



**NAVAL
POSTGRADUATE
SCHOOL**

MONTEREY, CALIFORNIA

THESIS

**LITTORAL COMBAT GROUPS: ANSWERING
THE NATION'S CALL IN SHALLOW WATERS**

by

Matthew M. Smith

September 2020

Thesis Advisor:

Daniel J. Moran

Second Reader:

Jeffrey E. Kline

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, 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 this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC, 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 2020	3. REPORT TYPE AND DATES COVERED Master's thesis	
4. TITLE AND SUBTITLE LITTORAL COMBAT GROUPS: ANSWERING THE NATION'S CALL IN SHALLOW WATERS			5. FUNDING NUMBERS	
6. AUTHOR(S) Matthew M. Smith				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) What is the ideal force structure for a Littoral Combat Group? This thesis examines the threats posed in the littoral environment and recommends a mixture of surface combatants to reduce the risk to forces operating in a contested littoral environment. By examining the major amphibious campaign conducted by the British in the Falklands War, valuable lessons were extracted and applied to this hypothetical combat group. Further analysis was applied to the theoretical work of naval strategists who have considered how littoral warfare should be conducted. The result has been the development of counterarguments to some of the more widely accepted recommendations. This thesis concludes that the Navy and Marine Corps are currently not well prepared for littoral combat, but that the scales can be tipped toward success by feasible revisions to command arrangements and the embarked force structure.				
14. SUBJECT TERMS Littoral Combat Group, gray zone conflict, naval force structure, Marine Corps, Littoral Combat Ships			15. NUMBER OF PAGES 85	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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**LITTORAL COMBAT GROUPS:
ANSWERING THE NATION'S CALL IN SHALLOW WATERS**

Matthew M. Smith
Lieutenant, United States Navy
BS, Old Dominion University, 2013

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(STRATEGIC STUDIES)**

from the

**NAVAL POSTGRADUATE SCHOOL
September 2020**

Approved by: Daniel J. Moran
Advisor

Jeffrey E. Kline
Second Reader

Afshon P. Ostovar
Associate Chair for Research
Department of National Security Affairs

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ABSTRACT

What is the ideal force structure for a Littoral Combat Group? This thesis examines the threats posed in the littoral environment and recommends a mixture of surface combatants to reduce the risk to forces operating in a contested littoral environment. By examining the major amphibious campaign conducted by the British in the Falklands War, valuable lessons were extracted and applied to this hypothetical combat group. Further analysis was applied to the theoretical work of naval strategists who have considered how littoral warfare should be conducted. The result has been the development of counterarguments to some of the more widely accepted recommendations. This thesis concludes that the Navy and Marine Corps are currently not well prepared for littoral combat, but that the scales can be tipped toward success by feasible revisions to command arrangements and the embarked force structure.

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LIST OF ACRONYMS AND ABBREVIATIONS

A2/AD	Anti-Access/Area Denial
AMDC	Air Missile Defense Commander
APWC	Amphibious Warfare Commander
ASW	Anti-Submarine Warfare
ASWC	Anti-Submarine Warfare Commander
C2	Command and Control
CSG	Carrier Strike Group
CVN	Aircraft Carrier Nuclear
CWC	Composite Warfare Commander
DDG	Guided Missile Destroyer
EEZ	Exclusive Economic Zone
ESG	Expeditionary Strike Group
FAC	Fast Attack Craft
FIAC	Fast Inshore Attack Craft
GCC	Geographic Combatant Commander
HADR	Humanitarian Aid and Disaster Relief
JLOCC	Joint Forces Littoral Operations Component Commander
LCG	Littoral Combat Group
LCGC	Littoral Combat Group Commander
LCS	Littoral Combat Ship
LPD	Transport Dock Ship
MCM	Mine Countermeasure Mission
NIFC-CA	Navy Integrated Fire Control-Counter Air
NSFS	Naval Surface Fire Support
NSM	Naval Strike Missile
SCC	Sea Combat Commander
SM	Standard Missile
SOF	Special Operations Forces
SP-MAGTF	Special Purpose Marine Air-Ground Task Force
SUW	Surface Warfare

SUWC	Surface Warfare Commander
TEZ	Total Exclusion Zone
TLAM	Tomahawk Land Attack Missile
VBSS	Visit, Board, Search, and Seizure
VLS	Vertical Launch System

ACKNOWLEDGMENTS

Thank you to Professor Moran for your guidance and humor during this process. I would also like to thank Captain Kline, USN (Ret). Your Surface Warfare eye was much needed for proposing a new force structure. Lastly, I would like to thank my wife, Haley. Between COVID, a newborn, and a thesis you were the sanity amongst the chaos.

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I. LITTORAL COMBAT GROUPS

A. MAJOR RESEARCH QUESTION

How should the United States Navy structure a Littoral Combat Group (LCG) to support American maritime strategy? What combination U.S. Naval and U.S. Marine Corps assets will be best suited to conduct operations in the littoral environment? Research focused on the capabilities of the ship classes suited to the littoral mission, and on the Command and Control (C2) structures required to employ them effectively. It aims to determine the best composition and C2 structure for an operational Littoral Combat Group across a range of mission sets. The missions the LCG is suited for are operations in an Anti-Access Area Denial (A2/AD) environment, maritime security, HADR, expeditionary operations, and gray zone conflicts.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

The United States Navy does not currently have a force structure specifically suited for the littoral combat area. This leaves a gap in strategy for operating closer to foreign shores, an environment that can present a wide range of missions and a vast array of threat profiles. Previous terms like “Green Water Navy” have been used to describe temporary combatant force structures utilized during times of necessity but then quickly disbanded once the conflict had been resolved.¹

This kind of arrangement may have sufficed in an environment characterized by crisis management against weak adversaries. With a major focus of national interest trending towards great power competition, the “green water” is liable to become an arena for new forms of gray zone conflict. For the purpose of this research, I will be using the definition of gray zone conflict cited in a RAND study titled, “Gaining Competitive Advantage in the Gray Zone.” RAND defines the gray zone as the following:

¹ Wayne P. Hughes, Jr., *The New Navy Fighting Machine: A Study of the Connections between Contemporary Policy, Strategy, Sea Power, Naval Operations, and the Composition of the United States Fleet*, Report No. NPS-OR-09-002-PR (Monterey, CA: Naval Postgraduate School, 2009), NPS-OR-09-002-PR.

An operational space between peace and war, involving coercive actions to change the status quo below a threshold that, in most cases, would prompt a conventional military response, often by blurring the line between military and nonmilitary actions and the attribution for events.²

In the context of gray zone conflict, deploying Carrier Strike Groups (CSG) can be viewed as an escalatory measure, thus unlikely to dissuade aggressors without raising tensions. Research was conducted to evaluate a different force structure of combat groups that can be deployed to any part of the world to enforce policy without escalating tensions and risking high value units such as aircraft carriers. In addition to policy enforcement, research looked at this hypothetical LCG's effectiveness in different mission areas such as Humanitarian Assistance and Disaster Relief (HADR), Expeditionary Warfare, gray zone conflict, and counter A2/AD operations. The research looked into various threats foreseen in different areas of the world while conducting these mission sets and formed a structure the LCG should have in order to defend against said threats while still being able to carry out the specific mission profile it is assigned to.

Another aspect of the research looked into the effectiveness of tactics deployed by a theoretical LCG. Looking at the strengths and weaknesses of each ship class included in this LCG and weighing them against common threat matrices, a preliminary set of tactics were formed so the LCG will be able to answer a wide range of mission profiles and be an effective alternative to CSGs. A specific area of interest was a new C2 structure for this LCG so they can integrate effectively with the Marine Corps and have clear delineation of command.

C. LITERATURE REVIEW

In researching how to create a new force structure and tactics for a maritime force, one will continually come across the same person and their multitude of writings on various naval tactics; that person is the late Captain Wayne P. Hughes Jr., USN (Ret.). Beginning with his book *Fleet Tactics and Coastal Combat*, Hughes provided a well-researched and

² Lyle J. Morris et al., *Gaining Competitive Advantage in the Gray Zone*, RR2942 (Santa Monica, CA: RAND, 2019), 8, https://www.rand.org/content/dam/rand/pubs/research_reports/RR2900/RR2942/RAND_RR2942.pdf.

put together guide on how naval tactics and maritime warfare has evolved and the commonalities that when applied can lead to successful operations of maritime assets. He describes six cornerstones, which were applied in structuring and operating an LCG. The book proceeds to lay out great trends and variables for conducting naval operations, specifically due to no challenger being present for the United States Navy in the high seas. He predicted that most conflict would now arise closer to shores and the prevalence of A2/AD.³ This book provided the bedrock for much of this thesis in proposing new structures and tactics in naval strategy.

Continuing with Capt. Hughes' writings, another great source co-authored by Captain Jeffrey E. Kline, USN (Ret), was published in the book *The Legacy of American Naval Power, titled Between Peace the Air-Sea Battle*.⁴ In this piece we see both authors positing the necessity for Naval strategy to focus on countering A2/AD all while not escalating the situation to cause a larger conflict or all-out war. This piece was instrumental in conveying the necessity of a force structure that can act as a deterrent to enemies while enforcing American national policy. The article discusses the "ends, ways, and means," in achieving success in gray zone conflicts.⁵

Captain Kline provides further insightful information pertaining to force structure in, *Impacts of the Robotics Age on Naval Force Design, Effectiveness, and Acquisition*.⁶ The majority of focus for the literature review was on force design, vice robotics. He discusses how four factors affect naval force structure: national strategy, national treasure, technological advancement, and potential adversary capabilities.⁷ These factors were considered when then formulating the final force structure.

³ See Wayne P. Hughes, Jr., *Fleet Tactics and Coastal Combat* (Maryland, Naval Institute Press, 2000).

⁴ Jeffrey E. Kline and Wayne P. Hughes, "Between Peace and the Air-Sea Battle: A War at Sea Strategy," in *The Legacy of American Naval Power: Reinvigorating Maritime Strategic Thought*, ed. Paul Westermeyer (Virginia: Marine Corps History Division, 2019), 291–297.

⁵ Kline and Hughes, "Between Peace and the Air-Sea Battle: A War at Sea Strategy," 291–297.

⁶ Jeffrey E. Kline, "Impacts of the Robotics Age on Naval Force Design, Effectiveness, and Acquisition," *Naval War College Review* 70, no. 3 (July 1, 2017): 63–67, <http://search.proquest.com/docview/1945550628/>.

⁷ Kline, "Impacts of the Robotics Age on Naval Force Design, Effectiveness, and Acquisition," 63–67.

On strategy and tactics for the purpose of this thesis, the current Surface Force Strategy and Design for Maintaining Maritime Superiority, both released by the United States Navy, give a broad guidance for the strategy of the future.⁸ These pieces both stress the importance of sea control any time or place. They give the requirements that the LCG would need to have as a baseline in order for the Navy to adopt the concept. The main ideas from these pieces are stressing joint forces capability within the Department of Defense and with our international partners, utilizing the upgraded CRUDES ships and LCS', and countering challenges to our maritime superiority while acting as a deterrent for future aggression. These two pieces were utilized when explaining the necessity of an LCG and the gap that this group could fill.

An additional piece on strategy vital to this thesis is a report written by the RAND Corporation titled *Gaining Competitive Advantage in the Gray Zone*.⁹ This piece proved valuable to the research conducted because of the response options it offers. As stated in the report the majority of strategies that involve gray zone responses tend to be more defensive in nature while this report suggests the opposite of the United States going on the offensive in order to maintain superiority.¹⁰ The report goes over national strategy for gray zone conflict and delves into 9 principles for how a strategy should be formed. These principles will provide opportunities for the LCG to fill the roles required from following these principles. There are limitations of the LCG when reading this report. Some limitations are that the strategy calls for a whole government approach to the gray zone conflict, while the LCG is a tool to be utilized by the United States Navy to do its part in conducting operations in the gray zone. This thesis posited that the LCG is a capable concept to be the go-to tool in gray zone conflicts due to its versatility and ease of use all while not escalating tensions.

⁸ John M. Richardson, *A Design for Maintaining Maritime Superiority*, United States Navy, 2018; Thomas S. Rowden, Naval Surface Force Pacific Fleet, *Surface Force Strategy: Return to Sea Control*, January 1, 2016, <http://www.dtic.mil/docs/citations/AD1024229>.

⁹ Morris et al., *Gaining Competitive Advantage in the Gray Zone*, 129–152.

¹⁰ Morris et al., 129–152

Continuing the focus on Naval strategy another piece offered valuable insight specifically into littoral warfare. The piece by Milan Vego titled *On Littoral Warfare* was instrumental in understanding the differences between traditional open ocean naval combat and littoral water combat.¹¹ In his piece Vego discusses the necessity of recognizing the differences in conducting warfare in those two environments, and how despite the objectives of open ocean and littoral combat may be alike, the differences in achieving those objectives are staggering.¹² Utilizing the ideas from Vego, the LCG was structured to make the group the go to tool for enforcing National Strategy in the littorals.

Another piece by Vego focuses specifically on the concept of an LCG. His article is titled, *Go Smaller*. In his writings he explains the necessity of not utilizing a model along the lines of the one proposed in this thesis. He suggests the necessity of smaller ships, sub-surface forces, and aerial vehicles.¹³ He provides well thought out counter arguments for this thesis to consider and consequentially show that the model he has proposed is one that does not recognize the full capability of the ships involved in the LCG concept, specifically LCSs.

Continuing on the subject of writings specific to littoral combat and LCGs, the United States Navy has experimented with the concept and deployed two separate LCG constructs as test deployments. The first LCG concept was deployed to South America and consisted of a single DDG and a single LPD. Megan Eckstein's article, "Navy Tests 'Littoral Combat Group,'" describes this deployment as a test for the command and control structure of a possible LCG. This test concept appears to be lacking due to the fact that only two ships were involved. While counter to the idea proposed in this thesis it did

¹¹ Milan Vego, "On Littoral Warfare," *Naval War College Review* 68, no.2 (April 1, 2015): 30–68. <http://search.proquest.com/docview/1660144761/>.

¹² Vego, "On Littoral Warfare," 29–30.

