environment is a key point of consideration. Testing concepts in experimentation through simulations factored with current and future assumed technological advances should be approached in a prudent manner. This recent historical precedence should not be foreign to current Army senior leadership, who themselves may have experienced these institutional changes earlier in their careers.

³² Albert Palazzo. "Multi-Domain Battle: Meeting the Cultural Challenge," *The Strategy Bridge*, 14 November 2018, accessed 10 August 2019, <https://thestrategybridge.org/the-bridge/2017/11/14/multi-domain-battle-meeting-the-cultural-challenge?rq=%20multi-domain-battle-meeting-the-cultural-challenge>.

³³ US Army, FM 3-0, 1-14, 1-15.

³⁴ Robert Scales. "Battle For Army's Soul Resumes: Lessons From Army After Next," *Breaking Defense*, 28 March 2017, accessed 10 August 2019, <https://breakingdefense.com/2017/03/battle-for-armys-soul-resumes-lessons-from-army-after-next/>.

General officer thoughts dominate the authorship of pieces written on MDO. Army Senior Leaders address the topic at large with foundational undertones to institutional reform and culture change. United States Army and Navy flag officers have addressed how MDO is currently impacting their geographic commands. Specifically, INDO-PACOM has been the geographical focus of how MDO is shaping resourcing requirements.³⁵ Former United States Army Pacific (USARPAC) commander, General Robert Brown, in 2017, wrote an article addressing resourcing considerations, joint integration, and how service leaders will enable success of MDO in INDO-PACOM.³⁶ Brown's position is interesting because the Army is not the dominate service of this combatant command (COCOM). Second, he clearly addresses three components of successful implementation of MDO. His position is reinforced by Admiral, Davidson, Commander, US INDO-PACOM, in his testimony to the United States Senate Armed Services Committee. While individual service contributions and approaches to MDO vary, unity of effort to operationalize MDO is a point of continuity among the Joint Force.³⁷

The Combat Studies Institute Press in 2017 published work on Multi-Domain Battle during WWII set in the Pacific Theater of Operations. Author Christopher Rein's is the only current work utilizing the language found in the MDO concept. Rein's work provides a historical precedence to increase understanding in the application of MDO. The historical emphasis of Rein's work doesn't provide the reader with depth regarding contextual principles found in the current MDO concept. His work does provide a waypoint for continued exploration on the possibilities of MDO's application in large scale combat operations.

³⁵ Robert Brown. "The Indo-Asia Pacific and the Multi-domain Battle Concept," 21 March 2017, *Military Review*, accessed 10 August 2019, <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/September-October-2017/The-Indo-Asia-Pacific-and-the-Multi-Domain-Battle-Concept/>.

³⁶ Brown, "*The Indo-Asia Pacific and the Multi-domain Battle Concept*," 21 March 2017.

³⁷ Senate Armed Services Committee, U.S. INDO-PACIFIC Command Posture, 12 February 2019, accessed 10 August 2019, https://www.armed-services.senate.gov/imo/media/doc/Davidson_02-12-19.pdf.

Reviewed literature reinforced a direct gap addressing this study's thesis. There are peripheral mentions of the impact of current doctrine and organizations, providing greater context to the MDO tenet of convergence. Considerations of application in the INDO-PACOM theater of operations, historical precedence in this theater, and Joint Force application of MDO provide the best components for continued analytical research in order to support this study's thesis. Focusing on the temporal considerations applied in the SWPA Theater proposes an expanded utility for CJTF staffs in the future maturation of the MDO concept.

Methodology

This section outlines the methodology this study uses to examine the New Guinea and Leyte campaigns in the Southwest Pacific Theater of Operations during WWII. It includes a description of the structured, focused comparison approach, the historical case study, the research questions, and the expected outcomes and primary data sources. This will enable testing the hypotheses and validate the initial thesis. The thesis asserts that joint headquarters planning must exploit frequency, sequencing, and opportunities across all domains in order to provide a greater context of the MDO concept tenet of convergence from a temporal planning prospective.

This study uses the structured focused comparison methodology, as explained by Alexander George and Andrew Bennett, to qualitatively assess a single historical case study..³⁸ The Pacific theater has been chosen as a single case study because it provides historical precedence of US Joint Force operations, EAB formations, and contemporary examples of layered synchronization of effects. Moreover, it includes two sequential phases: The New Guinea Campaign from 24 January 1943 thru 31 December 1944 and the Leyte Campaign from 17 October 1944 thru 1 July 1945. The structure is provided by four research questions that enable collection of qualitative data while the focus is on the role of joint integration in achieving

³⁸ Alexander George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge, MA: MIT Press, 2005), 67-72.

layered synchronization of effects by EAB formations. By comparing the two sequential phases of joint operations, the study aims to demonstrate the validity of the thesis regarding consideration of temporal aspects of planning to attain necessary cumulative effects across all domains in order to achieve convergence of effects in a given space for a given duration. The lens of frequency, sequencing, and opportunities provide the framework for the analysis.

The New Guinea and Leyte Campaigns provide the most relevant lens in which the US may face in future conflict against a highly capable peer threat having to initially respond with limited forces while rapidly transitioning from competition phases to conflict. A possible scenario such as this may require Joint Forces to regain operational and tactical initiative. Operations in the Southwest Pacific during WWII provide an introspective look at the US Joint Force where campaign execution was anything but flawless, interservice rivalries, and organizational stovepipes encumbered efficient joint integrating synchronization of effects to defeat an adversary.³⁹ The sequential observation of New Guinea and Leyte reinforce temporal considerations discussed previously in this study and support contextual understanding of those theories to inform practical application of the tenet of convergence.

Three hypotheses and four research questions guide the research for the historical case study supporting this academic process to develop a greater sense of context to the practical application of MDO tenet of convergence. The first hypothesis asserts if a CJTF can sustain a greater frequency of offensive operations against an adversary in one or more domains, it can build cumulative effects to allow operational opportunities within a theater of operation. Three questions seek to confirm this hypothesis. The first question is how did the CJTF exploit cross domain effects? Second, what was the frequency of operations in the campaign? Third, what opportunities were exploited during the campaign?

³⁹ Rein, Christopher, M. *Multi-Domain Battle in the Southwest Pacific Theater of World War II*, (Fort Leavenworth, KS: Combat Studies Institute Press, 2017), 2-3.

The second hypothesis states if a CJTF manages sequencing of offensive operations with superiority in more than one domain it can exploit opportunities to maintain operational tempo against an adversary. Three questions seek to confirm this. First, is how did the CJTF exploit cross domain effects? The second question asks what was the frequency of operations in the campaign? Third, what opportunities were exploited during the campaign?

The last hypothesis claims if supremacy of multiple domains is present then a CJTF can achieve convergence of effects within a space for a given amount of time. Three questions pursue this assertion. First, is how did the CJTF exploit cross domain effects? Second, what opportunities were exploited during the campaign? Finally, when did convergence of effects occur within a given operational space?

This study uses primary and secondary sources for answering the research questions and examining the historical case study. The sources include official historical documents, reminiscences, biographies, and military theories and doctrine. Analyzing the campaign from a US Army perspective, the study relies upon the US Army's official campaign accounts because they provide scalable lens in which to assess utility to support this study's hypothesis. US sister service official histories and contemporary research sources facilitate precise and consistent findings.

This section described the methodology this study uses to examine qualitatively how US joint integration of EAB formations were able to successful execute layered synchronization of effects against the Japanese during WWII. Four focused questions enable structured research of the case study to answers the hypotheses. Data collection for the study includes primary and secondary sources primarily from the Army "Green Book" collection and other secondary historical sources. The next section analyzes the New Guinea and Leyte Campaigns from March 1944 to December 1944.

Case Study

This section analyzes the one sequential phased case study from General MacArthur's Southwest Pacific Area (SWPA) in the Pacific Theater of Operations (PTO) during World War II. The case study follows the same structure by examining the Western New Guinea Campaign starting at March 1944 with preparations for Operation RECKLESS through Operation KING TWO, the Leyte Campaign in December 1944. First, an introduction will provide an overview outlining the key temporal conditions, spatial relationships, key personal of the belligerents, and specific key events of the respective campaign further illuminating MDO concept tenet of convergence. Next, utilizing historical context, the study examines the research questions poised in the introductory section and detailed in the previous methodology section. Third, a short summary highlights the confirmation, rebuttal, or mixed findings to the proposed hypothesis supporting this work's thesis.

By 1944, strategic objectives in the Pacific had been limited to securing lines of communication from the United States to Australia. In the two years following the Japanese attack on Pearl Harbor in December 1941, operations of Allied Forces under GEN Douglas MacArthur's SWPA had secured eastern New Guinea, western New Britain, and the Admiralty Islands, joining the predominately US Navy's South Pacific Area. These forces were commanded by Admiral William Halsey, along the Solomon Islands to neutralize the Japanese strongpoint at Rabaul. In the Central Pacific, Admiral Chester Nimitz had begun offensive operations in the latter half of 1943. Offensive initiative in the Pacific War across, land, air, and sea domains under the commands of MacArthur and Nimitz were converging their attacks toward the Philippine Islands. This offensive would have secondary priority to the effort in the European Theater of Operations (ETO) as directed by the US-British Combined Chiefs of Staff.⁴⁰

⁴⁰ Rein, *Multi-Domain Battle in the Southwest Pacific Theater of World War II*, 1.

Within the PTO, the US Joint Chiefs of Staff (JCS) had determined the Central Pacific approach of the dual pronged advance toward the Philippines would have priority because at the time it was seen as strategically more decisive.⁴¹ From, February to early March, 1944, the JCS planning conference in Washington D.C. resulted in a new directive for operations in the Pacific for the remainder of 1944.⁴² Forces of the SWPA would maneuver north-west along the New Guinea coast and the islands northwest of the Vogelkop Peninsula to the Philippines. Central Pacific forces were to maintain maneuver towards Japan through the Mariana Islands chain and the Carolines west towards the Philippines via the Palaus.⁴³ This truncated explanation of the United States' strategic approach wholly underscores the intense internal US Army, joint service, and allied tensions ongoing with MacArthur throughout the duration of this time period.

Strategic prioritization, environmental considerations, and the Japanese were all challenges facing US forces at the time. The US Army command support relationships and interservice rivalries provided additional operational environment complexity to the austere demanding fight in the PTO. MacArthur is known for his reputation to assert absolute control of all aspects of the operational environment. Until mid-1943, MacArthur had to rely heavily on Australian forces in SWPA especially during the Papuan Campaign.

In an effort to maintain surface level amicable relationships with Allies, MacArthur worked around the command structure in the SWPA because of previous operational differences with the Allied Land Forces Commander, Australian General Sir Thomas Blamey.⁴⁴ MacArthur's creation of a the "Alamo Force" would allow him to circumvent operational control and administrative command of the Sixth Army (Alamo Force) under the command of the Allied

⁴¹ Rein, *Multi-Domain Battle in the Southwest Pacific Theater of World War II*, 6.

⁴² Ibid., 11.

⁴³ Rein, *Multi-Domain Battle in the Southwest Pacific Theater of World War II*, 12.

⁴⁴ Taaffe, Stephen, R., *MacArthur's Jungle War The 1944 New Guinea Campaign*, (Lawrence, KS: University Press of Kansas, 1998), 54.

Land Forces Commander, GEN Blamey..⁴⁵ The designation of the Sixth US Army as the Alamo Force was commonly used during the New Guinea Campaign and would continue until September 1944. Lieutenant General (LTG) Robert Eichelberger's US I Corps had participated in the Papuan Campaign and echoes this subsurface tension with Australian Allies, noting while polite in public, Australian Army senior leaders thought Americans to be inexperienced theorists at best..⁴⁶

Within the US Army command structure, MacArthur's relationship with his two subordinate commanders would at times be tenuous. LTG Walter Krueger, commander of the Sixth US Army, had previous service with MacArthur when the latter served as the Army Chief of Staff during the 1930's. The duality of Krueger's rugged exterior and meticulous military intellectual interior coupled with his long Army experience made him an appropriate fit..⁴⁷

Conversely, LTG Robert Eichelberger was a GEN George C. Marshall man, having previously served as the secretary of the General Staff in Washington DC..⁴⁸ During the twilight of the Papuan Campaign at Buna in 1943, MacArthur who told him, "Bob, I want you to take Buna, or not come back alive," when directed to control the operational efforts of the 32d Infantry "Red Arrow" Division..⁴⁹ MacArthur would play his subordinate commanders against each other at times, capitalizing on their differences..⁵⁰ Friction would continue between LTG Krueger and LTG Eichelberger later in 1944 when MacArthur would recommend the latter to command the

⁴⁵ Krueger, Walter, *From Down Under to Nippon*, (Washington DC: Combat Forces Press, 1953), 10.

⁴⁶ Eichelberger, Robert L, *Our Jungle Road to Tokyo*, (New York: The Viking Press, 1950), 7.

⁴⁷ Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 37.

⁴⁸ Ibid., 83.

⁴⁹ Eichelberger, *Our Jungle Road to Tokyo*, 21.

⁵⁰ Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 84.

