

CONTRIBUTIONS TO NAVAL HISTORY NO. 14

PRIMING THE WARFIGHTER

LEARNING FROM 250 YEARS
OF NAVY HISTORY



EDITED BY

TYLER A. PITROF AND GUY J. NASUTI

PRIMING THE WARFIGHTER

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FOREWORD BY
REAR ADMIRAL SAMUEL J. COX USN (RET.)



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FOREWORD



The mission of the Naval History and Heritage Command (NHHC) is to preserve and present an accurate history of the United States Navy. While our work has many different aspects, from underwater archaeology and museum curation to archival preservation, the bottom line is that the command is the sea service's long-term memory. As the Navy's warfighters rotate through postings every few years, institutional memories tend to be short. NHHC helps bridge the resulting knowledge gap by supplying past experiences that are relevant for today's sailors. In this way, historical analysis is a form of information warfare in that NHHC keeps sailors and decision-makers apprised of the context that frames current problems.

To celebrate 250 years of American sea power, NHHC has compiled this volume of historical studies to inform, inspire, and educate service members and the public. Although the topics range widely, on display throughout is the resilience, adaptability, and ingenuity of the Navy and the American sailor. Every contribution to this volume speaks to current challenges facing the service in some way.

The Navy has many excellent organizations dedicated to learning. What sets NHHC apart is not merely the extent of our archives, but the scope of our analyses. Whereas the various technical and warfare centers are often limited by a need for quick and near-term solutions, NHHC is part of a lengthier feedback loop. The command's work takes a broader and longer-term view of issues to reveal trends or parallels hidden in the noise of short-term events. As the saying goes, history generally does not repeat—but it does rhyme. Past events may have occurred in a vastly different tech-

nological environment. But an appreciation of how the Navy previously approached its problems, particularly the human factor, informs how the service can address modern or future issues. It is ultimately through these shared experiences that history helps forge the modern Navy to fight.

Rear Admiral Samuel J. Cox, USN (ret.)

Director, Naval History and Heritage Command

ABBREVIATION LIST



AAF	Army Air Force
ABDACOM	American-British-Dutch-Australian Command
ANMB	Army and Navy Munitions Board
AOR	Area of Operations
ARG	Amphibious Ready Group
AROU	Aviation Repair and Overhaul Unit
BuAer	Bureau of Aeronautics
BuDocks	Bureau of Yards and Docks
BuOrd	Bureau of Ordnance
CASU	Carrier Aircraft Service Unit
CCB	Combined Communications Board
CCS	Combined Chiefs of Staff
CIC	Combat Information Center
CNO	Chief of Naval Operations
CV	Aircraft Carrier
HASC	House Armed Services Committee
HoF	Health of Force

IAMMSP	Integrated Aeronautic Maintenance, Material, and Supply Program
IJA	Imperial Japanese Army
IJN	Imperial Japanese Navy
JANB	Joint Army and Navy Board
JCS	Joint Chiefs of Staff
LHA	Amphibious Assault Ship (general purpose)
LHD	Amphibious Assault Ship (multipurpose)
LPD	Amphibious Transport Dock
LSD	Dock Landing Ship
LST	Tank Landing Ship
MAU	Marine Amphibious Unit
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEU	Marine Expeditionary Unit
MSC	Military Sealift Command
NATO	North Atlantic Treaty Organization
NATTC	Naval Aviation Technical Training Command
NAVSEA	Naval Sea Systems Command
NCB	Naval Construction Battalion
NDAA	National Defense Authorization Act
NSC	National Security Council
NSWC	Naval Surface Warfare Center
NWC	Naval War College
OPNAV	Office of the Chief of Naval Operations

PJBD	Permanent Joint Board on Defense
SACLANT	Supreme Allied Commander Atlantic
SECNAV	Secretary of the Navy
TF	Task Force
TG	Task Group
WPB	War Production Board
WPD	War Plans Division
XO	Executive Officer

INTRODUCTION



In his second annual message to Congress on 2 December 1902, President Theodore Roosevelt stated, “A good Navy is not a provocation to war. It is the surest guaranty of peace.”¹ Roosevelt realized that a strong Navy provided security for the United States and could be used in a variety of ways, from supporting diplomatic efforts to warfighting. Five years later, in December 1907, Roosevelt sent the bulk of the US Atlantic Fleet, a powerful force that included 16 battleships, on a world tour to showcase the strength of the Navy and foster international goodwill. The Great White Fleet, named for the white-painted hulls of the ships involved, remains a gold mine of lessons in a nation’s ability to project forward-ranging power from logistics and engineering to personnel handling and cooperation with allies. The Great White Fleet also announced to the international community that America could project its power half a world away, foreshadowing the global reach of American seapower during World War II and the Cold War. History is filled with similar episodes where past knowledge can augment lived experience and training today. It is for the purpose of storing, arranging, uncovering, analyzing, and disseminating these details that the Navy has the historians, archivists, and librarians of the Naval History and Heritage Command (NHHC). In this volume, 18 articles, essays, and white papers by

1 Theodore Roosevelt, “December 2, 1902: Second Annual Message,” 2 December, 1902, Miller Center of Public Affairs, University of Virginia, transcript, <https://millercenter.org/the-presidency/presidential-speeches/december-2-1902-second-annual-message>.

those at the command leverage lessons of the past 250 years of Navy history in the pursuit of better appreciation of, and solutions for, current problems.

The following selections provide a sampling of NHHC historical products. Just as leaders today can draw many different lessons from the Great White Fleet, the topics of these articles provide a wide array of insights, although readers may trace themes (such as the unique challenges of operating forward at sea, including the need for flexible thinking to rapidly adapt to unexpected combat environments or the centrality of mental resilience) that exist throughout the history of the US Navy.² Running the gamut from damage control to strategy, planning, and leadership to lessons learned, there is something here for every area of interest. The point to remember while reading this book is that whether you are the commanding officer of a ship at sea, the command master chief of a shore billet, or a civilian worker in a shipyard, if you have questions about the history of an organization, ship, rating, policy, or battle, NHHC can provide the answers. And as this collection demonstrates, NHHC historians can provide that history in different formats that tailor the information, whether the product is a one-page information brief, a six-page white paper, a 55-page pamphlet, or even a full-length book. Accordingly, this anthology has been broken down into an easy-to-follow order of “short” articles numbering no more than six pages, followed by a “medium” section of white papers totaling between six and eleven pages, and concluding with a “long” essay of roughly 20 pages in length.

The short section of works exhibits the concentrated analysis that NHHC historians can offer on a wide breadth of subjects. Chronologically, the 11 items in this section are as follows:

- The volume opens with an overview of three significant innovations that transformed US naval shipyards in the nineteenth century. Although the 1800s are typically remembered for the transition of American warships from wood and sail to steel and steam, a similar industrialization occurred ashore that dramatically increased effi-

2 For some of these lessons, see Daniel P. M. Curzon and Tyler A. Pitrof, “A Pacific Effect”: *The United States Navy, Naval Engagement, and the World Cruise of the Great White Fleet* (Naval History and Heritage Command, 2024), <https://www.history.navy.mil/content/history/nhhc/research/publications/publications-by-subject/pacific-effect.html>.

ciency and capacity, creative thinking which modern yards would do well to emulate.

- The second piece is a look at the Bureau of Engineering's scramble to keep up with the pace of technological change during World War I. The bottom line of this experience was the need for the Navy to be administratively flexible so that it could rapidly adapt to unanticipated wartime operating conditions, a challenge that remains true to today's conflicts.
- The third short article is the story of, and context for, the Army and Navy Munitions Board in the interwar period, the primary organization charged with mobilization planning for future conflicts. The board ultimately failed in this task, and its experience provides several important lessons in industrial planning and legislative backing that are highly relevant today.
- The fourth contribution is a brief outline of torpedo production in both the United States and the United Kingdom. While ostensibly focused on the American Mark 13, Mark 14, and Mark 15 torpedoes, the issues the US Navy encountered concerning scaling up weapons production with limited budgets, personnel, and equipment in the years preceding and during World War II are problems that the Navy is currently confronting.
- The fifth article looks back at aircraft maintenance and training in the aviation community aboard the US Navy's World War II aircraft carriers. Administrative matters like these had a tremendous impact on the availability of aircraft and endurance of carrier task forces throughout the war and must be considered a critical part of modern mobilization planning.
- Sixth is "Even When All Seems Lost, Sailor Toughness and Resilience Make All the Difference," which outlines the efforts of sailors in firefighting and at-sea repairs to ships during combat actions at the Battle of the Coral Sea. This paper emphasizes the importance of dogged and well-organized damage control efforts in saving crew members aboard USS *Lexington* (CV-2) and getting USS *Yorktown*

(CV-5) back into the fight—a message that continues to ring true for any potential fleet combat today.

- The seventh entry is an examination of the tremendous gunfire damage taken by the heavy cruiser USS *San Francisco* (CA-38) and the damage control efforts that saved the ship during the Naval Battle of Guadalcanal in November 1942. Doubling down on the message of “Even When All Seems Lost,” *San Francisco* continued to fight and survived the battle despite the relentless pounding the ship received, underlining the importance of effective damage control training and preparedness.
- Eighth, in “Guadalcanal and High-Velocity Learning,” NHHC historians provide a detailed examination of the Navy’s first offensive against the Japanese in the Pacific War. Sea battles during this campaign occurred in rapid succession, leaving little time to analyze past performance, yet requiring both sides to do so nonetheless. The campaign therefore remains a prime example of the importance of cultivating the Navy’s ability to quickly adapt to unexpected technological and tactical problems.
- Ninth is an exploration of the Navy’s continuing cooperation with World War II coalition partners in the late 1940s after the formal lapse of the wartime alliance. The service’s actions helped facilitate a smooth transition to the security framework backed by the North Atlantic Treaty Organization and laid important groundwork for potential wartime operations in a manner that the Navy continues to carry out in the present day.
- The tenth entry in this volume is “Submarine and Destroyer Tenders,” which examines the importance of the titular ship type to extended operations. The tender force has steadily declined since World War II, but based on the criticality of these vessels to long-endurance operations, any potential conflict with China or Russia may create a powerful need to expand it.
- Finally, the short section concludes with the gripping true story of 30 Navy civilian employees of Naval Surface Warfare Center Crane Group, Indiana, who were visiting the Pentagon on 11 September 2001. Their frightening, yet successful, escape through pitch darkness and thick smoke not only memorializes the chaos of that day

but also emphasizes the importance of remaining calm and organized even in the face of dire crises.

The medium-sized chapters provide more expansive discussions of topics with contemporary significance. These six articles include:

- A broad examination of strategy and modernization occurring both in our nation's policies and the Navy in the late 1890s and early 1900s forms the twelfth entry in this volume. Largely focused on William McKinley's presidential administration, the period underlines the significance of investing in the Navy as a tool to manage overseas crises.
- Thirteenth, "Remember the Men of the *Maine*," touches on the incredible stress that warfighters face in combat (or in this case, in an engineering disaster) by outlining the stories of several survivors and family members of the victims of the 1898 explosion of *Maine* in Havana Harbor.
- Warfighters often endure serious psychological stress outside combat as well, and the fourteenth entry, "The Aleutian Stare: Environment, Morale, and the Mental Health of the Naval Fighting Force," provides a haunting look into this phenomenon through service in the Aleutian Islands during World War II. Bleak and harsh weather, stark isolation, and few available diversions seriously impacted service members. Their experiences hold numerous lessons for today's armed services.
- The fifteenth contribution is a discussion of the role of joint cooperation and the often extreme competition among the branches of the armed forces for defense budgets post-World War II in the "Revolt of the Admirals." The precise results of the "Revolt" remain uncertain due in large part to the outbreak of the Korean War a year later, which led to significant budgetary increases across the board, but nevertheless, the event underlines the danger of focusing too heavily on a single avenue of national defense.
- The sixteenth article is an analysis of the Seventh Fleet's operation (8–15 April 1951) in the Formosa Straits during the Korean War. Although a diversion of combat assets from an active theater, this employment of the Seventh Fleet met diplomatic, strategic, opera-

tional, and tactical needs by simple methods that continue to serve as a prime example of the deterrent value of the Navy today.

- The second section concludes with an in-depth operational report on amphibious shipping capabilities, with a particular focus on their size and employment around the time of Operation Desert Storm (1991). These forces have steadily declined since the end of the Cold War but loom large for any future conflict in the Pacific.

Finally, the anthology closes with a long essay on “US Navy War Planning in the Interwar Period.” Covering the time period between the Spanish-American War and the first year of America’s entrance into World War II, the intricacies involved in war planning and the carrying out of these large operational plans, especially in light of a coming war in the Pacific, are illuminated in detail. The work itself serves as a prime example of the in-depth analysis and unique type of product that Navy leaders, planners, and policymakers can call upon for reference and inspiration. The piece certainly resonates, especially with the rise of near-peer competitors to the United States and the possibility of having to combat an adversary in the Western Pacific far more threatening than that of the last world war’s Imperial Japanese Navy.

The reader may also notice that the pieces presented exhibit a variety of citation styles. The use of citations by a historian is core to professional practice, providing additional information to the reader while acknowledging the work of others. The absence of citations is not a matter of cutting corners but one of presentation, either for online platforms that did not allow citations or for white papers where the customer preferred a concise format without footnotes. Where possible, citations have been included; where not included, the reader can be assured that professional standards have been maintained.

Finally, most of the essays here were written in response to queries. Unlike many historians who choose their topics based solely on personal interest or preference, the historians of NHHC serve the Navy. These essays reflect not only deep subject matter expertise in both naval history and historical practice, but also how the team at NHHC can make information about the past available for the Navy and the public today. Whatever the reasons behind the interesting and well-researched works provided here,

the reader is reminded that history is more than just the oft-examined facts behind famous leaders, dates, places, weapons, or ships. Ultimately, our Navy's history connects us to the past and informs us not only about the human condition at a certain time but also the colossal challenges inherent in an organization as enormous as the US Navy, as well as the experiences shared by those who came before and the hard lessons they learned through trial and error. It is essential to today's Navy and Marine Corps to remember that the ultimate goal of the historian is to inform the present-day audience and continue providing future generations of sailors and marines insight into the challenges they face. In this way, history helps sailors and marines to project peace and strength throughout the world.

1

NINETEENTH-CENTURY NAVAL SHIPYARD INNOVATION

Gina L. Nichols



This article was originally posted on NHHHC's naval history blog, The Sextant.

As the Navy transitioned from wooden sailing vessels to a steam-powered fleet, three major innovations—steam power, marine railways, and the ship-house—changed the tone and development of shipyards during the nineteenth century. Each of these now seemingly simplistic innovations helped the Navy progress from a few small yards into a global system of naval stations, supply depots, and radio compass stations capable of supporting the burgeoning fleet.

STEAM POWER

While steam was not used to propel a working naval vessel until 1837, it was used in the operation of labor-saving machinery at the navy yards as early as 1805. By the 1820s, the growing use of steam power allowed the Navy to purchase machinery to aid laborers working with metals. The brass and bronze foundries, the molding lofts, and their accompanying machine shops were soon equipped with mechanical lathes, boring machines, hydraulic bellows, drills, circular saws, and forging hammers to increase efficiency and expedite projects.

At the Boston Navy Yard in the late 1850s, naval engineers designed and constructed a steam-engineered building in the shape of a parallelogram.

The facility housed a brass and iron foundry, a boiler shop, a blacksmith, and a machine shop in order to make the yard more self-sufficient. The boiler house and chimney were located at the center and contained eight boilers operating in pairs with five donkey pumps. The building also housed two 100-horsepower engines to power the complex. The Navy added storehouses, blacksmith shops with a turning machine, foundries, and plumbing shops at each of the main yards to increase advancements and make them competitive with private yards. All of these improvements showed a cohesive effort by the Navy Department and Congress to create self-sufficient, forward-looking installations that could eventually compete with the main naval powers of the day.

By 1890, the Bureau of Yards and Docks (BuDocks) installed the first electrical plant at the Washington Navy Yard to illuminate all streets and gun shops. By 1900, the yards at Mare Island, Boston, Brooklyn, Port Royal, Norfolk, and Pensacola all had electrical plants. The efforts to provide modern shops and mechanized equipment in the waterfront areas resulted in a large number of power plants at the yards, each run by the various bureaus. The Naval Act of 1904 provided for centralizing all power plants and distribution systems at each base under the cognizance of BuDocks. In accordance, BuDocks established a central power plant, serving all activities, at each naval yard or station.

MARINE RAILWAY

The marine railway became the first advanced technique developed to haul a ship out of water and allow the crew to work on its hull. Prior to this, ships needing hull repairs were hauled on shore at high tide and careened on their sides to expose half of the hull at a time. In 1822, Commodore John Rodgers built the first inclined marine railway in the United States at the Washington Navy Yard. The first ship was run up the railway through the power exerted on a 10-foot hawser, and the ship moved upward at the rate of three feet per minute. In order to take smaller naval vessels economically and conveniently out of the water for repairs or overhauling, a marine railway was essential to their care. Originally, men or horses were used to drag the cradle and vessel up the slipway, but with the advent of the steam engine, most marine railways were converted to steam-powered operation. Later, electric or electro-hydraulic winches became standard. At

a station where dry docks were not available, the marine railway became an indispensable requisite.

SHIPHOUSES

The third major innovation during the nineteenth century was the shiphouse, huge hangar-like covered structures, that provided shelter for ships during their overhauls or when laid up “in ordinary.” They were tall enough to drydock the entire ship, less the top section of the masts. Workers used overhead block and tackle equipment inside the shiphouse for lifting heavy items while they repaired and built ships.

On 21 August 1813, Commodore William Bainbridge proposed to construct shiphouses over the ship’s ways under construction at Charlestown (Boston), Massachusetts, and Portsmouth, New Hampshire (now Maine). It would not only protect the workers from the elements but also increase work speed and efficiency, and protect the vessels from material deteriora-



Torpedo boats *Dahlgren* (Torpedo Boat No. 9) and *Craven* (Torpedo Boat No. 10) laid up in a shiphouse at the Portsmouth Navy Yard, 12 December 1900. (Naval History and Heritage Command [NHHHC], NH 19-N-15-14-9)

tion. The shiphouse built over the ways at the Charlestown Navy Yard covered the ship-of-the-line *Independence* while under construction and was the first of its kind ever built. Soon, shiphouses were part of every navy yard. By 1850, Boston had four shiphouses, and the other yards had at least two each.

Throughout the nineteenth century, naval innovation transformed the fleet from a few wooden-hulled ships to the ironclads and early battleships. Steam power, marine railways, and shiphouses were crucial to transforming the navy yard from a few wharves and warehouses into major facilities capable of building and supporting the next generation of Navy ships well into the twentieth century and beyond.

2

HISTORY OF THE BUREAU OF ENGINEERING DURING WORLD WAR I

Jon S. Middaugh



The Historical Section of the Department of the Navy published seven monographs on the US Navy and World War I between 1920 and 1923. The monograph History of the Bureau of Engineering was the fifth in the series and was published in 1922. This 2017 essay from NHHC historian Jon S. Middaugh provides an introduction to the monograph as part of the centennial commemoration of the First World War. The text of the monograph itself, along with a downloadable PDF, is available in the Navy Department Library Online Reading Room.

The confluence of several new capabilities made possible by aircraft, submarines, and radio created a continuously evolving challenge for the Bureau of Steam Engineering in World War I. Complicating the bureau's burdens was the Navy's own rapid expansion as the United States fought in its first large-scale overseas war from April 1917 through November 1918. Nevertheless, the uniformed and civilian engineers and mechanics managed to develop and field new systems for ships and aircraft that quickly contributed to the fight.

The Bureau of Steam Engineering, established in 1862 and renamed the Bureau of Engineering in 1920, had a broad mission. Central to its responsibilities was "all that relates to designing, building, fitting out, and

repairing machinery used for the propulsion of naval ships.” Its portfolio also encompassed internal and external communications systems for ships and aircraft; equipment for processing salt and fresh water; shipboard maintenance tools, equipment, and supplies; the provision of sources for gas to fill dirigibles; and much more.¹

Rear Admiral Robert S. Griffin headed the bureau throughout the war and oversaw an increase in the size and complexity of his organization’s already diverse prewar responsibilities.² A fleet of about 350 ships swelled to nearly 2,000 by mid-1918, including over 100 German and Austro-Hungarian vessels that were interned by the United States—but not before they were sabotaged by their former crews. The US Navy’s establishment of air and radio stations throughout Europe also expanded the amount and types of equipment under the bureau’s purview. Griffin’s supporting cast of officers therefore grew from 35 before the war to 143, with his civilian ranks also expanding.³ The technical challenges confronting them required testing and incorporating new technologies in the unforgiving and pressing laboratory of war. But the fielding of new systems encountered delays due to shortages of materials, transportation snags, or technical dead ends.⁴ The requirement that US ships working closely with the British fleets be able to link to the latter’s systems also added difficulty. Meanwhile, the bureau navigated contentious litigation cases generated by inventors or companies

1 Navy Department, Office of Naval Records and Library Historical Section, “History of the Bureau of Engineering Navy Department During the World War,” 1922, v., <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/h/history-bureau-engineering-during-wwi.html>; “Bureau of Steam Engineering,” Naval History and Heritage Command, accessed 16 March 2017, <https://www.history.navy.mil/research/library/research-guides/lists-of-senior-officers-and-civilian-officials-of-the-us-navy/bureau-of-steam-engineering.html>.

2 “Robert Stanislaus Griffin,” Naval History and Heritage Command, accessed 22 March 2017, <https://www.history.navy.mil/research/histories/biographies-list/bios-g/griffin-robert-s/griffin-robert-s-text.html>. Griffin was an 1878 graduate of the Naval Academy.

3 “History of the Bureau of Engineering,” 4, 73–81.

4 Ronald Schaffer, *America in the Great War: The Rise of the War Welfare State* (Oxford University Press, 1991), 30–38. At one point during the construction of the Hog Island shipyard, an 11-mile backlog of railroad cars filled with construction materials for the yard had developed outside of the gate. For the country as a whole, the railways between Chicago and the East Coast had become so clogged by late 1917 that President Wilson ordered a federal takeover of large swaths of the system.

wanting to ensure they profited financially from their contributions to radio and other powerful new technologies.