¹³ Milan Vego, "Go Smaller," *Armed Forces Journal* (April 1, 2013) <http://search.proquest.com/docview/1331176271/>.

provide value because it highlights the concept of joint international cooperation with a proposed LCG.¹⁴

The next LCG test deployment was one conducted in Alaska and focused on putting Marines ashore and coordinating between the Navy and Marine Corps. Eckstein's other article, *Navy and Marine Practice 'Littoral Combat Force' Construct in Alaska*, provided more insight into how both forces are actively pursuing an LCG concept and how they need a C2 structure that allows for easy transition between supporter and supported.¹⁵

D. HYPOTHESIS

In order to achieve success across a broad spectrum of challenges presented to any force structure, a Littoral Combat Group must be structured robustly with a mix of a San Antonio class Landing Platform/Dock ship (LPD), Guided Missile Destroyer ships (DDGs), Littoral Combat Ships (LCSs), and supplemented with a Special Purpose Marine Air-Ground Task Force (MAGTAF) to meet these challenges head-on. The main purpose of the LCG is to conduct operations in littoral areas where Carrier Strike Group's survivability is extremely low.

For the purpose of this thesis all LCSs referred to will be the Independence Variant of LCSs. This is done because of the functionality of those platforms and their ability to be operational versus the Freedom variant. In basing the number of LCSs needed for the maximized effectiveness, research previously conducted by Lieutenant Benjamin Abbott for his thesis showed 6 to 10 LCS ships yield the highest rate of success across three mission profiles.¹⁶ Therefore, an LCG should consist at minimum of five LCSs to

¹⁴ Megan Eckstein, "Navy Tests 'Littoral Combat Group' Concept That Pairs DDG, LPD in South America Deployment," *USNI News* (January 3, 2019). <https://news.usni.org/2019/01/03/navy-tests-littoral-combat-group-concept-that-pairs-ddg-lpd-in-south-america-deployment>.

¹⁵ Megan Eckstein, "Navy, Marine Practice 'Littoral Combat Force' Construct in Alaska," *USNI News* (September 23, 2019). <https://news.usni.org/2019/09/23/navy-marines-practice-littoral-combat-force-construct-in-alaska>.

¹⁶ Benjamin P. Abbott, "Littoral Combat Ship (LCS) Mission Packages Determining the Best Mix," (master's thesis, Naval Postgraduate School, 2008) 53, https://calhoun.nps.edu/bitstream/handle/10945/4291/08Mar_Abbott.pdf?sequence=1&isAllowed=y.

maximize their potential while they are supplementing DDG ships when conducting their missions.

A composition of three DDGs is the optimal number in order to provide the most utility to the LCG Commander (LCGC). Two DDGs would be designated to defend against the threat from the air. The second DDG is designated to defend against surface threats and subsurface threats. All three DDGs would utilize the LCSs to distribute the lethality across the group.

The LPD would provide the platform for the LCGC to be embarked on. The LPD is also the transport ship for the SP-MAGTAF and their associated equipment assigned to the LCG. This launch platform will allow the SP-MAGTAF to conduct various mission sets associate with the littorals. The LPD will fill subsequent roles which will be discussed in depth in later chapters.

This group composition allows LCG to cover a spectrum of mission sets that would allow for defense of international trade routes, enforcing sanctions, HADR, joint international exercises/training, amphibious assaults, grey zone conflicts, Visitation Board Search and Seizure (VBSS), and power projection.¹⁷ The LCG will be a critical asset to any geographic commander in carrying out a vast array of mission sets in areas in which we are not currently able to operate or have a low survivability.

E. RESEARCH DESIGN

The primary method of research was analysis of capabilities. By analyzing the ship classes involved in an LCG, the full breadth of capabilities and limitations was set forth to establish how the LCG can effectively carry out national strategy and successfully address the group's limitations. Common threats in the littorals such as; land-based aircraft, land-based missile sites, fast attack missile boats, and mines, were reviewed and weighed against the structure of the LCG.

¹⁷ Al Elkins, "The Joint Force Littoral Operations Commander: Leveraging LO, Multi-Sensor Fusion, Networks, and Interoperability to Enable New Concepts," (Unclassified Concept Brief, November 2019).

Another area of research was dedicated to case studies. There are three case studies that were utilized for this thesis. The first being the Falklands War between Great Britain and Argentina in 1982. This was used due to the nature of the conflict being in the littorals and amphibious environment and for its historical relevancy of being a major amphibious operation that occurred after World War II closer to modern day.

The other two cases were the two experimental LCG deployments the Navy conducted. These two experimental deployments were to test the concept of what an LCG should consist of and what mission sets they could complete. These experimental deployments were rudimentary and incomplete but a good source of material for initial lessons learned from a similar type of force structure.

F. THESIS OVERVIEW AND CHAPTER OUTLINE

The thesis was organized by first analyzing the Falklands War and highlighting the success and failures of Great Britain in conducting their amphibious operations and littoral operations. The next section looked at the two initial experimental deployments of a simplistic LCG in order to showcase those lessons learned to apply them later in the thesis. From there the thesis continued to the force structure of the LCG and how the assets assigned can integrate with each other in a cohesive unit. After forming the force structure, this thesis proposed a C2 structure to offer a basis for commanders to use. Continuing on, the thesis suggested initial tactics the group can use to be an effective fighting force and particular mission sets the LCG can fulfill. Finishing the chapter, the thesis discussed what it terms as force multipliers that can be added to the LCG to increase its effectiveness and finished with discussing opposing ideas of what forces should be used in the littorals.

II. THE FALKLANDS

The Falklands War is among the most important naval campaigns of the last 70 years. In his book *The Royal Navy In The Falklands Conflict And The Gulf War* Alastair Finlan states “The South Atlantic campaign was an unusual event in international relations because it encapsulated a type of high-intensity naval warfare never before experienced by a Western nation in the years after World War II.”¹⁸ His statement shows the relevancy of an analysis of the Falklands War in any work that proposes a new naval strategy. Lyle Goldstein has highlighted the significance of the Falklands to Chinese naval strategists, by stating “The Nanjing Naval Command College had initiated, over the previous several years, organized teaching and research teams to study naval forces, naval strategy, sea defence and blockade operations in the Falklands War with the goal of understanding future naval warfare.”¹⁹

In order to condense the information and maintain a focus on naval strategy, this chapter will focus on the naval dimensions of the Falklands war. A close analysis of the campaign will produce valuable insights into possible shortcomings to avoid when conducting major operations in the littorals. This chapter will conduct a brief overview of the entire campaign, highlighting both the positives and negatives in order to apply those lessons to the proposed combat group later.

A. OVERVIEW OF OPERATIONS

The Falklands War was a conflict between Great Britain and Argentina for control of the Falkland Islands, South Georgia, and the Sandwich Islands, all sovereign British territory when the war began. The conflict began April 2, 1982, with Argentinian Special

¹⁸ Alastair Finlan, *The Royal Navy in the Falklands and the Gulf War: Culture and Strategy*, 52 (London: Frank Cass Publishers, 2004).

¹⁹ Lyle Goldstein, “China’s Falklands Lessons,” *Survival: Global Politics and Strategy* 50, no. 3, 66 (September 2008): 65–82, <https://www.tandfonline.com/loi/tsur20>.

Forces deploying to the Falklands to seize the Governor and the British Royal Marines.²⁰ Britain responded by organizing a naval task force to re-capture the occupied islands.²¹ The task force was commanded by Admiral Sir John Fieldhouse and consisted of 65 ships, of which over half were auxiliary ships carrying support for the combatant forces.²²

Britain used the Ascension Islands as a forward staging base to support the naval task force en route to the Falklands. The Royal Navy needed to travel approximately 8,000 miles to reach the Falklands forcing the task force to outfit quickly. A small action group was broken off and designated to liberate the island of South Georgia. While conducting the operations to liberate the South Georgia Island the Royal Navy disabled and captured a World War II-vintage submarine purchased from the U.S. by the Argentines. This allowed the Royal Navy to conduct an amphibious assault to recapture the island from the small contingent of Argentine marines with little resistance.²³

After Great Britain established a small occupying force on South Georgia, the remaining task force set out to establish sea control, defined by Alastair Finlan as “Command of the sea that is limited in time and place.”²⁴ The Royal Navy faced two problems from the offset: Argentine surface presence and air presence. The distance between Argentina and the Falklands is approximately 945 miles. Recently purchase French Super Etendard fighter aircraft outfitted with the Excocet anti-ship missile were thus constrained to inflight refueling when employed from Argentina’s homeland.²⁵ However, the Super Etendard’s combat range did force the Royal Navy to remain outside of the effective radius of the fighter air. This resulted in the majority of engagements with fighter air being with older Argentine land-based aircraft based the Falklands.

²⁰ *The Falklands War. The Strategic Survey* Volume 83 1982 Issue 116–123. “Military Lessons of the Falklands Campaign.” *Strategic Survey* 83, no. 1 (January 1, 1982): 121–23, <https://doi.org/10.1080/04597238208460594>.

²¹ The Editors of Encyclopedia Britannica, “Falkland Islands War,” *Encyclopedia Britannica*, last modified 26 Mar 2020, <https://www.britannica.com/event/Falkland-Islands-War>.

²² Douglas N. Hime, *The 1982 Falklands-Malvinas Case Study*, NWC 1036, 14 (Newport, RI: U.S. Naval War College, 2010).

²³ The Editors of Encyclopedia Britannica, “Falkland Islands War.”

²⁴ Finlan, *The Royal Navy in the Falklands and the Gulf War: Culture and Strategy*, 41.

²⁵ The Editors of Encyclopedia Britannica.

Despite the Argentine air threat, the British maintained station and established maritime supremacy around the Falklands. Great Britain had declared a Maritime Exclusion Zone around the Falklands when the war began, and redefined this as a Total Exclusion Zone on April 30. This TEZ established applied to any aircraft or ship that supported Argentina.²⁶ On May 1, the Argentine Navy attempted positioning forces to conduct a pincer attack against the Royal Navy from the North and South. The Royal Navy learned this through intercepted communications and thus Admiral Woodward, commander of the carrier strike group, ordered HMS Conqueror, a Royal Navy submarine, to attack the Argentine cruiser General Belgrano in the North. On May 2 the Royal Navy submarine launched three torpedoes at the Belgrano and sank her outside of the established TEZ, killing all 321 men on board.²⁷ The same day two British helicopters were fired upon by the Argentine patrol craft Alférez Sorbal. The helicopters returned fire and badly damaged the Argentine patrol craft. Ultimately, the losses to the Argentine Navy were so great that all Argentine naval forces were ordered to return to home port in mainland Argentina, from which they remained the rest of the conflict.²⁸

The main threat to the British Naval forces now was the Exocet missiles being carried by Super Etendard fighter aircraft. In-flight refueling enabled the Argentines to launch these aircraft from mainland Argentina and conduct attacks on the Royal Navy. In response to the sinking of the Belgrano, on May 4 HMS Sheffield was attacked while serving as a forward air-defense ship for the rest of the combat group. It was struck by one Exocet missile, and suffered enough damage to force the crew to abandon ship. Despite numerous tries by the Royal Navy to tow it to South Georgia, the Sheffield did sink.²⁹ The Argentines' ability to project the Super Etendard and its Exocet missile through inflight refueling caused concern in Admiral Woodward. The Argentine fighter air threat's effect

²⁶ Hime, *The 1982 Falklands-Malvinas Case Study*, 23.

²⁷ Hime, 24.

²⁸ Hime, 24.

²⁹ Hime, 25.

was to force the Royal Navy to cease continuous shore bombardment operations in vicinity of Stanley on the Falkland Islands and limit the operations to nights.³⁰

On May 21, the British landing operations begin by landing in San Carlos. The initial landing forces were met with very little opposition due to the Argentine's believing the landing would be at Stanley on the island's opposite side. Argentine forces responded by launching fighter air from an Argentine held airfield on the Falklands, Goose Green, but were shot down by the British Royal Navy and Special Air Service. For the rest of the day the Argentine forces attempted to conduct air raids on the landing forces and were only successful at taking one ship out of commission, HMS Antrim, from the amphibious group.³¹

May 23 marked another blow to the British fleet in the loss of HMS Antelope. While still in area with the British task force, Argentine fighter air attacked the ships in the Falkland Sound. The Antelope was struck by two, one thousand-pound bombs, both of which did not explode. One bomb that struck the Antelope later exploded and forced the crew to abandon the ship, that sank the next day, May 24.³² May 25 saw another attack by Argentine air on the loitering British task force. HMS Coventry and Broadsword were distracted from the group's air defense by a contingent of Argentine Dassault Mirage jets and allowed a group of A-4 Skyhawks to attack three logistic ships; Sir Galahad, Sir Lancelot, and Sir Belvedere. The first two vessels were struck by bombs that did not detonate, and Sir Belvedere was struck but the bomb went completely through the ship without exploding. Although a second attack of fighter air on the logistics ships, resulted in little damage, it demonstrated the British vulnerability to the Argentine air threat.³³ Later that day HMS Coventry and Broadsword were attacked again by Argentine air. Due to poor maneuvering by the Coventry, the Broadsword was unable to fire its defense missile system. While the bomb that struck the Broadsword did not explode it did suffer damage

³⁰ Hime, 27.

³¹ Hime, 32.

³² Hime, 34.

³³ Hime, 34–35.

to its Lynx and Mk44 helicopters. The Coventry was strafed and suffered enough damage to force its crew to abandon ship and eventually sank. The fighter air continued their attack on the task force and eventually struck the Atlantic Conveyor, a British merchant vessel repurposed for the Falklands War, forcing her crew to abandon the ship and sinking as well.³⁴

With enough forces ashore and supplies to support them in the immediate future, the decision was made to start their south easterly push to recapture Stanley from the Argentine forces. British land forces re-captured the major airfield on the island, Goose Green, which proved to be a much-needed boost to British morale. After the Argentines surrendered Goose Green on May 29 the British task force continued to move east towards Stanley. After two weeks of a continuous push by the British, the loss of the landing craft Foxtrot 4, and HMS Glamorgan being badly damaged by an Exocet missile, the British captured Stanley and Argentina surrendered.