Eighth US Army, which would be operationalized for consolidation of gains during the Leyte Campaign.⁵¹

Ultimately the New Guinea Campaign would not have been successful without the contributions of the 5th Army Air Force (AAF) and the US Navy's 7th Fleet. LTG George Kenney took command of the 5th Air Force in July of 1942. Kenney believed war was in the domain of air and he was mildly interested in anything other than air power. Enthusiastic of the air domain, Kenney knew air power alone would not solidify victory. Kenney's panache and informal style earned him respect with his men and fellow officers, and in the process of the campaign, converted MacArthur into an air power aficionado.⁵²

Vice Admiral Thomas Kinkaid would take command of the 7th Fleet in the latter half of 1943. Admiral Kinkaid, known for having amiable relations with Army Officers found himself in a precarious position answering to MacArthur, and Admiral Ernst King the Chief of Naval Operations, the former's professional nemesis.⁵³ Kinkaid would balance trust and confidence of both Army and Navy superiors. Internal and intra-service rivalries in the SWPA of WWII has been memorialized in many histories regarding this campaign and while not an ideal situation for American forces, these men in the end would be victorious.

By the beginning of 1943 the Japanese had realized they no longer held the strategic initiative. Attempting to maintain interior lines to force the American's into an attritional war, the Japanese established a loose defensive line from the southern East Indies through New Guinea, Rabaul on New Britain, the Gilberts, Wake Island, and north to the Aleutians.⁵⁴ MacArthur's maneuver approach, avoiding Japanese strong points within the SWPA Theater alarmed Japanese

⁵¹ Eichelberger, *Our Jungle Road to Tokyo*, 156-157.

⁵² Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 38.

⁵³ Ibid., 38.

⁵⁴ Ibid., 51.

senior leadership, thus reinforcing western New Guinea with 50,000 men in April 1944.⁵⁵ Those soldiers would come from Lieutenant General Hatazo Adachi's 18th Army which was reconstituting in eastern New Guinea, it composed of the 20th, 41st, and 51st Divisions. The Japanese also transferred their 4th Air Army, 6th and 7th Air Divisions to the Hollandia area of New Guinea.⁵⁶ These forces would not have Japanese naval support in New Guinea as senior leaders had determined naval forces were needed for more decisive areas in and around the Philippines.⁵⁷

New Guinea, February-July 1944

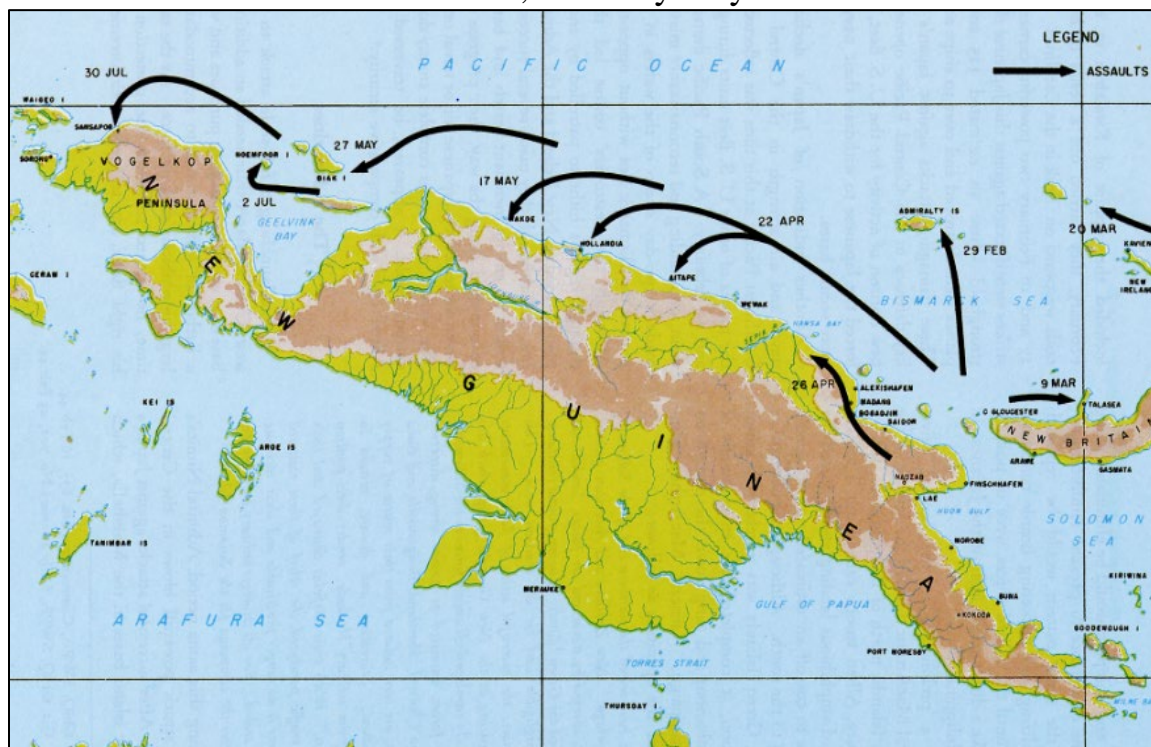


Figure 3: The New Guinea Campaign. SWPA General Staff, The Reports of General MacArthur, *The Campaigns of General MacArthur in the Pacific Volume 1*, accessed 20 January 2020, <https://history.army.mil/books/wwii/MacArthur%20Reports/MacArthur%20V1/ch06.htm#b1>.

⁵⁵ Smith, *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, 88-89.

⁵⁶ For a more comprehensive description of the Japanese defensive and actions during this time period, I suggest researching details in the US Army's studies in World War II, especially *The War in the Pacific, The Approach to the Philippines*.

⁵⁷ Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 53.

The first step to realizing seizure of the Philippines, was controlling the Hollandia area of western New Guinea. MacArthur would take a significant leap forward with the decision to bypass other Japanese strong points at Hansa Bay and Wewak.⁵⁸ Operation RECKLESS, would gain more ground than SWPA forces had gained the previous year.⁵⁹ This area known for its capacity for sea basing and extension of air operational reach would allow US forces to dominate Japanese counterattack by sea and air.⁶⁰ Hollandia would become a strategic staging area through the duration of the war, even as demobilizing station at the end of the war.⁶¹

The JCS approved MacArthur's ambitious plan on March 12th, 1944. In the internal US battle to reach the Philippines first, MacArthur struck another victory with the JCS decision, as they directed Admiral Nimitz to support the operation with carrier-based air support.⁶² This aspect was critical for MacArthur because operations planned for Hollandia were beyond the operational reach of land based air support. SWPA staff plans were not fully accepted by Nimitz who would refuse to leave his carriers in the objective area for more than seventy-two hours beyond the initial landings.⁶³ While the robust naval support would provide a powerful striking force of five fleet carriers, seven light carriers, and escort of five battleships, planners would add an intermediate objective at Aitape.⁶⁴ LTG Eichelberger's I Corps would land two divisions on Hollandia beginning on April 22, and 24 1944, executing a double envelopment of Japanese forces.⁶⁵ The minimal Japanese response to Operation RECKLESS strengthened US resolve to

⁵⁸ Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 77.

⁵⁹ Ibid., 101.

⁶⁰ Smith, *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, 12.

⁶¹ Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 101.

⁶² Ibid., 78.

⁶³ Smith, *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, 20.

⁶⁴ Rein, *Multi-Domain Battle in the Southwest Pacific Theatre of World War II*, 90.

⁶⁵ Ibid.

accelerate the operational timelines for the next operational maneuver.⁶⁶ Wakde Island, situated just east of the New Guinea coast was another 300 miles west from Hollandia. 3rd Battalion, 163rd Infantry Regiment, 41st Infantry Division would assault on May 17th, 1944. The 836th Engineer Aviation Battalion would have Wakde's airfield operational by May 21st.⁶⁷ Wakde's airfield would enable air operational reach to Mindanao, the Philippines southernmost island. Other 163rd Infantry Regiment battalions would also assault the Sarimi area on the adjacent New Guinea coastline.

Less than ten days later and with concurrent operations occurring at Wakde-Sarmi, the 162nd and 186th Infantry Regiments of the 41st Infantry Division would assault the island of Biak.⁶⁸ Forces would continue to consolidate gains in the Wakde-Sarmi and Biak areas until September 1944. Landing assaults would continue along the Vogelkop Peninsula at the beginning of July at Noemfoor Island and Sansapor Island on July 30th.⁶⁹ MacArthur's last operational maneuver prior to fulfilling his promise of returning to the Philippines was assaulting the island of Morotai on September 15th, 1944.⁷⁰ Soldiers of the 31st Infantry Division, reinforced by the 126th Infantry Regiment, 32nd Infantry Division would land unopposed. This operation had been timed simultaneously to operations in the Palaus Islands, to include the 1st Marine Division's assault on Peleliu in order to capitalize on naval carrier air support.⁷¹ In six months' time, US joint force efforts executed numerous assaults enabling continuous operational maneuver by land, air, and sea. MacArthur's operational approach to bypass Japanese strong points had in large

⁶⁶ Rein, *Multi-Domain Battle in the Southwest Pacific Theatre of World War II*, 93.

⁶⁷ Ibid., 90.

⁶⁸ Rein, *Multi-Domain Battle in the Southwest Pacific Theatre of World War II*, 94.

⁶⁹ Smith, *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, 406, 433.

⁷⁰ Taaffe, *MacArthur's Jungle War The 1944 New Guinea Campaign*, 218.

⁷¹ Rein, *Multi-Domain Battle in the Southwest Pacific Theatre of World War II*, 103.

benefited US efforts. By September 1944, United States AAF and carrier-based aircraft dominated the air domain, enabling US plans for the upcoming Leyte Campaign.

The first question to assess this portion of the case study is, how did the CJTF exploit cross domain effects? In February 1944, MacArthur's SWPA forces executed feebly opposed amphibious landing, securing the Green islands, fully enveloping the Solomon Islands and essentially isolating the Japanese strongpoint at Rabul.⁷² This minor operation illuminated a weakness in the Japanese response to air and naval aircraft in the Bismarck area. A destroyer team executing maritime reconnaissance and raiding missions were able to do so without Japanese opposition. During this same period, Admiral Nimitz's Central Pacific forces were executing successful operations against Japanese strategic strong points in the Marshall Islands, including securing Kwajalein and leading to a number of raids on Turk and Carolines. These significant operations against Japan's two key defenses in the Central Pacific enabled sea and air operations, forcing the Japanese to withdraw their navy to more secure bases. The rapid seizure of the Admiralties Islands provided MacArthur an opportunity in justification with the JCS in March, 1944 for the bold envelopment approximately 500 miles forward along the New Guinea coast to Hollandia exploiting distance and Japanese weak defenses.⁷³

The second question to assess the New Guinea Campaign is, what was the frequency of operations in the campaign? The transition from 1943 to 1944 saw the measurement between named operations measured by months to days. Starting with the Hollandia operation in April, 1944, there were twenty-five days until the next invasion at Wakde; followed ten days later with the invasion at Biak; thirty-six days until the invasion of Noemfoor Island, and twenty-eight days

⁷² SWPA General Staff, The Reports of General MacArthur, *The Campaigns of General MacArthur in the Pacific Volume 1*, accessed 20 January 2020, <https://history.army.mil/books/wwii/MacArthur%20Reports/MacArthur%20V1/ch06.htm#b1>, 136.

⁷³ SWPA General Staff, *The Campaigns of General MacArthur in the Pacific Volume 1*, 142.

subsequently until the Sansapor operation.⁷⁴ Approximately 121 days had elapsed starting with the Hollandia operation in April until the invasion at Sansapor in July. Geographically, MacArthur's forces had advanced 1,800 miles west and 700 miles north as SWPA forces were postured to continue offense operations against the dwindling Japanese defensive capabilities.⁷⁵

The third question assessing the New Guinea Campaign is, what opportunities were exploited during the campaign? Invasions of Japanese weak defensive locations which were suitable for MacArthur's land, air, and sea forces to utilize was an opportunity exploited. Bypassing Japanese strongpoints and overwhelming ill prepared Japanese forces allowed for MacArthur to continue a greater frequency of offensive operations which the Japanese could not adequately counter.⁷⁶ The rapidity of SWPA forces sequential offensive operations had cumulative effects against Japanese shipping during the New Guinea Campaign, which was another significant opportunity exploited.⁷⁷ The wholesale destruction by SWPA air, naval surface and subsurface platforms against Japanese cargo and troop vessels, transports in the Southwest Pacific Area incrementally incapacitated Japanese efforts to supply, reinforce, or evacuate the remnants of land forces isolated in New Guinea, New Britain, New Ireland, and the Solomon Islands.⁷⁸ SWPA forces were further enabled to maintain offensive frequency by The Battle of the Philippine Sea in June 1944. As a result of the battle, Japanese naval air power forfeited superiority to the allies of which the cumulative effects could not be overcome. The

⁷⁴ SWPA General Staff, *The Campaigns of General MacArthur in the Pacific Volume 1*, 135.

⁷⁵ MacArthur, *Reminiscences*, (New York: McGraw-Hill Book Company, 1964), 195.