Rear Admiral Robert S. Griffin, chief of the Bureau of Engineering from 1913 to 1921.
(NHC, NH 60871)

The bureau received assistance from many corners, however. Expertise came from recalled retirees and the newly established US Naval Reserve Force, which in the last months of the war became larger than the active force.⁵ Industrial giants such as General Electric, Westinghouse, and Ford partnered with the bureau to develop promising concepts and then leveraged their capacity for large-scale production. The bureau also attacked problems by working with universities such as MIT and Columbia, employing

5 David F. Winkler, *Ready Then. Ready Now. Ready Always: More than a Century of Service by Citizen-Sailors* (Navy Reserve Centennial Book Committee, 2014), 26–43.

successful designs from the British Admiralty, and welcoming assistance from Allied scientists such as Nobel laureate Sir Ernest Rutherford.⁶

While many hands helped lighten the load, organizational concepts were also important. Flexibility with public-private contracting needs sometimes meant that the government assisted businesses by paying directly for their plant expansions and equipment or offering “special rental” rates that ensured companies could make a profit while retooling for a period of an unknown duration. But the bureau often found that using its own engineers yielded more effective designs than what came from the diverse group of ambitious but inexperienced radio or aviation companies. The Navy also pushed hard to standardize equipment to make it easier for operators to use and maintain. This was especially desirable for a rapidly expanding force that generally had little or no familiarity with the era’s cutting-edge technology. Nevertheless, standardization had to be balanced against the need to improve the performance of radios, aircraft, and other parts of an interrelated but evolving system. The Army and Navy’s differing operational needs for ostensibly similar craft, for example, created headaches for the engineers working to improve the Liberty aircraft engine. This experience reinforced the Navy’s belief in needing to preserve its own aviation force after the war. It also highlighted the difficulty of producing a “one size fits all” product, a concept that still confronts engineers, as illustrated by the development of the F-35 Joint Strike Fighter.⁷

Today, Naval Sea Systems Command (NAVSEA) is the most direct descendant of the Bureau of Engineering, which in 1940 merged with the Bureau of Construction and Repair to form the Bureau of Ships. Subsequent reorganizations resulted in the Naval Ship System Command in 1966 and, finally, NAVSEA in 1974. This transition resulted from Defense Secretary Robert S. McNamara’s department-wide effort to introduce modern management practices to what he considered a stove-piped organization struggling to integrate the new wave of capabilities associated with computers,

6 “History of the Bureau of Engineering,” 5–8, 33–34.

7 Anthony C. Robinson, “Averting the Navy’s Tactical Aircraft Crisis,” *Proceedings* 139, no. 6 (2013): 54–58. The F-35 program aims to serve several US allies as well as the joint services.

nuclear power, and jet propulsion.⁸ Today, NAVSEA, the largest of the five systems commands, is responsible for shipbuilding, ship maintenance and repair, and the procurement of the equipment and systems necessary to keep Navy vessels operational. Its force of 74,000 civilian, uniformed, and contract support personnel dwarfs the staff of the bureau during the war. But unlike the bureau, NAVSEA does not direct the development of aircraft propulsion efforts. Today's emphasis on engineering multiple communications, maneuver, and fire control systems, however, reflects the legacy of the bureau's efforts to integrate a range of powerful new technologies during World War I.⁹

The history of World War I's Bureau of Steam Engineering sheds light on a remarkable period that ought to inspire and inform us. The United States' first large-scale overseas conflict posed great challenges for those attempting to rationalize the effort. Great bottlenecks in the manufacturing and supply efforts appeared early and often. Nevertheless, sound concepts, such as standardized designs and practical flexibility with private-public contracting efforts, helped the Navy to execute the nation's strategic military objectives. Still, we must also address whether today's highly sophisticated but relatively limited industrial base would have the raw capacity to expand itself for a large-scale conflict of extended duration. The Navy and military in general depend heavily upon a healthy public-private relationship, and the current corporate structure may face more pronounced constraints than it did a century ago.¹⁰

8 Thomas C. Hone, *Power and Change: The Administrative History of the Office of the Chief of Naval Operations, 1946–1986* (Naval Historical Center, 1989), 57–73.

9 Naval Sea Systems Command, "Warfare Centers: Who We Are," <https://www.navsea.navy.mil/Home/Warfare-Centers/Who-We-Are/>, accessed 19 April 2017.

10 John L. Birkler, et. al., "Strengthening the Shipbuilding Industry," *Proceedings* 139, no. 12 (2013): 40–46.

3

ARMY AND NAVY MUNITIONS BOARD

Tyler A. Pitrof



This article was written in response to a time-sensitive request for information (RFI).

The Army and Navy Munitions Board (ANMB) was created by the War Department in 1922 to facilitate procurement and economic mobilization planning. This was an Army initiative; however, without the Navy's cooperation, any planning would be incomplete and of limited value (stemming from the supply reforms of the National Defense Act of 1920). The board consisted of the assistant secretary of war, the assistant secretary of the navy, and their staffs. This organization never received strong support from the Navy, as it was not interested in this sort of coordination; during World War I, the Navy's existing supply organization had been adequate, and the Navy Department lacked the statutory authority for planning of this type. Further complicating matters, the Chief of Naval Operations (CNO), Office of the Secretary of the Navy, and Navy bureaus possessed competing lines of theoretical planning authority that prevented definitive action from being taken without outside intervention. As a result, the Navy's preparatory work in the interwar period was largely focused on immediate operations, ship-building, and ordnance (as opposed to *future* operations, industry, and the

economy at large). The ANMB was therefore limited to broad-brush work for the Navy throughout the 1920s and 1930s.¹

Multiple attempts by Congress to reform the Navy Department by creating clear lines of authority for material planning were thwarted (in 1931, 1933, and 1939) due primarily to the inability of the bureaus, secretary, and CNO to agree upon where that authority should ultimately lie (each had substantial political backers). With the declaration of a limited national emergency in the middle of 1939, Congress granted the ANMB statutory recognition, and President Franklin D. Roosevelt placed it under his direct supervision via executive order. Mobilization at this stage was already underway, so the board functioned primarily as a mobilization agency.²

CHANGES AND ASSESSMENT

Despite the Navy's shortcomings and lack of statutory authority to do so, the ANMB issued four industrial mobilization plans (in 1931, 1933, 1936, and 1939). These plans depicted a basic scheme in which the Army and Navy would calculate their individual material requirements to establish the basic framework within which detailed economic planning would take place. This would additionally require several civilian "super-agencies" to control allocation priorities and prices. When the United States entered World War II, the framework sketched out by the ANMB was largely adopted, with the War Production Board (WPB) assuming the important primary economic control function. But the ANMB was also intended to serve as a facilitator for the WPB by actually coordinating procurement between the services when war broke out, which it never succeeded in doing (in fact, it served essentially no important function at all after the creation of the WPB in January 1942). Competition between the services instead proved to be a major hurdle that was never entirely overcome during the war.³

On the other hand, the demand for planning in the Navy itself expanded rapidly as Lend-Lease activities began in 1940 and civilian super-agencies

1 "History of OP 24" in *U.S. Naval Administration in World War II, Office of the Chief of Naval Operations, Fleet Maintenance Division, Materials Division* (Department of the Navy), 16–18, accessed 2024; Paul A. C. Koistinen, *Planning War, Pursuing Peace: The Political Economy of American Warfare, 1920–1939* (University Press of Kansas, 1998), 11.

2 "History of OP 24," 18–28; Koistinen, *Planning War, Pursuing Peace*, 12.

3 "History of OP 24," 29–32.

were deployed, causing the small material planning section in the Office of the Chief of Naval Operations, OP-23M, to balloon to 13 subsections. Material planning was therefore finally centralized in OP-24 (Materials Division) in October 1941. But this was not due to the Navy's unification behind centralizing material control with the CNO; it was merely a response to the demand for up-to-date mobilization and material utilization data. As such, OP-24 did not solve the problem of divided material authority of the earlier interwar period. The organization lasted less than three months, being superseded by the Office of Procurement and Material (OP&M) under direct WPB supervision in January 1942 (this organization was created by Undersecretary of the Navy James Forrestal). Coordination problems with the Army and civilian economy were never fully resolved, but this structure held until the end of the war.⁴

4 "History of OP 24," 1–2; Paul A. C. Koistinen, *Arsenal of World War II: The Political Economy of American Warfare, 1940–1945* (University Press of Kansas, 2004), 45, 108, 112–14.

4

US (AND UK) TORPEDO PRODUCTION, 1930–45

Tyler A. Pitrof

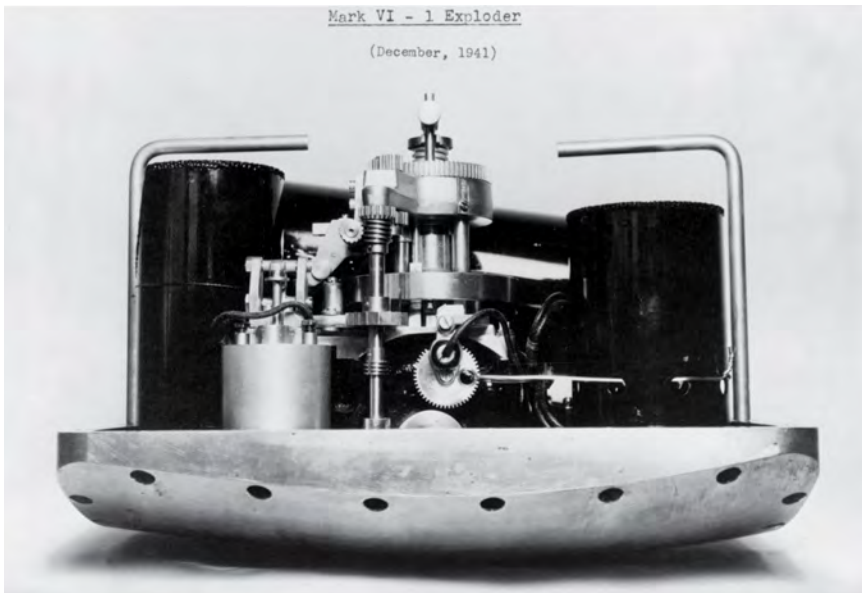


This article was written in response to a time-sensitive RFI.

OVERVIEW

During the interwar period, the United States developed and fielded the Mark 13 (aerial), Mark 14 (submarine), and Mark 15 (destroyer/cruiser) torpedoes. The latter two carried the top-secret Magnetic Exploder, Mark 6. Designed by the Newport Torpedo Station in conjunction with General Electric, the Mark 6 was intended to detonate under the keel of a target vessel upon entering the latter's magnetic field, bypassing its structural torpedo protection. The Mark 6 was developed under extremely tight security, and the weapons that carried it were complex and expensive (\$10,000 per shot in 1931). Testing was therefore limited after initial live-fire successes, and the majority of maintenance knowledge was restricted to a select group of individuals in the Bureau of Ordnance. This policy was relaxed only in the summer of 1941, providing little time for proper familiarization on the part of the sailors that would use the weapons. The lack of knowledge and testing, combined with the rapid expansion of production after 1938, led to many serious defects in all three torpedoes.¹

1 Burford Rowland and William B. Boyd, *U.S. Navy Bureau of Ordnance in World War II* (US Government Printing Office, 1946), 90–103.



The troublesome magnetic exploder, the secret weapon whose defects plagued US torpedoes throughout World War II, photographed at Newport Torpedo Station in December 1941. (NHHC, NH 88454)

PRODUCTION

Between 1923 and 1939, the Newport Torpedo Station in Rhode Island was the only source of American torpedoes. This was due to the budgetary and personnel restrictions of the treaty era, when naval arms limitation was seen as the path to maintaining peace. (The E. W. Bliss Company, which had played a major role in the development of torpedo technology in the United States, was forced out of the business in 1919 due to a lack of contracts). Production was managed by the Bureau of Ordnance (BuOrd) and based primarily on the number of ships in service and in the process of being built. Practice shots were highly limited, and the torpedoes used were recovered for reuse. Between 1933 and 1938, a series of investments in machinery and skilled personnel enabled BuOrd to increase production at Newport from a handful per month to 2.5 torpedoes per day. Despite this effort, by 1938 there was an order backlog in excess of \$29 million (~\$10,000 per weapon) and a projected deficit of 2,245 torpedoes by mid-1942. Further expansion of Newport at this stage was deemed too expensive and time-consuming, as was opening a new facility on the West Coast. Instead, a closed facility

in Alexandria, Virginia, was resurrected, raising significant political ire from those lobbying for the expansion of Newport. In the end, both the Newport and Alexandria stations were further expanded and shifts added, bringing production in 1940 to 23 torpedoes a day (against a requirement of 50). To reach this number, *many* components were subcontracted from private companies (whereas all parts had previously been built on-site). Manufacturing methods were also streamlined as much as possible. Finally, full private fabrication of torpedoes was contracted out with a handful of unrelated companies. Production was never considered adequate for all three torpedo types.²

The British produced about two torpedoes per week at the Royal Naval Torpedo Factory in Greenock, Scotland, prior to beginning rearmament in the mid-1930s, which was easily enough to meet demand. They followed a similar pattern of first expanding in-house production before farming out components (then whole torpedoes) to contractors. They did not procure foreign torpedoes (due to mounting and use requirements) but did contract several American companies to produce British-designed aerial torpedoes in February 1942.³ That being said, some American Mark 13s may have been used on American aircraft sold or Lend-Leased to the British and Dutch.

2 Rowland and Boyd, *U.S. Navy Bureau of Ordnance*, 124–29.

3 Rowland and Boyd, *U.S. Navy Bureau of Ordnance*, 127–28; G. A. H. Gordon, *British Seapower and Procurement Between the Wars: A Reappraisal of Rearmament* (Naval Institute Press, 1988), 89–90, 138, 225–26.

5

WORLD WAR II CARRIER AIRCRAFT MAINTENANCE AND AVIATION TECHNICAL TRAINING

Stan E. Fisher



This article was written in response to a time-sensitive RFI.

The ability of the US Navy to fight a protracted war throughout the Pacific Ocean was not solely the result of technology, tactics, or admiralty. Naval aviation maintenance also played a major role in the Allied naval victory over Japan and should be considered in all historical analyses when planning for future conflicts. Sustaining the Navy's carrier forces in terms of readiness during World War II was as much of a labor problem as it was a material one. The true effectiveness of the aircraft carrier (CV) task force was achieved only in 1944, when both the material and the manpower were sufficiently supplied to the fleet, streamlining what aircraft maintenance at sea entailed. This was a multipronged process that was late on arrival and very well may have contributed to the longevity of the war.

BACKGROUND

Throughout the interwar period, US naval aviation leadership focused more on the improvement of technology and tactics than training a sufficient cohort of enlisted aircraft technicians. Aircraft maintenance was an afterthought for much of the era because of the small number of carriers and aircraft.

Based on the findings of the 1939 Horne Board, the Bureau of Aeronautics (BuAer) realized that it had to revise its personnel and technical training policies to manage the colossal buildup of people, aircraft, and carriers that would soon be authorized by the forthcoming Two-Ocean Navy Act (1940). Recruiting individuals with technical acumen and the activation of naval reservists with maintenance experience became a priority. BuAer modified its internal administrative structure in order to manage the rapid influx of recruits and transform them into competent aviation mechanics. Technical trade schools were built and civilian “tech reps” were brought in to produce new curricula for modern aircraft systems. Full-rate production of trained technicians took nearly three years to accomplish, culminating with the establishment of Naval Aviation Technical Training Command (NATTC) in 1942.



Trainees perform 30-hour check on “live” aircraft at Naval Air Technical Training Center, Naval Air Station Memphis. Practical learning enabled trainees to quickly obtain the skills necessary for deployment. (NHHC, L 39-18.01.01)

The structure of naval operational maintenance programs also required modification. At sea, aircraft maintenance on the carrier transitioned to a full-time, integrated workforce. Enlisted aviation technicians became permanent members of the ship's crew. For the first time, maintainers remained on the carrier even as squadrons rotated in and out.

After 1943, most engine and aircraft overhauls and repairs were completed at forward-based shore establishments where the required technicians were readily available. As maintenance personnel became more specialized, aircraft system troubleshooting and repair time was reduced, and a given carrier's aircraft "down" time decreased because minor problems could be corrected on the spot and aircraft could be placed back into the flight schedule. If the repair was more labor-intensive, it was completed at a shore-based facility somewhere in the Pacific island chains—at either a carrier aircraft service unit (CASU) or an aviation repair and overhaul unit (AROU).

In developing the forward-deployed servicing and overhaul units, carrier maintenance crews were no longer required to complete the intensive labor associated with overhaul and major repair. Task forces were deployed to fight, not fix. Therefore, they could delegate the labor-intensive overhaul work to the CASUs and AROUs and focus on having available aircraft for each day's flight schedule.

After 1944, Rear Admiral Arthur Radford's Integrated Aeronautic Maintenance, Materiel, and Supply Program (IAMMSP) further changed how the Navy conducted its aircraft maintenance. Simultaneously, the war industry reached its highest levels of production of naval aircraft and aircraft carriers. The IAMMSP directed that major overhaul and repair would only be conducted in continental US facilities. CASUs and AROUs would be dedicated to supporting the forward-deployed carrier air groups. Broken or malfunctioning aircraft were no longer the problem of the carrier air departments, CASUs, or AROUs. Most importantly, the IAMMSP dictated that combat aircraft would be retired after serving two deployments in support of combat operations and replaced with new aircraft from the factories. Prior to 1944, the expectation was that carrier aircraft would serve as many as five years in operation before replacement. The culture within naval aviation maintenance shifted from one of repair to one of replace-

ment. Ultimately, this resulted in CV aircraft availability and readiness averaging between 80 and 90 percent throughout the latter half of the war.

RECOMMENDATIONS:

- **Determine the requirements for skilled technical personnel in the event of a protracted conventional war.** Verify that the current inventory of skilled labor will satisfy the manning requirements of multiple deployed CV Strike Groups. If not, coordinate with NATTC in developing plans for increased training school production as necessary.
- **Review current maintenance doctrine and determine whether, in the event of a major “shooting” war, current phase maintenance and overhaul policies will sustain required readiness levels.** Consider revising to include less “repair” and more “replace” if the level of acquisition will allow for it.
- **Explore the concept of aircraft carrier maintenance departments as they are currently in place.** In the event of war, would it be more efficient to detail maintenance personnel directly to the CV, rather than to a squadron? If the next “great power” war is anything like World War II, the CVs will quite possibly maintain their forward-deployed status much longer than the squadron aircrew can manage. Making the maintenance departments a fixed entity within the CV could mostly eliminate the maintenance aspect of workup periods, and combat readiness would be established sooner.
- **Establish forward shore-based O-level overhaul and repair facilities in the expected area of operations (AOR) to relieve pressure on CVs and squadrons from having to perform anything more than routine maintenance (i.e., daily, turnaround, and 30-hour checks).** If aircraft inventory is sufficient, rotate inventory to and from CV on a regular basis and conduct “Phase” maintenance at the shore-based forward units.
- **Consider establishing major overhaul and depot-level facilities in the vicinity of the forward O-level activities to alleviate the need to rotate aircraft back to the continental United States.** This will minimize the time aircraft are out of service for maintenance by

simply reducing the physical distance between the fleet and overhaul units.

- **Consider significantly increasing the levels of repairable items and spare parts in and around the AOR, specifically in the vicinity of the O-level facilities.** Combat operations are exponentially more demanding on aircraft systems. This should be considered when determining the sufficient number of spare parts contracted for and prepositioned in the AOR.

For more information see:

Fisher, Stan. *Sustaining the Carrier War: The Deployment of U.S. Naval Air Power to the Pacific*. Naval Institute Press, 2023.

6

EVEN WHEN ALL SEEMS LOST, SAILOR TOUGHNESS AND RESILIENCE MAKES ALL THE DIFFERENCE

Ryan A. Peek



This article was originally posted on NHHC's naval history blog, The Sextant.

The Battle of the Coral Sea (4–8 May 1942) was the first carrier versus carrier battle in history—the opposing Australian-American and Japanese fleets never sighted each other. Though tactically inconclusive, the battle blunted a Japanese offensive aimed at capturing Port Moresby on the island of New Guinea, a position that would have threatened northern Australia.

Instead of focusing on the fighting, this article looks at the important role played by damage control and repair efforts aboard the carriers USS *Lexington* (CV-2) and USS *Yorktown* (CV-5).¹ The fate of both ships highlights the importance of toughness, as laid out by former Chief of Naval Operations John M. Richardson in *A Design for Maintaining Maritime Superiority*: “We can take a hit and keep going . . . We don’t give up the ship,

1 “*Lexington IV* (CV-2),” Dictionary of American Naval Fighting Ships, Naval History and Heritage Command, last modified 19 January 2016, <https://www.history.navy.mil/research/histories/ship-histories/danfs/l/lexington-cv-2-iv.html>; Robert J. Cressman, “*Yorktown III* (CV-5),” Dictionary of American Naval Fighting Ships, Naval History and Heritage Command, 31 December 2015, <https://www.history.navy.mil/research/histories/ship-histories/danfs/y/yorktown-iii.html>.

we never give up on our shipmates, and we never give up on ourselves. We are never out of the fight.”²

On the morning of 8 May, *Lexington*, under attack by Japanese aircraft, was hit in quick succession by two torpedoes and two bombs. Collectively, these hits ruptured aviation fuel tanks, flooded three boiler rooms, damaged the aircraft elevators, and started fires. Initially, damage control efforts appeared successful, and *Lexington* continued flight operations. However, at 1247, about an hour after the initial attack, the ship suffered a secondary explosion, probably caused by electrical sparks igniting vapor from the ruptured fuel tanks. As fires spread and set off more secondary explosions of fuel vapor, the ship eventually lost most of its power and water pressure for fire hoses, crippling the crew’s efforts to save their ship.