B. LESSONS LEARNED

There are many lessons learned from this campaign, which provide valuable insight into developing a Littoral Combat Group concept. Five areas are highlighted due to their significance: air superiority, maritime superiority, logistics, amphibious operations, and Command and Control (C2). The successes and failures in these areas provide a basis on which to build a Littoral Combat Group.

1. Air Superiority

The most immediate lesson most analysts take away from the Falklands War, is the need for air superiority and aircraft early warning. Britain's lack of air superiority accounted for the sinking of six ships and one landing craft with many other ships heavily damaged. This thesis posits the British's poor quality of ships and poor training of watch standers contributed more to the loss of ships than their lack of air superiority.

³⁴ Hime, 35.

This conclusion was exemplified by the sinking of HMS Sheffield, the first ship lost to the newer Exocet missile. Initial reports blamed the sinking on the “undefeatable” Exocet missile, when in reality the factors that lead to the sinking were completely avoidable. The British Ministry of Defence finally released an unredacted report on the sinking of HMS Sheffield 35 years after the event. In the report there are several preventable factors that lead to the sinking of HMS Sheffield. The first was while HMS Sheffield was serving as one of the air defense ships for the battle group, somehow an Argentine Super Entendard was allowed to fly within 25 nautical miles of HMS Sheffield, which was inside of the TEZ, while it launched its Exocet missiles. Second, HMS Sheffield did not fire off any chaff which is a standard electronic counter measure used in ship’s self-defense.

Third, HMS Sheffield did not alter course to try and reduce its profile size for the Exocet missile. Fourth, HMS Sheffield’s Anti-Air Warfare officer was not at his proper station when this event occurred, instead he was in the wardroom getting coffee. Fifth, the assistant Anti-Air Warfare officer was also not at his proper station and was using the restroom at the time of the attack. Sixth, the officer who was the principal warfare officer in the operations room at the time of the attack did not take any measures to defend/protect the ship. Seventh, the Sheffield had picked up the incoming Argentine fighter air earlier on radar but unfortunately their radar was blanked out due to another ship’s transmissions.

Eighth, when called back to the operations room due to incoming attack the Anti-Air Warfare officer disregarded the call and believed that the Sheffield was too far out of range for the Argentine Entendard to be able to attack them. Ninth, the officers standing watch on the bridge of the ship failed to warn the rest of the ship due to the fact of being “mesmerized” by the incoming Exocet missile.³⁵ Tenth, a number of the ship’s weapon systems did not have ammo loaded and did not have a watchstander manning the weapons, resulting in complete inability to defend against the incoming missiles. Eleventh, the commanding officer was a submarine officer and the executive officer was a helicopter

³⁵ Ian Cobain, “Revealed: catalogue of failings that sank Falklands warship HMS Sheffield,” *The Guardian*, last modified 15 October 2017, <https://www.theguardian.com/uk-news/2017/oct/15/revealed-full-story-behind-sinking-of-falklands-warship-hms-sheffield>.

pilot, both of which had little to no surface combatant experience. Twelfth, the ship was not at battle stations during the time of the attack despite being told to be in a heightened ship posture due to the possibility of attack. The final point did not contribute to the sinking of the Sheffield but merely speaks to the extreme negligence on the side of the British Royal Navy. It was reported that the Anti-Air Warfare officer still denied the fact that they had been struck by a missile despite the missile striking the ship 12 minutes before his statement.³⁶

The other Royal Navy ship designed specifically for air defense was HMS Glasgow. HMS Glasgow was in company with HMS Brilliant, a ship designed primarily for anti-submarine warfare, both of which were bombarding the coast of Stanley. While on station they were attacked by Argentine fighter air. The Glasgow and Brilliant were able to sustain the first attack and the Brilliant was even successful in shooting down two of the Argentine fighter aircraft. Another wave of Argentine fighter aircraft came and struck a direct hit on the Glasgow, while it did not sink the Glasgow it took her out from the remainder of the conflict. The primary air defense ship was badly damaged by an Argentine fighter aircraft due to equipment failure of the Glasgow's Sea Dart system, her primary air attack missile system.³⁷

The next Royal Navy ship designed for air defense that was damaged was HMS Coventry. The Coventry did not sink because of Argentina having a superior air force. The Coventry sunk due to equipment failure and human error. A crew member is quoted saying "It was a war we were not prepared for...We were training to fight against the Soviets."³⁸ Coventry's radar did not detect Argentine fighter air because the planes were flying over the Falkland Islands, again this ship was specifically designed for air defense yet struggled to maintain a proper air picture.³⁹ Coventry's commanding officer was in the ship's operations room when the Argentine fighter aircraft were incoming. He is quoted as saying

³⁶ Cobain, "Revealed: catalogue of failings that sank Falklands warship HMS Sheffield."

³⁷ Hime, 26.

³⁸ Jennifer Harby, "HMS Coventry sinking anniversary: 'War we weren't prepared for,'" BBC News, last modified 25 May 2017, <https://www.bbc.com/news/uk-england-39965515>.

³⁹ Harby, "HMS Coventry sinking anniversary: 'War we weren't prepared for.'"

“On my left was the air warfare officer saying ‘get the missile out’ and a chap on my right saying ‘I think they are to the north-west’, which put me off because it was wrong.”⁴⁰ He went on to further state “Then the chap controlling the Sea Harriers said ‘do you want the Harriers in or shall we take it with missiles?’ That was an awful decision to take.”⁴¹ The commanding officer was concerned about accidentally committing friendly fire against the British Harriers so he decided to fire off the ship’s Sea Dart, by that time it was too late to change the situation at hand and Coventry was struck by three bombs and sank.⁴²

HMS Ardent was a Type 21 Frigate designed to be an escort ship. The Ardent’s primary fire control radar had a range of approximately 25 miles and was not suited for air defense. Its primary air defense weapon was the SeaCat which has a maximum range of approximately two and a half nautical miles and has to be manually guided.⁴³ With this in mind, the Ardent was struck by Argentine bombs while conducting shore bombardment on the Argentine air field at Goose Green, with no other ships in company to provide overwatch protection.⁴⁴ While the Ardent was good at conducting Naval Surface Fire Support, it was not suited to protect itself or any other ship against fighter air and required an overwatch. This mistake resulted in its sinking.

The next type 21 Frigate to sink was HMS Antelope. The Antelope was one of four ships providing protection to the landing forces at San Carlos when it was attacked by Argentine fighter air.⁴⁵ This again showed the mismanagement of forces because the type 21 Frigate was ill-suited for air defense and resulted in the Antelope being struck by two

⁴⁰ Duncan Gibbons, “HMS Coventry: How and why was she sunk during the Falklands War 37 years ago,” Coventry Live, last modified 22 May 2019, <https://www.coventrytelegraph.net/news/coventry-news/hms-coventry-argentina-falklands-war-13074186>.

⁴¹ Gibbons, “HMS Coventry: How and why was she sunk during the Falklands War 37 years ago.”

⁴² Gibbons.

⁴³ David Todd, “Analysis: Standard Missile SM-3 makes successful missile intercept using satellite tracking data and Royal Navy might need similar(Updated),” Seradata, last modified 20 February 2013, <https://www.seradata.com/standard-missile-sm-3-makes-su/>.

⁴⁴ Hime, 32.

⁴⁵ Hime, 34.

bombs. While neither bomb exploded initially, the next day one exploded while being defused resulting in the ship sinking.⁴⁶

The next two Royal ships to sink were the SS Atlantic Conveyor and the RFA Sir Galahad. The Atlantic Conveyor was a merchant container ship sequestered for the Falklands War by the Royal Navy.⁴⁷ There was a conscious decision to not outfit her with any defense measures. There were initial discussions of outfitting the Conveyor with chaff launchers but this never happened because of the short time at which she was needed in area supporting the battle group. Another idea proposed outfitting the Conveyor with radar systems that would detect fighter air and missiles also never happened. The Atlantic Conveyor instead relied on other Royal Navy ships to alert them of incoming aircraft and or missiles.⁴⁸ The RFA Sir Galahad was anchored near Fitzroy when the Argentine fighter air commenced their attack. The Galahad was a logistics ship outfitted with two Bofors 40mm gun systems, which is known to have issues aiming against highspeed aircraft.⁴⁹ The Galahad was one of two logistics ships anchored without the protection of any Royal Navy ships, and was only covered by two Sea Harriers attempting to attack the Argentine fighter air. The Galahad was struck three times by Argentine fighter air and eventually sank.⁵⁰

These losses suffered by the British from mostly outdated Argentine fighter air were by and large avoidable. The British government gave no favors to its navy. It showed apathy towards the service by a lack of proper funding and proper orientation towards warfare areas other than anti-submarine obligations England had from NATO. The two admirals in charge of the operation, Admiral Fieldhouse who planned and ordered the operation and Rear Admiral Woodward who executed the operations, were not proficient at planning or utilization of forces. The British were lucky that many of the Argentine

⁴⁶ Hime, 34.

⁴⁷ Hime, 12.

⁴⁸ Dr. Gordon Brooks, "The Exocet Threat," Atlantic Conveyor, last modified May 2017, <http://www.atlantic-conveyor.co.uk/naval-warfare>.

⁴⁹ Hime, 43.

⁵⁰ Hime, 43.

bombs dropped on the Royal Navy ships did not explode due to improper fusing, because the casualties suffered would be a much larger number and the British would not have been able to successfully retake the island. The lesson learned here is that had the British proper equipment, proper watch standers, and proper planning their ships would not have been as vulnerable to the lack of air superiority.

2. Maritime Superiority

Approximately ten days after the Argentines invaded the Falklands, Britain declared a two-hundred-mile Maritime Exclusion Zone around the islands to prevent Argentina from reinforcing and supplying their forces occupying the islands.⁵¹ They eventually escalated the Maritime Exclusion Zone to a Total Exclusion Zone, which prevented Argentine airplanes and ships from resupplying the Falklands. This would prove to be one of the crucial decisions that allowed the British forces to recapture the island. The Argentine forces that arrived on the Falklands Islands were “Inadequately dressed for the harsh, unforgiving climate; there was no cover to conceal their positions; and the soggy, peaty, rocky soil was unsuitable for digging defensive trenches- the entire brigade would be defending on open ground in various defensive sectors around Puerto Argentino.”⁵²

When the British declared the TEZ they also made it easier for their forces to establish the Routine Maritime Picture and Routine Air Picture. This forced civilian shipping and aircraft to avoid the area and made it easier to track and identify Argentine surface forces. The first success the British saw was in their recapturing of South Georgia from Argentine forces. They had intercepted an Argentine submarine, the Santa Fé, on its way to reinforce the Argentines on South Georgia. The British had very little resistance in attacking this submarine because ASW had been their main mission set for the duration of the Cold War.⁵³

⁵¹ Hime, 18.

⁵² Hime, 17.

⁵³ Hime, 19.

The next success the British Royal Navy saw was the sinking of the ARA General Belgrano.⁵⁴ The Belgrano was sunk by a Royal Navy submarine outside of the TEZ which brought up legality issues, but was still a significant win for the British Royal Navy because effectively after the Belgrano's sinking the Royal Navy was not challenged by any Argentine surface forces for the remainder of the conflict. Despite forcing the Argentine navy to remain outside of the TEZ, the Royal Navy still pursued vessels inside of the TEZ. The British suspected an Argentine trawler to be a spy ship and were correct. They disabled and boarded the ship and discovered, "An Argentine naval lieutenant commander with code books, charts and military radios."⁵⁵ Maintaining the TEZ allowed them freedom of maneuver outside of Argentine fighter air. The ability to transit free from surface combatants allowed for multiple British Royal Navy ships to commence shore bombardments around the Falkland Islands to support amphibious operations. The highpoint of the shore bombardments was a continual bombardment of Stanley by the British Royal Navy. This misled the Argentines to believe that the British were going to concentrate their landing forces in the Port of Stanley, when in reality they landed on the opposite end of the island in San Carlos.

A final factor that led to the Royal Navy's maritime supremacy was their use of shipboard helicopters. As stated in Alastair Finlan's book, *The Royal Navy in The Falklands Conflict and The Gulf War*, "Surface vessels with helicopters have an unprecedented ability to prosecute surface and sub-surface contacts at far greater ranges than vessels without such technology."⁵⁶ This was crucial because this conflict was one of the major naval conflicts in the missile age that also incorporated helicopters to pursue surface and sub-surface combatants.

The British Royal Navy's maritime operations during this conflict provided numerous valuable lessons. The first is establishing a maritime or total exclusion zone to try and prevent as much civilian traffic in the area as possible. This frees up sensors and

⁵⁴ Hime, 24.

⁵⁵ Hime, 26.

⁵⁶ Finlan, 66.

watchstanders to maintain a clearer and more accurate surface and air picture to maintain situational awareness. The second is decisive actions. As noted in Finlan's book "The Navy needed to assert a high degree of sea control around the island in order to fulfil the mission of providing a successful platform for the land forces."⁵⁷ This limited sea control was due to the decisive actions of sinking the Argentine submarine and the General Belgrano. Those two actions effectively forced the Argentines to give up their surface actions. The third lesson was conducting multiple missions of Naval Surface Fire Support (NSFS) and shore bombardment. The NSFS utilized to re-capture South Georgia was just as crucial as the shore bombardment on Stanley that deceived the Argentines causing them to dedicate a majority of their defense forces to the wrong area. The follow on NSFS proved invaluable for prepping the landing area in San Carlos. Although it later was sunk conducting shore bombardment HMS Antrim was pivotal to the success of the SBS capturing the Argentine forces at Fanning Head which overlooked the entrance to the San Carlos waters.⁵⁸ In amphibious operations naval gunfire support is an absolute force multiplier.

3. Logistics

Logistics are an integral part of any operation; thus, short and protected lines of communication are essential to successful operations. Milan Vego states "The need to protect ever-lengthening flanks and lines of communications requires increasingly larger forces to secure the rear area and to control a hostile populace, thus reducing the attacker's striking power."⁵⁹ Long lines of communication proved to be a major hindrance for the British Royal Navy in the Falklands War. The Royal Navy was forced to use the Ascension Islands as a forward staging base for their operations against the Argentines. The Ascension Islands are almost exactly halfway between England and the Falklands, approximately four thousand miles either way. The long distance between where the task force loaded supplies for the operation and where they were going to be operating presented a sense of urgency in the task force. This urgency coupled with a lack of understandable objectives created

⁵⁷ Finlan, 68.