⁷⁶ Drea, Edward, J., Center of Military History Publication 72-9, *New Guinea*, (Washington DC: U.S. Army Center of Military History, n.d.), 31.

⁷⁷ SWPA General Staff, *The Campaigns of General MacArthur in the Pacific Volume 1*, 164.

⁷⁸ *Ibid.*, 164.

Japanese lost approximately 600 airframes, two fleet carriers, one light carrier, two fuelers, and approximately 3,000 sailors and pilots..⁷⁹

The fourth question assesses when did convergence of effects occur within a given operational space? Following the Hollandia invasion in April 1944, SWPA forces had supremacy in the land, air, and sea domains. Land forces available in the SWPA in April 1944 were seven US divisions, three separate regimental combat teams, and five Australian divisions. During this time only five Japanese divisions opposing Allied land forces in New Guinea, and three divisions postured in the East Indies..⁸⁰ SWPA forces had enough combat power to execute multiple invasions sequentially, overwhelming Japanese defenses and exploiting their lack of air and naval combat power to counterattack allied offensive operations within the SWPA Theater. The Mariana and Palau Islands Campaign and the Battle of the Philippine Sea in the adjacent Central Pacific Theater further enabled convergence in the SWPA as the Japanese could no longer overcome the cumulative effects of Allied sequential offensive operations in both Pacific theaters. SWPA forces would maintain convergence through the initial days of the Leyte Campaign in October 1944..⁸¹

The New Guinea Campaign illustrates the sequential and cumulative effects of attrition and maneuver warfare. Attrition warfare was mainly executed by the Australian Army during the beginning of the campaign while the allies remained in the operational defense against the Japanese. This period is characterized from January 1943 through January 1944. The American component of the SWPA forces then had time to deploy more forces, equipment, and material in the application maneuver warfare. MacArthur's decision in employing an envelopment strategy

⁷⁹ Samuel Eliot Morison, *History of United States Naval Operations in World War II: New Guinea and the Marianas, March 1944–August 1944, Vol. VIII*. (Boston: Little, Brown and Co., 1953), 277-278.

⁸⁰ SWPA General Staff, *The Campaigns of General MacArthur in the Pacific Volume 1*, 142-147.

⁸¹ MacArthur, *Reminiscences*, 210-212.

utilizing all domains to obtain tactical initiative created the opportunity to transition from the operational defense to offensive operations by the summer of 1944.

Leyte Campaign, October 1944

Preparations for the invasion on Leyte had been ongoing for months. As conditions in the SWPA of operations continued to evolve, adjustments were made to the original decisions for operations in the Philippine Islands.⁸² Japanese intentions revealed through decoding by the ULTRA system illuminated the temporal urgency for Allied operational planning in the Philippines.⁸³ The operational name for the return of United States forces to the Philippines was Operation KING TWO.

The US Joint Chiefs of Staff had designated GEN MacArthur the supreme commander of land, sea, and air forces drawn from the SWPA and Central Pacific area of operation. The US Seventh Fleet with Vice Admiral Kinkaid commanding provided the predominance of the Allied naval support to the operations for Leyte. Kinkaid's fleet consisted of 701 ships, including 157 warships including duty of transport and assault of land forces. Land based long range air support for the Leyte operation would come from Allied Air Forces, commanded by LTG George C. Kenney, when conditions were favorable ashore. Air support would come from naval aviation of Admiral Halsey's Third Fleet, who would remain under overall command of Admiral Nimitz.⁸⁴

⁸² Anderson, Charles, A., Center of Military History Publication 72-27, *Leyte* (Washington DC: U.S. Army Center of Military History, n.d.), 7-8.

⁸³ Anderson, CMH PUB 72-27, *Leyte*, 7-8.

⁸⁴ Anderson, CMH PUB 72-27, *Leyte*, 11.

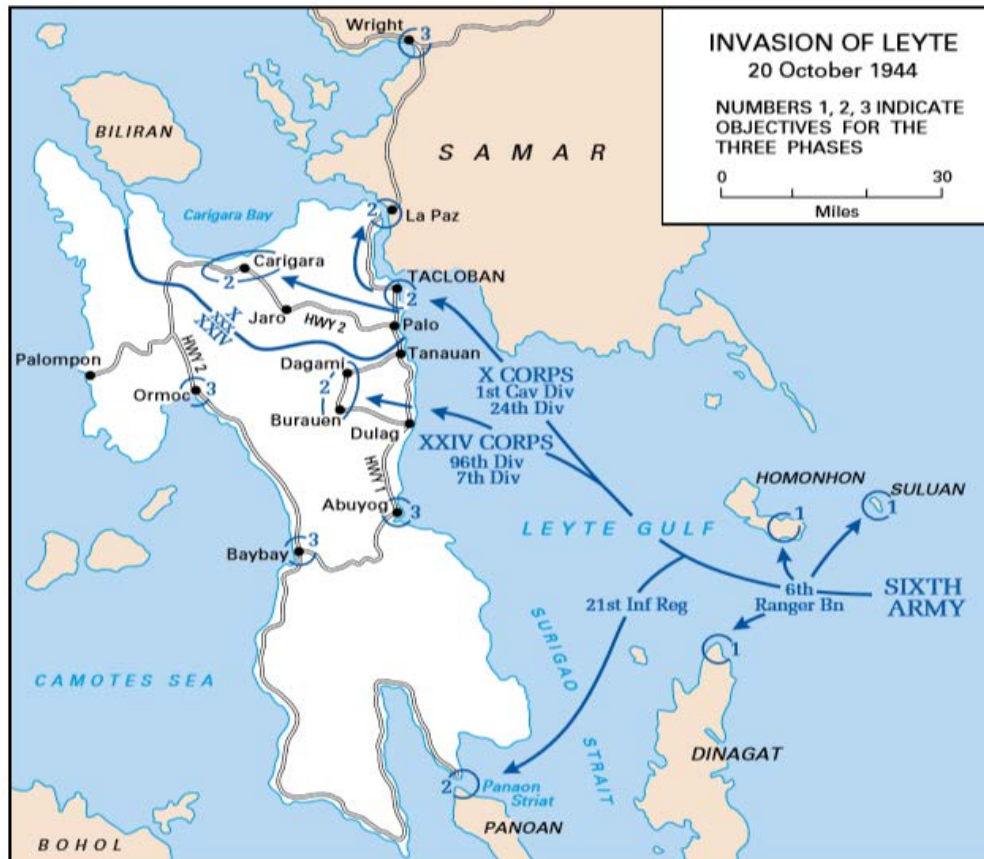


Figure 4: Invasion of Leyte, October 1944. Anderson, Charles, A., Center of Military History Publication 72-27, *Leyte* (Washington DC: U.S. Army Center of Military History, n.d.), 11.

LTG Walter Krueger's Sixth US Army consisted of two corps, the X and XXIV with a strength of 202,500 men. The X Corps, commanded by Major General (MG) Franklin C. Sibert, comprised of 1st Cavalry Division (dismounted) and the 24th Infantry Division. XXIV Corps, commanded by MG John R. Hodge consisted of the 7th and 96th Infantry Divisions.⁸⁵ The Sixth Army, reserve, had two divisions and one regimental combat team, the 32d "Red Arrow" Infantry Division, 77th Infantry Division and the 381st RCT.⁸⁶ The Sixth Army Service Command

⁸⁵ US theater, field, and corps commander's perspective on the Leyte Campaign are presented in Douglas MacArthur, *Reminiscences* (1964), Walter Krueger, *From Down Under to Nippon: The Story of Sixth Army in World War II* (1953), and Robert Eichelberger, *Our Jungle Road to Tokyo* (1950).

⁸⁶ Anderson, CMH PUB 72-27, *Leyte*, 10-11.

(ASCOM), commanded by MG Hugh J. Casey would control land logistical and mobility support operations..⁸⁷

The 14th Japanese Area Army was responsible for the defense of the Philippines. Commanded by GEN Tomoyuki Yamashita. The Japanese 35th Army, commanded by LTG Sosaku Suzuki was the intermediate Philippine defense headquarters which included four complete divisions and elements of another, plus three independent mixed brigades. Suzuki assigned the 16th Division, commanded by LTG Shiro Makino to defend Leyte. Japanese total strength in the Philippines was approximately 432,000 troops, with the Japanese 16th Division consisting of 20,000 soldiers on Leyte. Philippine based Japanese Army were supported by the 4th Air Army and the 1st Air Fleet, also located in the Philippine Islands. Philippine based Japanese Army elements could be reinforced with task forces based in the Borneo and Formosa areas totaling 4 carriers, 7 battleships, 2 battleship-carriers, 19 cruisers, and 33 destroyers..⁸⁸

On October 20, 1944, X and XXIV Corps assaulted abreast on the east coast of Leyte at separate beaches against minimal Japanese opposition. X Corps initial objective was seizure of the airfield at Tacloban and XXIV Corps was to secure the airfield at Dulag. X Corps would achieve success in obtaining its initial objective compared to XXIV Corps whose divisions faced greater resistance..⁸⁹ Favorable weather conditions of during the amphibious landings would give way to Leyte's monsoon season, with more than 35 inches of rain during the first forty days of the campaign..⁹⁰ Weather conditions would hinder engineer capacity to improve airfields limiting the scope of US Army Air Forces to provide close air support to Sixth Army's corps and divisions as they advanced inland to subsequent objectives. Engineers were further prioritized to general engineer support focused on mobility for ground supply lines of communications.

⁸⁷ Anderson, CMH PUB 72-27, *Leyte*, 11.

⁸⁸ Ibid, 10.

⁸⁹ Ibid.

⁹⁰ Rein, *Multi-Domain Battle in the Southwest Pacific Theatre of World War II*, 108.

Without adequate land-based air support, Sixth Army's corps and divisions would have to rely on naval air support, however this became problematic as the Navy would become decisively engaged during the Battle of Leyte Gulf on 24 and 25 October, 1944. The Japanese would exploit these conditions reinforcing the initial 20,000 soldiers on Leyte at the time of Sixth Army's invasion. In November through early December, the Japanese were able to increase their combat power to 55,000 soldiers with an addition 10,000 tons of supplies for defense operations..⁹¹

⁹¹ Anderson, CMH PUB 72-27, *Leyte*, 20.

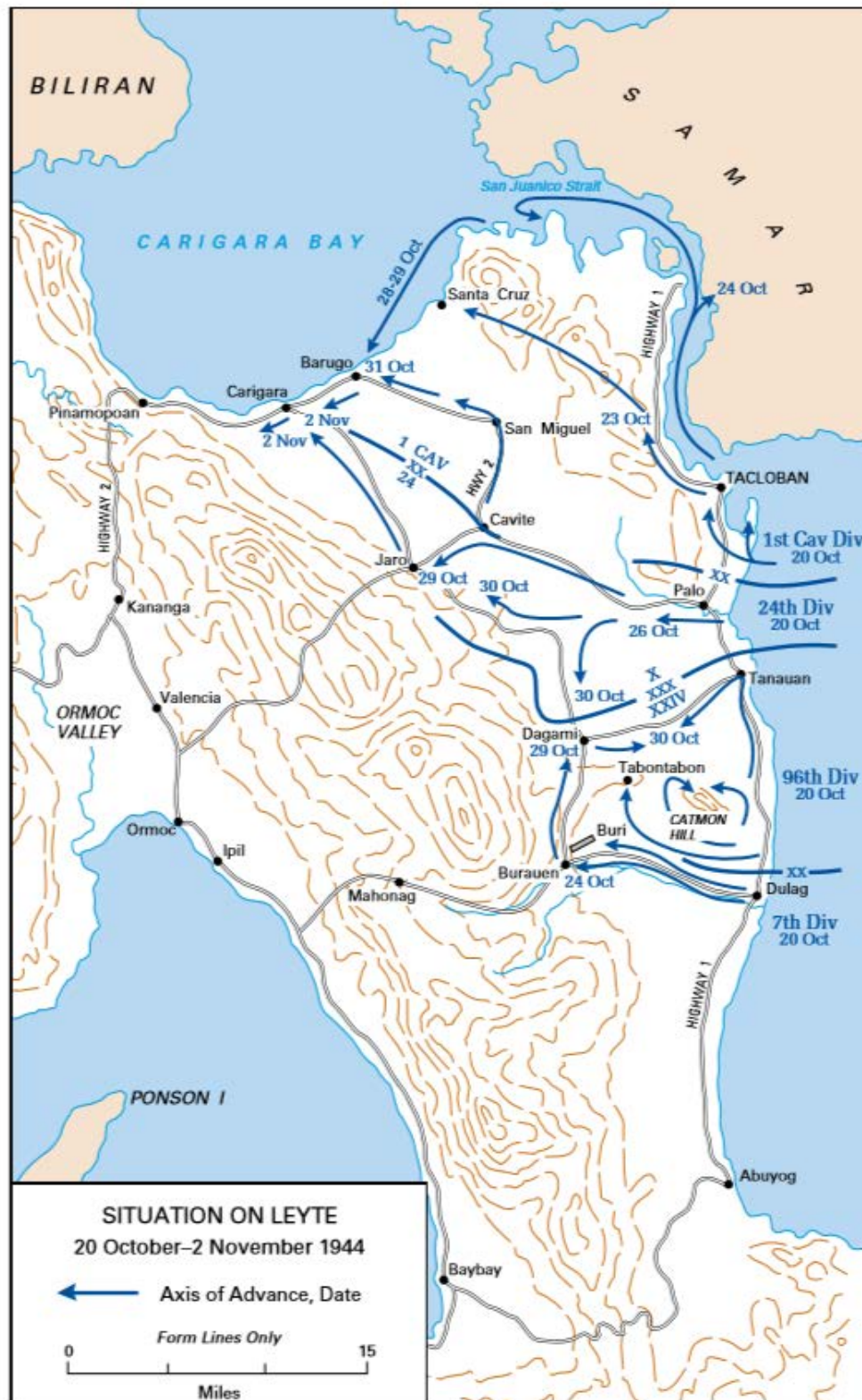


Figure 5: Operation KING TWO, 20 October – 02 November 1944. Anderson, Charles, A., Center of Military History Publication 72-27, *Leyte* (Washington DC: U.S. Army Center of Military History, n.d.), 18.