After more than five hours, *Lexington*’s captain ordered the crew to abandon ship at 1707 and, after the crew evacuated, the ship was sunk by its escorts. While *Lexington* was lost, the crew’s damage control and firefighting efforts allowed for an orderly evacuation, meaning 2,770 sailors—more than 92 percent of the crew—were rescued and lived to fight another day.

Yorktown, steaming near *Lexington* on 8 May, also came under air attack and was struck by a single bomb, which caused structural damage and temporarily knocked out the ship’s radar.³ Although the bomb exploded among a repair party belowdecks, the crew swiftly extinguished the fire (the leader of the repair party, Lieutenant Milton Ricketts, was awarded a posthumous Medal of Honor for his initial efforts at firefighting).⁴ *Yorktown* was soon ordered to steam for Pearl Harbor, where Admiral Nimitz hoped the ship could be repaired in time to contest

2 John M. Richardson, “A Design For Maintaining Maritime Superiority,” *Naval War College Review* 69, no. 2 (2016): 15, <https://digital-commons.usnwc.edu/nwc-review/vol69/iss2/>.

3 “Coral Sea, Damage to USS *Yorktown*,” Dictionary of American Naval Fighting Ships, Naval History and Heritage Command, accessed 25 June 2025, <https://www.history.navy.mil/content/history/nhhc/our-collections/photography/wars-and-events/world-war-ii/battle-of-the-coral-sea/battle-of-the-coral-sea--events-of-8-may-1942/damage-to-uss-yorktown--8-may-1942.html>.

4 “Ricketts, Milton Ernest,” Naval History and Heritage Command, accessed 25 June 2025, <https://www.history.navy.mil/content/history/nhhc/our-collections/photography/us-people/r/ricketts-milton-ernest.html>; “The Medal of Honor,” Naval History and Heritage Command, last modified 10 June 2024, <https://www.history.navy.mil/content/history/nhhc/browse-by-topic/heritage/awards/decorations/medal-of-honor.html>.

a Japanese offensive aimed at Midway Atoll.⁵ In contrast, the two Japanese carriers damaged at Coral Sea did not return to action until August, and an additional light carrier sank during the battle.

After Coral Sea, it was estimated that *Yorktown* would take 90 days to fully repair. The ship arrived at Pearl Harbor on the afternoon of 27 May and entered dry dock on the morning of the 28th. That morning, Nimitz visited *Yorktown*, telling the inspection party “We must have this ship back in three days.” More than a thousand shipyard workers and the ship’s company toiled to repair *Yorktown*, replacing and refitting bulkheads and watertight doors to make the ship more seaworthy in lieu of a full repair. Nimitz’s



Corpsmen treating casualties on board USS *Yorktown* (CV-5), shortly after the carrier was hit by Japanese bombs on 4 June 1942. The dead and wounded were members of the crew of 1.1-inch gun mount No. 4. They were struck by fragments from a bomb that exploded on the flight deck just aft of the midships elevator. (National Archives and Records Administration [NARA], 80-G-312021)

5 “Fleet Admiral Chester W. Nimitz,” Naval History and Heritage Command, last modified 15 July 2016, <https://www.history.navy.mil/browse-by-topic/people/chiefs-of-naval-operations/fleet-admiral-chester-w--nimitz.html>.

deadline was met, and on the morning of 30 May, *Yorktown* and its escorts sortied for Midway.

Yorktown was joined that afternoon by a nearly new air group, reconstituted after serious losses suffered at Coral Sea. Three of *Yorktown*'s four squadrons had lost too many aircraft to function and were quickly replaced by three Hawaii-based squadrons formerly attached to the carrier USS *Saratoga* (CV-3).⁶ The hastily repaired *Yorktown* was mortally wounded at Midway, but not before aircraft from its air group sank *Soryu* and contributed to sinking another, *Hiryu*, two of the four Japanese carriers sunk at Midway, a contribution that far outweighed *Yorktown*'s loss.⁷

When thinking of war at sea, we tend to think in terms of putting ordnance on target, but the stories of *Lexington* and *Yorktown* highlight the importance of sailor resilience after their ships were struck by bombs and torpedoes. *Lexington*'s crew could not save their ship but saved most of their shipmates for future fights after hours spent battling conflagrations. On the other hand, the efforts of sailors and civilian shipyard workers on the damaged *Yorktown* allowed the carrier and its new air group to return to combat in time to contribute to the decisive victory at Midway.

6 "Saratoga V (CV-3)," Dictionary of American Naval Fighting Ships, Naval History and Heritage Command, last modified 24 April, 2023, <https://www.history.navy.mil/research/histories/ship-histories/danfs/s/saratoga-v.html>.

7 "Battle of Midway," Naval History and Heritage Command, last modified 30 May 2025, <https://www.history.navy.mil/browse-by-topic/wars-conflicts-and-operations/world-war-ii/1942/midway.html>.

USS *SAN FRANCISCO* (CA-38)
GUNFIRE DAMAGE,
13 NOVEMBER 1942

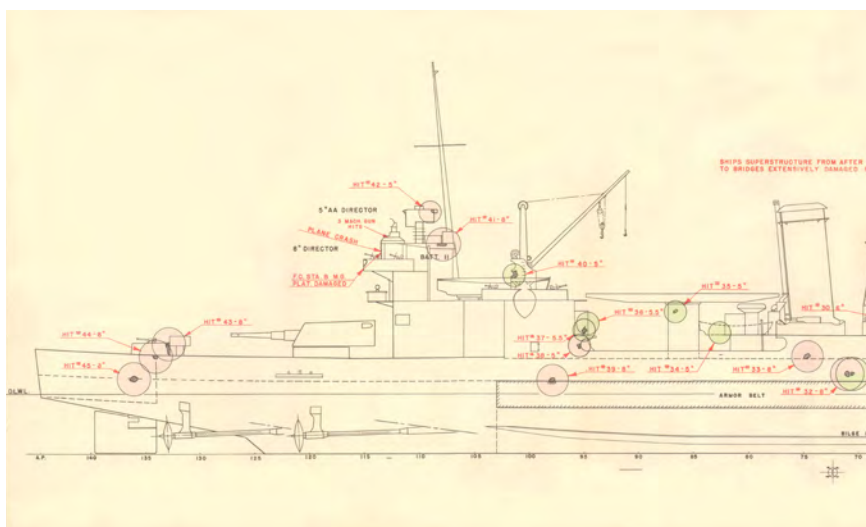
Timothy L. Francis and Curtis A. Utz



This article was originally posted on NHHC's naval history blog, The Sextant.

The heavy cruiser *San Francisco* (CA-38), flagship of Rear Admiral (RADM) Daniel J. Callaghan's surface Task Group (TG) of cruisers and destroyers, covered the approaches to Guadalcanal during the 13 November portion of the Naval Battle of Guadalcanal. Earlier in the day, a damaged Japanese twin-engine bomber struck the cruiser at the after mast, damaging the secondary conning station (Battle II), disabling the aft 8-inch and 5-inch fire control directors, and causing significant casualties (15 killed, 29 wounded), including wounding the executive officer (XO). Repair parties had the skill, equipment, and parts to get Battle II repaired before the night action, but manning was limited. The ship also stopped at Tulagi and offloaded search aircraft and other flammables from the hangar area—a clear lesson learned from previous night battles.

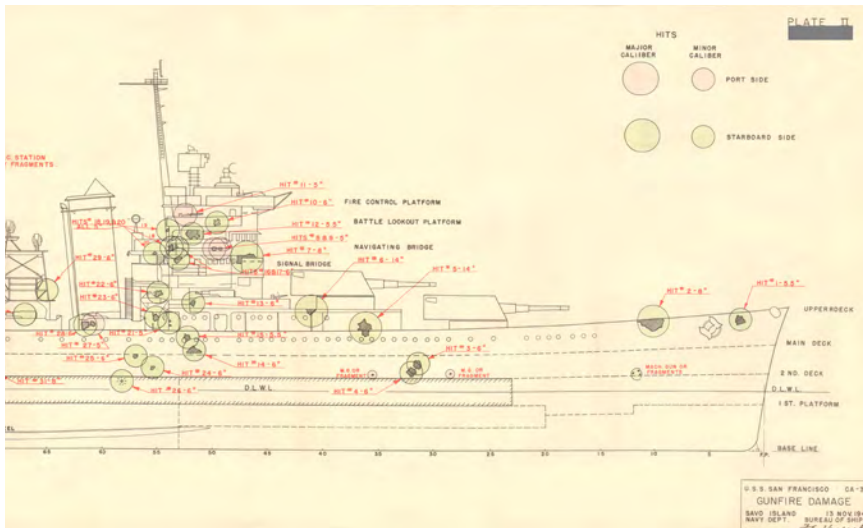
During their patrol after midnight, Callaghan's forces encountered a Japanese surface force that had planned to bombard Henderson Field on Guadalcanal, intending to temporarily knock out the airfield to allow the landing of troops from a follow-on troop convoy. Ineffective use of radar and poor communication discipline resulted in late notice of the Japanese force and led to an extremely close action, sometimes from as little as 100



Starboard side chart of USS *San Francisco* (CA-38) depicting the damage received during the Naval Battle of Guadalcanal on 13 November 1942. (U.S.S. *San Francisco* [CA 38], War Damage Report No. 26, [U.S. Hydrographic Office, 1942])

yards. In a fierce engagement that started at 0148, *San Francisco* took at least 45 hits (though many overlapped) from 14-inch, 8-inch, 6-inch, and 5-inch shells from port, forward, and starboard. The navigating and signal bridges were wrecked, RADM Callaghan and most of his staff killed or severely wounded, as were Captain Cassin Young and most of his bridge team. The communications officer, Lieutenant Commander (LCDR) Bruce McCandless, had the conn when the shells hit. Wounded and briefly unconscious, he was the only officer still able to function on either bridge. The acting XO shifted command to secondary conn/Battle II shortly thereafter, but a direct hit several minutes later destroyed it and killed most of the personnel there as well. There was no effective control of the ship at that point.

McCandless soon discovered he had only one functioning communication circuit—the sound-powered phone to the central (damage control) station deep in the hull. Central station had a conning station—wheel, compass, engine room telegraph, and revolutions indicator. In conjunction with the acting first lieutenant (or damage control assistant in modern terms), LCDR Herbert Schonland in the central station, he learned that steering control in the armored conning tower still worked. McCandless and two quartermaster mates then manned the tower and got the badly damaged



ship safely out of action. Even while withdrawing, *San Francisco* continued to fire with local control, and the single remaining manned and operable portside 5-inch gun under Chief Boatswain's Mate (now Boatswain's Mate Chief) John McCullough fired at an enemy destroyer just a few hundred yards away. McCandless saw one of their shots hit near the destroyer's stern, and thought that the large explosion was the depth charges detonating.

Meanwhile, Schonland, who was located in the central station, directed efforts to save the ship. Despite the almost four dozen hits, damage was mostly fragmentation (the initial 14-inch Japanese shell hits were from high-explosive shells rather than armor piercing) and *San Francisco* had no damage below the waterline. The superstructure damage was considerable, though, with over 20 fires burning in various locations (including the paint locker, hangar, and armory) and major secondary damage to electrical, communications, and combat systems. Prompt action by firefighting parties got the fires under control, but one shell fragment had damaged the magazine-flooding switchboard for No. 2 turret. The resulting electrical short flooded the powder magazine and handling rooms, making the turret useless. To make matters worse, the automatic water shut-off failed, and the spaces flooded up to the overhead, getting into the ventilation system

and putting water into adjacent compartments. On the second deck, the water was three feet deep from bulkhead 28 to 48. Water also entered the ship from hits near the waterline as the ship maneuvered violently at battle speed, threatening overall stability.

To save the ship, a damage control team using battle lanterns made its way through the dark, largely flooded passageways and manually shut off the valves for the magazine-flooding system. Other teams directed by Schonland got water out of the higher decks by building cofferdams and directing water down into the engineering spaces, where the water drained into the bilges and was pumped out normally.

Losses in *San Francisco* were staggering, with 77 dead, 105 wounded, and four missing, including most of the senior officers. As McCandless later said, the ship fought independently by departments: the engineers kept the plant running, damage control kept the vessel afloat and “right side up,” gunners engaged enemy ships, and medical tended the wounded, all while McCandless conned the ship to safety.

The rest of the TG suffered severely as well. In the end, the Navy lost two light cruisers and four destroyers, both heavy cruisers were severely damaged, and most of the other ships had varying levels of gunfire damage, including some of which was friendly fire. The mauled task group, however, kept the Japanese ships from their mission to bombard and neutralize Henderson Field and thus forced the Japanese transports to withdraw as well. The Japanese did not get off easily; two destroyers were lost, three more were badly damaged, and the battleship *Hiei*, battered by point-blank gunfire by both US heavy cruisers and three destroyers, withdrew only slowly. Marine aircraft from the untouched Henderson Field and aircraft from *Enterprise* (CV-6) sank the Imperial Japanese Navy (IJN) battleship later that day.

San Francisco, with all of its compasses out, steered east at around 0400 that morning in company with light cruisers USS *Helena* (CL-50) and USS *Juneau* (CL-52). At about 1000, *Juneau*’s medical personnel transferred to *San Francisco* to assist with the many wounded. About an hour later, Japanese submarine *I-26* torpedoed *Juneau*’s port side, detonating a magazine and sinking the ship in minutes, killing another 590-plus sailors. With no destroyers to provide antisubmarine protection, the two surviving cruisers did not stop to look for survivors. Unbeknown to them, about

100-plus *Juneau* crewmembers jumped into the water; however, most died of exposure or shark attack before the last 10 were rescued eight days later.

San Francisco reached Espiritu Santo that afternoon, received four days of temporary repairs, and then sailed for the United States, arriving in San Francisco, California, on 11 December. The warship entered Mare Island Naval Shipyard on 14 December and remained there for only two and a half months, while workers repaired the superstructure and rebuilt the bridge, installed new air and surface search radars, and added additional 20-mm and 40-mm guns to its antiaircraft battery. The cruiser returned to active duty on 26 February 1943, just three and a half months after its last engagement.

8

GUADALCANAL AND HIGH-VELOCITY LEARNING

Curtis A. Utz, Nicholas K. Roland, and Guy J. Nasuti



This article was written in response to an official RFI.

The naval battles off Guadalcanal in 1942 were part of the first major US amphibious offensive in the Pacific. Although the US Navy's performance in the campaign was mixed, the fighting at Guadalcanal resulted in the seizure of the strategic initiative from Japan. The Navy's ability to rapidly adapt to unanticipated tactical and technological problems was crucial to the ultimate success of the campaign and set the stage for the defeat of the Imperial Japanese Navy.

Following the victory at Midway in early June 1942, Admiral Ernest J. King, Chief of Naval Operations and Commander in Chief of the US Fleet, ordered the seizure of the Solomon Islands. The operation was intended to protect the United States' lines of communication with Australia and New Zealand and to set the conditions for the seizure or destruction of the major Japanese base at Rabaul, New Britain. On 7 August, the US 1st Marine Division landed and quickly captured the airfield at Guadalcanal and several nearby islands. The Japanese rapidly counterattacked, and fighting for control of the island and its vital airfield raged for several months.

Before Pearl Harbor, Navy planning had assumed a decisive battle with the IJN in the open waters of the Western Pacific. Navy doctrine called for superior naval gunfire executed during daylight hours to win this battle.

Most of these assumptions were confounded at Guadalcanal. The five naval surface actions of the campaign all took place at night in constricted waters. The Navy was also still integrating evolving radar technology—the ships in the Solomons carried two different types of surface search radars that varied significantly in capability—while also developing standard procedures and command, control, and communication (C3) methods to effectively use the information. Inexperienced in night fighting and lacking a doctrinal emphasis on mixed destroyer and cruiser tactics, the Navy would have to rapidly adapt or risk defeat at the hands of a seasoned and skilled opponent.

The night after the marine landings, on 8 August, an IJN force of cruisers and destroyers carried out a devastating attack on Allied naval forces at the Battle of Savo Island, sinking three US cruisers and one Royal Australian Navy cruiser and damaging another US cruiser. The Japanese escaped largely unscathed. At Savo Island, the use of radar pickets did not prevent IJN ships from slipping into the Allied formation and attacking at close range. This surprise attack was aided by the mistaken belief that the



USS *Quincy* (CA-39) burning and illuminated by Imperial Japanese Navy (IJN) searchlights during the Battle of Savo Island, off Guadalcanal on 9 August 1942. The IJN sank *Quincy* during this action. (NHHHC, NH 50346)

main danger was from IJN aircraft rather than from surface ships. Not anticipating a surface attack, the Allied commander on the scene, Rear Admiral Victor Crutchley of the Royal Navy, departed for a conference with his flagship shortly before the fighting began, failed to issue a battle plan, and divided his forces into two groups, which were unable to support one another.

At the Battle of Cape Esperance, on the night of 11–12 October, Rear Admiral Norman Scott attempted to achieve better command and control by arranging his Task Force 64 (TF-64) in a close order, linear formation, and turning off the radar on his flagship, *San Francisco* (CA-38). Scott did not trust the relatively new technology after its apparent failure at Savo Island, nor did he fully understand the qualitative differences between the US radar systems. Scott was able to intercept an approaching IJN force from an advantageous position, sinking the cruiser *Furutaka* and setting the flagship cruiser *Aoba* ablaze. The apparent lesson learned from his success was that linear, compressed formations aided command and control at night and that radar was not reliable. This conclusion unfortunately ignored the fact that TF-64 had suffered a friendly fire incident and that *Helena* (CL-50) had used the better US radar system to detect the IJN formation and deliver devastating gunfire salvos to initiate the fighting. In fact, because Scott lacked situational awareness due to poor C3, he ordered a ceasefire and failed to exploit his advantage.

The decisive naval actions at Guadalcanal took place from 12 to 15 November 1942. In the first action, on the night of 12–13 November, Rear Admiral Daniel Callaghan, who had superseded Scott as he was senior, emulated Scott's tactics at Cape Esperance. Although he succeeded in turning back the IJN force sent to bombard Guadalcanal's Henderson Field, the TF suffered poor C3 and again failed to properly utilize its superior radar systems. The resulting action devolved into a close-range melee that sank several US ships and cost both Callaghan and Scott their lives. This battle demonstrated that compressed formations did not facilitate command and control at night and limited the ability to use destroyers effectively. Two nights later, Rear Admiral Willis Lee confronted another IJN force. Lee was a gunnery expert and was familiar with the capabilities and limitations of the Navy's new radar systems. He adopted a dispersed formation to allow his destroyers to flush out the IJN ships, which would then be attacked with

radar-directed gunfire from the battleships USS *Washington* (BB-56) and USS *South Dakota* (BB-57). Although US destroyer losses were again heavy, and *South Dakota* was badly damaged, Lee achieved a tactical victory and mortally wounded the fast battleship *Kirishima*. A final surface action on the night of 30 November–1 December, called the Battle of Tassafaronga, saw the adoption of an effective plan that drew on recent combat around Guadalcanal. Rear Admiral Thomas Kinkaid decided to allow his destroyers to operate in a decentralized manner, launching close-range torpedo attacks while his cruisers stood off and engaged with radar-directed gunfire. Unfortunately, Kinkaid was relieved by Rear Admiral Carleton Wright two days before the battle, and the plan was executed ineffectively, with the Navy sinking the destroyer *Takanami* in exchange for the loss of the cruiser USS *Northampton* (CA-26) and torpedo strikes on three other US ships.

At the tactical level, pre-war Navy surface combat doctrine emphasized three things: aggressive action to seize and retain the initiative, rapid and accurate gunnery, and decentralized command and control in battle. This doctrine ultimately supported the US Navy's success at Guadalcanal, but did not anticipate the following problems:

- Ad hoc organization inhibited the effective development of tactics and procedures at the task force level, a process that US Navy doctrine relied upon; TFs at Guadalcanal were rapidly assembled and often composed of ships with little or no experience working together.
- Instability in command delayed implementation of lessons learned; a different commander was in charge at each battle around Guadalcanal, with the replacement of Kinkaid by Wright the clearest example of rapid changes in leadership that obstructed Navy efforts.
- TF commanders did not always place themselves on the ship best equipped for effective collection and control of information; both Scott and Callaghan used the heavy cruiser *San Francisco* as flagship at Cape Esperance and the 13 November action, respectively, despite the presence in both TFs of the light cruiser *Helena*, which was equipped with a superior radar system.

- Lack of adequate battle plans; at both Savo Island and the 12–13 November night action, battle plans were poorly developed or virtually nonexistent.
- Failure to understand the opponent; the IJN developed special tactics and capabilities, especially night fighting expertise, well-suited to the Guadalcanal campaign, and also made effective use of long-range, powerful torpedoes.
- Inability to leverage new technology; the fleet had difficulty in applying emerging technology (radar) effectively to provide an advantage over the IJN.

However, another pillar of the Navy's doctrine—decentralized command and control—gave flexibility to commanders and encouraged rapid adaptation to tactical problems at the lowest levels. Although their performance was uneven, Navy leaders at Guadalcanal attempted to rapidly adapt to a changing tactical operating environment and had adopted a viable solution by the time of the Battle of Tassafaronga. Additionally, in the pre-war years, the Navy had developed a learning system that relied upon constant feedback and experimentation by commanders and junior officers. This learning system meant that the lessons of combat at Guadalcanal resulted in rapid, fleet-wide adaptation to the realities of the Pacific War that would have long-ranging consequences.

To address the problems of interoperability, the Navy established a more uniform organizational and tactical doctrine that permitted ships and task units to move between task forces and theaters with minimized requirements for indoctrination under their new commands. The IJN never achieved comparable modularity within its force structure, rendering the Japanese tactically rigid by comparison with the US Navy. Recognizing the importance of destroyer torpedo tactics, Captain Arleigh Burke developed a destroyer doctrine that—combined with greater lethality in US torpedoes—maximized the tactical capabilities of the destroyer force. Finally, perhaps the greatest leap forward after Guadalcanal was the creation of the combat information center (CIC) in the winter of 1942–43 and the development of a school in 1943 that familiarized captains and their crews with effective methods for maximizing the effectiveness of CICs. The CIC centralized all of the available combat information systems on a ship into a single location

onboard and was staffed by specially trained officers and sailors who were tasked with maintaining situational awareness for the ship's captain. As with other technological and tactical developments, the Navy relied heavily on experimentation and feedback from the fleet to establish its CIC doctrine. Once implemented, CICs allowed the Navy to finally exploit its radar technology advantage, and they were especially credited with enabling victories such as Vella Gulf, Empress Augusta Bay, and Cape Saint George in 1943.