⁵⁸ Hime, 32.

⁵⁹ Milan N. Vego, *Joint Operational Warfare*, 8 (Newport, RI: U.S. Naval War College, 2009).

friction before the operations even began and caused the task force to load as much as they could without a clear idea as to what would be required and an understanding that it would be some time before they could be refitted.⁶⁰ The task force recognized that providing supplies to the landing forces would be daunting and as each day progressed the landing forces would slowly degrade because resupply would be near impossible.

Forward operating bases not only provide a site to stock pile supplies to move to troops but also an avenue to launch air assets from. The closest run-way which the British could launch Vulcan bombers was also located on Ascension, which proved to be another logistic challenge. Due to the distance between Ascension and the Falklands, launching two Vulcan bombers to conduct bombing operations required eleven air-refueling tankers for them to be able to make it to the target and return.⁶¹ These bombing campaigns proved ineffective because of the limited capacity due to distance. If there was a logistics site with an appropriate airfield located closer for the British to use, more bombing sorties could have been conducted with ease and proved more effectual.

The lesson taken away from the Falklands is having a forward staging base closer to operations. The shorter the lines of communication are, the easier they are to defend and the faster supplies can reach the area of interest. The large distance between the Ascension Islands and the Falklands created a false sense of urgency when outfitting the task force. The task force felt compelled to quickly supply and then depart because they still had quite a distance to travel in order to get to the Falklands.

4. Amphibious Operations

The amphibious operations conducted by the British are a rarity in the post-World War II era. The British were successful in penetrating the Argentine defense and recapturing the island with a smaller attacking force. The Argentines had a large defense force which was entrenched and yet the British amphibious forces were able to force the Argentines to surrender 25 days after the first landing. The effectiveness of the British

⁶⁰ Hime, 20.

⁶¹ Hime, 22.

amphibious operations was a result of three factors; deceit, well trained land forces, and speed.

The British were able to deceive the Argentines in a multitude of ways thus forcing Argentina to concentrate majority of their defense forces on the opposite side of the island from the initial British landing forces. This was accomplished through a shore bombardment campaign by the British Royal Navy. The Royal Navy decided to conduct these attacks on Stanley, the most obvious choice for an amphibious landing.⁶² This convinced the Argentines that the British were doing this to soften up the defenses and conduct the landing there. The other form of deceit was the choosing of San Carlos as the landing area. In choosing San Carlos the Argentines believed this was the least likely to happen due to it being so far away from Stanley, the major city and port on the island.⁶³

Having a professional well-trained force allows an attacker to overcome a larger untrained defense force. This was the case with British amphibious assault forces against the Argentine defense forces. The British were able to quickly re-capture strategically significant areas such as; Goose Green, Fitzroy, and eventually Stanley due to previous combat experience and various training exercises the British conducted with NATO. These training exercises prior to the onset of the conflict were key because it allowed the British to maintain their proficiency. Additionally, the British special operation forces were crucial for reconnaissance and targeted attacks to weaken the Argentine defense forces. If these forces were not as well trained and did not maintain current training in peacetime the British would not have seen the success they did.

Speed of maneuver is a crucial factor to many operations. The British were not resting once they established a beach head in San Carlos. As mentioned above it took British land forces twenty-five days to recapture the island with a smaller attack force than the Argentines.⁶⁴ This rapid operational tempo coupled with well-trained forces allowed

⁶² Hime, 22.

⁶³ Hime, 26.

⁶⁴ Hime.

the smaller British invasion force to overcome the Argentine defenses and force Argentina to surrender.

5. Command and Control

“For successful combat in the littorals, a simple and streamlined littoral command structure, with the fewest possible intermediate levels, should be established.”⁶⁵ Unfortunately, this was not understood by the British in the Falklands campaign. Initially, the C2 structure had Rear Admiral Sandy Woodward as the task group commander and the carrier battle group commander. Commodore Michael Clapp was in command of the amphibious task force directly under command of Rear Admiral Woodward. Brigadier Julian Thompson was in command of the landing forces, again directly under the command of Rear Admiral Woodward. This set up created separate groups who were equal in a sense under one on-scene commander. For unknown reasons this force structure was changed by the operational commander, Admiral Fieldhouse, to where all three were equal to each other and there was no designated on-scene commander. However, due to Rear Admiral Woodward being the most senior he was considered in charge.⁶⁶ Later on during the campaign another person was thrown into the mix, Major General Jeremy Moore, who was more senior than Brigadier Thompson but was in a supporting role to Thompson. The Naval War College case study provides a valuable quote as to the situation of the C2 structure, “While MG Moore was able to provide support for Brigadier Thompson upon his arrival in the South Atlantic, the lack of an in-theater overall commander, capable of assessing priorities and dealing with Northwood arguably impeded smooth command and control.”⁶⁷ Northwood is referring to the location in which Admiral Fieldhouse resided during the campaign.

The C2 structure for the British continued to plague the task force throughout the campaign. Prior to the landings, tensions between the three equal unit commanders rose when Rear Admiral Woodward wanted to use the command ship for Clapp and Thompson

⁶⁵ Milan Vego, “On Littoral Warfare,” 46.

⁶⁶ Hime, 21.

⁶⁷ Hime, 11.

as a decoy instead of gearing up for the landings. Thompson is quoted, “It is simply not good enough to promulgate a structure of three co-equal commanders, and then arbitrarily, and without ever telling the other two, treat one of the commanders as he was the overall boss on some occasions, which they did a number of times.”⁶⁸ Even after the landings there were continual clashes between the landing force commanders and Woodward over where to deploy the Sea Harriers.

Command and control is only harder in the littorals: “Because of the rapidity and possibly drastic changes in the tactical and operational situations, warfare in the littorals requires a highly decentralized command and control (C2).”⁶⁹ Not only was the British C2 structure not decentralized due to the constant requirement to request permission from the operational commander who was approximately eight thousand miles away, but confusing and caused clashing because there was no person clearly designated in charge. The lesson taken away is for a clear and simple command and control structure with one person designated as the OIC. The operational commander should give a clear message of intent in which it, “should afford sufficient freedom of action by subordinates at all levels of command.”⁷⁰ Intervention by the overall commander should be when there is going a threat of risking the success of the mission.⁷¹

C. CONCLUSION

While the British were successful in defeating the Argentines in the Falklands War, it came at a heavy cost. The British suffered throughout the campaign due to a failure in their planning, execution, and utilization of forces. While they did face a new technology in the Exocet missile, its threat would have been mitigated had not focused primarily on anti-submarine warfare in the years leading up to this conflict. Despite the campaign’s overall success, the Royal Navy was not prepared to conduct operations in contested

⁶⁸ Hime, 21.

⁶⁹ Vego, “On Littoral Warfare,” 31.

⁷⁰ Vego, 60.

⁷¹ Vego, 60.

littorals, but both their success and failures provide valuable insight when conducting future operations.

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III. PREVIOUS LCG ATTEMPTS

This chapter will explore the United States Navy's previous experiments with Littoral Combat Group structure. In doing so, the areas of success and areas in need of improvement will be highlighted and carried over into the theoretical LCG this thesis proposes. There are many theories proposing how the United States Navy should conduct battle in the littorals and how to structure the forces operating in those areas. The two LCG examples are the LCG deployment to Southern Command, South America, and a different LCG construct deployed to Alaska as part of a proposed Littoral Combat Force. The reason for choosing these two instances is that they are the most current attempts, and therefore actual applications and not theories.

A. LITTORAL COMBAT GROUP IN SOUTH AMERICA

In November 2018, the United States Navy conducted its first Littoral Combat Group experiment by deploying one Arleigh Burke class Guided Missile Destroyer (DDG), DDG-108 USS Wayne E. Meyer, and one San Antonio class Amphibious Transport Dock ship (LPD), LPD-25 USS Somerset, to South America. Onboard the Somerset was a Special Purpose Marine-Air-Ground Task Force (SP-MAGTF) and a fleet surgical team to supplement the group's Humanitarian Assistance and Disaster Relief (HADR) component. Finally, a Coast Guard Law Enforcement Detachment (LEDET) was embarked with the LCG. From November to December the LCG participated in multiple exercises with various Latin American countries to train their local forces and increase their capabilities.⁷²

The DDG and LPD participated in EXPONAVAL, which is an International Naval & Maritime Exhibition and Congress for Latin America.⁷³ Expeditionary Strike Group 3 was the operational commander for this LCG and organized the command structure in approximately three weeks, prior to commencement of the exercise. The LCG was staffed

⁷²Megan Eckstein, "Navy Tests 'Littoral Combat Group' Concept That Pairs DDG, LPD in South America Deployment," *USNI News* (January 3, 2019). <https://news.usni.org/2019/01/03/navy-tests-littoral-combat-group-concept-that-pairs-ddg-lpd-in-south-america-deployment>.

⁷³ Eckstein, "Navy Tests 'Littoral Combat Group' Concept That Pairs DDG, LPD in South America Deployment."

with approximately thirty-three personnel who were temporarily attached, all of whom embarked on the LPD. The Navy released a statement on the primary purpose of this two-ship deployment; “The deployment of LCG-1 was designed to test a command and control concept.”⁷⁴ The LCG commander was a Navy Captain and was embarked on the LPD. All of the assets of the group reported to him, which is standard practice of any naval group. The LCG reported to both 3rd Fleet, Commander of the Eastern Pacific, and 4th Fleet, Commander of South America, in part because of transiting from 3rd Fleet to 4th Fleet forced them to report to two Geographic Combatant Commanders (GCC).⁷⁵

In critiquing this deployment, the intent is to identify the takeaways, both positive and negative of the LCG-1 deployment to South America, and apply them to the more robust and complete LCG proposed. First, while the LPD and DDG are versatile ships, they are not sufficient in themselves to comprise an effective LCG. The DDG is designed to be a jack of all trades, capable of conducting Anti-Air Warfare, Anti-Submarine Warfare, Anti-Surface Warfare, Strike Warfare, and Ballistic Missile Defense as needed, but it is not capable of operating effectively in more than one of those warfare areas at the same time, as littoral warfare may well require. Littoral waters are almost by definition shallow, and often narrow. A DDG has a navigable draft of approximately thirty-four feet, depending on which flight it is, and because it is a propeller- and rudder-driven ship it has limited maneuverability in restricted waterways and at low speeds. This makes them vulnerable to fast inshore attack craft. Despite the massive amount of fire power on the DDG, they are likely to be ineffective compliments to LPDs in the littoral environment.

Second, the San Antonio class LPD was a good choice for the LCG because it is capable of transporting a robust expeditionary unit and a more modern platform than its dated counterpart the Dock Landing Ship (LSD). The LPD is capable of transporting and delivering a landing force of between 630 and 800 Marines, again depending on the

⁷⁴ Eckstein, “Navy Tests ‘Littoral Combat Group’ Concept That Pairs DDG, LPD in South America Deployment.”

⁷⁵ Eckstein, “Navy Tests ‘Littoral Combat Group’ Concept That Pairs DDG, LPD in South America Deployment.”

flight.⁷⁶ It can be outfitted with two Landing Craft Air Cushion (LCAC), or one Landing Craft Unit (LCU). They also are able to carry fourteen Amphibious Assault Vehicles, AAVs, which can transport a small number of personnel.⁷⁷ On the aviation side, if the operational environment allowed, the LPD would be able to deliver troops via a MV-22 Osprey but would not be able to store any other helicopters in its hangar bay.⁷⁸ If the amphibious transport was sufficient to move the amphibious forces to the shore and did not require the MV-22 the LPD would be able to hold, “One Sea Stallion, two Sea Knights, three Super Cobra helicopters.”⁷⁹ The ability for the LPD to embark a fleet surgical team also adds to its capability. As seen during one of the exercises conducted on this deployment, it is extremely useful in HADR. Being able to fill various mission sets increases a combat group’s versatility. Clearly, the LPD is a robust amphibious transport ship, but falls short in regards to sustainable combat at sea. The ship’s main weapons are two Mk 46 30 mm guns and two Rolling Airframe Missiles (RAM).⁸⁰ These weapons are not very significant in comparison to those of other surface combatants, making LPDs vulnerable when they are alone or in a small combat group, as seen in this experimental LCG deployment.

The takeaway from this LCG deployment is in order to operate effectively in the littorals a DDG and LPD are necessary because of their versatility but the number of DDGs, and supplementary ships, would need to be increased to cover more of the spectrum of threats. Having one DDG focus on threats from the surface and another on threats from the air, would have sufficiently covered those warfare areas while decreasing the likelihood of one DDG being overwhelmed trying to conduct both Anti-Air and Surface Warfare while protecting the LPD. The combination of the DDG and LPD alone would not be able to accomplish many mission sets in a littoral environment.

⁷⁶ “Amphibious Transport Dock - LPD,” United States Navy, January 28, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=4200&tid=600&ct=4

⁷⁷ United States Navy, “Amphibious Transport Dock - LPD.”

⁷⁸ “San Antonio Class Landing Platform Dock,” Naval Technology, accessed June 13, 2020, <https://www.naval-technology.com/projects/lpd17/>.

⁷⁹ Naval Technology, “San Antonio Class Landing Platform Dock.”

⁸⁰ United States Navy, “Amphibious Transport Dock - LPD.”

The LCG command and control structure used in this deployment was effective for the missions assigned. Having the LCG commander on scene, embarked on the LPD, was a good idea because it makes decision making easier when the commander has the full tactical picture at once. Combat in the open ocean can occur quickly, but combat in the littorals occurs even faster, and requires quicker decision making. Allowing for commanders on scene to make snap decisions without reaching back continuously to higher command is critical to success in the littorals. The type commander should give a clear message of his or her intent and then allow the group commander to act accordingly.⁸¹

B. LITTORAL COMBAT GROUP IN ALASKA

Following the initial LCG experiment in 2018, the Navy expanded the LCG concept in 2019. The Navy and Marine Corps conducted Arctic Expeditionary Capabilities Exercise (AECE). This exercise extended from Alaska's southern coast to San Diego, California, and was an expansion of the LCG concept seen during the 2018 EXPONAVAL. These operations encompassed two LCGs, collectively called a Littoral Combat Force (LCF). This again was an attempt to establish a command and control structure that would adequately integrate the Marine and Naval forces, particularly after the Marines have landed on the shore.⁸² The majority of the exercises focused on getting the SP-MAGTF on shore and setting up the logistics network to transfer supplies ashore.