The Sixth Army continued offense operations in the western mountainous side of the island due to Japanese reinforcement instead of consolidating gains on the east side of Leyte.⁹² Additionally, three reserve divisions would be committed to Leyte, which delayed SWPA headquarters operational schedule for the rest of the Philippine campaign.⁹³ On 26 December, Sixth Army would conclude offensive operations with GEN MacArthur transferring control of operations on Leyte and Samar to the US Eighth Army. Japanese resistance no longer posed a threat to American control there, consolidation of gains would continue until 8 May 1945.⁹⁴

⁹² For a more comprehensive description of the campaign during this time period, I suggest researching details in the US Army's studies in World War II, *The War in the Pacific, Leyte The Return to the Philippines*.

⁹³ Anderson, CMH PUB 72-27, *Leyte*, 21.

⁹⁴ *Ibid.*, 30.



Figure 6: Leyte Campaign, 7 November – 31 December 1944. Anderson, Charles, A., Center of Military History Publication 72-27, *Leyte* (Washington DC: U.S. Army Center of Military History, n.d.), 18.

The first question to assess this portion of the case study is, how did the CJTF exploit cross domain effects? Third Fleet air and naval operations around Mindanao and Visayas in the second week of September 1944 with limited Japanese response provided SWPA opportunity to exploit operational frequency. Attaining permission from the Joint Chiefs of Staff, SWPA forces

accelerated the invasion of Leyte by approximately sixty days.⁹⁵ The Leyte invasion exploited SWPA forces ability to converge land, air, and naval effects at the time and place of their choosing with minimal Japanese resistance to the landings on October 20, 1944.⁹⁶ The Battle of Leyte Gulf challenged naval and air superiority and placed land forces at risk within the first week of the campaign. The American and Japanese impressions of the outcome of the battle would shape decisions throughout the duration of the campaign, ultimately providing the SWPA headquarters other opportunities to exploit.⁹⁷ ULTRA intercepts would eventually allow SWPA forces to exploit cross domain effects against Japanese supply and land force inter-island reinforcement.⁹⁸ On December 7, 1944 SWPA forces were able to exploit cross domain effects to support the amphibious assault by the 77th Infantry Division near Ormoc. The Ormoc landing was decisive in segmenting the Japanese Army to the point they no longer were able to execute collective defensive operations.⁹⁹

The second question to assess the Leyte Campaign is, what was the frequency of operations in the campaign? SWPA forces invaded Morotai Island on September 15, 1944 and the Leyte invasion followed approximately thirty-five days later on October 20, 1944. The Eighth US Army would take over Leyte operations on 25 December 1944. Fifty-two days following Eighth Army taking operational control of Leyte operations the Japanese would finally surrender.¹⁰⁰ SWPA continued execution of offensive operations invading the island of Luzon on 9 January 1945. Eighty days had elapsed between the invasion of Leyte and Luzon.

⁹⁵ Anderson, CMH PUB 72-27, *Leyte*, 8.

⁹⁶ *Ibid.*, 12-15.

⁹⁷ *Ibid.*, 19.

⁹⁸ *Ibid.*, 20.

⁹⁹ *Ibid.*, 27.

¹⁰⁰ Eichelberger, *Our Jungle Road to Tokyo*, 200.

The third question assessing the Leyte Campaign is, what opportunities were exploited during the campaign? The results of the Battle of Leyte Gulf provided multiple opportunities for SWPA forces to exploit. At this point in the war the Japanese could no longer reverse the cumulative effects of naval and air combat.¹⁰¹ Japanese leadership assessing a decisive victory during the battle committed greater numbers of land forces from Luzon and adjacent islands to reinforce the fight on Leyte. ULTRA intercepts provided targeting opportunities to exploit these Japanese supply and troop transport efforts.¹⁰² Cumulative effects of the campaign by November 1944 provided SWPA forces control of the air and sea domains, enabling the opportunity to exploit use of an amphibious landing near Ormoc on 7 December 1944. The 77th Infantry Division's amphibious assault near Ormoc forced the Japanese to further divide their defensive posture which resulted in their inability to collectively defend against SWPA land forces.¹⁰³ Superiority in the air and sea domains allowed the SWPA headquarters to exploit the frequency of their offensive operations on Leyte by executing an invasion of the island of Mindoro on 12 December 1944.¹⁰⁴ By 23 December 1944 two airfields were operational on the island providing SWPA forces supremacy in the air and sea domains in preparation for the Luzon invasion.¹⁰⁵

The fourth question assesses when did convergence of effects occur within a given operational space? Convergence of effects for MacArthur's SWPA forces occurred from June 1944 following the Battle of the Philippine Sea until 24 October 1944 at the onset of the Battle of Leyte Gulf. Geographically SWPA forces would continue to extend convergence operational space further north toward the southern Philippine Islands as offensive operations continued. The period starting from 24 October 1944 at the beginning of the Battle of Leyte Gulf until the first

¹⁰¹ Anderson, CMH PUB 72-27, *Leyte*, 19.

¹⁰² *Ibid.*, 20.

¹⁰³ *Ibid.*, 27.

¹⁰⁴ SWPA General Staff, *The Campaigns of General MacArthur in the Pacific Volume 1*, 247.

¹⁰⁵ *Ibid.*, 251.

week of December 1944, SWPA forces would not have convergence of effects, but this was largely because of poor weather conditions brought about from monsoons..¹⁰⁶ Convergence of effects by SWPA forces would reemerge the first week of December 1944 beginning with the amphibious landing near Ormoc. Establishment of two operational airfields on the island of Mindoro by 23 December enabled geographic extension of convergence to support the upcoming invasion of Luzon on 9 January 1945..¹⁰⁷

The Leyte campaign was decisive for both the Americans and Japanese. American actions during the campaign did not necessarily reflect operational successes in the previous New Guinea Campaign. The duration of the campaign extended beyond previous operations for SWPA forces in the spring and summer of 1944. Lacking continuous layered synchronization of effects across domains turned the campaign to one of attritional warfare rather than the preferred maneuver warfare. The Japanese seizing this opportunity were able to adjust their defensive posture in the Philippines, however the sequential and cumulative effects of the campaign and battles took their toll. As a result of the Leyte Campaign, the Japanese no longer could contest Allied operational advances in the air and maritime domains. Within the land domain, attrition warfare was their remaining scheme.

This section applied and answered the research questions postulated in section one to the two selected campaigns. Those campaigns were in MacArthur's SWPA in New Guinea and Leyte from March through December 1944, principally focused on the United States perspective. In both New Guinea and Leyte, the evidence suggests layered synchronization of effects could be sufficiently leveraged given frequency, sequencing, and opportunities exploited during offensive operations. The following findings and analysis section will assess whether that evidence supports or does not support the hypothesis.

¹⁰⁶ Anderson, CMH PUB 72-27, *Leyte*, 23-25.

¹⁰⁷ SWPA General Staff, *The Campaigns of General MacArthur in the Pacific Volume 1*, 251.

Findings and Analysis

The findings and analysis section comprise of two major subsections. The findings subsection reviews the data from the two phases of the case study; the analysis subsection examines the data to indicate whether they support or do not support the hypothesis. The findings subsection applies the structured, focused comparison method using the set of guiding questions to examine the empirical findings from the two campaigns of the case study. This first subsection flows with the inherently related questions in the same way as the case studies did before.

The first question is how did the CJTF exploit cross domain effects? In the first phase of the case having transitioned from operational level defense to offensive operations, SWPA forces would execute tactical offensive operations where the Japanese did not have superiority in one or more domains. Starting in April 1944 SWPA forces were able to sustain a greater frequency of tactical offensive operations along the New Guinea coastline exploiting weak Japanese defensive positions. The cumulative effects of Allied offensive operations in the SWPA and Central Pacific theaters provided multiple dilemmas for the Japanese thus forcing them to concede operational defensive depth. In the second phase of the case, SWPA forces exploited supremacy in multiple domains which further illuminated weakness in Japanese defenses creating opportunities to increase frequency of operations. This allowed a foothold to be established by Sixth Army almost sixty days ahead of the originally planned invasion of Leyte. A commonality of both phases of the case is the fact exploitation of cross domain effects was the key component for successful execution of tactical operations and enabled accelerated frequency of the operational level offense.

The second question asks what was the frequency of operations in the campaign? During the New Guinea campaign, starting with the Hollandia invasion the frequency between the subsequent invasions averaged a month in duration with the exception of the operations at Biak onward to Noemfoor. In the second phase of the case starting with operations at Morotai until the invasion of Leyte again averaged approximately a month. However, the duration from Leyte to

Luzon extended to approximately two and a half months. The extension of frequency in these two instances from New Guinea and Leyte highlight unexpected resistance from the Japanese within the land domain. From the United States prospective in these examples, SWPA forces were unable to exploit cross domain effects for various reasons. When superiority in more than one domain was present SWPA forces were able to create tactical opportunities to sustain operational offensive frequency.

The third question assessing the Leyte Campaign is, what opportunities were exploited during the campaign? MacArthur's approach for operational maneuver in the SWPA Theater in 1944 had imposed a unique blend of sequencing and cumulative effects. Supremacy of multiple domains by the summer of 1944 was an opportunity MacArthur was able to exploit when directed to accelerate the invasion of Leyte by the Joint Chiefs of Staff. During this same period, Japanese Navy exaggeration of attrition of Allied air and naval capacity insulated Japanese beliefs they still had the operational initiative. Japanese heuristics provided an opportunity for MacArthur to exploit, again attacking Japanese defenses where SWPA land forces would have numerical superiority. The loss of Japanese air and naval capacity and lack of operational depth as the result of the Battle of Leyte Gulf provided the opportunity for SWPA forces to sustain an extended duration land domain fight because of nonexistent air domain support. Sequentially, the seizure of key airfields on Mindoro Island in December 1944 solidified air domain supremacy during favorable weather conditions. SWPA forces exploited opportunities provided by ULTRA targeting Japanese supply and troop transport efforts. Supremacy in the air and sea domains provided the opportunity to exploit the amphibious landing of the 77th Infantry Division near Ormoc in December 1944. Exploiting an amphibious envelopment by of Japanese defenses provided a sequential opportunity in the land domain. The landing of the 77th Infantry Division forced the Japanese to fragment their defenses. Japanese inability to collectively continue defensive operations on Leyte enabled SWPA force offensive operational frequency. This

exploited opportunity enabled consolidation of gains on Leyte by Eighth Army and the invasion of Luzon Island on January 9th, 1945 by Sixth Army.

The first hypothesis asserts if a CJTF can sustain a greater frequency of offensive operations against an adversary in one or more domains it can build cumulative effects to allow operational opportunities within a theater of operation. Three questions seek to confirm this hypothesis. The empirical evidence suggests this hypothesis supports the outcome. The transition of Allied operational defensive posture to operational offense by SWPA forces early in 1944 starting in the Admiralty Islands provided justification by MacArthur with the JCS to execute the bold envelopment strategy against Japanese weakness in their defensive posture on New Guinea. SWPA forces capacity to rapidly execute sequential tactical operations in the land domain was further enabled by superiority in the air and sea domains. SWPA air, naval surface and subsurface forces cumulatively effected Japanese operational response to these envelopments in the land domain. The increased frequency allowed SWPA forces to successfully defeat isolated Japanese defensive strongpoints in New Guinea, New Britain, New Ireland, and the Solomon Islands. 121 days would elapse from the Hollandia invasion in April 1944 until the invasion of Sansapor in July 1944. Geographically SWPA forces expanded control by 1,800 miles west and 700 miles north within this short duration. The sequential offensive and cumulative effects from operational offensive operations in the Central Pacific Theater and the Battle of the Philippine Sea in June 1944 provided the opportunity for SWPA to accelerate the invasion of Leyte by 60 days.