The US Navy was confronted with unanticipated tactical and technological issues in the South Pacific in 1942. Over the course of the Guadalcanal campaign, the Navy's emphasis on decentralized adaptation and constant feedback and learning enabled it to adjust and ultimately to move on with doctrinal and technological-cognitive systems that would enable victory in the Pacific. The Navy of the twenty-first century must likewise nurture a dynamic learning system in order to achieve and maintain maritime dominance.

9

THE NAVY AND THE FORMATION OF NATO

Tyler A. Pitrof



This article was originally posted on NHHC's naval history blog, The Sextant.

SUMMARY: Continued Navy cooperation with coalition partners after World War II helped facilitate a smooth transition from a war footing to a new postwar security framework backed by the North Atlantic Treaty Organization (NATO). NATO then helped clarify the roles and responsibilities for America's Navy in nuclear age limited warfare.

The Navy's quiet maintenance of its planning links, liaison and education exchanges, and efforts at communication standardization with the British and Canadians that began during World War II significantly eased the creation of the North Atlantic Treaty Organization (NATO) on 4 April 1949. While the initial motivation for this was to coordinate postwar occupation, repatriation, and security activity, once NATO was established, contingency planning for a war against the Soviet Union heavily contributed to the development of the Navy's critical role in the Cold War era.

Prior to the second half of the twentieth century, the United States adhered to a policy of avoiding peacetime alliances, and as a result, the Navy entered World Wars I and II unprepared for coalition warfare. In World War I, the subsequent ad hoc naval cooperation with the British took the form of a division of American battleships that were attached to the British fleet in the North Sea and the deployment of several dozen destroyers to Ireland

as convoy escorts. Both of these groups adopted the operating procedures and leadership of the Royal Navy for the duration of the conflict.¹ In World War II's early stages, the American-British-Dutch-Australian Command (ABDACOM) was created for a brief period in 1942 in an attempt to coordinate the defense of Southeast Asia—an effort that failed miserably due to infighting over leadership and a broader lack of coordination and supply. In each case, the Navy's lack of experience with coalition warfare contributed to excessive administrative, operational, and tactical friction and made it clear that some sort of peacetime collaboration with potential allies was necessary to pave the way for a more formal wartime alliance.²

This lesson was taken to heart by President Franklin D. Roosevelt and Navy leadership even before the ABDACOM disaster. As the second Battle of the Atlantic intensified in August 1940, Roosevelt and Canadian Prime Minister William Lyon Mackenzie King established the Permanent Joint Board on Defense (PJBD), ostensibly to protect US neutrality, but also to plan the defense of North America. While formal coordination with the British was politically impossible before December 1941, the United States nevertheless began secret cooperation as early as the extension of the Pan-American Security Zone in April of that year, which opened the door for US forces to escort convoys as far as Iceland. Finally, in the immediate aftermath of the attack on Pearl Harbor, President Roosevelt and British Prime Minister Winston Churchill created the Combined Chiefs of Staff (CCS), a body that included the American and British service heads, to plan the strategic direction of the US and UK war effort. That organization spun off a number of subordinate boards to coordinate the war effort itself, such as the Combined Communications Board (CCB), which sought to standardize and streamline communication terminology and doctrine between the allies.³

While the United States quickly moved to demobilize its armed forces after both world wars, this process was slowed in 1945 by occupation, repatriation, and security duties several orders of magnitude greater than

1 Christopher B. Havern Sr., *Ensuring the Lifeline to Victory: Antisubmarine Warfare, Convoys, and Allied Cooperation in European Waters during World War I* (Naval History and Heritage Command, 2020), 25–33, <https://www.history.navy.mil/research/publications/publications-by-subject/ensuring-lifeline.html>.

2 Corbin Williamson, *U.S. Navy and Its Cold War Alliances, 1945–1953* (University Press of Kansas, 2020), 9–37.

3 Williamson, *U.S. Navy and Its Cold War Alliances*, 9–33.

those in 1919. A substantial amount of this work relied upon the US Navy, which now supported a diminished British Royal Navy in the Atlantic and Mediterranean and filled the power vacuum created by the destruction of the Imperial Japanese Navy in the Western Pacific. Additionally, the potential for a third world war between the Western Allies and the Soviet Union encouraged President Harry S. Truman and the Joint Chiefs of Staff to maintain their close wartime relationships with the British and Canadians, particularly on naval matters. Critically, the PJBD, CCS, and CCB, which had proved highly useful during the war, persisted into the postwar period because they facilitated ongoing coordination. These efforts were politically dangerous not only due to the continuing American disdain for peacetime alliances, but also because the end of the war featured the creation of the United Nations to arbitrate international disputes. This institution was highly popular with the American public and meant that the military had to carefully camouflage its continuing foreign relationships.⁴ Defense unification in 1947 and the cancellation of the carrier *United States* in favor of the US Air Force's B-36 Peacemaker intercontinental strategic bomber in 1949 (resulting in the so-called Revolt of the Admirals) also contributed to the Navy's political and budgetary woes.⁵

Throughout these challenges between 1945 and 1950, the Navy managed to maintain its critical World War II relationships with Britain and Canada in the form of what historian Corbin Williamson has called “deep and wide links.”⁶ Deep links included an exchange of a few foreign postings, liaison officers, and attendance of foreign military schools. On the other hand, wide links included multinational exercises or brief foreign training and involved much larger numbers of personnel. These were accompanied by a continuation of joint planning, such as that carried out by the CCS and PJBD, and efforts at standardization of communications and doctrine by the CCB. Much of this effort could be accomplished at a personal level

4 Williamson, *U.S. Navy and Its Cold War Alliances*, 33.

5 Anthony R. Wells, *A Tale of Two Navies: Geopolitics, Technology, and Strategy in the United States Navy and the Royal Navy, 1960–2015* (Naval Institute Press, 2017), 6–39; Kenneth W. Condit, *History of the Joint Chiefs of Staff: The Joint Chiefs of Staff and National Policy, 1947–1949*, vol. 2 (Office of Joint History, 1996), 180–88; Thomas C. Hone and Curtis A. Utz, *History of the Office of the Chief of Naval Operations, 1915–2015* (Naval History and Heritage Command, 2023), 189–207.

6 Williamson, *U.S. Navy and Its Cold War Alliances*, 3.

rather than an official one, based on the leadership relations that had been established between the Western Allies during the war. Overall, deep and wide links not only kept up the hard-won relationships between the US Navy and its wartime allies but also fostered new relationships and reinforced interoperability. While higher coordination was not politically possible before 1949, these links bridged a critical capability gap that had been created by demobilization. The framing of a future conflict in terms of coalition warfare was also a major shift for US planners.⁷

The establishment of NATO in April 1949 built upon the groundwork laid out by the Navy. Increasingly aggressive Soviet actions, specifically the communist coup in Czechoslovakia in February 1948, and the Berlin blockade that began in June of that same year, forced a reexamination of US foreign policy and cleared the deck for a defensive pact with Western Europe.⁸ The alliance formalized the Navy's Atlantic sea control mission; in the event of a conflict with the Soviets, a third Battle of the Atlantic was expected in which the enemy would leverage cutting-edge German submarine technology captured in 1945 to prevent American reinforcement of Europe. At first, sea control enjoyed less prominence than that afforded to the offensive roles of the Army and Air Force and did little to halt the Navy's budgetary downward spiral. Close cooperation between the US, British, and Canadian navies—all diminished by budget cuts—would therefore be critical to the accomplishment of this task.⁹

Ultimately, the detonation of the first Soviet atomic bomb in August 1949 and the critical role of naval aviation in providing air support to UN forces in the Korean War underlined the need for rapidly deployable forces capable of fighting a limited war.¹⁰ The need for a quick reaction striking force was a message that NATO and the Truman administration immediately took to heart. Even at the height of the Korean conflict, three carriers remained in the Atlantic or Mediterranean poised to respond to emergen-

7 Williamson, *U.S. Navy and its Cold War Alliances*, 6, 34–38, 51–52, 103–4, 131–32.

8 Condit, *Joint Chiefs of Staff and National Policy*, 191–92.

9 Condit, *Joint Chiefs of Staff and National Policy*, 215–17; Jeffrey G. Barlow, *From Hot War to Cold: The U.S. Navy and National Security Affairs, 1945–1955* (Stanford University Press, 2009), 163–65; Williamson, *U.S. Navy and Its Cold War Alliances*, 4–6.

10 Norman Friedman, *Fighters Over the Fleet: Naval Air Defense from Biplanes to the Cold War* (Naval Institute Press, 2016), 238–39.

cies in Europe.¹¹ Accordingly, the position of the Supreme Allied Commander Atlantic (SACLANT) was established in 1952 as a counterpart to the Supreme Allied Commander Europe to manage all NATO naval forces in the Atlantic Ocean. As was the case with the establishment of ABDACOM 10 years earlier, the choice of who would hold this position—an American or British naval officer—was fraught with political difficulties. But the allies had, at least, learned to iron these issues out in peacetime rather than while trying to fight a war for survival. Aside from the appointment of an overall



The first Supreme Allied Commander, Atlantic (SACLANT), Admiral Lynde D. McCormick, with his staff in Newfoundland on 18 March 1952. Admiral McCormick is fifth from the right in the front row, directly beneath the SACLANT markings on his Douglas R5D. (NARA, 80-G-440234)

11 Michael A. Palmer, *Origins of the Maritime Strategy: The Development of American Naval Strategy, 1945–1955* (Naval Institute Press, 1990), 36; Mark L. Evans and Roy A. Grossnick, *United States Naval Aviation 1910–2010* (Naval History and Heritage Command, 2015), 368–70, <https://www.history.navy.mil/research/publications/publications-by-subject/naval-aviation-1910-2010.html>.

commander, the transition to a formal alliance was reasonably smooth thanks to the preexisting links that the Navy had fought hard to establish.¹²

The creation of NATO and of SACLANT was a significant step in redefining of the US Navy's role after World War II, but it was not the end of its political and funding difficulties. The Dwight D. Eisenhower administration's "New Look" policy doubled down on a reliance on air-dropped nuclear weapons with the possibility of "Massive Retaliation," or a mass attack with atomic bombs, in response to any provocation against the United States or one of its allies.¹³ But it quickly became clear that this approach was unsustainable, particularly as the Soviet Union rapidly built up its own nuclear stockpile. As the idea of limited war between the superpowers (often in the form of "proxy" wars) became more credible in the late 1950s and early 1960s, the Navy's ability to project power ashore, coupled with its critical role in resupplying Europe, rapidly reinforced the service's place in the Cold War defense establishment and in NATO.

12 Barlow, *From Hot War to Cold*, 300–26.

13 Robert J. Watson, *History of the Joint Chiefs of Staff: The Joint Chiefs of Staff and National Policy, 1953–1954*, vol. 5 (Office of Joint History, 1986), 35–37.

10

SUBMARINE AND DESTROYER TENDERS

Justin B. Blanton



This article was written in response to a time-sensitive RFI.

The US Navy has long used forward-deployed tenders to support ongoing operations by small combatants. The use of submarine tenders during World War II illustrates the importance of forward support for persistent operations. The Navy also supported the forward operations of smaller combatants, such as destroyers and PT boats, with tenders. The flexibility provided by these tender platforms would reduce the risk the Navy faces from being tied to known, static installations that could easily be targeted by a peer competitor, either through kinetic strikes or softer methods such as cyber warfare.

ANALYSIS

Submarine tenders were crucial to the US Navy's ultimate success in the Pacific during World War II because they provided maintenance, replenishment, and logistics support without the need to travel thousands of miles to the nearest base. As the fighting moved closer to Japan and farther from the continental United States, so did the tenders, thus bringing the vital supplies and services needed to support the submarine force closer to the front. During the final year of the war, the Navy had 17 submarine tenders deployed to several locations around the world to actively engage in a full range of forward-based support activities necessary for winning a mari-



USS *Dixie* (AD-14) resupplying destroyers, circa 1945. Destroyers present include (*left to right*): USS *Compton* (DD-705), USS *Ault* (DD-698), USS *Charles S. Sperry* (DD-697), USS *English* (DD-696), USS *John W. Weeks* (DD-701), and USS *Borie* (DD-704). (NHHHC, NH 905541)

time conflict. The use of in-theater tenders greatly reduced the amount of time submarines spent transiting to or from resupply, enabling the ships to remain on station for longer periods and helping the United States sink most of the Japanese merchant fleet. The Navy also used tenders to facilitate the operation of smaller combatants such as PT boats. The Navy's experience in the Pacific suggests that global projection and sustained forward deployment during a hot war against a near-peer fleet is dependent upon mobile replenishment and in-theater repair capabilities as provided by tenders.

Since the end of the Second World War, the Navy has gradually scaled back the number of tenders in the service fleet, reducing the flexibility required for maximum combat readiness and minimum response time. In 1970, the Navy had nine submarine tenders and 15 destroyer tenders, which helped the fleet operate forward during the Cold War. These tenders also helped the Navy sustain itself away from fixed bases during Desert Shield/Desert Storm. However, during the post-Cold War drawdown, the Navy

retired almost all its tenders, minus two submarine tenders, now based at Guam and Diego Garcia. These ships periodically transit to ports in the Philippines, Malaysia, the United Arab Emirates, Bahrain, India, and elsewhere to resupply and provide maintenance and repair services to forward-deployed submarines and other vessels.

RECOMMENDATIONS:

Today, the Navy has little experience using forward-deployed tenders to enable combat operations. As American planners examine pushing new platforms further from homeport for longer periods and as technology at sea continues to evolve rapidly amid the challenges posed by China and Russia, mobile tender services could help address the exigencies of potential conflicts against peer or near-peer adversaries. In light of the lessons learned during World War II, the Navy should consider expanding its tender fleet. The following are more specific examples of the potential benefits of a rebuilt and expanded service fleet:

- The support of an expanded service fleet would free the Navy from the protracted processing times and exorbitant costs of relying on delivery companies for “just-in-time” supplies. These methods may be advantageous for a commercial fleet, but not for a fleet expected to provide global projection. Furthermore, using delivery companies may put inventory control and management systems at risk of cyber intrusion. Self-contained and isolated stockpiles aboard tenders would mitigate some of these risks.
- The Navy cannot count on guaranteed access to forward-deployed facilities. Improving adversary anti-area/access denial weaponry poses a kinetic risk, while access to foreign port facilities cannot be guaranteed in a wartime scenario. Improved mobile tender capabilities would give the Navy more autonomy while forward deployed thousands of miles from the continental United States. The mobile maintenance, crew swap, refueling, and rearming capacities of an expanded service fleet would better equip the Navy to maintain a powerful, permanent, and ready in-theater forward presence.
- Each of the Navy’s two submarine tenders are a great deal cheaper than the ships they serve. Acquisition costs for the Navy’s now-decommissioned destroyer tenders tracked closely with those of sub-

marine tenders. Regardless, the Navy does not need to bring back the large tenders of the World War II or Cold War eras. Rather, an austere utility platform may suffice to provide valuable forward support to warships.

11

ESCAPE FROM THE PENTAGON: NSWC CRANE GROUP ON 9/11

Guy J. Nasuti



This article was originally posted on NHHC's naval history blog, The Sextant.

For millions of Americans, September 11, 2001, began as any other day. For those on the East Coast, the morning dawned with few clouds and bright sunshine. After enjoying their morning coffee and breakfast, the rush out of the house began only after kissing their significant others and school-bound children goodbye, with thousands starting the routine commute to work. By the end of this deceptively normal morning, the routine, commute, and life itself would never be the same again.

Thirty Navy civilian employees from Naval Surface Warfare Center (NSWC) Crane Group, Indiana, arrived in the nation's capital just two days prior to 9/11 to take part in a weeklong industrial management course. The group spent the morning of the 10th sitting through three separate lectures. Several of the Crane Group members looked forward to visiting the Pentagon the next day for a talk from Susan Livingstone, the first acting female undersecretary of the Navy.¹

Due to some difficulties in transportation from the hotel to the Pentagon, the group was late for their 0900 briefing in room 5E490 with

1 Alfred Goldberg et al., *Pentagon 9/11* (Historical Office, Office of the Secretary of Defense, 2007), 46.

Undersecretary Livingstone. After finally arriving to their conference room on the fifth floor, some five minutes later, Undersecretary Livingstone's executive assistant, Captain Dennis Kern, informed the class that two aircraft had struck the World Trade Center buildings in New York City. After hearing about the terrorist attacks for the first time that morning, engineer Richard D. Marshall Jr., remembers thinking that the Pentagon "could be a prime target as well."²

Despite concerns about the events in Manhattan, Undersecretary Livingstone opened the class with some remarks about budget cuts and the impact on certain commands within the Navy. With another speech scheduled at 1000, Captain Kern began giving Livingstone "the high sign" to conclude her remarks.³ Wanting to take at least one or two questions from the class, she was a few words into her first response when, at 0932, American Airlines Flight 77, hijacked by five members of al-Qaeda, struck the west side of the Pentagon, directly below and slightly to the left of the conference room the group was in.

The members of the Crane Group felt the building lurch as if shaken by a violent earthquake. Captain Kern recalled a "very loud explosion" that "rocked the room." Undersecretary Livingstone exclaimed, "There has been a terrorist event . . . , and we need to evacuate and get out of here."⁴ Light fixtures fell to the floor while ceiling tiles dropped into the corridor. To make matters worse, black smoke began filling the room, making it difficult for everyone to see and breathe. With none of the offices having windows facing the outside of the building, it was difficult to discern what had happened. JoAnn Moubray, a supply systems analyst with the Supply Directorate of the Crane Group, noticed that smoke immediately "came

2 Crane Group #1, interviewed by Detachment 206, Pentagon Terrorist Attack Incident Project, 25 February 2002, Pentagon 9/11 Collection, box 5, folder 13, Archives Branch, Naval History and Heritage Command, Washington Navy Yard, 2, https://www.history.navy.mil/content/dam/nhhc/research/archives/9-11/C/Crane-Group/Crane_Group_1_Abstract%26Transcript.PDF.

3 Susan Livingstone, interviewed by Detachment 206, Pentagon Terrorist Attack Incident Project, 19 February, 2002, Pentagon 9/11 Collection, box 7, folder 15, Archives Branch, Naval History and Heritage Command, Washington Navy Yard4, https://www.history.navy.mil/content/dam/nhhc/research/archives/9-11/L/Livingstone_Susan_Abstract%26Transcript.PDF.

4 Goldberg, *Pentagon 9/11*, 47.

out of the light fixtures.”⁵ She also recalled being one of the first out of the conference room, following just behind Undersecretary Livingstone. With the conference room filling with smoke, the class members stepped out into the hallway. Within ten seconds, all were out but instantly became confused as to which direction to go. Somebody in the group checked the stairwell and, upon seeing only the first two stairs, alerted everyone else that there did not seem to be any stairs to walk down. Several people in the group wondered if the stairs and the hallway leading away from the room were the only two ways off the fifth floor. With plumes of smoke rapidly entering the hall, there was no indication of an exit in that direction (in fact, the hallway leading to the conference room from the stairs led to a dead-end wall). All of the class members began covering their mouths and noses with coats and handkerchiefs to protect themselves from the effects of smoke inhalation.

At that moment, several Pentagon employees began entering the hallway from the offices on the fifth floor, most of whom were visibly upset. After Undersecretary Livingstone managed to calm them, she began walking uneasily down the smoke-filled hallway with Captain Kern in the lead. Kern knew the layout of the E Ring better than the class members did and made sure they were right behind him. As the group began following Captain Kern, a female voice suddenly told the others to watch their step, and each person carefully had to step down nearly two feet. The drop-down was the result of floors 1, 2, and 3 buckling from the impact of the aircraft. Captain Kern realized the only way to get out was forward down the darkened hallway and into corridor 4, recalling there was a construction wall that blocked the way behind them. As soon as the members turned into the corridor, they all noticed it was pitch black.

Captain Dennis Kern remembered the group made a perilous, and mostly blind, exodus down corridor 4. Telling everyone to get down on the floor to avoid the deadly smoke, the group began crawling on all fours close to the right-hand side of the corridor. Captain Kern understood the fire was raging on the floors below them due to the heat emanating from the floor and walls. Leading from the front and unable to see any possible dangers before him, he ran his right hand along the wall while he held onto Undersecretary Livingstone just behind him with his left hand. With each

5 Crane Group #1, interview, 7.

person, “grasping the hand of the person behind them,” the group moved “in a daisy chain type” of formation down the hall.⁶ As he led the Crane Group members, a voice down the hallway suddenly began providing support. Some of the members pressed the voice to continue speaking in order for them to follow the sound and get closer to safety. If the helpful voice suddenly became quiet, even for a few seconds, people in the group would again ask the person to keep speaking. The voice became a beacon of hope to the disoriented group. The class could not definitively establish to whom the voice belonged.⁷

Despite the panic that individuals may have felt within themselves, the class proceeded down the corridor calmly, working together while helping and encouraging one another. As the thick, acrid smoke began to burn their throats, several members of the class started to wonder if they would make it out of the Pentagon alive. Others thought only of their families and moving forward as much as possible with a fervent desire to survive. Nearly all of those later interviewed remarked on how incredibly at peace everyone seemed. Jim Buher, the coordinator of logistical support for the Crane Group class, recalled how he became “totally amazed and impressed by how calm everyone stayed through the entire process. I never saw a hint of anyone panicking.”⁸

After what must have seemed an eternity, the class “finally got where the smoke started thinning down,” recalled JoAnn Moubray, “It was almost a miracle.” Hearing a male voice suddenly exclaim, “Run!” she began to move quickly toward three stationary escalators leading to the Metro exit. A friend later asked if she thought the voice was a real person or an angel. She replied, “I didn’t care what it was, it was an angel to me.”⁹ As the class at last

6 Captain Dennis Kern, interviewed by Detachment 206, Pentagon Terrorist Attack Incident Project, Pentagon 9/11 Collection, box 7, folder 2, Archives Branch, Naval History and Heritage Command, Washington Navy Yard, 10, https://www.history.navy.mil/content/dam/nhhc/research/archives/9-11/K/Kern_Dennis_Abstract%26Transcript_Redacted.pdf.