Going forward, the Navy intends to create an LCF made up of multiple LCGs utilizing Expeditionary Fast Transports, Expeditionary Transfer Docks, Expeditionary Sea Bases, Littoral Combat Ships, and expeditionary mine countermeasures (ExMCM).⁸³ The LCF would solely focus on operations in the littorals and be heavily integrated with the Marines. This construct is a facet of the Navy's Distributed Maritime Operations (DMO).

⁸¹ Vego, "On Littoral Warfare," 60.

⁸² Megan Eckstein, "Navy, Marine Practice 'Littoral Combat Force' Construct in Alaska," *USNI News* (September 23, 2019). <https://news.usni.org/2019/09/23/navy-marines-practice-littoral-combat-force-construct-in-alaska>.

⁸³ Eckstein, "Navy, Marine Practice 'Littoral Combat Force' Construct in Alaska."

The positive observations from this exercise included the incorporation of multiple LCGs into a command and control structure, allowing them to operate in different areas simultaneously with one person in charge. The next positive note was the LPD and the SP-MAGTF conducting fuel transfer to shore.⁸⁴ The ability of an LCG to transfer fuel to the Marine shore component without needing a logistics ship greatly reduces the risk to the group. Logistics ships do not have very strong defense capabilities and rely heavily on surface combatants for defensive measures. This reliance detracts from maintaining proper sea control as seen in the Falklands War with the British forces suffering heavy damage to their civilian turned military logistics ships. The final positive was conducting the exercise in Alaska. This allowed the concept to be tested in a harsh environment to see where there are points of friction and points of ease.

While there were some positive factors, the first negative was the continued lack of surface combatants required for proper sea control in the littorals. The Navy and Marine Corps released doctrinal guidance named Littoral Operations in a Contested Environment, (LOCE). This guidance stipulates requirements and recommendations for the operations in the littorals and specifically names the requirement of an LCG. In the LOCE the Navy and Marine Corps state an LCG would require “One or more a [sic] surface combatants.”⁸⁵ An LCG with one surface combatant would be severely inefficient in a contested littoral environment. For example, China’s Anti-Access/Area Denial capability makes it extremely dangerous for Carrier Strike Groups and Expeditionary Strike Groups to operate nine hundred miles from China and those Strike Groups have strong inherent missile defense. An LCG with one surface combatant would be completely overwhelmed and unable to get close to an island’s shores in a contested environment.

Given those issues the Navy recognized the initial LCG construct fell short of the actual force structure required for a robust and effective force. The Alaska exercise recognized that more forces would be required, and created an overarching force

⁸⁴ Eckstein, “Navy, Marine Practice ‘Littoral Combat Force’ Construct in Alaska.”

⁸⁵ “Littoral Operations in a Contested Environment,” United States Marine Corps, accessed June 17, 2020, <https://www.candp.marines.mil/Concepts/Subordinate-Operating-Concepts/Littoral-Operations-in-a-Contested-Environment/>

commander to command and control multiple LCGs across various environments. Nevertheless, this attempt fell short of what would be required for an effective LCG, whose deficiencies cannot be remedied efficiently simply by combining them under a single commander.

C. CONCLUSION

The steps taken in these two exercises conducted by the Navy and Marine Corps are steps taken in the right direction. Unfortunately, they are not large enough steps to adequately compose a functional LCG that is capable of operating in contested littorals. The Navy needs to approach this problem and create a solution based on a ground up approach. Right now, they are focused on creating a command and control structure with an inadequate force structure. In the following chapter a proper LCG force structure will be proposed which will then be followed by a command and control structure suited to effectively operate in the littorals.

IV. LITTORAL COMBAT GROUP

This chapter will propose a force structure for a Littoral Combat Group (LCG), based on lessons learned from the real-world deployments discussed earlier. It begins by grouping the relevant platforms and assets into specific warfare areas, and explaining how each is able to operate in the littoral environment. It also considers the Command and Control (C2) structure required to integrate all of the assets involved in the LCG. A brief section on tactics follows. The chapter concludes by discussing force multipliers that, if integrated to the LCG, would enhance the group's effectiveness.

A. FORCE STRUCTURE

The following force structure layout is organized with reference to the particular assets that the Composite Warfare Commanders (CWC) have under their direct control. Milan Vego states "The main prerequisites for success in littoral warfare are suitable and diverse platforms, weapons, and sensors; robust command organization."⁸⁶ The force structure below fulfills these prerequisites by combining existing platforms, personnel, and technology.

1. SURFACE/SUB-SURFACE

One DDG would be designated as the Sea Combat Commander (SCC), combining the functions of the Surface Warfare Commander (SUWC) and the Antisubmarine Warfare Commander (ASWC). This SCC DDG would be outfitted with a mixture of missiles to cover the spread of threats. The majority of the ship's Vertical Launch System (VLS) would contain the multi-purpose SM-6 Standard missile, because of its versatility.⁸⁷ The remaining VLS cells would be for Vertically Launched Anti-Submarine Rockets (VLAs) and Tomahawk Land Attack Missiles (TLAMs). Because the command DDG serves as the

⁸⁶ Vego, "On Littoral Warfare," 45.

⁸⁷ "SM-6 Missile," Raytheon Technologies, accessed June 6, 2020, <https://www.raytheonmissilesanddefense.com/capabilities/products/sm6-missile>.

Anti-Submarine Warfare Commander it would also need to have both the MH-60R and MH-60S helicopters embarked in order to have organic air assets.

The SCC has five LCSs under their control. Three LCSs would be specified as hunters and would act in conjunction with each other. The remaining two LCSs would be a protection force for the LPD. The three LCSs specified as hunters would be configured using the Surface Warfare Mission Module. With the Surface Warfare Mission Module comes two Mk-44 MOD 2 30mm Automatic Cannons, a Helicopter Sea Combat (HSC) squadron with either a MH-60R or MH-60S helicopter alongside of a MQ-8B Unmanned Aerial Vehicle (UAV), and two 11m Rigid Hull Inflatable Boats (RHIBs) meant for Visit, Board, Search, and Seizure (VBSS).⁸⁸ The higher speeds and shallower drafts of the LCS make them better suited for operations in the littorals especially when they are supplemented by a DDG a short distance away. Two of the LCS would need to have MH-60S to supplement their surface action capability along with the MQ-8B, while the third LCS would need to be outfitted with two MH-60Rs and no MQ-8B. LCS does not have a SONAR dome, and thus requires an ASW mission package, which is still being tested and not operational.⁸⁹ While existing LCSs may not be suited to conduct ASW, one is able to act as a transport for two MH-60Rs allowing the SCC to have a DDG with a capable SONAR dome, Surface Vessel Torpedo Tubes (SVTTs), ASROCs, and the ability to control three MH-60Rs. In the event of entering an ASW environment the responsibilities of the SUWC shift from the DDG to the most senior LCS who would then have tactical control of the other LCSs, while still reporting to the SCC. The LCSs can also act as refueling stations for the helicopters.

In Capt. Wayne P. Hughes Jr.'s book, *Fleet Tactics and Coastal Combat*, a reoccurring principle is the absolute necessity of aerial reconnaissance for any maritime battle group.⁹⁰ The MQ-8B is a perfect platform for aerial reconnaissance. According to

⁸⁸ "Littoral Combat Ships-Surface Warfare Mission Package," United States Navy, accessed June 6, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=2100&tid=437&ct=2.

⁸⁹ Megan Eckstein, "LCS Mission Package Office Focused On Test, Fielding; IOC Dates Continue to Slip," *USNI News*, January 25, 2019. <https://news.usni.org/2019/01/25/lcs-mission-package-office-focused-on-test-fielding-ioc-dates-continue-to-slip>.

⁹⁰ Hughes, Jr., *Fleet Tactics and Coastal Combat*.

Northrop Grumman the MQ-8B provides, “Intelligence, Surveillance, Reconnaissance and Target-acquisition (ISR&T), laser designation and battle management.”⁹¹ These UAVs can provide aerial reconnaissance that is organic to the LCG without risk to personnel. They will provide valuable information to the LCG, especially in highly congested areas in the form of target identification and tracking.

For Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC) threats the LCSs are capable of dealing with multiple threats when assisted by the DDG. The Mk-110 57mm BOFORs gun on the LCS is well suited to surface combat in the littorals. The Mk-110 is capable of firing medium caliber rounds up to 220 per minute with a maximum range of nine miles.⁹² Milan Vego discusses the nature of littoral combat and states, “Most of the actions on the surface and subsurface will be fought at short ranges. They will consume fuel and ammunition quickly.”⁹³ Short-range combat with rapid succession of fire are the situations the Mk-110 was designed for. The Mk-110 is supplemented by the SUW mission package and their Mk-46 30mm cannons. Each 30mm gun system is capable of firing 200 rounds per minute with a nominal range of 4,400 yards.⁹⁴

In this context it is also worth noting that LCSs produce extremely large wakes. When operating against smaller fast attack vessels larger ships can use their wakes to disrupt and even capsize small enemy vessels. During testing on Lake Michigan an LCS was creating waves from its wake so large it was swamping and damaging boats approximately one mile away.⁹⁵ With their high speed and maneuverability coupled with their large wake this allows them to traverse quickly in between friendly vessels to use their main guns and wake to destroy FAC/FIACs.

⁹¹ “Fire Scout Unmanned Aircraft System,” Northrop Grumman, accessed June 6, 2020, <https://www.northropgrumman.com/air/fire-scout/>.

⁹² “MK 110 57 MM Gun,” United States Navy, accessed June 6, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=2100&tid=1150&ct=2.

⁹³ Milan Vego, “Go Smaller.”

⁹⁴ “MK 46–30 MM Gun Weapon System,” United States Navy, accessed June 6, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=2100&tid=525&ct=2.

⁹⁵ Bill Miston, “LCS shipbuilder, contractor cooperating with DNR after ‘multiple’ boats damaged,” *Fox News*, September 8, 2015. <https://fox11online.com/news/local/lakeshore/lcs-shipbuilder-contractor-cooperating-with-dnr-after-multiple-boats-damaged>.

The two LCS designated LPD protection are assigned because their inherent protection capabilities against FAC/FIAC. They are still under control of the SCC, but their primary tasking is to protect the group's High Value Unit (HVU), the LPD. One of these close escort LCSs needs to be outfitted with the surface warfare mission package with two MH-60Ss and no MQ-B. The other LCS would be outfitted with the Mine Countermeasures Mission (MCM) package. With the MCM package the LCS is outfitted with various countermeasure options some of which are; a Common Unmanned Surface Vehicle (CUSV), Airborne Laser Mine Detection System (ALMDS), Airborne Mine Neutralizations Systems (AMNS), Unmanned Surface Sweep System (USSS), and a Surface Mine Countermeasure Unmanned Underwater Vehicle (SMCM UUV) or Knifefish.⁹⁶ This LCS will break off from LPD protection in a mine environment and will provide safe routes for the LCG or destroy shore based mines in preparation for amphibious operations.

The SM-6s on the DDG are extremely valuable in surface actions. They would deliver initial strikes allowing the LCS to close distance and continue to pursue targets via their gun systems. The DDG's missile contributions are necessary until the LCS SUW mission package is fully tested with an integrated missile system.⁹⁷ The inherent missile defense onboard both the DDG and the LCSs are capable of self-defense with a mixture of soft kills and hard kills. Primary air and missile defense for the LCG will be discussed in a later section.

Finally, the SUW mission package onboard the LCSs allow for robust VBSS operations. VBSS is extremely important in enforcing any sanctions or laws in a contested environment. The two 11m RHIBs that come with each mission package allow for numerous VBSS teams to operate in a single environment. With the LCSs conducting the VBSS operations, this would allow the DDG to remain the guard on the surface picture unencumbered by small boat operations.

⁹⁶ "Littoral Combat Ships-Mine Countermeasure Mission Package," United States Navy, accessed June 6, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=2100&tid=425&ct=2.

⁹⁷ Megan Eckstein, "Navy Completed Hellfire Tests on Littoral Combat Ship, Will Likely Deploy Later This Year," *USNI News*, July 3, 2019, <https://news.usni.org/2019/07/03/navy-completed-hellfire-tests-on-littoral-combat-ship-will-likely-deploy-later-this-year>.

2. AIR

In order to mitigate a possible lack of air superiority due the near threat of land-based air, the LCG needs two DDGs designated for Air Missile Defense (AMD). The most senior DDG of this warfare group would be designated as the Anti-Air Warfare Commander. The DDG's VLS needs to be outfitted with SM-6s and a small number of TLAMs, to cover the largest spectrum of threats. These two DDGs must have the newest version of the SPY radar system, SPY-6 (V)1. Enemy air and missile capabilities in the littorals present two problems. First, operating in close proximity to land allows more land-based aircraft to fly at lower altitudes and disguise themselves amongst land features.⁹⁸ Second, radars operating closer to land often do not work as well as they would in open ocean. Milan Vego states "In general, electronic sensors when used close to a coast are prone to degradation due to a variety of climatic, electromagnetic (EM), and atmospheric anomalies, the presence of a large landmass, human-made clutter, and the proximity of multiple EM sources."⁹⁹ These two factors were evident in the Falklands War and contributed to number of ships lost by the British to Argentine fighter air.

The SPY-6 (V)1, according to Raytheon "Provides significantly enhanced range, greater resistance to environmental or man-made electronic clutter, and higher reliability and sustainability than currently deployed radars. The radar's demonstrated sensitivity - significantly more than current fielded radars - provides better coverage for early and accurate detection."¹⁰⁰ The radar can defend against surface threats, air threats, cruise missiles, ballistic missiles, and jamming/cluttering concurrently.¹⁰¹ While all of the ships in the LCG have capable soft kill measures to protect themselves, the LCSs along with the LPD are very limited in their hard kill abilities against highspeed fighter air and missile threats.