The second hypothesis states if a CJTF manages the sequencing of offensive operations with superiority in more than one domain it can exploit opportunities to maintain operational tempo against an adversary. Three questions seek to confirm this hypothesis. The empirical evidence suggests this hypothesis is supported. Securing the Green Islands in February 1944 by SWPA forces illuminated degraded Japanese response in the air and sea domains. This operation effectively isolated the Japanese strongpoint at Rabaul. Sequenced with JCS approval for the Hollandia invasion exploited the opportunity to bypass Japanese strong points along the southern

New Guinea coastline thus penetrating the Japanese operational defense line extending from the Dutch East Indies through New Guinea to the Central Pacific. Isolation of Rabaul and the remnants of the Japanese Armies in the Solomon's shifted the balance of strategic and operational initiative within the SWPA Theater to the Allies. SWPA forces maintained offensive initiative by sequencing invasions to secure necessary airfields to exploit superiority air and sea domains. Numeric superiority within the land domain allowed SWPA forces to sustain the increased offensive operational frequency during the New Guinea Campaign to posture SWPA forces for the invasion of the Philippines. Followed by the Battle of the Philippine Sea in June 1944, SWPA forces superiority within multiple domains provided the necessary control within the theater to circumvent the invasion of Mindoro Island for Leyte. This opportunity allowed SWPA forces to maintain offensive frequency, executing the Leyte invasion 60 days ahead of schedule and forcing the Japanese to adjust their defensive disposition in Philippines at large.

The last hypothesis claims if supremacy of multiple domains is present then a CJTF can achieve convergence of effects within a space for a given amount of time. Three questions pursue confirmation of this hypothesis. Finally, the evidence suggests that this hypothesis is also supported. Supremacy within the land, air, and sea domains following the sequential invasions along the New Guinea coastline starting in April 1944 along with the cumulative effects achieved as the result of the Battle of the Philippine Sea enabled SWPA forces to achieve convergence of effects. SWPA forces were able to sustain convergence of effects for nearly six months within the SWPA Theater. The Japanese were unable to contest Allied convergence of effects until the Battle of Leyte Gulf. SWPA forces would not maintain supremacy of multiple domains from October 24, 1944 until December 7, 1944. For 45 days, SWPA forces did not maintain supremacy in multiple domains necessary to achieve convergence. This can be attributed largely to weather conditions hindering SWPA capacity more than Japanese contention. The amphibious landing of the 77th Division near Ormoc followed by the establishment of two operational airfields as a result of the invasion of Mindoro Island represented reestablishment of SWPA force supremacy

of multiple domains. Transfer of authority in the land domain on Leyte from Sixth US Army to Eighth US Army on December 25, 1944 enabled SWPA forces to prepare for the invasion of Luzon on January 9, 1945, a mere 81 days following MacArthur's triumphant return to the Philippines.

In summary, the empirical evidence supports all three of this paper's hypotheses, and the analyses supports this paper's thesis. The New Guinea and Leyte Campaigns illustrate SWPA forces were able to exploit cross-domain effects in support of each other. Maintaining a greater frequency of tactical operations created opportunities in one or more domains. Sequential and cumulative effects created at the tactical level enabled greater operational opportunities. Frequency, sequencing, and opportunities enabled SWPA forces to concentrate operational offense efforts throughout the theater of operations by the summer of 1944. By the summer of 1944 the Japanese could no longer collectively contest cross-domain effects. The analysis of the findings informs several conclusions which the next section will describe.

Conclusions

This paper sought to contribute to the discussion, analysis, and development of the MDO concept by examining the tenet of convergence. Utilizing the framework of the MDO concept, theory, and a historical vignette as the basis which to examine three hypotheses. This section will summarize the paper, discuss the major findings, identify why, and to whom, these findings are relevant, and finally highlight areas for future study. First, the literature review illuminated the need for expanded dialogue on the temporal considerations in the application of the MDO concept. The second step used these theories and the MDO concept as a lens for a structured, focused, analysis of a single historical case study. The method employed guiding questions to structure the analysis of the case study and achieved focus by relating each of the questions to a theoretical concept. The structured, focused, method applied criteria to the case study questions to

standardize the data collection. The third step consolidated the findings of step two and conducted analysis.

This paper's thesis is that CJTF headquarters operational planning must exploit frequency, sequencing, and opportunity to attain cumulative effects in order to achieve convergence in a given space for a given duration. The findings and analysis from the case study of the New Guinea and Leyte Campaigns support this thesis. Under these circumstances, planners must utilize temporal considerations across domains when formulating operational campaign plans. Achieving convergence across all domains requires layered cross-domain synergy at multiple echelons and from all Joint Force capabilities.

The CJTF maintaining a greater frequency of offensive operations against an adversary in one or more domain builds cumulative effects which may establish advantageous conditions for opportunities within the theater of operations. These opportunities potentially provide commanders and planners greater operational flexibility. Sequential approaches to offensive operations with superiority in multiple domains allows for sustainment of operational frequency. A balance of sequential and cumulative effects when considered in concert provide a greater opportunity to sustain offensive operational frequency. Opportunities exploited as a result of supremacy in multiple domains based upon greater frequency and sequencing of operations sets conditions necessary for the Joint Force to converge effects within a theater of operations.

The findings are relevant because they provide clear recommendations for future research considerations and training implantation for joint operational headquarters. The United States Joint Force must continue to invest in demanding, realistic training to achieve layered synchronization in time and space in the future. A Joint force approach must be applied in further development to bring MDO concepts into executable doctrine. An underpinning of the case study illuminates Allies were able to move beyond interservice rivalries to ultimately prevail in large scale combat against an adversary. Today's Joint Force leaders should bear this in mind so not to

hinder continued development initiatives if we are to be postured to successfully answer the nation's call if needed.

This study has highlighted several gaps that require future research. First, the temporal considerations are a must for planning consideration to establish favorable conditions to achieve desired effects against an adversary. Second, the complexity of operating in an environment where the joint force must truly work together interdependent of each other for successful execution is relevant. This is because the Pacific remains a space in which we as a nation could find ourselves responding to conflict. Third, further research on achieving convergence in complex operational environments will further our understanding of the practical application of the concept.

Appendix A

Allied Organizational Charts New Guinea Campaign.

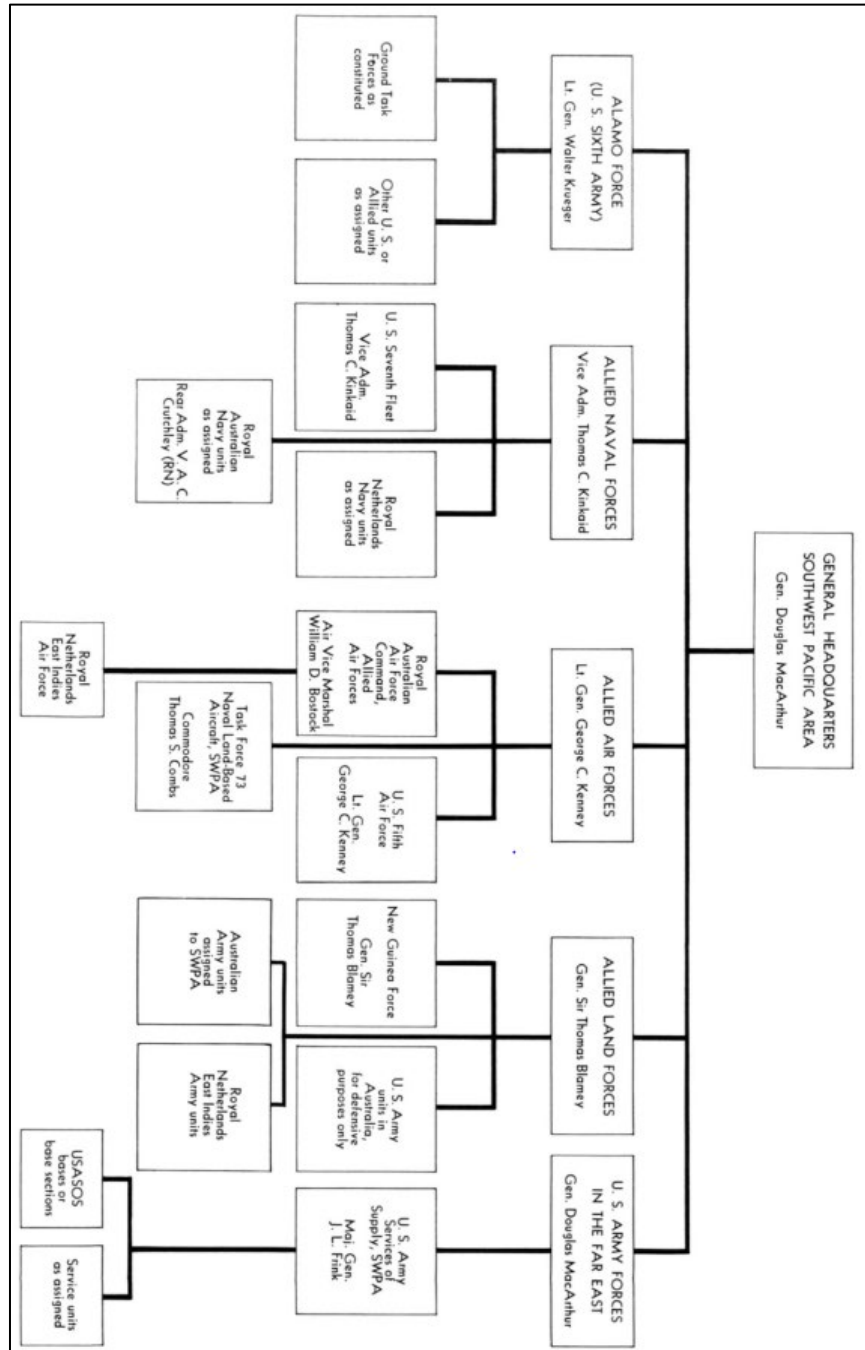


Figure 7: Allied Organizational Chart, New Guinea Campaign, April 1944. Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 15.

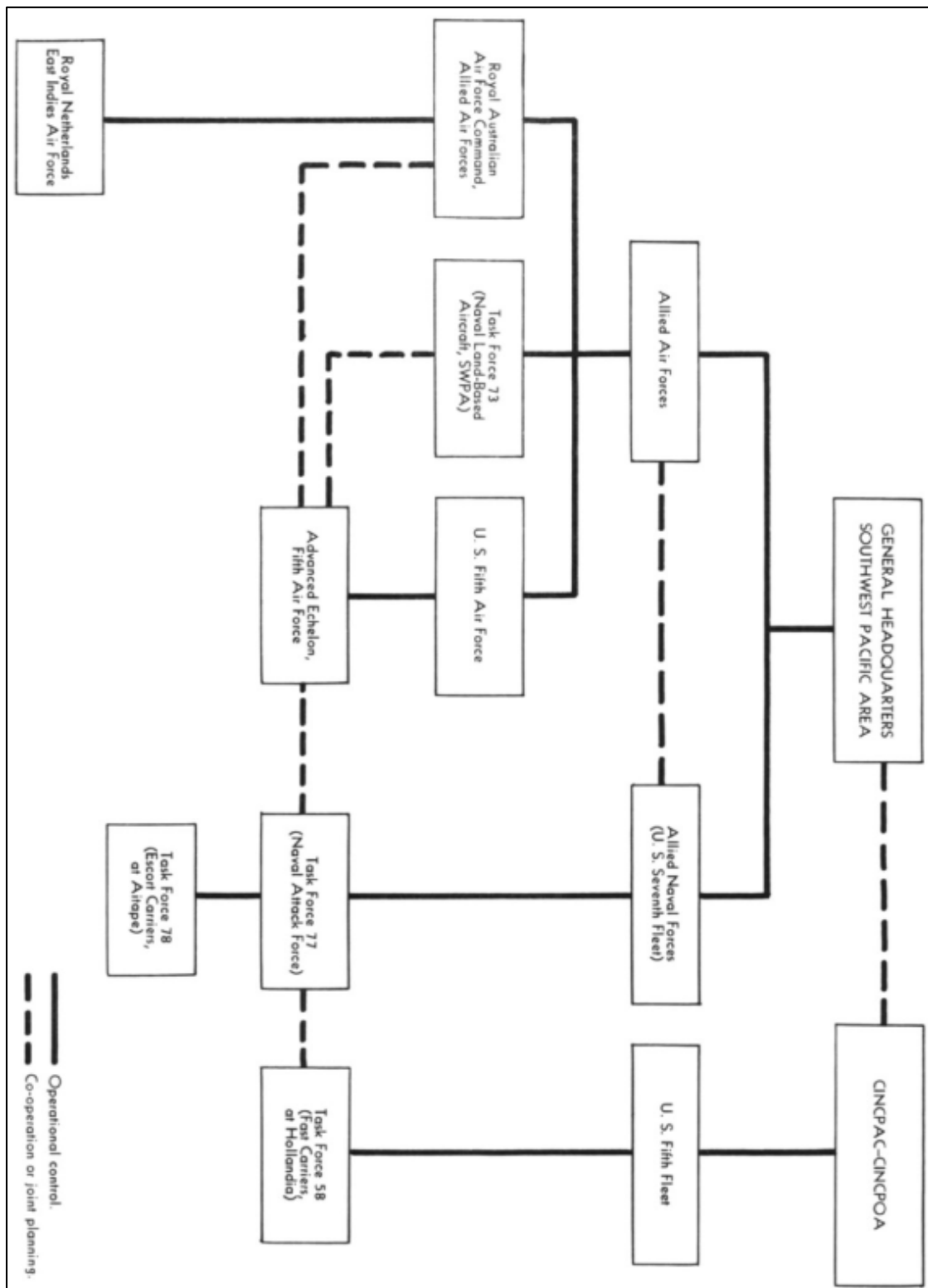


Figure 8: Allied Air Organization for Hollandia Invasion, April 1944. Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 25.