7 Kern, interview, 3.

8 Crane Group #2, interviewed by Detachment 206, Pentagon Terrorist Attack Incident Project, 25 February 2002, Pentagon 9/11 Collection, box 5, folder 14, Archives Branch, Naval History and Heritage Command, Washington Navy Yard, 30, https://www.history.navy.mil/content/dam/nhhc/research/archives/9-11/C/Crane-Group/Crane_Group_2_Abstract%26Transcript.PDF.

9 Crane Group #1, interview, 29.

made its way out of the Pentagon, Undersecretary Livingstone recalled the building's security officers encouraging survivors to go into the Pentagon's large courtyard. After what the group had just been through, she felt, "That seemed to me to be the last place in the world you'd want to be if there was unknown further attacks that were going to occur."¹⁰ Instead, the class made their way out to the Metro concourse, then on to the south entrance and into the south parking area. Finally, after conducting a headcount, every member of the Crane Group was accounted for. Only when the group felt relatively safe and gathered with other survivors did they learn what had happened. Although most of them originally believed the Pentagon had suffered a terrorist bomb attack, they learned from several other witness survivors that it was an aircraft flying into the building that had caused the deadly destruction.

While looking back on that frightening morning, Undersecretary of the Navy Susan Livingstone recalled, "There was so much that was learned that day...not only from the perspective of the Pentagon, the military services, and the Department of Defense, but the nation itself, and life fundamentally changed on that day."¹¹ Sadly, there were 184 victims of the Pentagon attack. Onboard American Airlines Flight 77, six crewmembers and 53 passengers were killed. Inside the offices of the Pentagon, 125 workers perished in the attacks (55 military personnel and 70 civilians). Of those, 92 died on the first floor, 31 on the second floor, and two perished on the third floor. Despite their unfamiliarity with the Pentagon's layout, coupled with the horrors and confusion following Flight 77's impact, NSWC Crane Group proved to be the largest and best-organized group to escape the Pentagon after the terrorist attack. All 30 members, plus Captain Kern and Undersecretary of the Navy Susan Livingstone, made it out alive with no injuries, a testament to the will to survive by ordinary people put in extraordinary circumstances.

¹⁰ Livingstone, interview, 13.

¹¹ Livingstone, interview, 22.

12

PRESIDENT MCKINLEY'S CONTEXT AND MARITIME POLICIES

Daniel P. M. Curzon



This article was written in response to an RFI.

NAVY STRUCTURE AND LEADERSHIP

During William McKinley's presidency, the Navy consisted of three principal formations: the North Atlantic Squadron, or Home Squadron, operating along the Eastern Seaboard and in the Caribbean; the Pacific Squadron, operating along the Western Seaboard and South America; and the Asiatic Squadron, operating in the Western Pacific. The North Atlantic Squadron contained the heaviest concentration of forces and was primarily tasked with coastal defense. The Pacific Squadron was a mix of medium and light units and focused on commerce protection and diplomatic interventions. The Asiatic Squadron was the smallest and usually consisted of the lightest units intended for commerce protection and defending American interests in the Far East.

The Navy lacked a formalized headquarters and staff. The loosely governing body of the Navy was the Board on Construction. Founded in 1889, the board consisted of the eight rear admiral chiefs of the Navy bureaus: Navigation (whose chief was usually considered the first among equals), Ordnance, Yards and Docks, Provisions and Clothing, Equipment and Recruiting, Construction and Repair, Engineering, and Medicine and Surgery. Each bureau chief reported directly to the Secretary of the Navy

and had their own appropriation line in congressional bills, meaning direct links to Congress. The bureaus fought constant turf wars for funding. They could maintain daily tasks, but could not plan or provide a strategic vision. To craft that type of guidance through planning and education, the Navy established the Naval War College in 1884. Also, to provide an authoritative official source for comparable warship construction to foreign power standards, the Navy established the Office of Naval Intelligence in 1882 to advise the secretary and bureaus.¹

One of the important organizational goals of Navy reformers like Alfred Thayer Mahan and Henry C. Taylor was the formation of a Navy general staff that could provide a centralized location for managing the Navy and creating strategic guidance and plans. Taylor, in particular, also suggested the outlines of what a chief of staff position would entail.²

Following the dismal planning and logistic circumstances of the Spanish-American War, Secretary of the Navy John D. Long recognized the need for a knowledgeable staff that could help civilian leadership run the Navy. He stood up the General Board of the US Navy in the spring of 1900, appointing Admiral of the Navy George Dewey as its first president. Although it was not a general staff as had been hoped for by reformers, it *would* grow into a hub for the Navy's thinking, especially about strategy, and be a referee for Navy-wide discussions.³

POLITICAL CONTEXT

The US government, of which Congress acted as the most powerful branch, was transitioning from the political patronage “spoils system” to a professionalized civil service during the late nineteenth century. The “spoils

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- 1 Daniel P. M. Curzon and Tyler A. Pitrof, “A Pacific Effect.” *The United States Navy, Naval Engagement, and the World Cruise of the Great White Fleet* (Naval History and Heritage Command, 2024), 28–29, <https://www.history.navy.mil/content/history/nhhc/research/publications/publications-by-subject/pacific-effect.html>; Thomas C. Hone and Curtis A. Utz, *History of the Office of the Chief of Naval Operations, 1915–2015* (Naval History and Heritage Command, 2023), 3, <https://www.history.navy.mil/research/publications/publications-by-subject/opnav-100.html>; Wyman H. Packard, *A Century of US Naval Intelligence* (Department of the Navy, 1996), 2, <https://babel.hathitrust.org/cgi/pt?id=mdp.39015038547744&seq=28>.
 - 2 John T. Kuehn, *America's First General Staff: A Short History of the Rise and Fall of the General Board of the US Navy, 1900–1950* (Naval Institute Press, 2017), 24–28.
 - 3 For that evolution, see Kuehn, *America's First General Staff*.

system” had controlled civil service and military officers’ careers through political patronage appointments and assignments. McKinley supported the civil and military services’ professionalization while in Congress (Pendleton Civil Service Reform Act of 1883) and as president through his support of Secretary Long and Assistant Secretary of the Navy Theodore Roosevelt Jr. (TR).⁴

The US electorate also transitioned from isolationist to imperialist. McKinley resolved one of his first presidential crises by annexing Hawaii,



President William McKinley stands next to Cardinal James Gibbons, the Archbishop of Baltimore, who is leading the benediction during the presentation of a ceremonial sword to Admiral George Dewey in New York City as part of the Dewey Day Parade to honor the Admiral for his victory at the Battle of Manila Bay. (NHHC, NH 50576)

4 Robert W. Merry, *President McKinley: Architect of the American Century* (Simon & Schuster, 2017), 231; Paul E. Pedisich, *Congress Buys a Navy: Politics, Economics, and the Rise of American Naval Power, 1881–1921* (Naval Institute Press, 2016), 111–12, 125, 128; Trent Hone, *Learning War: The Evolution of Fighting Doctrine in the US Navy, 1898–1945* (Naval Institute Press, 2018), 39–42.

which proved popular.⁵ Congress supported the later annexations of Puerto Rico, Guam, and the Philippines.⁶ The election of 1900 between McKinley (expansionist) and populist William Jennings Bryan (isolationist) was a referendum on expansionism vs. isolationism; expansionism won.⁷

McKinley also evolved his views concerning tariffs. As a congressman, he supported tariffs to safeguard fledgling American industries. In his first term, he changed, aiming to use tariffs as bargaining tools to open foreign markets to a surging American industrial sector.⁸ Tariffs were also the primary tax that supported the US government. In the 1880s, the tariff system led to a problem—it was running a surplus of gold and silver, meaning it limited currency in use, causing shortages and inflation.⁹ Also, while not tariffs, the “Open Door” Notes of 1899 and 1901 supported the goal of expanding American trade through gaining equal access to other markets. During his second term, McKinley further evolved his opinion, noting, “[t]he expansion of our trade and commerce is the pressing problem . . . Reciprocity treaties are in harmony with the spirit of the times; measures of retaliation are not.”¹⁰

The United States emerged as a great power during McKinley’s tenure, joining the five European great powers. Unlike most powerful nations of the day, the United States did not seek allies but remained a neutral power, aiming primarily to trade unimpeded internationally. The country nevertheless practiced the era’s international norms, such as gunboat diplomacy, armed interventions, and colonial endeavors, rationalizing those endeavors as bringing civilization to the needy.

5 Colin D. Moore, *American Imperialism and the State, 1893–1921* (Cambridge University Press, 2017), 52–64.

6 Kees van Dijk, “The United States Becomes a Colonial Empire,” in *Pacific Strife: The Great Powers and their Political and Economic Rivalries in Asia and the Western Pacific, 1870–1914* (Amsterdam University Press, 2015), 381–84.

7 Evan Thomas, *The War Lovers: Roosevelt, Lodge, Hearst and the Rush to Empire, 1898* (Little, Brown, 2010), 385–86.

8 Douglas Irwin, *Clashing over Commerce: A History of US Trade Policy* (University of Chicago Press, 2017), 261, 265, 291, 305, 309.

9 For a summary of the previous impacts of tariffs, see Madeline Marshall, “Why Trump’s Idol, McKinley, Abandoned His Own Tariff Strategy,” 4 February 2025, by *The Wall Street Journal*, YouTube, 8 min., 45 sec., <https://www.youtube.com/watch?v=svktRVVNJO8>.

10 “William McKinley: Last Speech,” *The Salem Press*, accessed 19 March 2025, https://www.salempress.com/Media/SalemPress/samples/dd_1900s_pgs.pdf.

MARITIME POLICIES AND CONGRESS

In the 1850s, Washington negotiated the Clayton-Bulwer Treaty with London for a joint canal construction project through Central America. The treaty favored Great Britain and led to American calls for revision. To reduce friction over the undetermined border between Alaska and Canada in the 1890s, the British were willing to renegotiate the treaty. McKinley supported the attempts, considering a canal beneficial to commercial and naval power. The US Senate did not like the renegotiated version, wanting the United States to fortify and restrict canal access. The discussion went public, causing an uproar from an Anglophobe electorate; the renegotiated treaty failed to pass Congress.¹¹

In 1881, the satirical magazine *Puck* joked that the US Navy consisted of “three mud-scows supplemented by a superannuated canal-boat.” The mockery was justified. In 1882 and 1883, the government began to modernize and reform the Navy from ships with wooden hulls and sails to steel hulls and steam propulsion. However, leadership remained caught in the Age of Sail, which led to a generation of reformers, including TR and Stephen B. Luce, to campaign for a modern Navy.¹²

Those changes manifested slowly. For instance, while called for in the 1870s, the Navy did not begin creating a meritocratic hierarchy until the “Roosevelt Bill” was enacted in 1899. As a part of that change, Secretaries of the Navy Benjamin F. Tracey and John D. Long fought the spoils system by replacing federal political appointees in navy yards with meritocratic civil servants.¹³

The victory in the Spanish-American War (1898) also propelled changes. Before the war, the American people and Congress conceptualized the Navy’s primary missions as coastal defense and commerce protection. In wartime, what few heavy units the Navy possessed would defend ports, while the cruisers would raid commerce. After the war, Congress realized the need for a Navy that could reach farther and, even while pursuing

11 Merry, *President McKinley*, 408–9; Pedisich, *Congress Buys a Navy*, 131.

12 Scott Mobley, *Progressives in Navy Blue: Maritime Strategy, American Empire, and the Transformation of US Naval Identity* (Naval Institute Press, 2018).

13 “US Ship Force Levels, 1886–present,” Naval History and Heritage Command, 17 November 2017, <https://www.history.navy.mil/research/histories/ship-histories/us-ship-force-levels.html>; Mobley, *Progressives in Navy Blue*, 56–80; Pedisich, *Congress Buys a Navy*, 72–73, 83, 123–25.

some retrenchment, bought ocean-going battleships aimed at fighting fleet engagements à la Mahan's theory.¹⁴

For comparison, the Army was reduced to a frontier constabulary force following the Civil War, shrinking from the authorized 54,000 in 1866 to 25,000 in 1874. Pay and poor conditions ensured the Army rarely reached the authorized strength.¹⁵ By 1 April 1898, the Army was composed of about 2,100 officers and 26,000 enlisted stationed in the American West.¹⁶ Throughout the period, the Navy's appropriations were half that of the Army's. That situation was ameliorated when the House and Senate naval committees gained the ability to structure their own appropriations bills for the service.¹⁷ However, the Navy's main growth came in response to crises.

McKinley was primarily focused on American economic policies, but supported Long as he proposed and lobbied Congress to expand the Navy. The Navy lobby in Congress, especially expansionists like Senator Henry Cabot Lodge, pushed for reforms and fleet construction. However, they were often thwarted by isolationists and fiscal conservatives. For instance, Congress could authorize a new ship, but the isolationists could add a rider noting that they would only pay a limited amount for crucial systems, and thus contractors would pass on the work.¹⁸

It took 15 years of infrequent congressional authorizations to purchase the Navy that the United States would use in the Spanish-American War. Those investments occurred in response to public outcry, usually over a perceived crisis, such as the 1891 crisis with Chile or the 1895 crisis around British Guiana. Also, Congress conceptualized the Navy for coastal defense and commerce raiding. Thus, it purchased a Navy according to those

14 Pedisich, *Congress Buys a Navy*, 131.

15 "United States Army," *Encyclopedia Britannica*, 19 March 2025, <https://www.britannica.com/topic/The-United-States-Army/The-Mexican-American-War-and-the-Civil-War>.

16 "The US Army in the 1890s," US Army Center of Military History, April 2000, <https://history.army.mil/Unit-History/Force-Structure-Support/The-US-Army-in-the-1890s/>.

17 Pedisich, *Congress Buys a Navy*, 55.

18 Congress decided that it would not pay more than \$300 per ton for the armor plating for the battleships. The manufacturers believed that price to be too far below market costs and so refused to sell armor plating. Pedisich, *Congress Buys a Navy*, 110–11, 127, 131.

thoughts, at times ignoring the recommendations of the Secretary of the Navy and of naval reformers.¹⁹

McKinley's initial and continuing maritime focus was on the creation of a suitable merchant marine to match growing industrial might. For various reasons, the American Civil War had killed the globally reaching and highly lucrative American shipping trade, and he wanted to revitalize it. He left force sizing concerns to Long, who realized he knew little and chose to rely on Navy reformers for guidance. The destruction of *Maine* and the declaration of war with Spain resulted in the addition of considerable Navy appropriations for war preparations and new warships, while loosening cost restrictions on armor prices, which had stalled and prevented previous authorizations.²⁰

Following the war, although Congress immediately reduced naval appropriations and construction, it did appropriate significant funds in 1900 and 1901 for new warships as the electorate approved of expansionist activities, including the acquisition and defense of foreign protectorates and territories.²¹ Under McKinley, the Navy experienced its largest growth since transitioning to steel. Through appropriations, Congress created the Navy's force structure as capital ship heavy and unbalanced with few other vessel types.

CONCLUSIONS

- The country has existed through eras of patronage, non-professionalized civil servants, and tariffs. It moved away from those practices due to their inefficiency and tendency toward corruption.
- Throughout the McKinley administration, Congress reacted to overseas crises by investing in the Navy. Also, reformers were active voices for change, but change took decades and crises to inspire action.

19 Pedisich, *Congress Buys a Navy*, 37, 48, 80, 82, 84–85, 89, 105; “Venezuela Boundary Dispute, 1895–1899,” Office of the Historian, Department of State, n.d., <https://history.state.gov/milestones/1866-1898/venezuela>.

20 Pedisich, *Congress Buys a Navy*, 113–15.

21 Pedisich, *Congress Buys a Navy*, 134.

- Secretaries of the Navy do not need naval experience to advocate for the Navy's expansion. However, having reformers as trusted advisers ensured that Secretary Long worked toward improving the Navy along lines of internal thought.

13

REMEMBER THE MEN OF THE *MAINE*

John E. Fahey



This article was originally posted on NHHC's naval history blog, The Sextant, on the 125th anniversary of the Maine explosion.

On 15 February 1898, the battleship *Maine* exploded while visiting Havana, Cuba. The loss of the ship would drive the United States and Spain to war within a few months. However, the global significance of the disaster should not overshadow the lives lost and the many wounded. Two hundred and fifty-three men died in the explosion, and another seven died of injuries over the next few weeks. Of the 77 rescued sailors and marines, 61 sustained injuries ranging from burns to broken bones to concussions.¹ All the survivors suffered trauma from seeing their friends and crewmates killed. As we remember this ship's loss 125 years ago, let's remember the men of the *Maine*.

1 *Report of the Surgeon-General, U.S. Navy to the Secretary of the Navy* (Government Printing Office, 1898), 173, <https://babel.hathitrust.org/cgi/pt?id=nnc2.ark:/13960/t3bz6x15p&seq=767>. A total of 355 men were on board *Maine* when it exploded. Of these, 290 were sailors, 39 marines, and 26 officers. One hundred and two survived the night of the explosion, but seven enlisted survivors died of burns and other injuries in the following days. Two officers, Lieutenant Friend Jenkins and Assistant Engineer Darwin Merritt, died in the explosion, but another officer, Lieutenant George Blow, died of shock later, leaving only 94 survivors in total.

Maine's crew was typical for Navy ships of the era, recruited from across the country and made up of a mixture of immigrants, workers, and men from seafaring families. Almost a quarter of the crew came from outside the United States, a marker of the heavy pace of immigration around the turn of the century.² Thirty of the crew were African American. Life on board *Maine* consisted of daily musters, watch bills, gunnery drills, and constant maintenance as the ship headed up and down the East Coast. This routine was broken only by port visits for repairs, refueling, and training of local naval militiamen. The crew particularly enjoyed visiting New Orleans for Mardi Gras, so much so that the ship's log book entry for 1 March 1897 notes that of 72 men released on liberty the day before, 39 did not return for morning muster.³ *Maine* also had some tragedies and close calls, like the time three men were washed overboard and lost in a storm off South Carolina, or when Captain Charles Sigsbee chose to ram a pier in New York Harbor to avoid sinking a ferry full of tourists.⁴ All in all, the sailors onboard would have had fairly typical careers in the new and expanding American Navy, if it were not for the Cuban insurrection.⁵

Maine and its crew entered Havana Harbor on 25 January 1898 to make a friendly port call in the city, then under Spanish administration, and to protect American lives and property threatened by an ongoing civil war between Spain and the local population. Captain Sigsbee kept everyone on board, except for some officers who made social calls and visited a bullfight,

2 John Edward Weems, *The Fate of the Maine* (Texas A&M University Press, 1992), 183–95.

3 USS *Maine*, volume 3, 1 March 1897, Logs of US Naval Ships, 1801–1915, Logs of Ships and Stations, 1801–1946, Records of the Bureau of Naval Personnel, Record Group 24, National Archives Building, Washington, DC.

4 For a detailed account of *Maine*'s career, see John E. Fahey, “*Maine* I (Second-class Battleship), 1895–1898,” Naval History and Heritage Command, 15 February 2023, <https://www.history.navy.mil/research/histories/ship-histories/danfs/m/maine-i.html>.

5 By 1898, Cubans had been fighting for their independence from Spain for decades. The United States became intensely interested in Cuban resistance in the face of brutal counterinsurgency tactics under the command of Spanish General Valeriano “the Butcher” Weyler. From October 1897, *Maine* stood by to protect American citizens, property, and interests in Havana. President McKinley ordered the ship to Cuba in January 1898. Ivan Musicant, *Empire by Default: The Spanish-American War and the Dawn of the American Century* (Henry Holt, 1998), 38–124.

and some sailors who were sent ashore to procure provisions. The crew kept busy over the next several weeks with drills and keeping watch of the harbor.

That fateful day, 15 February 1898, started out as a normal day. The men ran through regular drills, and, by the evening, many of the sailors took their hammocks topside to get out of the hot berth deck. Cadet Wat T. Cluverius was *Maine*'s officer of the watch until 2000 that day. Once relieved, Cluverius went to his quarters to write a letter and heard the men "dancing in the starboard gangway to an accordion's music. One of the gunners' mates was playing a mandolin in the after turret." Cluverius was sealing his letter in an envelope when the ship exploded. He heard a "report—the firing of a gun, it seemed" followed by "an indescribable roar, a terrific crash, intense darkness, and the deck giving way beneath." He and his classmate Amon Bronson Jr. got out to the poop deck, while most of the crew, "pinned down and drowning, mangled and torn, screamed in agony."⁶

Maine exploded at 2140 local time, when the 6-inch shell magazine detonated, probably due to an undetected coal fire in an adjacent coal bunker.⁷ Unfortunately for the crew, the magazines were in the forward part of the ship, in the middle of the crew's quarters. The explosion killed much of the crew instantly. The survivors had to escape from a sinking, burning ship and saw their less fortunate crewmates struggle and die. Later, Captain Sigsbee wrote that "none can ever know the awful scenes of consternation, despair, and suffering down in the forward compartments of the stricken ship; of men wounded, or drowning in the swirl of water, or confined in a closed compartment gradually filling with water."⁸ Lieutenant George Blow wrote to his wife on 16 February, "I can not write of the horrors now. Each man lived a lifetime of horror in a few seconds and all would like to forget it if possible."⁹

6 Commander W. T. Cluverius, USN, "A Midshipman on the *Maine*," *Proceedings* 44, no. 2 (1918): 244–45.

7 H. G. Rickover, *How the Battleship Maine Was Destroyed* (Naval History Division, 1976), 107–30.

8 Charles Dwight Sigsbee, "Personal Narrative of the 'Maine' by Her Commander, Captain Charles Dwight Sigsbee, U.S.N.," *Century Illustrated Monthly Magazine* (December 1898): 249.