⁹⁸ Vego, "On Littoral Warfare," 37.

⁹⁹ Vego, 100.

¹⁰⁰ "Five fast facts about SPY-6," Raytheon Technologies, accessed June 6, 2020, <https://www.raytheonmissilesanddefense.com/news/feature/five-fast-facts-about-spy-6>.

¹⁰¹ "U.S. Navy's SPY-6 Family of Radars," Raytheon Technologies, accessed June 6, 2020, <https://www.raytheonmissilesanddefense.com/capabilities/products/spy6-radars>.

The TLAMs onboard would be utilized for striking land targets that pose direct threats to operations conducted by the LCG. Joint Publication 3-32, Command and Control for Joint Maritime Operations, states “Typically, the STWC does not plan or direct TLAM missions,” but this would not be the case for the LCG.¹⁰² Joint Pub 3–32 also states “An important element of gaining access includes neutralizing advanced anti-ship cruise missiles prior to surface forces coming within their range. Long-range, high-speed and maneuvering characteristics of such missiles make inflight defeat challenging, necessitating strike operations to neutralize adversary launch platforms.”¹⁰³ With intelligence provided to the group, the LCG would be able to disable known airfields and missile sites approximately 700–900 nautical miles from their target.¹⁰⁴ Once Marines are ashore they can provide targeting for hidden missile sites, radar sites, bunkers, and logistics.

The two DDGs designated for air defense of the group will have four MH-60Ss embarked, two per DDG. This will multiply the force’s capability against surface threats. In the event of a surface attack that requires supplemental force for the SCC, these two DDGs would launch their helicopters to support the surface actions while the ship maintains the air picture. Once the helicopters have left the flight deck they will then fall under the control of the SCC.

3. AMPHIBIOUS OPERATIONS

The LCG will be primarily utilized for amphibious operations in contentious environments, especially A2/AD. Unfortunately, the doctrine discussing joint amphibious operations specifically mentions the need for a CSG to shape the environment in an A2/AD situation.¹⁰⁵ Advanced A2/AD technologies pose a high risk to the CSGs near where amphibious operations need to be conducted. The LCG will act as a ‘breacher’ for a larger

¹⁰² Department of Defense, *Command and Control for Joint Maritime Operations* (Washington, DC: Department of Defense) August 7, 2013

¹⁰³ Department of Defense, *Command and Control for Joint Maritime Operations*, IV-15.

¹⁰⁴ “Tomahawk Cruise Missile,” United States Navy, accessed June 6, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=2200&tid=1300&ct=2.

¹⁰⁵ Department of Defense, IV-16.

naval force that will follow in A2AD threats are mitigated. The LCG will be able to penetrate the outer most defenses of the opposing A2/AD structure in order to land Marines to start dismantling the outer most capabilities of those defenses. The same concept was used in the Pacific Campaign during World War II and is often referred to as “Island Hopping.” The LCG is not designed or suited for large scale invasions but smaller decisive raids to capture smaller islands or landmasses. Speed and intensity are the driving forces, requiring the Marine component to be a leaner fighting force with limited staying time. Geoffry Till’s, *Seapower*, offers four varieties of amphibious operations. Of the four varieties the LCG would solely focus on amphibious raids which are meant to “Establish temporary lodgment to achieve a tactical or operational aim before making a planned withdrawal.”¹⁰⁶ The Marine Corps needs to conduct research on the troop size and equipment best suited for those types of operations.

Some degree of sea control is required for any amphibious. “Working control” is defined as a “General ability to operate with degree of freedom. Enemy can only operate with high risk.”¹⁰⁷ Achieving working control will usually require the LCG to launch a shore bombardment prior to any contested amphibious landing. As noted in previous chapters of this thesis, the British saw success in their landings against the Argentines due to their ship borne shore bombardment. In contrast, more questionable results were achieved by the long-range bombing campaign that was also conducted. The misinformation created by firing on alternate landing sites allowed the British to land unopposed at a landing site opposite of where the Argentines expected. In addition to the shore bombardment conducted by the ship’s main gun, the LCG may need to use TLAM strikes as well. These guided munitions can achieve results that were not seen by the British in the Falklands.

The ships supporting the amphibious landing need to loiter in the area of operations, while the two DDGs designated as Air Missile Defense Commander (AMDC) assets are offset from the landing group to provide protection from fighter air. The SCC DDG will

¹⁰⁶ Geoffry Till, *Seapower: A Guide for the Twenty-First Century* (New York: Routledge, 2013), 189.

¹⁰⁷ Till, *Seapower*, 150.

stand off as well to act as missile support while the LCSs will run between the DDGs and LPD protecting the landing forces from FAC/FIAC. Fleet Tactics suggests to “Spread missile ships in a hope that not all would be detected and attacked simultaneously.”¹⁰⁸ The smaller SP-MAGTF allows for a shorter disembark and landing time. The multiple helicopters organic to the group would facilitate faster transfer of goods and select personnel with the SCC’s LCSs acting as forward staging points/jumping pads. Once the forces are ashore the ships need to return to an open ocean. Basic ship tactics dictate “Operating ships from the same position invites attack.”¹⁰⁹ Once ashore, the Marines will be supported by the Naval assets while they maintain sea control of the immediate area. The scope of sea control is dependent on the operational objective.¹¹⁰ Whether it be continued TLAM strikes, fuel transfer, logistics support, or NSFSS, the ships will support the land forces to facilitate rapid destruction and capture of enemy forces.

4. COMMAND AND CONTROL

Milan Vego provides a guidance for a communications structure. He states “Because of the rapidity and possibly drastic changes in the tactical and operational situations, warfare in the littorals requires a highly decentralized command and control (C2).”¹¹¹ The operational commander needs to give a framework of intent and allow tactical commanders to act independently inside of that framework. Vego continues with “One of the potentially greatest problems here for littoral combat is that operational commanders might interfere in the responsibilities of tactical commanders.”¹¹² The concept of command by negation is the ideal aspect. He further states “Because the small size of the operating area and high intensity of combat would cause sudden and often

¹⁰⁸ Hughes, Jr., *Fleet Tactics and Coastal Combat*, 270.

¹⁰⁹ Hughes, Jr., *Fleet Tactics and Coastal Combat*, 311.

¹¹⁰ Vego, “On Littoral Warfare,” 47.

¹¹¹ Vego, “On Littoral Warfare,” 31.

¹¹² Vego, “On Littoral Warfare,” 61.

drastic changes in the situation, the main prerequisites for success would be the largest possible degree of local initiative.”¹¹³

A major requirement of operations in the littorals is that it should be prepared and executed by one maritime commander.¹¹⁴ The Officer in Tactical Command (OTC) is the LCG Commander (LCGC) and needs to be filled by a rear admiral lower half surface warfare officer who has previous experience as a Destroyer Squadron (DESRON) Commodore. In the Falklands War, the British lost HMS Sheffield in part because a submarine officer was commanding and a helicopter pilot was the executive officer.¹¹⁵ The necessity for a one-star Admiral also alleviates any possibility of conflict of command because they are the most senior officer afloat in the group. The rear admiral and his/her LCG staff would be embarked on the LPD. There are some proposals for a Joint Force Littoral Operations Commander (JFLOCC) to be separate from the rest of the Joint Force Component Commander due to the number of joint assets that might possibly be required to work together in a littoral environment. In theory, the LCGC would be assigned to the JFLOCC and operate as a maritime and amphibious/land commander. For the purpose of this thesis, majority of the focus is on the maritime component and amphibious component. Further research needs to be conducted to see how the Army, Air Force, Coast Guard, and Space Force can integrate their capabilities with the LCG and JFLOCC.

Warfare commanders report to the LCGC. The warfare commanders are: AMDC, SCC, Information Operations Warfare Commander (IWC), and (notionally) the Amphibious Warfare Commander (APWC), which does not yet exist doctrinally. The AMDC and SCC were previously discussed and designated, along with their assets. The LPD would be designated as the IWC for the group. The officer in charge of the SP-MAGTF is assigned as the APWC in order to properly integrate the Marine forces into the CWC and allow for more direct line of communication to the LCGC for support of

¹¹³ Vego, “On Littoral Warfare,” 60.

¹¹⁴ Vego, “On Littoral Warfare,” 59.

¹¹⁵ Ian Cobain, “Revealed: Catalogue of failings that sank Falklands warship HMS Sheffield,” *The Guardian*, last modified 15 October 2017, <https://www.theguardian.com/uk-news/2017/oct/15/revealed-full-story-behind-sinking-of-falklands-warship-hms-sheffield>.

amphibious operations. The command element for the SP-MAGTF would be located on the LPD and would coordinate and communicate with the forces ashore to support their mission. Once ready, the APWC would shift command location from the LPD to land.

As noted, the APWC is a warfare commander that is proposed by this research and created for the LCG. The officer in charge of the SP-MAGTF will fill the role as the APWC. The Marine filling the role will have direct communications with the LCGC to ensure proper information flow to the overall commander. A problem the British experienced during the Falklands War was the landing forces not being properly supported. Instead of a clear delineation of command, the three major tactical commanders were all separate but equal with the operational commander, who was thousands of miles away, being the deciding factor between the three. The creation of an APWC allows the Marines inclusion in the C2 structure as an equal warfare commander and reporting to one overall tactical commander, the LCGC who is on-scene. The APWC will make all support requests to the LCGC in order to facilitate its operational directives once Marines have been placed ashore. A visual representation of the C2 structure is shown in Figure 1. This represents a template to act as a starting point for the tactical commander.

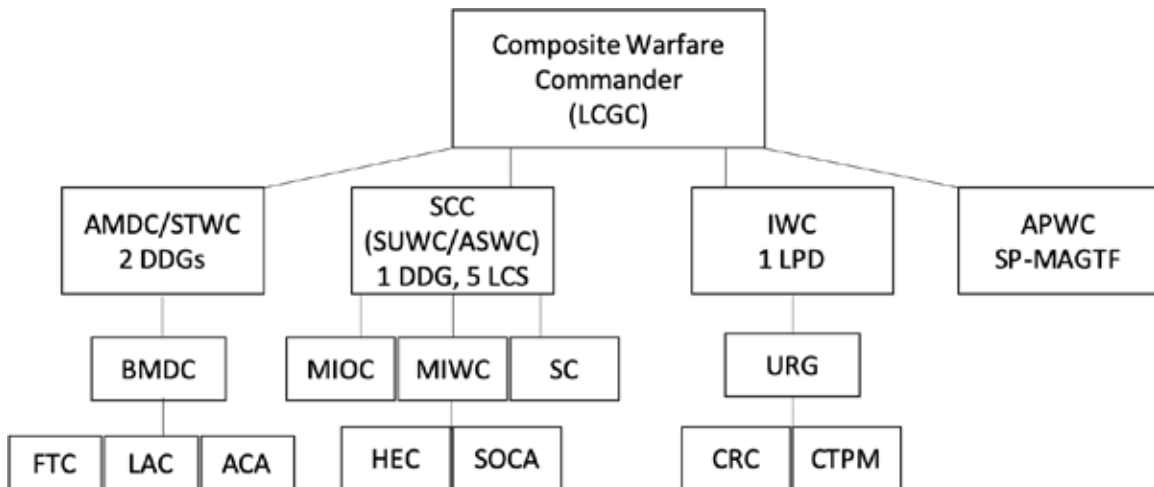


Figure 1. CWC Concept for the LCG

B. TACTICS

The tactics suggested for this group are only preliminary. A good starting point six cornerstones of maritime warfare proposed by Wayne Hughes:

1. Leadership, morale, training, physical and mental conditioning, willpower, and endurance are the most important elements in warfare.
2. Doctrine is the companion and instrument of good leadership...But doctrine is not dogma.
3. Tactical and technological developments are so intertwined as to be inseparable...To know tactics, you must know weapons.
4. While it is proper to think of the destruction of the enemy's fleet as the fleet's foremost objective, beyond that immediate objective is always some higher goal.
5. Ships do all they can to avoid a slugfest with fortifications ashore, but ships cannot operate in coastal waters without dealing with weapons directed toward the sea from the land.
6. The tactical maxim of all naval battles is *Attack effectively first*.¹¹⁶

Within this general framework, speed is an advantage. LCSs have been designed for speed and maneuverability at the expense of armor and fire power, and in the littorals that is a worthwhile compromise.

Littoral combat will be mostly a mixture of small fast attack craft, land-based missile sites, and land-based aircraft. The land-based aircraft must take off from a runway and land-based missile sites may offer fixed targets. Utilizing intelligence from outside sources or deployment of SOF, the LCG will conduct TLAM strikes to prevent the aircraft from taking off and destroying missile sites, narrowing down the primary threat to fast attack craft. Since fast attack crafts have short endurances and are designed to have a small crew, their staying times are extremely short. Fast attack crafts will most likely hide in off shoots of major bodies of water and attempt surprise attacks. Leading the group needs to be the three hunter LCSs to act as trip wires for the FAC/FIAC. The LCSs are the suitable platform to defend the rest of the LCG against these threats because they are highly maneuverable and have better suited weapons for close range combat against medium to small surface craft. A mixture of wake utilization, to act as stiff arms, and firepower by the

¹¹⁶ Hughes, Jr., *Fleet Tactics and Coastal Combat*, 25.

LCS, will see greater margins of success when supplemented by the DDGs surface missile capabilities.

If the LCG is deployed to an area with a single objective to accomplish, securing a small island for example, there is an expectation of combat. The LCGC needs to have the freedom from the Geographic Combatant Commander (GCC) to engage the enemy at the LCGC's discretion. That discretion should also flow to the warfare commanders. Aggressiveness and prompt action will be the deciding factor in any combat that takes place in the littorals.

Operating in close vicinity to land-based enemy munitions is inherent in littoral combat. When deploying the SP-MAGTF, the LCG needs to reduce ship loiter times. The British were vulnerable to Argentine fighter air because the naval force remained stagnant in the Falklands. After off-loading the Marines, the LCG needs to disperse and continue maintaining limited sea control of the area. In maneuvering, this also allows further support of the Marines once they are ashore. They can move along the coastline with the SP-MAGTF and provide supplies, fire support, or the avenue for a tactical retreat.