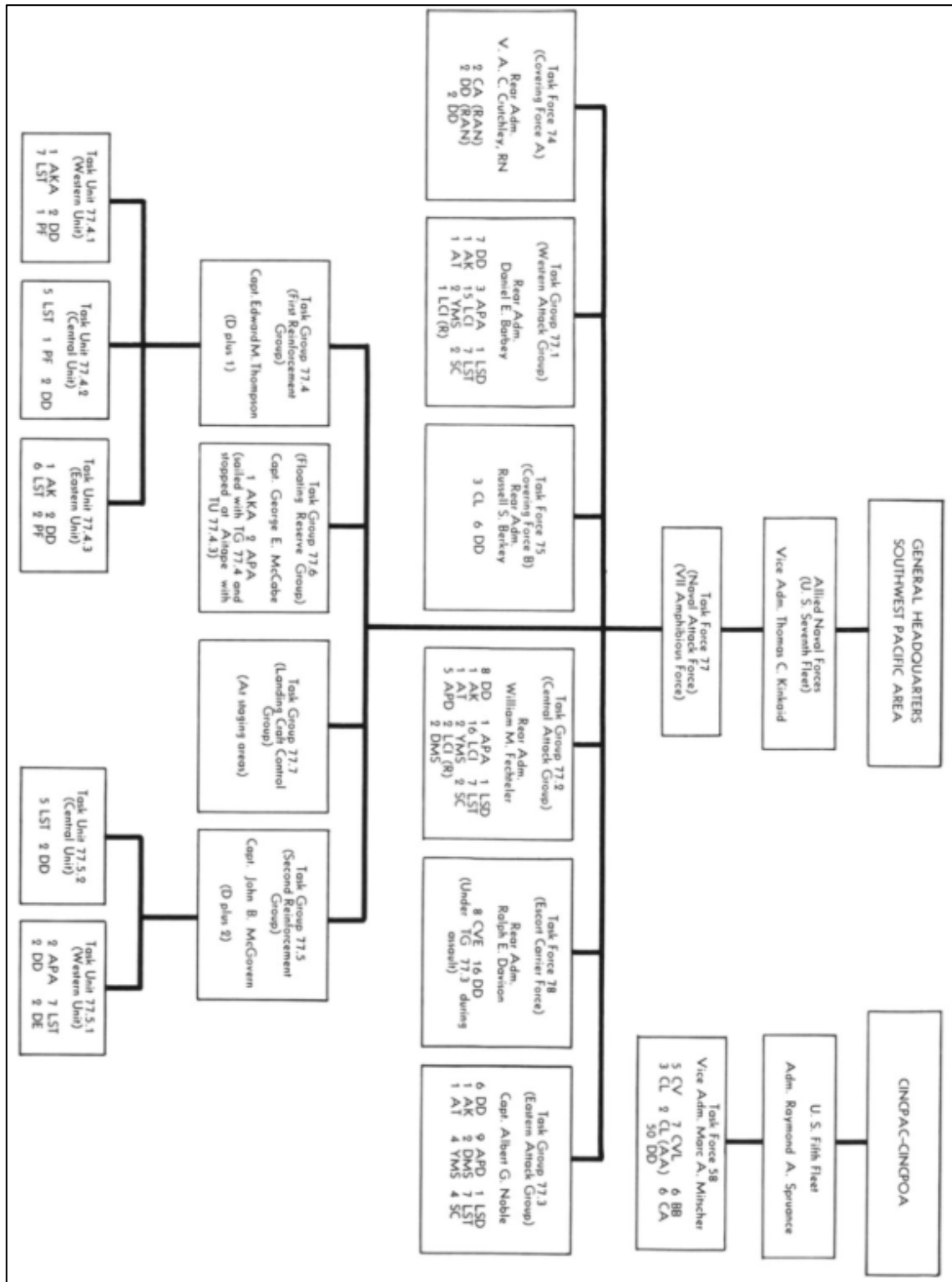


Figure 9: Allied Naval Organizational for Hollandia Invasion, April 1944. Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 28.

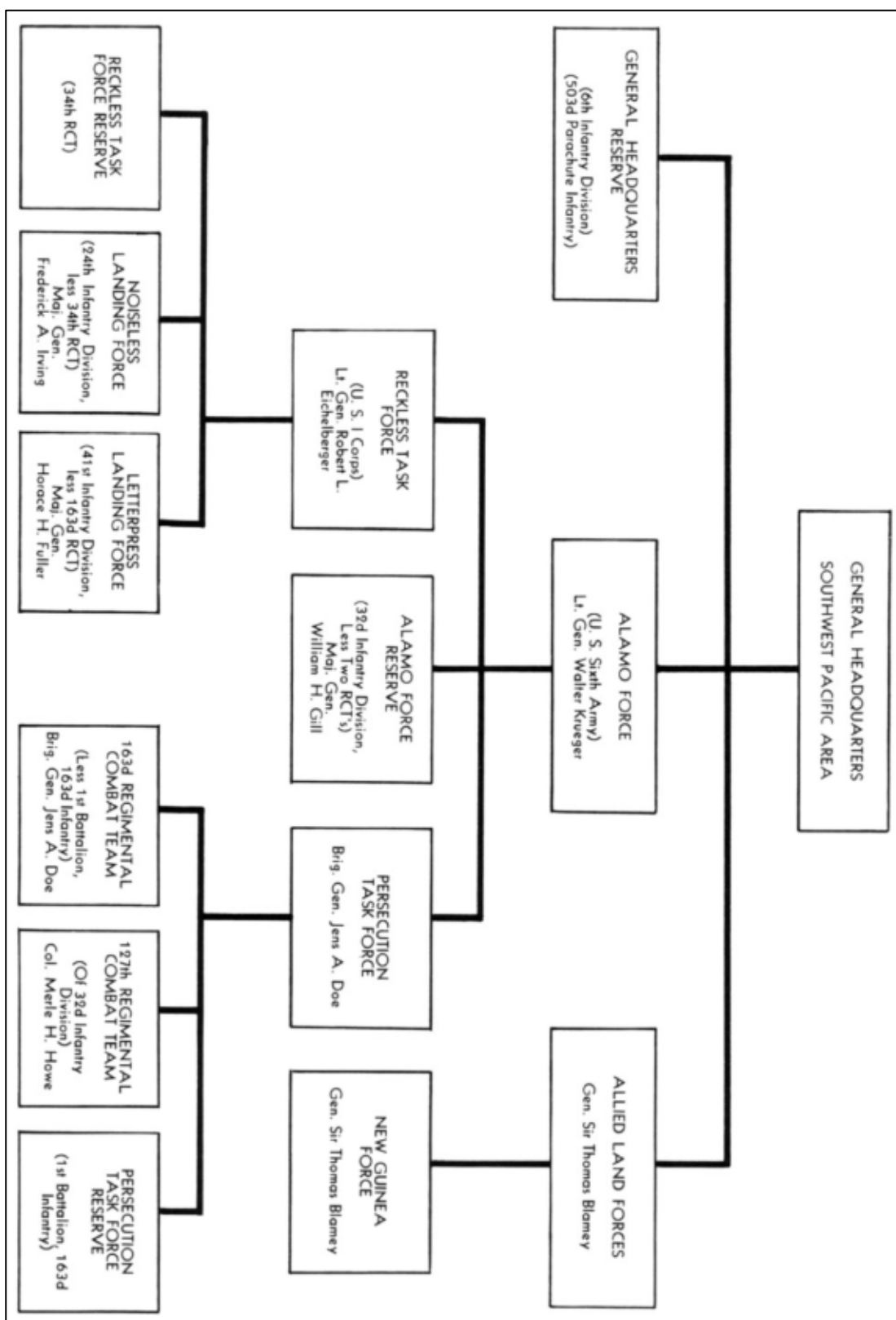


Figure 10: Allied Ground Organizational for Hollandia Invasion, April 1944. Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 33

Appendix B

Japanese Organizational Charts New Guinea Campaign.

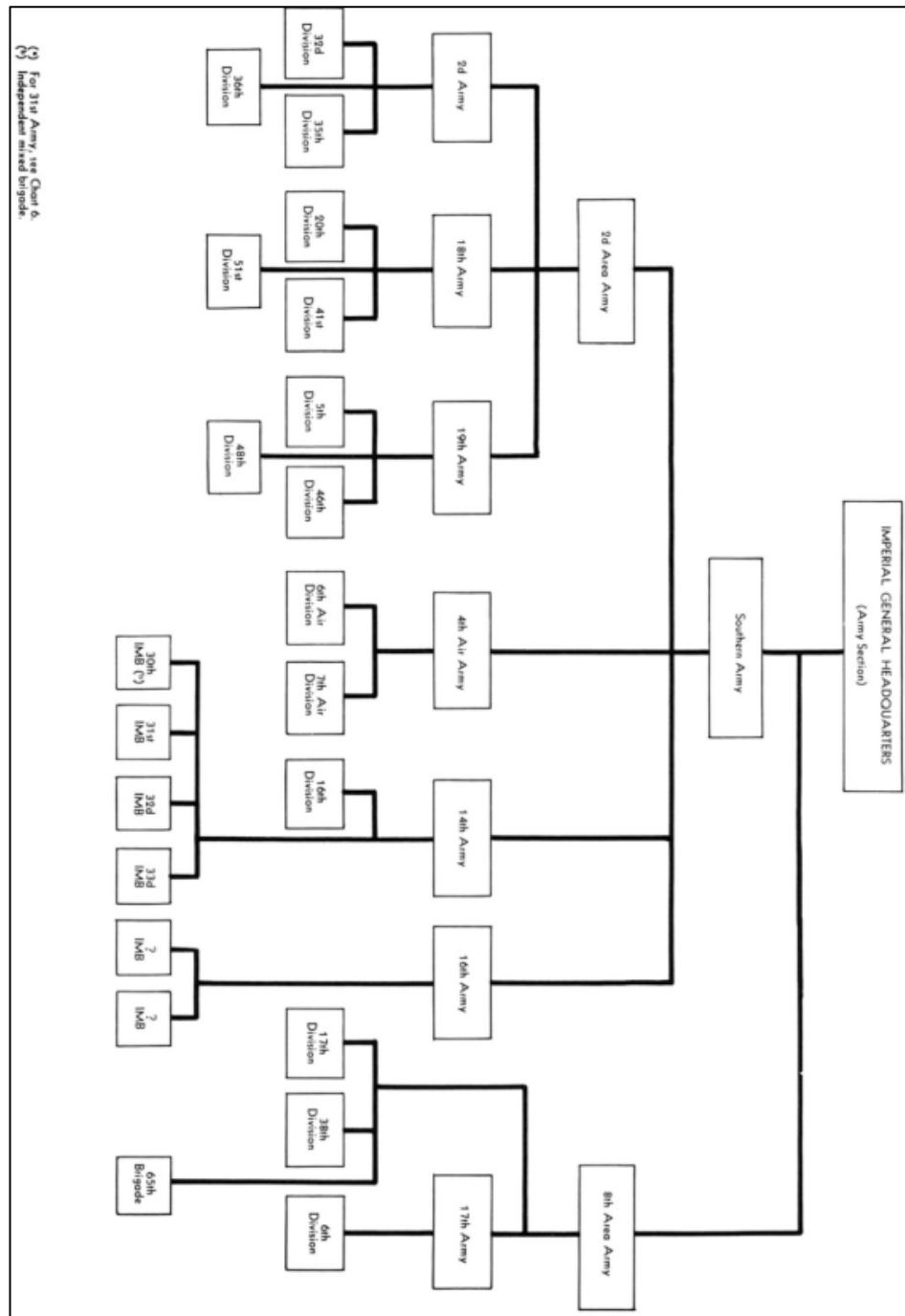


Figure 11: Japanese Army Operational Organization SWPA, April 1944. Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 94.