9 "Letter Written by Lt. George Blow of the USS MAINE, Written the Day After the USS MAINE was Lost," *The Spanish-American War*, accessed 24 January 2023, <https://www.spanamwar.com/blowlet1.html>.

Most of the enlisted survivors were either at duty positions in the rear of the ship or sleeping on the deck. Only a few enlisted crewmen escaped from the lower decks. One of them, Coal Passer Jerimiah Shea of Haverhill, Massachusetts, explained his escape as: “I think I must be an armor-piercing projectile.”¹⁰ Another, Mess Attendant John H. Turpin, was below decks in the wardroom pantry. Turpin was sitting when the ship shook. “It was a jarring explosion—just one solid explosion, and the ship heaved and lifted like that, and then all was dark. I met Mr. [Lieutenant Friend] Jenkins in the mess room, and by that time the water was up to my waist, and the water was running aft. It was all dark in there.” Jenkins and Turpin could not find their way out of the pitch-dark mess room. As water rose to Turpin’s chest, a flash of light lit up the room, allowing Turpin to see Jenkins fall under the water. Turpin struggled to find a way up out of the ship. He explained, “By that time the water was right up even with my chin. Then I commenced to get scared, and in fooling around it happened that a rope touched my arm, and I commenced to climb overhand and got on deck.” Turpin then jumped overboard and was rescued by a Spanish barge.¹¹

Many of the survivors saw their friends and shipmates killed in the chaos. Coal Passer Thomas Melville was heading through a passage between the galley and the turret when he saw Seaman Peder Laren disappear. Melville later testified, “I couldn’t say how he disappeared. Of course, the shock took all the life out of me for a second.” Melville continued onto the starboard gangway, where he saw Fireman First Class William Gartrell praying and Boatswain’s Mate Second Class Luther Lancaster lying dead.¹² Earlier, Gartrell was in the steam steering room when the explosion hit. He and Coal Passer Frank Gardiner tried to escape. “The two of us jumped up, and I went on the port side up the engine-room ladder, and Frank Gardiner, he went up the starboard side—at least he didn’t go up, because he hollered to me ... he says: ‘O Jesus, Billy, I am gone.’ I didn’t stop then, because the water was then up to my knees.”¹³ Gardiner did not escape.

10 Sigsbee, “Personal Narrative,” 255.

11 *The Report of the Naval Court of Inquiry Upon the Destruction of the United States Battleship Maine in Havana Harbor, February 15, 1898, Together with the Testimony Taken Before the Court* (Government Printing Office, 1898), 191–92.

12 *Report of the Naval Court of Inquiry*, 181–83.

13 *Report of the Naval Court of Inquiry*, 187–89.

Those who made it into the water survived thanks to quick rescue efforts by boats from the US merchant steamer *City of Washington*, the Spanish cruiser *Alfonso XII*, and the port itself. These boat crews pulled men from the water and put themselves in great danger by getting close to the burning *Maine*. Badly injured survivors were mostly taken to the San Ambrosia Hospital, where they were cared for by Spanish and Cuban doctors, as well as Clara Barton and some Red Cross personnel visiting the island.¹⁴ Other *Maine* survivors spent the night on the *City of Washington* and *Alphonso XII*. The surgeon general of the Navy later reported, “Of the 77 rescued sailors and marines, only 16 were uninjured.” Five men were eventually discharged from the Navy due to back sprains, “chronic pleurisy,” “deformity of nasal bones,” injuries to a hand, and paralysis. Of the 253 killed in the explosion or by drowning, only 178 bodies were recovered in 1898, with the rest lost in the harbor or in the wreck of the ship.¹⁵

The tragedy of *Maine* did not end with the crew. Secretary of the Navy John D. Long wrote a few days after *Maine*’s loss, “the saddest thing of all is the constant coming of telegrams from some sailor’s humble home, or kinspeople, inquiring as to whether or not he is saved, or asking that, if dead, his body may be sent home.” The National Archives has 11 boxes of letters from family members of *Maine*’s crew, asking about their fathers, sons, brothers, friends, and husbands. A letter from Elizabeth Denning, mother of Seaman Charles Denning, is typical, as she asked for the Navy to “help a poor sobbing mother and advise me please what I have to do in case Charles died during his service.”¹⁶ Some family members were not sure if their relatives were even on board *Maine*. Fireman Second Class Patrick Flynn’s sister wrote to Long. She had “lost sight of [Pat] for several years” and asked Secretary Long if Flynn was dead. He was.¹⁷

14 Barton was there to help care for Cubans harmed by Spain’s reconcentration policy. Clara Barton, *The Red Cross in Peace and War* (American Historical Press, 1899), 524–26.

15 *Report of the Surgeon-General*, 173.

16 Elizabeth Denning to John D. Long, 21 February 1898, entry 98, Correspondence relating to men lost on USS *Maine*, box 3, D-F, Records of the Bureau of Naval Personnel, Record Group 24, National Archives Building, Washington, DC.

17 Morgan Rubenstein to John D. Long, 17 March 1898, entry 98, box 3, D-F, Records of the Bureau of Naval Personnel, Record Group 24, National Archives Building, Washington, DC.



Maine during salvage operations on 26 June 1911. (NHHC, NHF-011)

Family members writing to the Navy wanted many things. Some wished to find out if their loved one was alive. Many just desired closure and often asked for the body for burial. Unfortunately, the tropical climate made returning bodies impossible. Other relatives asked for help. Many of *Maine*'s sailors supported their wives, families, parents, or others. Karen Anderson, widow of Coal Passer Holm A. Anderson, asked Secretary Long what to do. "I just got back from Norway and I am pennyles [sic], I also have a little Baby, and I can not be doing much with him."¹⁸ The Navy was able to help in some cases, with pensions and other aid. Some relatives also received aid from private donations and funds.¹⁹

In addition to the men killed or wounded in the explosion, the tragedy caused an immense psychological burden for the survivors. Lieutenant John J. Blandin, the officer of the watch when the ship exploded, was deeply affected by the tragedy, later writing that "the reverberations of that sullen, yet resonant roar...will haunt me from my many days, and the reflection of that pillar of flame comes to me even when I close my eyes."²⁰ The events of 15 February troubled Blandin for the rest of his life, which only lasted a few months. After giving his testimony to the naval court investigating the catastrophe, he was put on light duty, but as his obituary put it, "He seemed utterly unable to dismiss from his mind the horrors of the fatal night which saw the destruction of the battleship and the death of so many of his comrades, and on July 1 [1898] he broke down under the strain and was removed to the hospital." He fell into delirium and died on 9 July, another victim of *Maine*.²¹

As *Maine*'s crewmen processed their trauma and healed from their wounds, war broke out. The Spanish-American War only lasted a few months, but ended with the United States as a global imperial power with new colonies in Puerto Rico, Guam, and the Philippines, as well as significant

18 Karen Anderson to John D. Long, 8 May 1898, entry 98, box 1, A-B, Records of the Bureau of Naval Personnel, Record Group 24, National Archives Building, Washington, DC.

19 The Navy sent aid to the families of men killed on board *Maine* for decades. For example, see *Annual Reports of the Navy Department for the Fiscal Year 1923* (Government Printing Office, 1924), 881.

20 James Rankin Young, *History of our War with Spain including Battles on Sea and Land* (J. R. Jones, 1898), 59–60.

21 "Lieutenant Blandin's Death," *Brooklyn Daily Eagle* (17 July 1898), 9.

influence over Cuba itself. The US Army occupied Cuba from 1899 to 1902. During the occupation, 165 crewmen from *Maine* (63 identified, 102 unidentified) who had been buried in Havana were re-interred in Arlington National Cemetery on 28 December 1899. Sixty-six additional sailors and the ship's main mast were moved to Arlington in 1911, after *Maine* was raised and re-sunk off Cuba. The dead of *Maine* now rest in Section 24.

Survivors of *Maine* were shaped by their experience for years afterward. Some were wounded and haunted by the horror and loss of 15 February, but at least one of *Maine*'s survivors, Fireman First Class Karl Christiansen, refused to let that stop him. Christiansen was blown into the water by the explosion, breaking his leg and scarring his body. Over 40 years later, he showed up at a New York City recruitment center to volunteer for Navy service two weeks after Pearl Harbor. He was rejected, as he was 69 years old. Leaving, he growled, "I guess the youth is only in my heart."²² These are men worth remembering.

²² Weems, *Fate of the Maine*, 164–65.

14

THE “ALEUTIAN STARE”:
ENVIRONMENT, MORALE,
AND THE MENTAL HEALTH
OF THE NAVAL FIGHTING FORCE

Caroline E. Tapp



This article was originally posted on NHHC’s naval history blog, The Sextant.

Flipping through the 1945 cruise book of the 138th Naval Construction Battalion (NCB), it’s easy to get lost in the detailed etchings of daily life “On Island X.” Produced by the Welfare and Recreation Department and 138th NCB, the book contains images paired with descriptions of various objects, events, and colloquial phrases familiar to the construction battalions (CBs or “Seabees”) during World War II. As one 138th Seabee notes in the beginning, “This is my book...it is an insight into the conditions of my work, my diversions, and my fellowships as a member of a military unit at its assigned station.”¹ The book accomplishes this intended task. It also pro-

1 *On Island X: 138th Naval Construction Battalion Maintains Island “X,”* (The Deers Press, 1945), 5, <https://www.history.navy.mil/content/dam/museums/Seabee/Cruisebooks/wwiicruisebooks/ncb-cruisebooks/138%20%20NCB.pdf>.

vides an arguably overlooked window into the impact of isolation and harsh climates on morale and mental fortitude that still affects the Navy today.²

Some sections of the book show common experiences of nearly all Seabees and sailors, regardless of location, including images entitled “Beer” and “Seasick.” Other images, however, had a specific application to the Aleutians, where the 138th spent the last years of World War II.³ While some images focus on the environment of the Aleutians, including “Williwaws” (strong storms), others, such as the “Aleutian Stare,” require additional context to unpack their meaning. Sketched in black and white, this image shows a wide-eyed figure staring off-center of the page, with a thumbs-up symbol and a seagull lurking overhead. The figure’s gaze gives the impression that if you waved your hand in front of their face, they would not react. On the page prior, the authors describe the “Aleutian Stare” as a “lockjaw of the eyes” and explain how the vacant stare progresses in stages. With a touch of humor, the final lines note that “...at eighteen months [of being on the island] you began discussing personal matters with the seagulls...at any time after that the birds began to talk back...it was positively amazing what some of those gulls had to say.”⁴ While the men of the 138th NCB chose to make light of the conditions on the island, the sketched image and accompanying description allude to a more abstruse history of how the weather and monotony of daily life in the Aleutians affected those stationed there.

2 The 138th NCB was part of a new, vital component of the wartime US Navy. Established in 1942, the Seabees were organized under the Bureau of Yards and Docks (BuDocks). In 350 units across more than 400 locations, 325,000 men served with the Seabees during World War II. While their primary duty was to build military facilities, by 1945, the 138th NCB was tasked with maintenance of infrastructure in the Aleutians.

3 The cruise book does not name the island, as “military security necessitates the omission of certain place names and dates that would ordinarily be used in our story” (*On Island X*, 3). Unit lists from the 138th NCB, however, show the battalion was reactivated on Attu Island in the Aleutian chain beginning 1 February 1944 with a detachment of 3 officers and 144 men ordered for temp duty at Naval Operating Base Adak Island on 31 January 1945 (138th Naval Construction Battalion, *Historical Information* (Bureau of Naval Personnel, 1945, <https://www.history.navy.mil/content/dam/museums/Seabee/UnitListPages/NCB/138%20NCB.pdf>). Given the time frame of these events and the publication date of the cruise book, the images and accompanying descriptions are representative of experiences on Attu as “Island X” with the detachment to Adak Island sharing in many of the experiences that characterized life on the Aleutian chain.

4 *On Island X*, 101–2.



A sketch depicting the Aleutian stare found in the 138th Naval Construction Battalion cruise book. (*On Island X: 138th Naval Construction Battalion Maintains Island "X,"* [The Deers Press, 1945], 101)

A TALE OF TWO ALEUTIANS

During World War II, the Army and Navy conducted joint operations in the Aleutians as a response to the Japanese invasion of Attu and Kiska during the Midway campaign of 1942.⁵ Public understanding of the Aleutian campaign relied heavily on government efforts, which did not always accurately reflect the state of personnel throughout World War II. Comparing the 1943 War Department film, *Report from the Aleutians*, and the “Aleutian Stare” found in the 138th cruise book just a year later offers the opportunity to grasp a more realistic picture of how the environment influenced personnel and the various factors that impacted morale.

In 1943, the US Army Signal Corps released a film entitled *Report from the Aleutians* to inform the American public of the day-to-day operations in the North Pacific. Directed and narrated by John Huston, the documentary-style film shot in Technicolor relayed the daily lives of service members on Adak Island during World War II. John Huston and his team of six filmmakers lived and worked on Adak for six months, and the Academy of Motion Picture Arts and Sciences nominated the film for Best Documentary.⁶

The War Department utilized clips of daily life and missions shown in the film to portray the Aleutians as an action-packed duty station. Just over 400 miles from Attu, Adak sits on the far western portion of the Aleutian archipelago in the Bering Sea. With the island serving as a crucial base from which the United States recaptured Attu from the Japanese, the proximity was undeniably important. As the camera pans to two men wrestling in tall grass and sitting in a tent playing the harmonica, Huston’s voice explains to viewers, “The extraordinary fact is that morale actually gets strong the closer the troops come to the enemy. On Adak proper, morale is first rate.”⁷ Given the continuous action, direct proximity to enemy forces, and strong sense of mission, it is not a stretch to say that high morale characterized the island during the 1943 filming.

5 For a detailed overview of the Aleutians Campaign see: Colin G. Jameson, *The Aleutians Campaign, June 1942–August 1943* (Naval Historical Center, 1993).

6 Damon Stuebner, “Report from the Aleutians,” Alaska State Library, 3 April 2018, <https://library.alaska.gov/hist/report-from-the-aleutians.html>.

7 *Report from the Aleutians*, directed by John Huston (Office of War Information and US Army Signal Corps, 1943), available via C-SPAN, <https://www.c-span.org/video/?425481-1/report-aleutians>.



The movie poster for the film *Report from the Aleutians*. (*Report from the Aleutians*, 1943, poster, IMDb)

Report from the Aleutians offered a generally propagandistic viewpoint of the war raging in the island chain during a very short timeline to drum up support on the home front. The documentary did, however, include clues regarding the reality of extended living and working in the Aleutians. As Huston explains early in the documentary, “Remote as the moon and hardly more fertile, Adak is next to worthless in terms of human existence.”⁸ Those who served in remote locations such as the Aleutians encountered specific challenges to morale and mental health as the war waged on, with the realities of war exacerbated by the additional burdens of isolation and adverse climate.

While fighting the Japanese promoted a direct sense of mission and morale boost in 1943, the men of the 138th encountered a different circumstance by 1944. According to the US Fish and Wildlife Service, some service members in the North Pacific during World War II were lucky enough to be reorganized in island-hopping campaigns or transferred to the European Theater. Others “were left to molder in the Aleutians, then the backwater of World War II. Some came to appreciate the raw beauty of the landscape; some succumbed to the weather and isolation and turned to alcohol. Others cracked, and were sent home in straightjackets, their eyes fixed in the ‘Aleutian Stare.’”⁹ Differing from the earlier depictions of life on Adak shown in Huston’s film, the 138th NCB cruise book’s inclusion of the “Aleutian Stare” suggests conditions on the islands, and morale continued to deteriorate throughout the war.

Modern historians who have studied the Aleutians during World War II emphasized how environmental factors hurt morale. According to Galen Perras’ account, “troop morale was fast crumbling in the desolate islands, with manifold cases of severe clinical depression, suicide attempts, and numerous assorted disciplinary problems.”¹⁰ Speaking of those who served on Umnak Island in particular, Brian Garfield describes how “their expressions faded; their stoic fortitude became the bland apathy of boneless sprawls

8 *Report from the Aleutians*, 1943.

9 US Fish and Wildlife Service, *Battle for the Aleutians: A Brief Illustrated History* (US Fish and Wildlife Service Alaska Region, 2011), https://www.google.com/books/edition/Battle_for_the_Aleutians/2azU5-eX-woC?hl=en&gbpv=1&dq=aleutian+stare&pg=PP36&printsec=frontcover.

10 Roger Galen Perras, *Stepping Stones to Nowhere: The Aleutian Islands, Alaska, and American Military Strategy, 1867–1945* (Naval Institute Press, 2003), 159.

and glazed, opaque eyes—the “Aleutian Stare.” They looked like veteran commuters waiting for a train that would never come.”¹¹ These conditions took their toll on personnel’s mental and physical health. The weather, combined with the tedium and sense of boredom, rendered the impacts of the “Aleutian Stare” noticeable. “In the end,” Garfield notes, “some of them [personnel] reached the worst kind of desperation—a total unfeeling calm. One by ones and two by twos, they began to disappear, sent back to the States under sedation.”¹²

In addition to the NCB World War II era cruise book and historical assessments of the Aleutians campaigns, references to the “Aleutian Stare” also appear throughout descriptions of fishing communities and fictional narratives set in the Aleutians.¹³ Each work paints a picture of the harsh climate and the “Aleutian Stare” as a state one enters when the conditions are too much to bear. As the 2004 through 2006 Poet Laureate of Alaska, Jerah Chadwick wrote, “I’ve heard what these islands can do to a man’s eyes. Stares of water and weather, as if the barrenness were echoing.”¹⁴ Such accounts and the pervasiveness of the term suggest location and climate have a direct bearing on the well-being of armed services personnel. When paired with historical sources and literature, the description of the “Aleutian Stare” in the 138th NCB cruise book challenges the depiction of high morale throughout the war promoted by *Report from the Aleutians* and offers a different take on the reality of living and working on Adak or Attu.

As chairman of the Committee of National Morale during World War II, Arthur Upham Pope underscored that “morale wins wars, solves crises, is an indispensable condition of a vigorous national life and equally essen-

11 Brian Garfield, *The Thousand Mile War: World War II in Alaska and the Aleutians* (Bantam Books, 1969), 162, https://books.google.com/books?id=9_bgaZyjnJkC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

12 Garfield, *Thousand Mile War*, 163.

13 Literature contains several references to the Aleutian Stare, including Harry B. Dodge, *The Hunts* (AuthorHouse, 2011); Francis E Caldwell, *The Search for the Amigo* (Anchor Publishing, 2000); Spike Walker, *Working on the Edge: Surviving the World’s Most Dangerous Profession: King Crab Fishing on Alaska’s High Seas* (St. Martin’s Press, 1991).

14 Jerah Chadwick, “Aleutian Stare,” *Cutbank*, vol. 1, issue 19 (Fall 1982) <https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=1843&context=cutbank>.

tial to the maximum achievement of the individual.”¹⁵ Although Seabees used humor to describe the “Aleutian Stare” in their cruise book, the widespread testimony about the gaze and its recurrence in secondary literature after the war establishes that the condition undoubtedly had an effect during wartime on the degradation of morale. While *Report from the Aleutians* captures the victorious spirit of the Aleutians campaign, the “Aleutian Stare” offers a realistic picture of environmental impact on personnel by analyzing change over time.

INCREASED FOCUS ON MORALE AND MENTAL HEALTH

The impacts of the “Aleutian Stare” can be broadly characterized into a larger understanding of morale and mental health in the United States. By the postwar period, medical professionals treated “morale” and mental health as related concepts that underscored mental readiness as an essential component to the health of all armed services. Following World War II, the National Mental Health Act “authorized the Surgeon General to improve the mental health of US citizens through research into the causes, diagnoses, and treatment of psychiatric disorders.”¹⁶ In 1949, the National Institute of Mental Health opened its doors, and the National Association for Mental Health declared May to be National Mental Health Awareness Month.¹⁷ As Dr. R. F. Tedgold explained, “Morale is interlinked with mental health and contributes to it”¹⁸ While serving on board ships, in submarines, or in isolated duty stations, individual and group morale have remained vital

15 Arthur Upham Pope, “The Importance of Morale,” *The Journal of Educational Sociology* 15, no. 4 (1941): 195, <https://doi.org/10.2307/2262466>. For more on Pope and his work with the Committee of National Morale, see his papers located at the New York Public Library, <https://archives.nypl.org/mss/2454>.

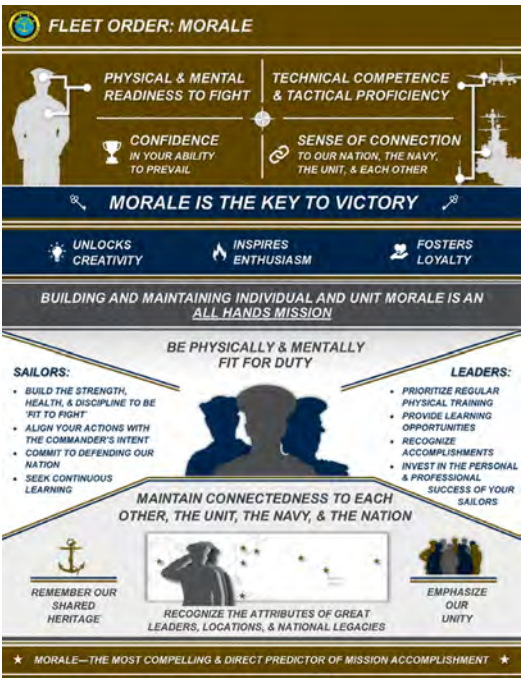
16 “NIMH Legislative Chronology,” National Institute of Mental Health, accessed 13 May 2024, <https://www.nih.gov/about-nih/what-we-do/nih-almanac/national-institute-mental-health-nimh#:~:text=1946%E2%80%94P.L.%2079%2D487%2C,and%20treatment%20of%20psychiatric%20disorders>.

17 “Benefits.gov spotlights Mental Health Awareness Month,” Benefits.gov, 7 May 2013, accessed 14 May 2024, <https://www.benefits.gov/news/article/163>.