Nighttime operations are an absolute requirement to further mitigate the lack of air superiority. As Vego has noted that "The ever-present and serious threat from the air [means] most surface actions in the littorals would take place at night or in bad weather."¹¹⁷ Among LCG components, LCSs have the most restrictions for operating in bad weather, but those operating windows will be even smaller for the light in-shore craft comprising FAC/FIACs.

C. FORCE MULTIPLIERS

The following section focuses on aspects that can be added to the LCG in order to increase its effectiveness. So far in this chapter much of the force structure and tactics are centered on readily available assets that are either operational or scheduled to be operational within the next five years. The suggestions for these force multipliers are ideas that should be investigated and folded into the LCG construct.

¹¹⁷ Vego, "On Littoral Warfare," 44.

The Navy Integrated Fire Control-Counter Air (NIFC-CA) program would greatly increase the capability of the LCG if it allowed LCS to integrate into the weapon's network. Currently, the Navy is looking to integrate more platforms with NIFC-CA capabilities to reduce the reliance on smart weapons.¹¹⁸ If integrated with LCS, the DDG could launch a cheaper "dumb" missile from a distance and as the missile closes distance towards the target the LCS could relay target information to guide the missile to the target. This would especially be appropriate for a group of LCSs broken off into a SAG. NIFC-CA has the possibility to integrate with other services to greatly enhance the possibility and capability of the LCG.

The Naval Strike Missile (NSM) is an anti-ship cruise missile. There is a current plan to procure 64 missiles and place them on LCSs.¹¹⁹ The NSM is an "Imaging IR-seeker and inertial/GPS navigation," missile that "Can strike both sea and land targets at a distance of around 185 kilometers (100 nautical miles)...the NSM is capable of reaching high subsonic speeds and can approach its targets in sea skim mode."¹²⁰ The Navy should seek to purchase many more NSMs to outfit them on all of the LCSs and possibly LPDs. The NSM was successfully fielded and tested on USS Gabrielle Giffords (LCS-10) in 2019, proving the concept of an armed amphibious ship. The NSM may eventually serve as a replacement for the outdated Harpoon missile on DDGs. Another possibility for the NSM is its integration with the Marine Corps. Currently, the Marine Corps has spent \$47.59 million dollars to integrate with the NSM in the form on mobile land-based launch system.¹²¹ The ability for this missile to attack surface vessels as well as land-based targets

¹¹⁸ Megan Eckstein, "NIFC-CA Advance Could Allow The Navy To Use Cheaper 'Dumb' Weapons," *USNI News*, February 22, 2017, <https://news.usni.org/2017/02/22/nifc-ca-advances-could-allow-the-navy-to-use-cheaper-dumb-weapons>.

¹¹⁹ Franz-Stefan Gady, "US Navy, Marine Corps Seek Shore-Based Naval Strike Missile," *The Diplomat*, January 16, 2020, <https://thediplomat.com/2020/01/us-navy-marine-corps-seek-shore-based-naval-strike-missile/>.

¹²⁰ Gady, "US Navy, Marine Corps Seek Shore-Based Naval Strike Missile."

¹²¹ "Raytheon Providing U.S. Marines With Naval Strike Missiles Under Other Transaction Authority: Naval Strike Missile Can Be Launched From Land Or Sea," Raytheon Technologies, accessed June 6, 2020, <https://raytheon.mediaroom.com/2019-05-07-Raytheon-providing-US-Marines-with-Naval-Strike-Missiles-under-Other-Transaction-Authority>.

would greatly enhance the LCG in regards to supporting fire for the SP-MAGTF when ashore.

The Navy should certify the LCS to conduct NSFS. Till states “Light, sea-portable forces usually cannot take much in the way of artillery with them; fire support needs to be supplied by the fleet, especially in circumstances where land-based air support is either unavailable (the Falklands, Sierra Leone) or insufficient.”¹²² The only ships in the LCG that are typically certified to conduct NSFS are the DDGs. Certifying the LCS to conduct NSFS greatly enhances the LCGs capabilities. NSFS played a pivotal role in the Falklands War for the British. While the 57mm gun on LCS does not have the same range as the 5in gun on DDGs, LCS’ shallower draft allows it to get closer to land. The 5in gun shoots approximately 16–20 rounds per minute versus the 57mm, which shoots 220 rounds per minute.¹²³ Utilizing the LCS to conduct fire support for the SP-MAGTF reduces the danger to the DDG and enables more assets in the LCG to support the land forces.

Finally, LCGs will benefit from the integration of the SPY-6 radar on LCSs and LPDs. The specifics of SPY-6 were discussed earlier in this chapter, but to reiterate it is an extremely robust radar which is 100 times more sensitive than SPY-1 capable of seeing objects three times farther than the original SPY with the same level of clarity.¹²⁴ Another major factor of the radar is it is not AEGIS dependent. The Radar Module Assembly (RMA) can be installed on any platform and integrate with the various combat systems. There are plans to retrofit the SPY-6 (V) 2 on some LPDs but they should be a required on all of them.

D. ALTERNATE VIEWS

Much of the theories on littoral combat suggest using a small missile boat force. Naval strategists from Milan Vego to Captain Wayne Hughes to Tim Joergensen recognize

¹²² Till, *Seapower*, 274.

¹²³ “MK 45–5-Inch 54/62 Caliber Guns,” United States Navy, accessed June 6, 2020, https://www.navy.mil/navydata/fact_display.asp?cid=2100&tid=575&ct=2; United States Navy, “MK 110 57 MM Gun.”

¹²⁴ Raytheon Technologies, “U.S. Navy’s SPY-6 Family of Radars.”

that smaller missile boats have the advantage of maneuverability and concealment over traditionally larger naval vessels. Small missile boats or FAC/FIACs, have a large number of limitations that make them less appealing for an attacking force. By their nature these small boats are defensive and can only sustain short combat actions for limited periods of time. They rely on a land-based infrastructure to retreat to in order to resupply and allow for their extremely small crew to rest. They are also highly susceptible to air threats. If the United States were to construct a littoral force consisting, primarily, of smaller attack vessels they would require a substantial amount of resources and manpower to make it possible.

First, there would have to be multiple bases constructed overseas to house and sustain these smaller attack craft because they have an extremely limited operating range. This presents multiple problems because more sailors would have to be stationed abroad to not only man these attack vessels but also to fill the various support billets required for the base. Second, these bases need to be stationed relatively close to the area where these attack vessels would operate, thus putting these bases most likely in the attack area of A2/AD threats. This could lead to the attack vessels being destroyed before they even left the pier.

The third and final idea is that these crews manning these attack vessels would suffer from large rates of burnout. Being forward stationed and with the high operational tempo required for the littorals would be overwhelming for smaller crews that would be able to support maybe one watch rotation, maximum two rotations. A deployment cycle is better suited for this environment because of the high complexity of the littorals. An LCG deploys, completes its six-month deployment, is properly relieved, and allowed to return to home port. The best way to strike a balance between larger surface vessels and smaller attack vessels is to engage partner nations in area. Majority of the world's navies consist of smaller attack craft vice the large surface combatants the U.S. Navy has. Utilizing in area assets from partner nations creates burden sharing and engages partners who are eager to maintain sea control of their territory.

Another facet of the littorals many naval strategists say is a requirement to have in order to complete successful operations is air superiority. Gaining air superiority in the

littorals as an attacking force is extremely difficult and dangerous. With A2/AD capabilities posing such a threat to CSGs that they cannot enter a contested environment; the U.S. is extremely limited. The LCG is constructed to mitigate, to a certain extent, the lack of air superiority but the threat from fighter air is still present. Again, by engaging partner nations in the area the LCG will be able to gain air superiority by folding in fighter air provided from allies or by them hosting land-based air support. This engages partners and reduces the burden on the United States.

One of the most prevalent threats in the littorals is the diesel-electric submarine. Milan Vego posits that these submarines will most likely “Attack from an ambushing position close to the coast or within a group of islands.”¹²⁵ Being in such close proximity to land and island chains presents many problems for submarines that work as an advantage for the LCG. Many submarines require a minimum depth of water above and below the submarine.¹²⁶ This limits their area of operation to certain depths. Bottom types also limit how close submarines can operate to the seabed because intakes can be damaged. Some of the best assets to hunt submarines are helicopters because they are not exposed to the dangers submarines present. The significant number of MH-60R helicopters embarked with the LCG coupled with the capable sonar onboard the DDG mitigate the risks that submarines pose.

E. CONCLUSION

The purpose of this chapter is to suggest a force structure meant to cover the spectrum of threats posed in the littorals while being a realistic option for the Navy and Marine Corps to take. There is a certain degree of open-endedness purposely built into this concept to allow for adaptation and tailoring. Rigid doctrine and tactics will break under the pressure of combat. In order to effectively win the battle in the littorals, leaders need the freedom to act according to how the situation dictates. Milan Vego sums up the most

¹²⁵ Vego, “On Littoral Warfare,” 44.

¹²⁶ Vego, 39.

prevalent problem the Navy faces in the littorals and he states “The Navy’s long-standing problem of a zero-defect mentality cannot but hurt the conduct of war in the littorals.”¹²⁷

¹²⁷ Vego, “Go Smaller.”

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V. APPLICATIONS

After providing a force structure and C2 outline in the previous chapter, this chapter will discuss the possible applications of the group. The LCG is a capable surface group able to project power in the littorals. Its main purpose, is to penetrate A2/AD defenses and begin to dismantle the enemy assets so as to allow a larger naval force to push into heavily contested areas with a greater chance of survival. This is not the only strategic role it can fill, however. An LCG is capable of conducting operations in a gray zone conflict, HADR, Expeditionary Warfare, and maritime security.

A. GRAY ZONE CONFLICT

The RAND organization defines the gray zone as follows:

An operational space between peace and war, involving coercive actions to change the status quo below a threshold that, in most cases, would prompt a conventional military response, often by blurring the line between military and nonmilitary actions and the attribution for events.¹²⁸

RAND outlines nine strategic principles the United States should follow in order to respond appropriately to gray zone conflicts.¹²⁹ The overarching theme of these nine principles are the necessity of a whole of government approach. The LCG is one among many that the United States can use to respond to threats in the gray zone. Of the nine strategic principles suggested by RAND, the LCG can be applied to three of them. The first principle suggested is, “In seeking strategic advantage, the United States should be proactive rather than reactive in its approach to the gray zone challenge.”¹³⁰ The LCG can be deployed to any of the major maritime areas of contention in gray zone conflict. The deployment need not be a response to an incident, but could be a proactive show of force by the United States. Whether conducting routine maritime patrols or special exercises,

¹²⁸ Morris et al., *Gaining Competitive Advantage in the Gray Zone*, 8.

¹²⁹ Morris et al., 130–133.

¹³⁰ Morris et al., 130.

possibly with foreign partners, the LCG is formidable enough to show a legitimate presence, but not overtly threatening, risking escalation.

The next principle is: “A core element of successful gray zone strategy is the ability to respond quickly to new provocations.”¹³¹ The natural advantage the U.S. Navy has over the rest of the military branches is its ability to respond rapidly and capably to threats around the world. A medium sized naval force can deploy quickly to almost any area in the world and have the tools on hand to respond with a relevant degree of force, given the limited military dimensions of gray zone operations generally. An LCG is able to deploy faster than a CSG or ESG due to a smaller amount of assets required to be trained and maintained. The LCG has no strike wing, no submarine, no logistics ship, thus enabling higher speed ships to deploy and transit rapidly to the area of contention with little notification time. Additionally, the shallower drafts of the LCS and LPD allow for operations closer to land, and none of the ships in the LCG are near the size of a CVN or LHD/LHA which allows for more access to foreign ports.

The third principle is, “Any strategy for responding to gray zone aggression must balance risks of escalation-including military, diplomatic, and economic aspects-with the reality that, to be effective, countering gray zone aggression demands some degree of risk tolerance.”¹³² An American CSG is the most capable Naval asset afloat, and it understandably is seen as very threatening because of its inherent capability not only to secure the maritime domain, but also to attack targets far removed from coastal waters. The LCG would be viewed as less threatening but still sufficiently formidable to respond in the gray zone. Part of its strength lies in its ability to control escalation. Another aspect of RAND’s third principle is the tolerance factor. The risk inherent in deploying a CSG is large, especially in A2/AD environments. Deploying an LCG requires far less risk tolerance than CSG. Politically, LCGs are thus inherently easy to use in circumstances where the issues at stake are unclear, another gray zone characteristic.

¹³¹ Morris et al., 130.

¹³² Morris et al., 132.

The RAND piece continues on to offer fourteen options specific to military responses for gray zone conflicts. The LCG can fulfill seven of the fourteen response options. The first response is, “Undertake direct military confrontation with hostile forces when they take direct aggressive, kinetic action.”¹³³ Two examples of such confrontation are the ongoing issues between Japan and China over the Senkaku Islands, and the ongoing issues between Ukraine and Russia.¹³⁴ If China were to become more aggressive and forcibly take the Senkaku Islands, an LCG would be an appropriate response to assist the Japanese in retaking the islands and defending their forces in area. An LCG lacks organic highspeed fighter aircraft, but this deficit can be overcome by integrating partner nation’s assets. In regards to the territorial disputes between Ukraine and Russia, the LCG can deploy to the Black Sea and operate off the coast of Crimea. They are able to provide strike packages, area defense, deploy the SP-MAGTF to assist Ukrainian forces in their operations, and collect ISR.

The next response is, “Deploy modest forces-military, law enforcement (coast guard), civilian-on a rotational or temporary basis to signal U.S. commitment.”¹³⁵ The LCG construct is modest in order to not be as valuable of a target as a CSG. That being said, it is still a capable group for enforcing international law, or simply acting as a presence to dissuade further aggression. LCSs are well suited to conducting law enforcement operations, especially when a Coast Guard Detachment is embarked. Another example provided by RAND are the issues between the Philippines and China involving oil-exploration or drilling.¹³⁶ An LCG can act as security for those Philippine operations to show support of nations acting in accordance with international law.

Another response is to, “Develop tailored military units for gray zone contingencies.”¹³⁷ The modularity of LCS and the special purpose aspect of a SP-MAGTF contribute to the LCGs capacity for mission tailoring. Depending on the response needed

¹³³ Morris et al., 158.