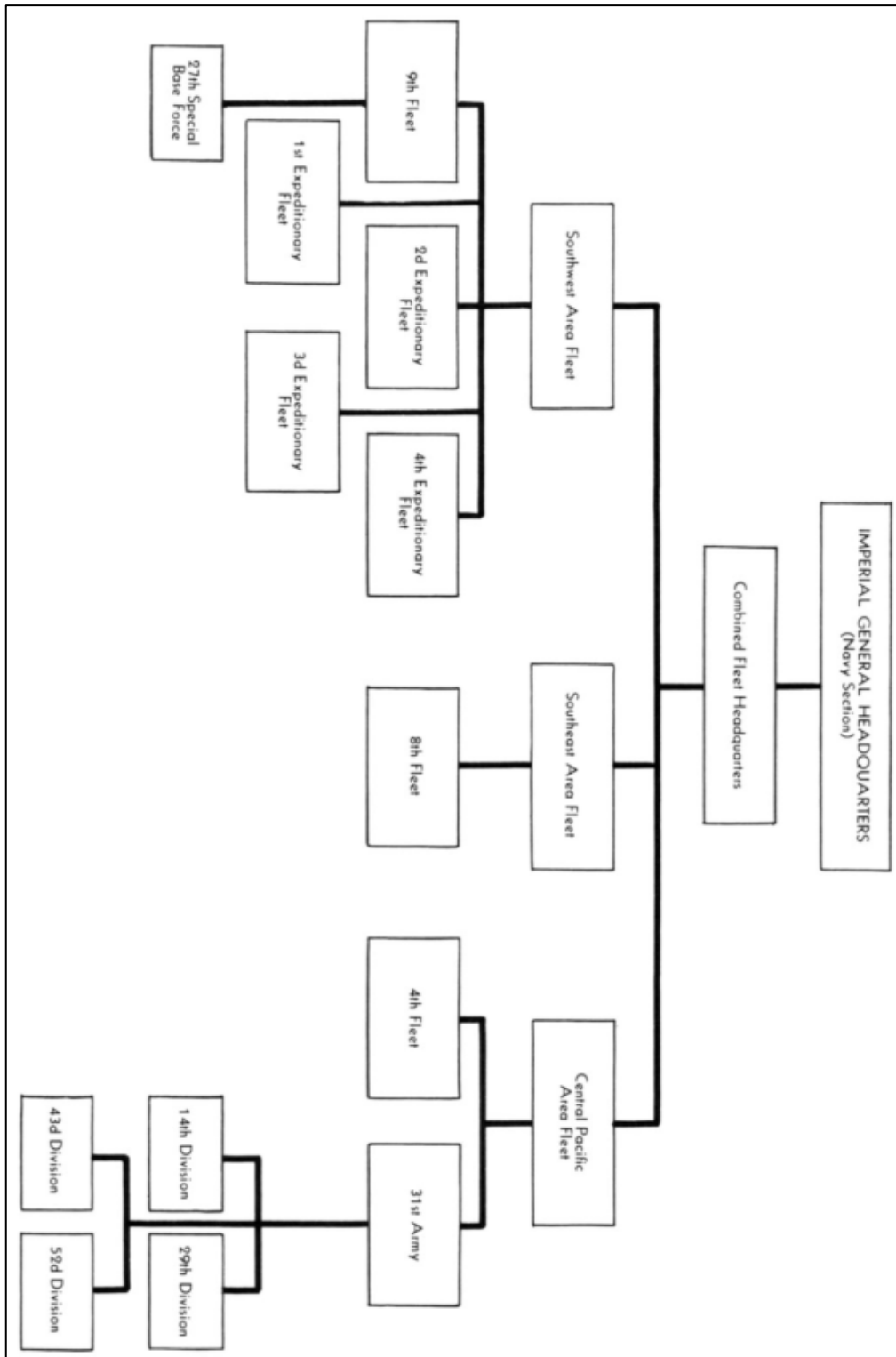


Figure 12: Japanese Naval Operational Organization in Central Pacific and SWPA, April 1944. Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 96.

Appendix C

Allied Organizational Charts Leyte Campaign.

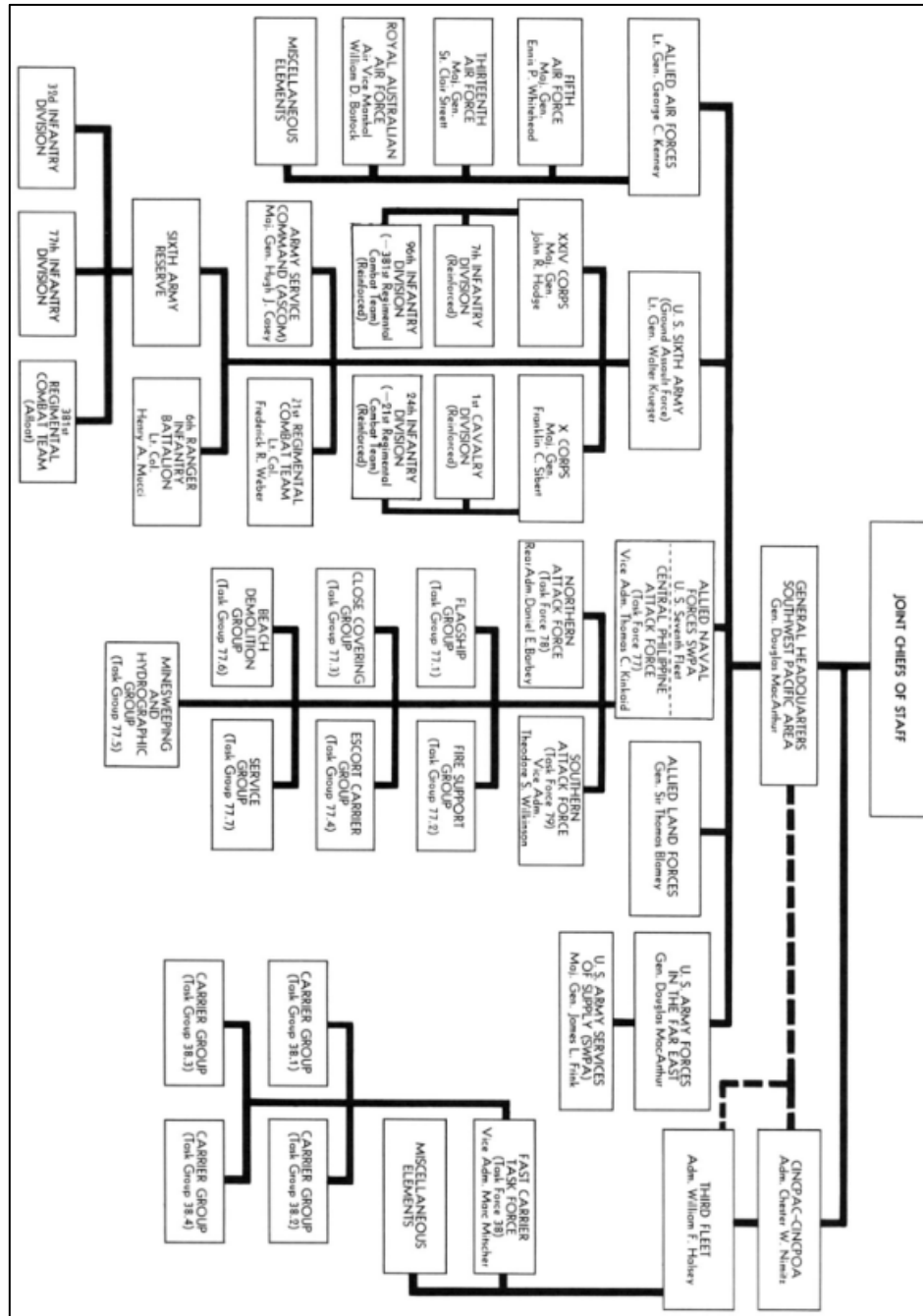


Figure 13: Allied Operational Organization for the Leyte Campaign. Cannon, M. Hamlin, *United States Army in World War II. The War in the Pacific. Leyte: The Return to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 25.

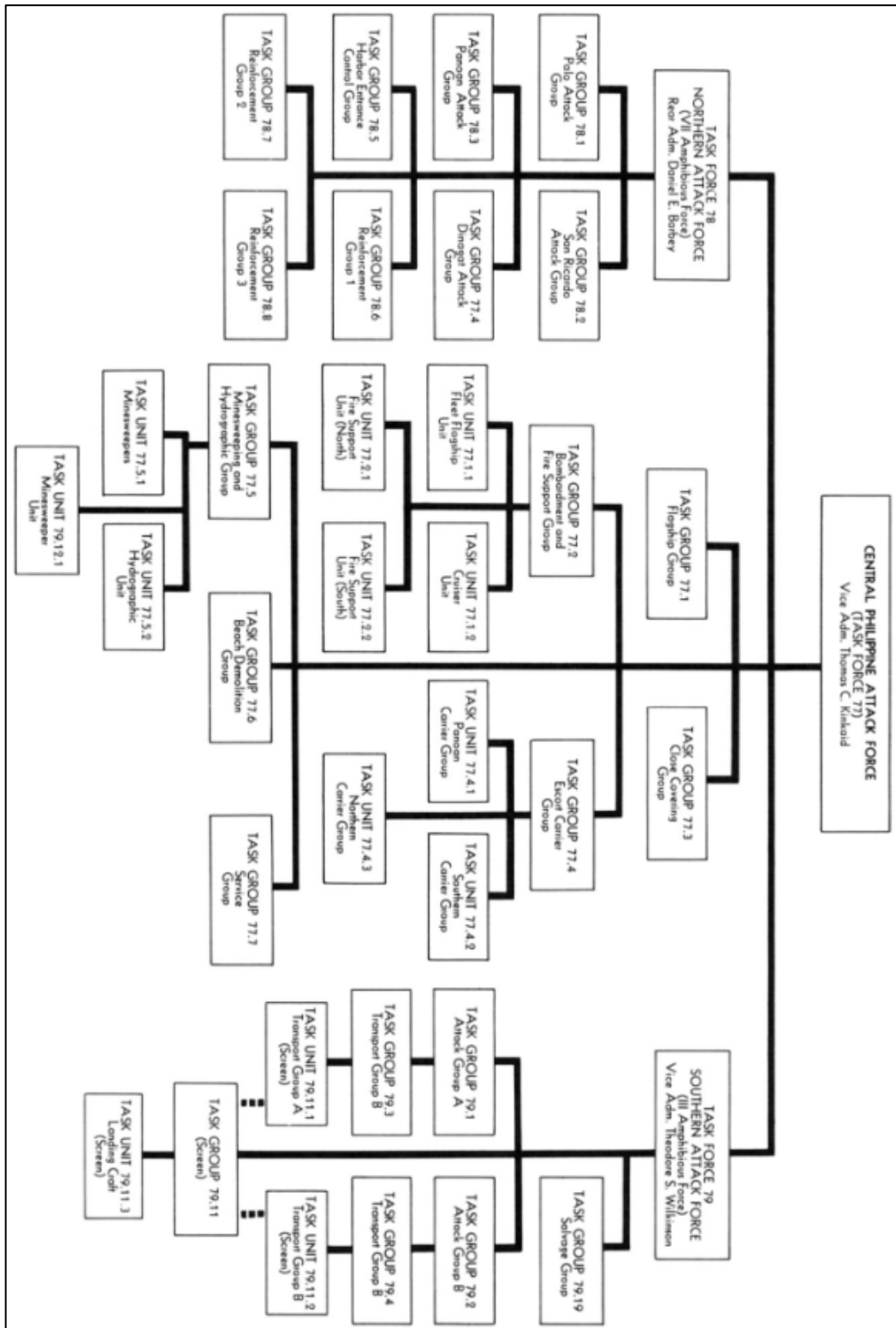


Figure 14: Central Philippine Attack Force Operational Organization. Cannon, M. Hamlin, *United States Army in World War II. The War in the Pacific. Leyte: The Return to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 29.

Appendix D

Japanese Organizational Charts Leyte Campaign.