18 R. F. Tedgold, “Morale and Mental Health in Modern Society” accessed on 1 April 2024, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5078410/pdf/menthealthlond70509-0005.pdf>.

components of well-being and readiness since World War II and remain critical factors in establishing the health of the fleet.

MORALE AND MENTAL HEALTH IN THE MODERN DAY



Standing orders from Commander, Pacific Fleet on morale and mental health. (Commander, US Pacific Fleet, March 2023, <https://www.cpf.navy.mil/About-Us/Fleet-Orders/Morale/>)

Over eight decades after the publication of the 138th NCB’s cruise book, morale continues to play a key role in how the Navy gauges the readiness of the force and the health of all war-fighters. Open from June through August 2023, the Health of the Force (HoF) Survey invited all active-duty personnel to fill out a questionnaire that would help Navy leadership assess the state of the force. According to the survey questionnaire fact sheet, “Together with the Defense Organizational Climate Survey (DEOCS), the HoF is a way to measure whether Navy Quality

of Service is getting better or worse.”¹⁹ While survey results revealed that perceptions of morale increased from 2021, most respondents would not describe their command’s morale as high or very high. These metrics underscore the continued influence of morale and the room for improvement.²⁰ They also necessitate a deeper consideration of environmental factors. While the 2023 HoF survey focused on work environment (HoF-W), it did not consider

19 “Navy Health of the Force Survey Fact Sheet,” My Navy HR, June 2023, https://www.mynavyhr.navy.mil/Portals/55/Messages/NAVADMIN/FACT_SHEETS/Fact_Sheet_NAV_141_23.pdf.
20 “Health of the Force Report,” United States Department of the Navy, CY2023, 8, accessed April 2024.

differing duty environments when measuring burnout, stress, command morale, sleep, or work-life balance.

With May serving as Mental Health Awareness Month, history reminds us that morale and mental health are not synonymous, but they are intrinsically linked and remain necessary considerations for the overall well-being of the fleet. While some sources, such as *Report from the Aleutians*, can color our interpretation of previous conflicts, the 138th NCB's inclusion of the "Aleutian Stare" in a 1945 cruise book underscores the reality of war, the cost of isolation, and the impact of environment as a significant contributor to the morale and overall health of a fighting naval force.

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THE REVOLT OF THE ADMIRALS

Peter C. Luebke



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SUMMARY

In 1949, a series of congressional hearings that opened as an inquiry into alleged irregularities in the procurement of the Air Force's B-36 Peacemaker strategic bomber became a referendum on the roles and missions of the Navy. Chief of Naval Operations (CNO) Louis Denfeld delivered testimony that diverged from the views of Chairman of the Joint Chiefs of Staff (JCS) Omar Bradley, Secretary of the Navy Francis Matthews, and Secretary of Defense Louis Johnson, particularly on matters of naval aviation and the Navy's role in executing national strategy. Following Denfeld's testimony, President Harry S. Truman removed Denfeld as CNO. The public airing of Navy grievances in the hearings—and the ouster of Denfeld—led the press to dub the affair the "Revolt of the Admirals." Although the B-36 served as the proximate cause of the "revolt," the entire matter reflected the contentious and unsettled configuration of the national security and defense establishment following World War II.



Admiral Louis E. Denfeld reads his acceptance speech as he becomes Chief of Naval Operations upon the retirement of Fleet Admiral Chester W. Nimitz on 15 December 1947. The ceremony took place in the Office of the Secretary of the Navy in Washington, DC. (NHHC, NH 62369)

THE REVOLT OF THE ADMIRALS

Contextualizing the “Revolt of the Admirals” demonstrates the affair to have been a particularly public coda to arguments that had occurred largely out of sight among the services, the president, and the new Department of Defense. Disagreements about the roles and missions of the armed services

in an era of austerity following World War II—predicated upon perceived lessons learned about how the United States had fought that war—created tension among the armed services.

The United States won a clear victory in World War II, but lessons other than that all the services had played a critical role in securing that victory remained less clear. The role and use of aviation in particular created friction between the services, as the Navy and Army Air Forces (AAF) drew diverging lessons from World War II.

During the interwar years, US Navy leadership grasped that aviation would play a large role in future wars. They explored concepts of how precisely naval air power could be used with Fleet Problems and at the Naval War College prior to World War II. The campaigns in the Pacific validated the central role of naval aviation to the Navy. Aircraft carriers demonstrated themselves as key platforms for force projection and naval air power with the ability to operate effectively against shore-based opposition and targets. Historian Jeffrey Barlow observed that, by the end of World War II, the Navy believed “its carrier would have to be capable of launching limited offensive strikes against selected land targets in the initial stages of a war.”¹ World War II also showed the Navy the value of controlling its own air assets so that they could be used with maximum efficiency to support operations.

The AAF, as well, thought that World War II had validated its concept of operations. AAF leadership assessed the strategic bombing campaign against the Axis powers as a great success that proved beyond a doubt the efficacy of strategic airpower. While some studies, such as that of the United States Strategic Bombing Survey, found that the strategic air campaign had not been as effective as claimed, AAF leadership tended to write any shortfalls off to divided efforts. In other words, they thought diversion of AAF resources to provide tactical air support and other support for the Army and the Navy had hurt the strategic bombing campaign, which would have been more successful had it been conducted independently and free from other requirements.² The fact that the atomic bombings of Hiroshima and

1 Quoted in Jeffrey G. Barlow, *Revolt of the Admirals: The Fight for Naval Aviation, 1945–1950* (Naval Historical Center, 1994), 21. See more generally Barlow, *Revolt of the Admirals*, 4–8.

2 Barlow, *Revolt of the Admirals*, 13–21. See also Walton S. Moody, *Building a Strategic Air Force* (Air Force History and Museums Program, 1996), 13–26.

Nagasaki led to the Japanese surrender only strengthened AAF's conviction that strategic bombardment had proven its importance.

These differing beliefs on the lessons learned from World War II shaped the postwar debates over national security policy and defense unification. The Army Air Forces believed World War II demonstrated it needed sole control over the air, while the Navy argued that the Pacific campaigns substantiated the need for its own air component.

World War II also made clear the necessity for some degree of armed forces unification. The scope, scale, and complexity of operations suggested that an overall leader—other than the chief executive—would need to synchronize joint efforts. The Navy feared that unification would undermine its independence and result in the lion's share of postwar funding going to the Army or the AAF. Similarly, the Marine Corps also feared for its existence under a joint structure, believing that the Army might make them redundant. Eventually, President Truman made clear that he supported unification efforts. Accordingly, in 1946, Secretary of the Navy James Forrestal and Secretary of War Robert Patterson, with input from their service heads, agreed upon the form of a unified defense establishment. Among other changes, the Army and Navy would be placed under a secretary of defense, as would the newly created Air Force.³

The passage of the National Security Act of 1947 formally established the Joint Chiefs of Staff (JCS) as well as created the National Military Establishment and the position of secretary of defense. While unification had occurred on paper, it remained for the new secretary of defense and the services to hash out the division of roles and responsibilities within the new structure. The National Security Act and Executive Order 9877, in which President Truman directed its implementation, assigned broad responsibilities to the services based on domain. Room remained for the services to debate their own primacy and roles, especially as concerned to aviation. The Navy's requests for large aircraft carriers—ones that might embark aircraft that could deliver atomic weapons—emerged as a topic of especial sensitivity, as it seemed to overlap with the newly created Air Force's

3 Jeffrey G. Barlow, *From Hot War to Cold: The U.S. Navy and National Security Affairs, 1945–1955* (Stanford University Press, 2009), 57–95.

strategic mission. Questions also arose around the apparent overlap of the roles and missions of the Army and the Marine Corps.⁴

Secretary of Defense James Forrestal convened two separate conferences with the JCS to address the issue of air power and atomic weapons. The first of these took place at Key West, Florida, in March 1948. There, the services agreed that the Navy would maintain its own air assets, but the Air Force would bear sole responsibility for the strategic strike mission. Despite the apparent harmony, Air Force Chief of Staff Carl Spaatz indicated he still believed that the Air Force should control all air assets. A meeting at Newport, Rhode Island, in July 1948 addressed questions regarding the control and use of nuclear weapons, with the Navy arguing that it required access and use to accomplish its mission. The Air Force, however, saw this position as an encroachment upon its strategic role.⁵ These debates prompted CNO Denfeld to establish the Organizational Research and Policy Division (OP-23) under the leadership of Captain Arleigh Burke. Scholars have assessed the role of OP-23 as “countering arguments favoring service unification.”⁶

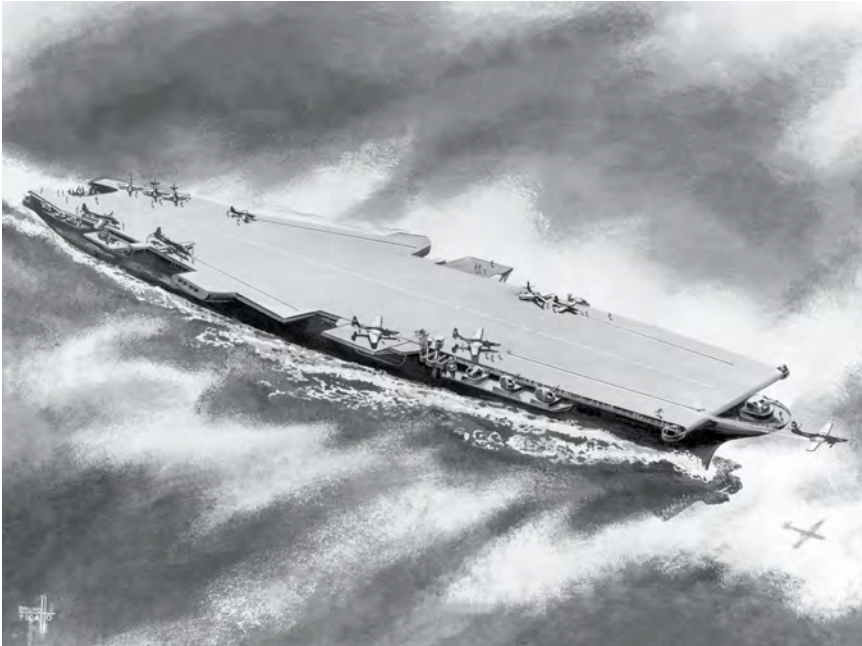
Addressing questions of roles, missions, unification, and national defense strategy would have resulted in tension among the services regardless, but a desire to cut overall government spending intensified the sharpness of the debate. In an era of diminishing budgets and looming austerity, debates over roles and missions, and the limits of armed services integration could appear as existential crises for leadership. Increasing tensions with the Soviet Union created concerns regarding national security policy, most acutely, whether foreign aid would provide the most prudent way of ensuring the national interest or whether military expenditures would give the best outcome. Priorities far outweighed the means available to address them and Truman kept cutting the budget. As Melvyn P. Leffler, an eminent scholar of the Cold War, has written, Truman thought that “domestic priorities must not be compromised; that economic reconstruction abroad

4 Kenneth W. Condit, *The Joint Chiefs of Staff and National Policy, 1947–1949*, vol. 2 (Office of Joint History, 1996), 87–95.

5 Condit, *Joint Chiefs of Staff and National Policy*, 87–98; see also Thomas C. Hone and Curtis A. Utz, *History of the Office of the Chief of Naval Operations* (Naval History and Heritage Command, 2020), 200–1.

6 Hone and Utz, *History of the Office of the Chief of Naval Operations*, 201.

was more important than rearmament at home; that coopting and reconstructing former enemies abroad were more important than engaging the new adversary.”⁷ Within the climate of constriction and budgetary pressure, interservice rivalry over big-ticket defense expenditures could quickly intensify, especially given the Navy’s resistance to unification and lingering distrust over whether the Air Force intended to abide by the Key West and Newport agreements.⁸



Artist's conception of USS *United States* (CV-58) from October 1948 showing the ship's approximate planned configuration as of that time. This carrier was laid down at Newport News, Virginia, on 18 April 1949 and cancelled by Secretary of Defense Johnson a few days later. (NARA, 80-G-706108)

7 Melvyn P. Leffler, “Austerity and U.S. Strategy: Lessons of the Past,” in Melvyn P. Leffler, *Safeguarding Democratic Capitalism: U.S. Foreign Policy and National Security, 1920–2015* (Princeton University Press, 2017), 310. More broadly, see Melvyn P. Leffler, *A Preponderance of Power: National Security, the Truman Administration, and the Cold War* (Stanford University Press, 1992).

8 Hone and Utz, *History of the Office of the Chief of Naval Operations*, 193–96. See also Steven L. Rearden, *The Formative Years 1947–1950* (Historical Office of the Office of the Secretary of Defense, 1974), 393–422.

A flashpoint proved to be a dispute over whether or not the JCS had agreed to the Navy's acquisition of *United States* (CV-58) in 1948, following the conference at Key West. In May of 1948, CNO Denfeld told Congress that the JCS had agreed to the carrier. Two weeks later, Carl Spaatz disputed Denfeld's statements and claimed that the Air Force had not agreed to the carrier. Such public divergences of opinion and ongoing argument between the services led the JCS to consider the issue again at its 26 May meeting, where the JCS—except the Air Force—agreed to approve construction of the carrier. Congress provided funding, and the Navy laid the keel for *United States* in February 1949.⁹

There matters stood, apparently resolved, until the appointment of Louis Johnson as secretary of defense on 28 March 1949. Forrestal had also brokered the agreements at Key West and Newport that apparently settled questions of the Navy's role. Sadly, the stress of the unification fights following his years of earlier service in the Navy Department had taken a toll on Forrestal, who had become increasingly unable to execute the responsibilities of his office.¹⁰ Navy leadership felt no fondness at all for Johnson, who they perceived as an Air Force partisan. Events seemed to prove those fears right, as Johnson soon reopened discussion on whether or not the Navy truly needed *United States*. The JCS again discussed the carrier in April 1949, but this time the Army joined with the Air Force in opposing its construction. Aware of the JCS draft memos, Johnson had already determined his response, so when he received the final memos from the JCS on 23 April, he immediately canceled the carrier with the tacit approval of President Truman. A press release announced the decision.¹¹ Johnson's decision and his announcement of it came without consultation with either the Secretary of the Navy or the CNO. "Absolutely infuriated,"

9 Condit, *Joint Chiefs of Staff and National Policy*, 173.

10 Historian Melvyn P. Leffler writes that Forrestal's eventual suicide stemmed from the defense unification controversies: "Forrestal's depression emanated from his inability to control the raging controversies among the military services over missions, roles, and budgets; his sense of failure stemmed from his belief that he had designed recipes for military unification and for the defense establishment that were failing." Melvyn P. Leffler, "Austerity and U.S. Strategy," 306. For more on Forrestal's career, service as Undersecretary of the Navy, and then Secretary of the Navy, see Robert Greenhalgh Albion and Robert Howe Connery, *Forrestal and the Navy* (Columbia University Press, 1962).

11 Condit, *Joint Chiefs of Staff and National Policy*, 173–75.

Secretary of the Navy John Sullivan resigned.¹² Sullivan would be replaced by Francis P. Matthews, “a lawyer-businessman with no previous administrative experience in the federal government or military service.”¹³ The actions of Johnson also telegraphed to the Navy that under the new configuration, the civilian leadership of the Department of Defense could act arbitrarily, without due consideration of the uniformed service’s opinions.

The ascendancy of the Air Force, exemplified by Johnson’s cancellation of *United States* and a particularly active Air Force public affairs campaign, led to drastic, and unofficial, action by Special Assistant to the Undersecretary of the Navy Cedric R. Worth. Assisted by Commander Thomas D. Davies, a naval aviator who served as an assistant to the Assistant Secretary of the Navy for Air and as a staff officer in OP-23, Worth penned what became known as the “Anonymous” document that attacked the Air Force’s B-36



Secretary of Defense Louis A. Johnson (center) attends a briefing with several naval officers in the hangar of an aircraft carrier, circa the late 1940s. Officers present from left to right include: Captain R. N. Smoot, Rear Admiral R. F. Good, Captain W. Beakley, and Captain K. Craig. (NHHHC, NH 96303)

12 Admiral Dennison, quoted in Barlow, *Revolt of the Admirals*, 189.

13 Barlow, *Revolt of the Admirals*, 205–6.

strategic bomber program. One historian has assessed that document as “cobbled together from aeronautical industry gossip and wild suppositions” that lobbed “highly negative aspersions on the reputations of senior officials in the National Military Establishment.” Among other things, it alleged that the secretary of defense and secretary of the Air Force had pushed for the B-36 because of undue influence and corruption.¹⁴ The B-36 had become linked to *United States* because the two programs competed for the same limited resources and the apparent duplication of the strategic strike role with the large-scale bomber and the carrier capable of embarking aircraft that could carry strategic weapons. In mid-late April, Worth passed copies to Glenn Martin, an aerospace magnate and competitor of B-36 manufacturer Boeing. Martin made several copies and gave them to some influential contacts. Worth passed additional copies to others, including members of Congress. Little happened at first.¹⁵

Initially, Chairman of the House Armed Services Committee (HASC) Carl A. Vinson (D-GA) attempted to sidestep the issue of the “Anonymous” document, given its self-evident questionable nature. But, as copies of it circulated and discussion spread, it became impossible to avoid a formal response. Congressman James E. Van Zandt (R-PA) forced the issue. An opponent of the B-36, Van Zandt introduced a resolution calling for an investigation into the B-36 program and delivered a speech on the floor of Congress based on the “Anonymous” document. Vinson could not ignore the resolution and submitted his own resolution to Congress. Vinson’s resolution passed, setting hearings on the B-36 program to start in August. Beyond the B-36, the committee would also consider questions on the roles and responsibilities of the services. Signs of trouble between OPNAV and the civilian leadership of the Navy Department appeared as the service prepared draft position papers; the uniformed officers’ position papers evidenced a strong anti-Air Force agenda, which ran afoul of the wishes of Under Secretary of the Navy Dan Kimball.¹⁶

The first round of hearings on the B-36, which began on 9 August 1949, demonstrated the scurrilous nature of Worth’s document. No witnesses nor

14 Barlow, *Revolt of the Admirals*, 208.

15 Barlow, *Revolt of the Admirals*, 209. See also Condit, *Joint Chiefs of Staff and National Policy*, 176–77.

16 Barlow, *Revolt of the Admirals*, 216–20.

evidence emerged that could show that either Secretary of Defense Johnson or Secretary of the Air Force Stuart Symington had received kickbacks for the B-36. Vinson invited Navy representatives to sit in on the testimony of Air Force officials before the HASC so that they understood the gravity of the situation. Captain Arleigh Burke, for one, observed that “this thing is no longer an investigation of the B-36. It may turn, at any time, into an investigation of the Navy.”¹⁷ Most damagingly for the Navy, at the end of August, Worth claimed authorship of the “Anonymous” document. As historian Jeffrey Barlow has noted, “the Worth revelation was a major blow to the Navy’s credibility, since many in the press looked upon Worth’s action as part of an orchestrated effort by the Navy hierarchy.”¹⁸

After the first rounds of testimony concluded, the Navy began preparation for the next round of questioning in October. Uniformed leadership understood how Worth’s unmasking had hurt their cause. Secretary of the Navy Matthews also took a deeper interest in the Navy’s position and instructed Navy leadership that it should moderate its public criticisms of the Air Force and the B-36. During the interim period, Captain John Crommelin, a prominent naval aviator and an officer with personal associations to Burke (and thus privy to the material that OP-23 had developed against the Air Force), gave an unofficial press conference where he spoke out against unification. Other naval officers announced their support of the position, which in turn led Matthews to direct that views would have to be expressed through “official channels.” Reverberations of these events continued throughout the summer, as Navy leadership and OP-23 prepared for the hearings. Admiral John Dale Price, for instance, leaked to *The Washington Post* that Secretary of the Navy Matthews had ordered Navy leadership not to testify against the B-36 and also unduly limited the number of Navy witnesses. This story in the press—an incorrect one, in fact—provoked an investigation into the leak and an inspector general raid on the offices of OP-23. By the end of the summer, Secretary Matthews held the opinion that the Navy should wrap up the hearings as quickly as possible, while uniformed leadership wanted to make its case to Congress. Captain Crommelin once again convened an unauthorized press conference where he criticized

17 Burke to Rear Admiral Briscoe, 15 August 1949, quoted in Barlow, *Revolt of the Admirals*, 231.

18 Barlow, *Revolt of the Admirals*, 232.

defense unification. The hearings would go on while the Secretary of the Navy ordered Crommelin suspended from duty.¹⁹ As with Worth, the public perceived a coordinated Navy effort to undermine civilian leadership so that it could present its own views to Congress.

HASC hearings resumed on 6 October 1949. Secretary of the Navy Matthews opened with his testimony, sometimes to the outright laughter of Navy officers in the room. Testimony after that came from a number of serving and former officers who spoke against the overall merits of the B-36 and in favor of the Navy's viewpoint that carriers and aviation were essential for sea control. The general tenor of the testimony was such that *Time* magazine labeled it "the revolt of the admirals." On 13 October, CNO Denfeld testified as the last witness for the Navy, providing a full-throated defense of the Navy's role in national defense. He decried budgetary austerity and the cancellation of *United States*. His testimony flew in the face of what Secretary of the Navy Matthews and Secretary of Defense Johnson had wanted. Rebuttal witnesses from the Army and the Air Force spoke out against the Navy, as did Chairman of the JCS Omar Bradley, who delivered harshly critical testimony that accused Navy leadership of subverting civilian control of the military. Testimony concluded on 21 October 1949. Secretary of the Navy Matthews and Secretary of Defense Louis Johnson obtained from President Truman on 27 October the transfer of CNO Denfeld, who went on leave. Admiral Forrest Sherman received an appointment as CNO, and he disestablished OP-23 as one of his first actions.²⁰

CONCLUSION

The revolt occurred because Navy leadership saw in unification the impending loss of their ability to make their own arguments without drawing the ire of the secretary of defense. Other than Denfeld's exit as CNO, the outcome of the "Revolt of the Admirals" remains uncertain. Historians differ on the importance and meaning of the revolt. Some point to the affair as defending the principle of civilian control of the military. Others see the revolt as an affirmation of the Air Force's preference for a strategy reliant upon strategic bombing, even though Navy leadership had neither denied that role nor sought it for themselves. Historian Jeffrey Barlow pointed out

19 Barlow, *Revolt of the Admirals*, 233–43

20 Barlow, *Revolt of the Admirals*, 238–39, 247–78.

that although the Navy lost the revolt, it retained naval aviation, despite the fact that the place of naval aviation had been secured at the Key West Agreement and the Newport Agreement.