¹³⁴ Morris et al., 158.

¹³⁵ Morris et al., 159.

¹³⁶ Morris et al., 159.

¹³⁷ Morris et al., 160.

LCGs can rapidly adapt to new requirements for a robust response. They can act as platforms for special forces insertions, training assets, security assistance, and civil affairs operations. All of these possibilities would increase partnerships with foreign nations and show a forward presence for the U.S.

The next response is, “Conduct specific, discrete military or paramilitary transit or movement operations to signal intent.”¹³⁸ The LCG is more than capable of conducting freedom of navigation operations in accordance with international law. The size of the LCG is an adequate show of force while simultaneously not escalating or posing an overt threat. The LCG is also capable of operating in emissions control conditions in order to mask their presence in certain geographic areas, enabling them to conduct discrete transits.

An additional response is, “Announce new exercises, training missions, and port visits to target countries and others in the region.”¹³⁹ The size of LCG and its ships allow for more access to areas of the world where CSGs and ESGs are restricted, either due to depth of water restrictions, berthing requirements, or political constraints. Additionally, the range of platforms and personnel involved in an LCG allows for a wider variety of training exercises with select countries in regions involved in gray zone conflicts. Geoffrey Till brings up this very point in his book, *Seapower*. He states “Big powerful ships offer commanders a wide range of capabilities and give them operational flexibility in planning and conducting exercises. Small ships, on the other hand, may be better suited for operations with small and modest navies.”¹⁴⁰

The next response is, “Generate regional military responses to the growing threat.”¹⁴¹ By tailoring the mission packages and SP-MAGTF one can create regional responses to rapidly deploy to counter gray zone aggressions. Possible options for military responses are; engaging in multinational training, exercises, sanction enforcements, intelligence collections, etc. All which show a growing engagement by the United States

¹³⁸ Morris et al., 160.

¹³⁹ Morris et al., 161.

¹⁴⁰ Till, 246.

¹⁴¹ Morris et al., 164.

in countering nations who are committing these aggressions and boosts partnership with regional allies.

The final response is, “Conduct new regional humanitarian assistance, disaster relief, and military aid missions to signal presence and deepen regional collaborations.”¹⁴² The capabilities of the LCG in the mission area of HADR will be discussed later in this chapter, but the LCG is more than capable of providing assistance, relief, and aid to many of the littoral regions of the world. The large mission bays on the LCS and LPD allow for safe transportation of supplies to assist nations in need of supplies post natural disaster or conflict. The LCG offers a naval presence which the British Royal Navy defines as, “The exercise of naval diplomacy in a general way involving deployments, port visits, exercising and routine operating in areas of interest to declare interest, reassure friends and to deter.”¹⁴³ By this definition naval diplomacy is critical for sufficient responses to gray zone conflicts.

B. HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

As described in chapter three of this thesis, one of the Navy’s initial attempts at an LCG saw a fleet surgical team embarked on an LPD. This illustrates an LCG’s value in HADR operations. The ability to have well trained medical personnel embarked with proper facilities, allows for more treatment options when assisting in post disaster areas. The number of helicopters the LCG has also allows for a wide array of rapid transit options from ship facilities to shore facilities. The LCSs have extremely shallow drafts allowing them to operate closer to land than a DDG and even an LPD. This makes the LCS a perfect landing pad in which supplies can be staged and transported via helicopters to land. The SP-MAGTF can assist in host nation in security, rebuilding efforts, and delivery of supplies. The LCG offers sufficient responses to disasters while not endangering larger more indispensable ships, all while building relations with nations in the region of the disaster.

¹⁴² Morris et al., 165.

¹⁴³ Till, 227.

C. EXPEDITIONARY WARFARE

The LCG's rapid deployment capability allows for quick responses to crises throughout the world. The SP-MAGTF allows for not only a maritime response but a tailored amphibious one as well. With strike capability, the LCG can reach out to land targets up to nine hundred nautical miles away, as previously mentioned. The SP-MAGTF is capable of conducting a wide range of medium to small scale operations on land and sea. In his book, Till lists criteria that to classify an operation as expeditionary. Of the ten criteria he suggests, the LCG meets eight. The first facet of expeditionary warfare is that it is operational.¹⁴⁴ This simply means that the action is at an operational level, the example Till uses is a campaign, not war.¹⁴⁵ The LCG is not a group that can singly be used in a war. It is relatively small in scale and is to be used to accomplish particular objectives, usually associated with campaigns.¹⁴⁶

The next facet is that the operations are distant.¹⁴⁷ This suggests that the operations are away from the continental United States. The LCG is a maritime asset, capable of rapid transit and infiltration into the operating area. The next facet that is naturally linked to a distant operation is that the forces executing the expeditionary operations are self-contained.¹⁴⁸ Till states "The emphasis is on portable, mobile, self-contained but hopefully decisive force packages."¹⁴⁹ The LCG meets all of those requirements because it can be altered, specifically the mission packages and SP-MAGTF, to cater to the threat in a littoral environment. The LCG is designed to deploy all of the supplies and equipment it needed to accomplish its mission. Underway replenishments can provide logistics to the group to enable the LCG to remain on station for long periods of time. Any additional force added to the LCG would only be supplementary not a requirement.

¹⁴⁴ Till, 254.

¹⁴⁵ Till, 254

¹⁴⁶ Till, 254.

¹⁴⁷ Till, 254.

¹⁴⁸ Till, 254.

¹⁴⁹ Till, 254.

The next two facets can be grouped together because they are closely tied. Those facets are; the operation is limited in aim and of a short duration; both of which mean that the operation has a specific finite goal that can be achieved in a relatively short amount of time.¹⁵⁰ The LCG is designed with these two facets in mind that is, it is a lean fighting force that responds to singular objectives that require speed.

The next three facets can be applied to littoral combat of any sort due to the nature of the in-shore environment. Those facets are; against varied opponents, demanding and specialized, and fought in urbanized littorals.¹⁵¹ The threats in the littorals are extremely varied between FAC/FIACs, land-based missile sites, land-based aircraft, surface combatants, submarines, mines, and the list goes on. The LCG is designed to effectively counter all of those threats in varying degrees. Expeditionary operations are inherently demanding and specialized. Till states “The fact that military technologies and skills useful for first-class war are often useful for expeditionary operations too does not mean they always are.”¹⁵² This is in reference to an over dependence on traditional forces such as CSGs or ESGs. The new construct of the LCG is tailored for these types of operations by emphasizing more versatile platforms that can operate in different environments across multiple warfare areas. The SP-MAGTF is designed to be a customizable force that is catered to a specific threat enabling it to be a more effective fighting force. The final facet of being fought in urbanized littorals is the very premise of this combat group. The LCG is constructed to conduct warfare in the urban littorals and counter, to a certain degree, the threats posed in the littorals.

D. MARITIME SECURITY

Maritime security operations encompass various missions, many of which occur in the littorals. In *Seapower*, it offers a clear definition of what Till terms “marine values.”¹⁵³ Marine values offer the basis for determining if an operation bears on maritime security.

¹⁵⁰ Till, 254.

¹⁵¹ Till, 255.

¹⁵² Till, 255.

¹⁵³ Till, 283.

The values listed by Till are; the sea as a resource, the sea as a means of transportation, the sea as a physical environment, and the sea as an area of sovereignty.¹⁵⁴ Maintaining and protecting those values is the purpose of maritime security operations. Missions the LCG can accomplish that are maritime time security operations are; assisting in or enforcing foreign partners EEZ rights, threats to shipping, threats to the environment, and threats to partner nations' sovereignty.¹⁵⁵ An example of one nation infringing upon another nation's EEZ is seen in a case between Vietnam and China. In this particular instance, Chinese research vessels were operating in Vietnam's EEZ searching for natural resources to extract, which violates international law.¹⁵⁶ The LCG is an appropriate asset to properly counter Chinese expansion into partner nations EEZs because it is a capable surface combatant group which can either detain violators or force them to leave but would not escalate tensions to the level that a CSG would. The LCG is also capable of embarking a Coast Guard Law Enforcement Detachment to assist smaller nations in enforcing their local fisheries laws inside of their EEZs.

The LCG is able to protect against threats to shipping such as piracy, and to enforce sanctions against illegal shipping in support of terrorism, human trafficking, or drug trafficking. All of the ships involved in the LCG are required to have a qualified VBSS team onboard capable of doing un-opposed boardings. The SP-MAGTF embarked on the LPD could be tailored to conduct opposed VBSS operations greatly enhancing the LCGs mission tasking. With the SP-MAGTF capable of conducting opposed boardings, it greatly decreases the wait/loiter time spent focusing on that particular target of interest. In normal situations if a Coast Guard Law Enforcement Detachment was not embarked, the naval surface vessel would have to wait until SOF personnel could deploy to the area and conduct the boarding. SP-MAGTF decreases the wait time from days to hours. With this combination the LCG could operate either in a high piracy area or an area of merchant

¹⁵⁴ Till, 283.

¹⁵⁵ Till, 283–308.

¹⁵⁶ “China/Vietnam: China Requested to Withdraw All Ships from Vietnam’s EEZ,” *Asia NewsMonitor*, August 26, 2019. <http://search.proquest.com/docview/2279400557/>.

shipping traffic to enforce international laws/sanctions. They can effectively protect shipping from pirates or other non-state actors, or enforce shipping restrictions.

Threats to the maritime environment can come in many forms. As mentioned earlier, enforcing partner nations EEZ rights may not only pertain to resource exclusivity but also to the protection of natural habitats or endangered species. A perfect example is a barrier reef inside an EEZ. If a particular nation is preventing the extraction of natural resources because of the harm it would do to the environment, it may need help preventing nefarious actors from destroying the natural habitat to extract those resources. The LCG is capable of enforcing those restrictions and training partner nations to effectively enforce their own laws in their EEZs as well. This signals the U.S. is in the contested area and interested in maintaining international law and norms. Another facet of environmental protection is responding to man-made disasters such as oil spills. Each ship in the LCG is required to form and maintain an Environmental Protection Program which requires certain degree of hazardous material response kits. The LCG is a perfect response option for mitigating certain catastrophes as a first responder. They can assist in containing the problem until better suited entities arrive.

Threats to nations' sovereignty occur on a daily basis, most of which are in the maritime environment. Nations like China and Russia continuously try to exercise territorial rights over large areas of the sea often overlapping separate nations legitimate territories, all of which not in accordance with the United Nations Convention on the Law of the Sea (UNCLOS). The United States Navy frequently partakes in operations referred to as Freedom of Navigation Operations. In accordance with established international law the Navy will conduct transits in contested areas where nations, like China for instance, claim exclusively as their territory when in reality it is legally considered open ocean or another nations territory. The LCG is more than capable of conducting these transits while effectively dissuading conflict, in contrast an individual ship might invite harassment. In doing this, the LCG counters the illegal territorial claims and shows in region partners that the United States has vested interest in protecting their rights along with maintaining the international norms.

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VI. CONCLUSION

The Navy's lack of a well-conceived littoral force structure creates a significant strategic gap for the United States. Carrier Strike Groups are no longer the all-purpose option for a maritime response, either due to unacceptable risk to force itself, or to well-founded concerns about inadvertent escalation. The LCG force structure recommended in this thesis is a robust response option that is capable of operating in contentious littorals successfully, opening the operating environment to other U.S. forces.

The lessons from the Falklands War show that a littoral force structure needs to be technologically relevant in order to conduct operations in complex environments like those presented by the littorals, especially when air superiority cannot be achieved out of hand. The Navy recognizes their operational deficiencies in the littorals, and is attempting to build more platforms suited for littoral warfare. Unfortunately, the ship building process is an extremely long one. The key challenge facing the deployment of LCGs is simply the availability of appropriate assets. While there are some recommended force multipliers stated in earlier chapters, the LCG discussed in this thesis can feasibly deploy with readily available assets and still complete its operational objectives, without the need to retrofit equipment on existing platforms.

The common view of A2/AD strategies is they are strategically the province of weaker nations. While China, Russia, and Iran maybe strategically weaker, this gap is closing. In order to deter aggression and the emergence of regional rivals, the United States needs to take a more active role in operating in these contentious environments. The Navy can provide the LCG as a versatile tool by deploying it to a multitude of the world's littorals to conduct a wide array of operations ranging from training, exercises, HADR, to maritime security operations.

Further research needs to be conducted in four specific areas. The first area is how the Marine Corps can effectively integrate into the LCG. While this thesis recommends a SP-MAGTF, it does not give specifics to the size and equipment required. A tailored SP-MAGTF will only increase the efficacy of the LCG, but the Marine Corps needs to analyze

the force structure of the LCG and the mission sets it is capable of conducting, to accurately state what it can provide.

The second area of research is, how the Air Force and the Army can integrate into LCG operations. Integrating the Air Force and Army into littoral operations will make the LCG a more potent force and therefore a more creditable deterrent. There is now widespread recognition among military leaders that joint-ness is the key to winning future conflicts. Early and eager engagement from the Navy and Marine Corps towards the other branches of the military will only make the LCG stronger and a more versatile force.

The third area of research is the C2 structure. The one proposed in this thesis, while consistent with all apparent requirements, has not been tested at sea. At-sea operations are the proving ground for the combat group proposed in this thesis. Composing this group and placing them out to sea, testing the communications structure, will show areas of strength and weakness. The concept of sweat more in training, so as to bleed less in war, should be applied.

The fourth area of research is tactics. Again, the tactics proposed in this thesis were created in a sterile environment. At-sea operations are again the proving ground where further adaptation can arise. Testing the group at sea is the only way to truly recognize its strengths and weaknesses and mitigate for the latter. The Navy and Marine Corps needs to be proactive and conduct training exercises that accurately represent the forces required for combat in the littorals.

Whether or not the Navy implements the force structure recommended in this thesis, a change needs to happen. The littorals are a complex environment for which the standard Navy and Marine Corps practices are not prepared. Nineteen years of the war on terror have forced the Navy and Marine Corps to atrophy in the maritime area. It is time to return to the sea, including the littorals, in order to retain our dominance as the world's preeminent maritime force.

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