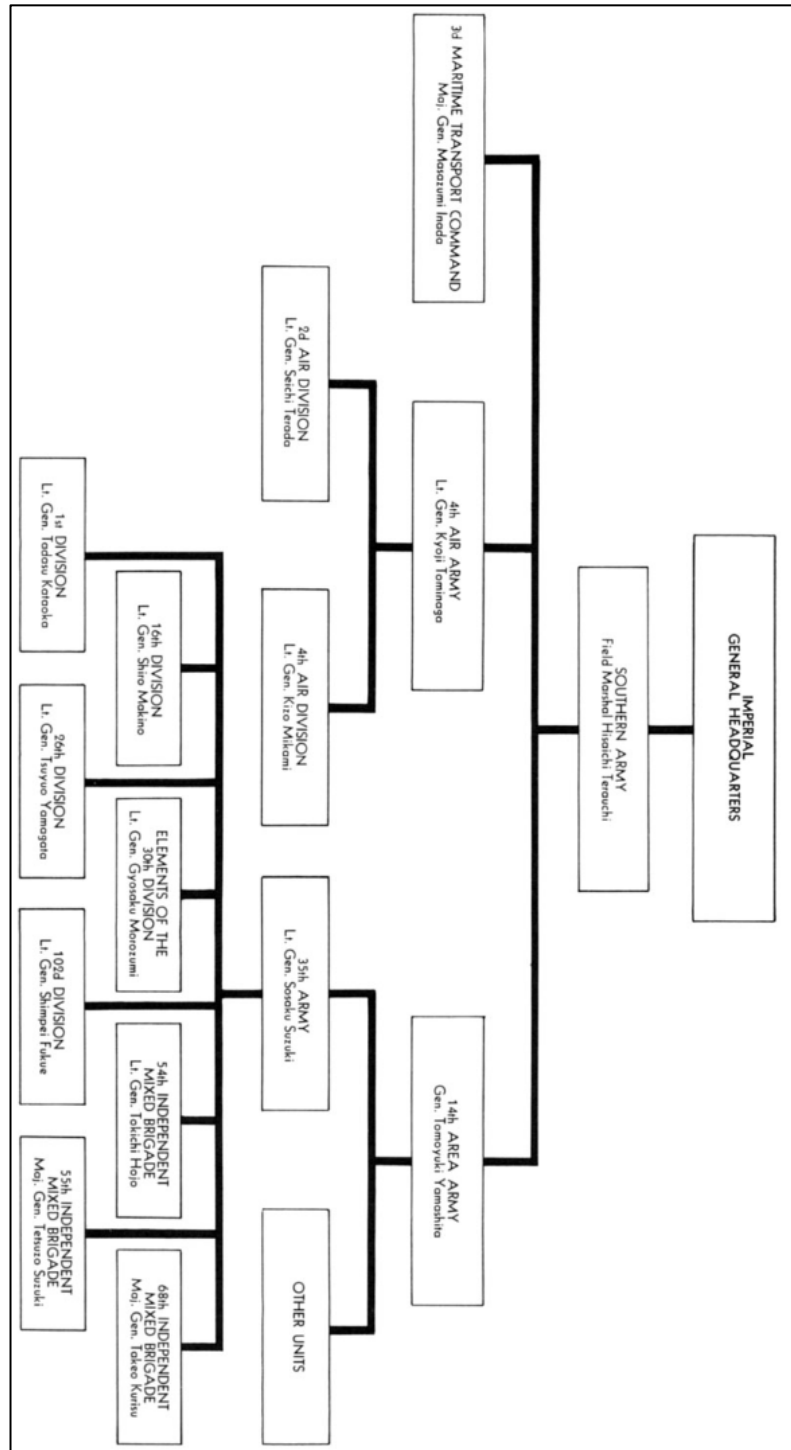


Figure 15: Japanese Army Major Units Organization for Leyte Operation. Cannon, M. Hamlin, *United States Army in World War II. The War in the Pacific. Leyte: The Return to the Philippines*, (Washington, DC: US Army Center of Military History, 1953), 48.

Bibliography

- Alexander George and Andrew Bennett. *Case Studies and Theory Development in the Social Sciences*. Cambridge, MA: MIT Press, 2005.
- Anderson, Charles, A. Center of Military History Publication 72-27, *Leyte*. Washington DC: U.S. Army Center of Military History, n.d.
- Boring Keith T; Brito, Gary M. “*Disrupted, Degraded, Denied, but Dominant: The Future Multi-Domain Operational Environment*,” in *Deep Maneuver: Historical Case Studies of Maneuver in Large-Scale Combat Operations*, edited by Jack D. Kem. Fort Leavenworth, KS: Army University Press, 2018.
- Berry, Henry. *Semper Fi, Mac: Living Memories of the U.S. Marines in World War II*. NY, NY: Arbor House Publishing Co, 1982.
- Brown, Robert B. *The Indo-Asia Pacific and the Multi-domain Battle Concept*, Military Review, September – October 2017. Accessed 10 August 2019.
<https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/September-October-2017/The-Indo-Asia-Pacific-and-the-Multi-Domain-Battle-Concept/>.
- Burgoon, Major Matthew. “*Multi-Domain Operations: The Historical Case*.” Monograph, School of Advanced Military Studies, US Army Command and General Staff College, Fort Leavenworth, KS, 2019.
- Cannon, M. Hamlin. United States Army in World War II. The War in the Pacific. *Leyte: The Return to the Philippines*. Washington, DC: US Army Center of Military History, 1993.
- Clancy Tom; Franks, Frederick Jr. *Into the Storm, A Study of Command*. New York, The Berkley Publishing Group, 1997.
- Clausewitz, Carl von. *On War*. Edited and translated by Peter Paret and Michael Howard. Princeton, NJ: Princeton University Press, 1976.
- Delvaux, Steve. “*The History of the Corps in the US Army*,” in *Essential to Success: Historical Case Studies in the Art of Command at Echelons Above Brigade*, edited by Kelvin Crow and Joe R Bailey. Fort Leavenworth, KS: Army University Press, 2017.
- Drea, Edward, J. Center of Military History Publication 72-9, *New Guinea*. Washington DC: U.S. Army Center of Military History, n.d.
- Drea, Edward, J. *MacArthur’s ULTRA Codebreaking and the War against Japan, 1942-1945*. Lawrence, KS: University Press of Kansas, 1992.
- Eichelberger, Robert L. *Our Jungle Road to Tokyo*. New York: The Viking Press, 1950.
- Gaddis, John Lewis. *The Landscape of History: How Historians Map the Past*. New York: Oxford University Press, 2002.

- Gaily, Harry A. *MacArthur's Victory: The War in New Guinea, 1943-1944*. New York: Presidio Press, 2004.
- Greer, Jim. "Ulysses S. Grant, Command and Control, and the Multi-Domain Battlespace of the Future." Modern War Institute. 30 November 2018. Accessed 15 August 2019. <https://mwi.usma.edu/ulysses-s-grant-command-control-multi-domain-battlespace-future/>.
- Isserson, Georgii Samoilovich. *The Evolution of Operational Art*. Fort Leavenworth, KS: Combat Studies Institute Press, 2013.
- James, D Clayton. "American and Japanese Strategies in the Pacific War," in *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, edited by Peter Paret with collaboration of Gordon A. Craig and Felix Gilbert. Princeton, NJ: Princeton University Press, 1986.
- Jomini, Henri Antoine. *The Art of War*. Translated by G.H. Mendell and W.P. Craighill. Philadelphia: J. B. Lippencott & Co., 1862.
- Krueger, Walter. *From Down Under to Nippon: The Story of Sixth Army in World War II*. Washington DC: Combat Forces Publishing, 1953.
- Leonhard, Robert. *Fighting by Minutes: Time and the Art of War*. Scotts Valley, CA: CreateSpace Publishing, 2017.
- Leonhard, Robert R. *The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle*. New York: Ballantine Press, 1991.
- Leonard, Robert R. *The Principles of War for The Information Age*. Navato, CA: Presidio Press, 1998.
- Lundy, Michael. "Meeting the Challenge of Large-Scale Combat Operations Today and Tomorrow," September-October 2018. Accessed 10 August 2019. <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/SO-18/Lundy-LSCO.pdf>.
- MacArthur, Douglas, *Reminiscences*. New York: McGraw-Hill Book Company, 1964.
- Maurice Matloff, ed. *American Military History*. Washington DC: Office of the Chief of Military History, U.S. Army, 1969.
- McCoy, Kelly. "The Road to Multi-Domain Battle: An Origin Story." Modern War Institute at West Point, 27 October 2018. Accessed 10 August 2019. <https://mwi.usma.edu/road-multi-domain-battle-origin-story/>.
- Milley, Mark, *Army Chief*: "Future War is Almost Guaranteed," October 4th 2016. Accessed on August 29th 2019, <https://www.ausa.org/news/army-chief-future-war-almost-guaranteed>.
- Milner, Samuel. "Victory in Papua." In *United States Army in World War II, The War in the Pacific*. Edited by Kent Roberts Greenfield. Washington DC: US Army Center of Military History, 1957.

- Palazzo, Albert. "Multi-Domain Battle: Meeting the Cultural Challenge," The Strategy Bridge, 14 November 2018. Accessed 10 August 2019. <https://thestrategybridge.org/the-bridge/2017/11/14/multi-domain-battle-meeting-the-cultural-challenge?rq=%20multi-domain-battle-meeting-the-cultural-challenge>.
- Prefer, Nathan N. *Leyte 1944 The Soldier's Battle*. Havertown, PA: Casemate Publishers, 2012.
- Naveh, Shimon. *In Pursuit of Military Excellence: The Evolution of Operational Art*. Abingdon, England: Frank Cross, 1997.
- Reilly, Jeffery M. "Multidomain Operations: A subtle but significant transition in military thought." *Air and Space Power Journal*, Vol 33, No 3 (Spring 2016): 61-73.
- Rein, Christopher, M. *Multi-Domain Battle in the Southwest Pacific Theater of World War II*. Fort Leavenworth, KS: Combat Studies Institute Press, 2017.
- Scales, Bob. "Battle for Army's Soul Resumes: Lessons From Army After Next." *Breaking Defense*, 28 March 2017. Accessed 10 August 2019. <https://breakingdefense.com/2017/03/battle-for-armys-soul-resumes-lessons-from-army-after-next/>.
- Schifferle, Peter, J. *America's School for War: Fort Leavenworth, Officer Education, and Victory in World War II*. Lawrence, KS: University Press of Kansas, 2017.
- Schultz, Duane, P. *Hero of Bataan: The Story of General Jonathan M. Wainwright*. New York, NY: St. Martin's Press, 1981.
- Senate Armed Services Committee, U.S. INDO-PACIFIC Command Posture, 12 February 2019. Accessed 10 August 2019. https://www.armedservices.senate.gov/imo/media/doc/Davidson_02-12-19.pdf.
- Shmuel Shmuel, "Multi-Domain Battle: Airland Battle, Once More, With Feeling." *War on the Rocks*, 20 June 2017. Accessed 10 August 2019. <https://warontherocks.com/2017/06/multi-domain-battle-airland-battle-oncemore-with-feeling/>.
- Simpkin, Richard. *Deep Battle: The Brainchild of Marshal Tukhachevskii*. London, England: Brassey's Defence Publishers, 1987.
- Smith, Robert, Ross. *United States Army in World War II. The War in the Pacific. The Approach to the Philippines*. Washington, DC: US Army Center of Military History, 1953.
- Spector, Ronald, H. *Eagle Against the Sun: The American War with Japan*. New York: The Free Press, 1985.
- Swain, Richard M. "Filling the Void: The Operational Art and the U.S. Army." In *Operational Art: Developments in the Theory of War*, edited by B.J.B. McKercher and Michael Hennessey. Westport, CT: Praeger, 1996.

- SWPA General Staff, The Reports of General MacArthur, *The Campaigns of General MacArthur in the Pacific Volume 1*. Accessed on 20 January 2020.
<https://history.army.mil/books/wwii/MacArthur%20Reports/MacArthur%20V1/ch06.htm#b1>.
- Taaffe, Stephen, R. *MacArthur's Jungle War: The 1944 New Guinea Campaign*. Lawrence, KS: University Press of Kansas, 1998.
- Townsend, Stephen. "Accelerating Multi-Domain Operations: Evolution of an Idea," Modern War Institute at West Point, 23 July 2018. Accessed 10 August 2019.
<https://mwi.usma.edu/accelerating-multi-domain-operations-evolution-idea/>.
- Turabian, Kate L. *A Manual for Writers of Research Papers, Theses, and Dissertations: Chicago Style for Students and Researchers*. 8th ed. Chicago: University of Chicago Press, 2007.
- Young, Robert M. "Stalemate to Victory: Combined Arms in World War II's New Guinea Campaign," in *Bringing Order to Chaos Historical Case Studies of Combined Arms Maneuver in Large-Scale Combat Operations*. Edited by Peter J. Schifferle. Fort Leavenworth, KS: Army University Press, 2018.
- US Army Training and Doctrine Command (TRADOC). TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi Domain Operations*. Fort Eustis, VA: TRADOC, 6 December 2018.
- US Army Training and Doctrine Command (TRADOC). TRADOC Pamphlet 525-3-8, *The U.S. Army Concept: Combined Arms in Multi Domain Operations at Echelons Above Brigade 2025-204*. Fort Eustis, VA: TRADOC, 6 December 2018.
- US Department of Defense, Joint Staff. Joint Publication (JP) 1-0, *Doctrine for the Armed Forces of the United States*. Washington, DC: Government Printing Office, 12 July 2017.
- . Joint Publication (JP) 3-0, *Joint Operations*. Washington, DC: Government Printing Office, 17 January 2017.
- . *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge*. Washington, DC: Government Printing Office, 2018.
- . Army Doctrine Publication (ADP) 5-0, *The Operations Process*. Washington, DC: Government Printing Office, July 2019.
- . US Department of the Army. Army Doctrine Reference Publication (ADRP) 3-90, *Offense and Defense*. Washington, DC: Government Printing Office, August 2012.
- . US Department of the Army, Field Manual 3-0, *Operations* Washington DC: Government Printing Office, 2017.
- . US Department of the Army, Field Manual 100-5, *Operations* Washington DC: Government Printing Office, 1986.
- Van Creveld, Martin. *Air Power and Maneuver Warfare*. Maxwell AFB, AL: Air University Press, 1994.

Williams, Tennessee. *The Glass Menagerie*. New York, NY: New Directions Publishing Corporation, 1999.

Wylie, J.C. *Military Strategy: A General Theory of Power Control*. Annapolis, MD: Naval Institute Press, 1967.