Events of 1950 rendered the revolt moot. Approved in April 1950, National Security Council policy paper NSC 68 laid out a strategy of containment and provided broad policy guidance. In June 1950, the outbreak of the Korean War demonstrated the importance of a robust defense establishment. The war itself showed the validity of the Navy's arguments for aircraft carriers, as in the early days of the war, naval aviation provided most of the ground support. Later in the war, the mobility of aircraft carriers proved their value. Finally, and perhaps most important, these developments led to increasing budgets. The size of the armed forces doubled while their budgets tripled, thereby somewhat easing the interservice competition over scarce funds. In the end, there was both room and money for the Air Force and the Navy.²¹

21 Leffler, "Austerity and U.S. Strategy," 311. See also Paul H. Nitze and S. Nelson Drew, ed., *NSC-68: Forging the Strategy of Containment* (National Defense University, 1994).

16

SUMMARY OF OPERATION:
8–15 APRIL 1951, FORMOSA STRAITS

Peter C. Luebke



This article was written in response to an RFI.

SUMMARY

During the Korean War in 1951, a Navy task force departed the area of operations off Korea and steamed south to reassure US ally Chiang Kai-shek and the Nationalist Chinese on Formosa that the United States would not abandon them. The carriers sortied aircraft in air parades over Taiwan—a visible signal of US support—while also flying multiple reconnaissance missions over mainland China in order to assess the invasion threat. The operations in the Formosa Straits therefore met diplomatic, strategic, operational, and tactical needs.

US Navy historian James A. Field Jr. described the 8–15 April operation of the Seventh Fleet in the Formosa Straits in his book *History of United States Naval Operations: Korea*. Field noted that due to concerns over a Chinese invasion, Task Force 77 steamed southwest from Korean waters into the South China Sea. There, the air group flew “air parades” to “strengthen Nationalist morale” and demonstrate the United States’ presence to the Communist Chinese. He also mentioned, “high altitude pho-

tography of selected coastal areas was carried out.”¹ Examination of Navy records reveals that Task Force 77 (TF-77), on two separate days, conducted reconnaissance of three crucial ports on the “invasion coast”: Foochow (Fuzhou), Amoy (Xiamen), and Swatow (Shantou). These flights occurred as part of a sanctioned plan that had been discussed by the State Department and the Joint Chiefs of Staff. Much as Field described, the plan had the goals of strengthening Nationalist Chinese resolve, demonstrating Navy presence to the Communist Chinese, and collecting intelligence on invasion ports. In conjunction with the second day of air parades, Commander Seventh Fleet, Vice Admiral (VADM) Harold Martin, visited Taipei and met with Chinese Nationalist leaders. The dangerous operation concluded without casualties, though the Chinese Communists opened fire on US Navy aircraft at all three ports.

BACKGROUND

Direct Communist Chinese intervention in the Korean War also raised prospects for the safety of Formosa. In June of 1950, President Harry S. Truman declared that the US Seventh Fleet would protect Formosa from Communist invasion. This pledge continued into 1951.²

The State Department and Joint Chiefs of Staff discussed a proposed operation in the Formosa Strait during a joint conference on 4 April 1951. Paul Nitze, director of policy planning at the State Department, expressed concern over the “plans for a show of naval force.” Chief of Naval Operations (CNO) Forrest Sherman stated that “we have given them a job to do—to get some photographs for reconnaissance purposes. The best way to get these is to use aircraft from naval vessels.” He also noted that “it is not so much a show of force as a demonstration that we are still on the job that was assigned to us last June.”³ Later in the conference, he indicated that the idea had come from a recommendation from General

1 James A. Field Jr., *History of United States Naval Operations: Korea* (Government Printing Office, 1962), 344.

2 For further information, see Bruce A. Elleman, *High Seas Buffer: The Taiwan Patrol Force 1950–1979* (Naval War College Press, 2012).

3 “Memorandum of the Substance of Discussions at a Department of State—Joint Chiefs of Staff Meeting, 4 April 1951,” *Foreign Relations of the United States, 1951*, ed. Frederick Aandahl et al., vol. 7, *China and Korea, Part II*, (Government Printing Office, 1983), 1616.

Douglas MacArthur and that the Navy had “agreed with it, with some minor revisions.”⁴ Crucially, Navy leadership in Washington had been involved in planning the upcoming operation.

For Nitze, it remained essential that the operation not appear as a “show of force” or a divergence from earlier policy. Nitze remarked, “If we get hit in Japan and Formosa, we want it to be clear that this is because of a Chinese Communist initiative and not an initiative of ours. If we are not clear on this we will not have any allies. The operation should not appear as a show of force. It should appear to be a continuation of our previous operations.” General Omar Bradley suggested that the reconnaissance be limited to invasion shipping.⁵ In the operation, Navy aircraft would fly over three ports to look for evidence of fortifications and invasion shipping. The Navy’s actions from 8–15 April would be consistent with the outcome of the discussion between the State Department and the Joint Chiefs of Staff.



Four F9F-2 Panther jet fighters prepare to land aboard USS *Boxer* (CV-21) on 23 June 1951 after completing a mission over North Korea. (NHHHC, NH 97281)

4 “Memorandum of the Substance of Discussions at a Department of State,” 1618.

5 “Memorandum of the Substance of Discussions at a Department of State,” 1618.

Besides showing US resolve to the Chinese and collecting intelligence, the operation would also reassure the Chinese Nationalists on Formosa. The naval attaché in Taipei reported that relief of Vice Admiral Arthur Struble on 28 March had upset Chiang Kai-shek, who “appeared genuinely perplexed” and “seemed to feel such change either forerunner or follow up of change in US official policy toward Taiwan which might not be in [the] best interest of ChiNats [Chinese Nationalists].”⁶ Within this context, a presence operation and official visit would also reinforce US commitments to the security of the Chinese Nationalists.

THE OPERATION

Task Force 77 executed the Formosa operations. As of 26 March, *Boxer* (CV-21) and *Princeton* (CV-37) composed the core of TF-77. Rear Admiral (RADM) R. A. Ofstie, commander Carrier Division Five, exercised tactical control in *Princeton*. In *Boxer*, RADM W. G. Tomlinson, commander of Carrier Division Three, served as second in command. Two cruisers and 13 destroyers accompanied the pair of carriers. Prior to the Formosa operation, leadership shuffled the scarce photo-reconnaissance version of the F9F Panther between vessels; several of the F9F-2Ps were transferred from *Princeton* to *Boxer* on 2 April.⁷

On 4 April, *Princeton*, with RADM Ofstie embarked, left TF-77 for Yokosuka. *Philippine Sea* (CV-47), carrying VADM Harold M. Martin, commander of the Seventh Fleet, joined the formation. RADM W. G. Tomlinson remained officer in tactical control (OTC).⁸

From 4 April until 7 April, TF-77 conducted normal operations against targets in North Korea, including close air support and interdiction strikes. On 8 April, TF-77 conducted replenishment and departed for the Formosa Straits. The next day, spent in transit, also served as an opportunity for

6 “The Naval Attaché at the Embassy in the Republic of China (Jarrett) to the Commander, Seventh Fleet (Martin),” *Foreign Relations of the United States, 1951*, ed. Frederick Aandahl et al., vol. 7, *China and Korea, Part II* (Government Printing Office, 1983), 1627.

7 Memorandum for COM CAR DIV FIVE, 31 March 1951, 1951 Letter File, Incoming, box 6, folder 4, Ralph A. Ofstie Papers, Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

8 W. G. Tomlinson to Wife, 14 April 1951, box 3, folder 5—Personal Correspondence 1950–1953/57–58/60–61/63–65, William G. Tomlinson Papers, Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

training. Aircrews practiced attacks on towed sleds, while ships drilled on defensive measures and “other fundamentals designed to improve readiness.”⁹ Carrier Air Group 101 in *Boxer*, for instance, conducted 40 training sorties.¹⁰

Poor weather on 10 April resulted in no flight operations. The start of the operations would begin the next day.

While in the Formosa Straits, TF-77 sought to gather intelligence on the Chinese “invasion coasts.” To this end, photographic aircraft flew missions to Foochow, Amoy, and Swatow on 11 April and Foochow and Amoy on 13 April. The Navy used jet aircraft for the mainland flights; additional photo-reconnaissance sorties using prop-driven F4U-4P aircraft accompanied the air parades, and AD-4W radar photo aircraft from *Philippine Sea* flew as part of the air parades on both 11 April and 13 April.

F9F-2Ps of composite squadrons (VC) 61, escorted by other Panthers from fighter squadron (VF) 721, overflowed the Communist Chinese cities of Foochow, Amoy, and Swatow on 11 April. The flights over Foochow faced poor weather, which limited them to only oblique shots of their targets. Pilots noted, “Airfields in good condition with plenty of well-kept revetments, yet no aircraft were spotted.” Over Foochow, they reported anti-aircraft fire of “about 40mm bursts with some small white bursts showing occasionally.”¹¹ The Amoy flights made several passes and noted construction at Makang Airfield. These flights drew “heavy intense AA fire,” which “intensified to the point that both planes were forced to take evasive action by turning, increasing speed, diving turns and climbs.” The reconnaissance flights and their escorts subsequently “made several runs in picking up gun emplacements over Amoy.” Due to the accuracy and intensity of the fire at

9 “Report of Task Force 77 Operations in Korea, 4–19 April 1951,” 13 May 1951, Commander Carrier Division 3 (Commander Task Force 77), Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

10 “Action Report; East Coast Korea, Formosa Straits, 17 March–21 April 1951,” 27 April 1951, Commander Carrier Air Group 101, Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

11 Photo Pilot Narrative, Foo Chow Area, 11 April 1951, “Report of Operations off the China Coast and in the Formosa Area in Long Range Support of the UN Forces in Korea,” Commander Carrier Division 3 (Commander Task Force 77), Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

Amoy, the pilots believed “that radar fire-control was being used.”¹² The Swatow flight flew over the city and harbor “for about ten minutes making photo runs at 7,000 feet.” After completing the high-altitude run, the aircraft dropped down to 1,000 feet for a north-to-south run along the west edge of the city, which drew some ground fire, though “no air bursts were seen.” The aircraft then turned for a west-to-east run along the south of the city, which provoked “black airbursts from antiaircraft guns,” which “continued firing until we had flown east past the mouth of the harbor.” Pilots said they saw “approximately 30 to 40 bursts in 5 to 10 seconds.”¹³

Due to inclement weather on 12 April, air operations were prohibited.¹⁴ Flights returned to Foochow and Amoy on 13 April. Once again, the Navy pilots faced poor weather and ground fire. The aircraft in Foochow completed vertical strips of the city, “finishing the work assigned.” Pilots noted shipping traffic in port, as well as the locations of antiaircraft guns. On this visit, the antiaircraft fire “was of varied intensity and accuracy, with some small tracers noted occasionally and generally closer than the large bursts.”¹⁵ Reconnaissance flights revisited Amoy, noting vehicles and people in the streets and construction of trenches, gun emplacements, and buildings at Makang Airfield. Overcast at 5,000 feet prevented early detection, with the flight dropping out of the clouds to take their photos and then ducking back into them. Doing so avoided Chinese ground fire, which led

12 Photo Pilot Narrative, Amoy Area, 11 April 1951, “Report of Operations off the China Coast and in the Formosa Area in Long Range Support of the UN Forces in Korea,” Commander Carrier Division 3 (Commander Task Force 77), Navy Archives, Naval History and Heritage Command, Washington Navy Yard.

13 Photo Pilot Narrative, Swatow Area, 11 April 1951, “Report of Operations off the China Coast and in the Formosa Area in Long Range Support of the UN Forces in Korea,” Commander Carrier Division 3 (Commander Task Force 77), Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

14 “Action Report; East Coast Korea,” Commander Carrier Air Group 101.

15 Photo Pilot Narrative, Foo Chow Area, 13 April 1951, “Report of Operations off the China Coast and in the Formosa Area in Long Range Support of the UN Forces in Korea,” Commander Carrier Division 3 (Commander Task Force 77), Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

the pilots to conclude, “It would seem unlikely that the AA fire reported in the narrative of 11 April was radar controlled.”¹⁶

Later, RADM Tomlinson relayed the results of the reconnaissance flights to RADM Ofstie in *Princeton*. Tomlinson expected to meet with Ofstie to debrief him on 18 April, but committed some of his thoughts to paper. He told Ofstie that “our photo jets got shot at every time they went over land down south[,] AA [anti-aircraft fire] was heavy and fairly accurate in the middle location (not bad at other points), but by changing speeds and altitudes no one got scratched.” Continuing, Tomlinson mentioned that the accuracy of fire on 11 April suggested radar-controlled antiaircraft fire, but that the return visit on 13 April revealed that it had been aimed visually. Tomlinson warned Ofstie that, “their look outs were alert (in clear weather) and fire was opened promptly and with enthusiasm.”¹⁷

Surface units supported the reconnaissance overflights. The destroyer *John A. Bole* (DD-755) took up a bird dog station off Swatow, likely to provoke activity in the port. The photo-reconnaissance flights did not report seeing *John A. Bole*, though several did report making radio contact with the “birddog.”¹⁸

On both 11 and 13 April, aircraft took part in “air parades.” The first parades on 11 April proceeded along the coast of mainland China as a reminder of the power the US Navy could project. *Philippine Sea* and *Boxer* generated over 100 sorties for the “air parade.” Carrier Air Group 101 in *Boxer* contributed 60 sorties to the air parade, while *Philippine Sea* aircraft flew 63.¹⁹ The air parades on 13 April coincided with VADM Martin’s visit to meet with Nationalist leaders in Taipei. These flights sought to

16 Photo Pilot Narrative, Amoy Area, 13 April 1951, “Report of Operations off the China Coast and in the Formosa Area in Long Range Support of the UN Forces in Korea,” Commander Carrier Division 3 (Commander Task Force 77), Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

17 W. G. Tomlinson to R. A. Ofstie, 17 April 1951, 1951 Letter File, Incoming, box 5, Ralph A. Ofstie Papers, Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

18 James Edwin Alexander, “Who’s in Charge Here,” *Naval History* (February 1997), 48–50.

19 “Action Report; East Coast Korea,” Commander Carrier Air Group 101; and, “Action Report: Formosan Straits and Off East Coast of Korea, 15 March to 30 May 1951,” USS *Philippine Sea*, Archives Branch, Naval History and Heritage Command, Washington Navy Yard.

show the force the US could use to protect Formosa. Additionally, this air parade offered the chance for some photo-reconnaissance aircraft to map Formosa. As RADM Tomlinson put it, these parades “gave moral support to Chinese Nationalists” while “provid[ing] area familiarization to units of this Force.”²⁰ Unlike the reconnaissance flights, the air parades stayed more than three miles from the Chinese mainland coast.²¹ The air parades also had the desired effect, with the US naval attaché in Taipei reporting that VADM Martin’s visit was “considered timely. General opinion it reassuring to ChiNats who feel extremely low over dismissal of General MacArthur.”²²

With the reconnaissance and parades complete, TF-77 had finished its mission. Training took place on 14 April, while air operations ceased on 15 April, as *Boxer* transited back to the Sea of Japan.²³ On 16 April, TF-77 resumed operations against targets in North Korea.

CONCLUSION

Task Force 77 completed its mission, as assigned. The reports, from the officer in tactical command down to the individual squadrons involved, conceived of the operation as a way to demonstrate support for the Chinese Nationalists and gain valuable intelligence on possible invasion dispositions in Communist Chinese ports along the “invasion coast.” Policymakers and commanders on the ground assumed that there would be risks associated, particularly with the intrusive reconnaissance overflights.

20 “Report of Task Force 77” Commander Carrier Division 3.

21 “Action Report: Formosan Straits” USS *Philippine Sea*.

22 “The Naval Attaché at the Embassy in the Republic of China (Jarrett) to the Commander in Chief, Far East (Ridgway),” *Foreign Relations of the United States, 1951*, ed. Frederick Aandahl et al., vol. 7, *China and Korea, Part II* (Government Printing Office, 1983), 1629.

23 “Action Report; East Coast Korea,” Commander Carrier Air Group 101.

US NAVY AMPHIBIOUS SHIPPING CAPABILITIES AND REQUIREMENTS

Ross E. Phillips



This article was written in response to an RFI.

SUMMARY: Amphibious ship numbers and capabilities peaked in the late 1980s and early 1990s, particularly during the Gulf War. During this conflict, the US Navy and Marine Corps deployed and sustained two marine expeditionary brigades (MEB), two marine expeditionary units (MEU), and other smaller units for operations in the Middle East and elsewhere, though this was accomplished with assistance from Military Sealift Command (MSC) and leased vessels. Following the end of the Cold War and the conclusion of the Gulf War, the US Navy's amphibious ship numbers waned and settled between 31 and 38 ships, a similar range to today's capabilities, though maintenance and readiness heavily influence the effectiveness of this capability. The Navy's obligation to maintain 31 amphibious warships comes from the Fiscal Year 2024 National Defense Authorization Act (NDAA), which echoes previous NDAA's.

EVOLUTION OF THE MARINE AIR-GROUND TASK FORCE AND AMPHIBIOUS REQUIREMENTS

Goals for amphibious shipping capabilities varied wildly from 1951 to 1991, with 15 alterations of overall requirements. While marines had provided the landing forces for the numbered fleets since the end of World War II, their unit nomenclature and structure evolved during the Cold War. By the

early 1960s, the triad of the marine expeditionary force (MEF), MEB, and the MEU, in decreasing order of size, capabilities, and shipping requirements, was taking shape.¹

To support the evolution of the amphibious requirement after World War II, three waves of shipbuilding took place. The first occurred during the Korean War (1950–53) and resulted in the dock landing ship (LSD) and new tank landing ship (LST) ships, 23 in total. The second buildup happened during the John F. Kennedy and Lyndon B. Johnson administrations in the early 1960s, resulting in 49 ships being built in the amphibious command (LCC), landing helicopter assault (LHA), amphibious cargo (LKA), amphibious transport dock (LPD), LSD, and LST classes. Another round of building was carried out in the 1970s and 1980s, with LSDs, LHAs, and amphibious assault ships (LHDs) being constructed.² Ships were expected to have an approximately 30-year life expectancy, though some remained in service with extensions.

In addition to supporting the evacuations of South Vietnam and Cambodia in 1975, marine amphibious units (MAUs) and MEUs played significant roles in US operations in Lebanon (1982–84) and Grenada (1983). The 32nd, 24th, and 22nd MAUs, respectively, executed presence operations in Beirut, Lebanon, from August 1982 until the suicide bombing of 23 October 1983, and subsequent withdrawal.³

DESERT STORM AND THE 1990S

At the beginning of the Gulf War on 10 August 1990, Commander in Chief, Central Command General H. Norman Schwarzkopf activated the 1st, 4th, and 7th MEBs for service. The 1st and 7th MEBs were airlifted to the area of operations from California and Hawaii, respectively, but the 4th MEB embarked aboard vessels of Amphibious Group 2 in three transit groups.

1 Edwin H. Simmons, “Getting Marines to the Gulf” *Proceedings* 117, no. 5 (1991): <https://www.usni.org/magazines/proceedings/1991/may/getting-marines-gulf>.

2 Norman Polmar, *The Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet*, 15th ed. (Naval Institute Press, 1993), 162.

3 Benis M. Frank, *U.S. Marines in Lebanon, 1982–1984* (History and Museums Division HQMC, 1987), https://www.marines.mil/Portals/1/Publications/US%20Marines%20In%20Lebanon%201982-1984%20PCN%2019000309800_1.pdf; Ronald H. Spector, *U.S. Marines in Grenada, 1983* (History and Museums Division HQMC, 1987), <https://www.marines.mil/Portals/1/Publications/U.S.%20Marines%20in%20Grenada%201983%20%20PCN%2019000309700.pdf>.

The 4th MEB requested two dozen amphibious warfare vessels for their deployment; however, due to the scarcity of shipping, they were allotted only a dozen. MSC ships and leased vessels made up the difference. MSC provided a squadron of three ships, while three additional ships were leased for the duration of the deployment. The use of supplemental shipping occurred at a time when the US Navy possessed approximately 63 amphibious ships as opposed to today's 32 vessels.⁴

In addition to the MEBs, the Navy/Marine Corps' MEUs were called to supplement forces flowing into the Arabian Gulf. The 13th MEU (special operations capable [SOC]) arrived in theater first on 7 September 1990. They received orders to the Arabian Gulf while on their normal six-month deployment rotation, arriving via Amphibious Squadron 5. The combina-



A bow view of the amphibious assault ship USS *Tripoli* (LPH-10) underway during Operation Desert Storm, 29 January 1991. (NARA, 6467812)

4 Paul Westermeyer, "Shattered Amphibious Dreams" in *Marine Corps History* (Winter 2017); Ronald J. Brown, *U.S. Marines in the Persian Gulf, 1990–1991: With Marine Forces Afloat in Desert Shield and Desert Storm* (Histories and Museums Division HQMC, 1998), 229–34, https://www.marines.mil/Portals/1/Publications/U.S.%20Marines%20in%20the%20Persian%20Gulf%2C%201990-1991_With%20Marine%20Forces%20Afloat%20in%20Desert%20Shield%20and%20Desert%20Storm%20%20PCN%2019000314500_3.pdf.

tion of these two units composed the Amphibious Ready Group (ARG) A, Landing Force Seventh Fleet. When the 4th MEB arrived, both units fell under the command of US Naval Forces Central Command and, with Amphibious Groups 2 and 5, formed Amphibious Task Force 150.6 (TG-150.6) with the two marine forces comprising Landing Force 150.8 (TG-150.8). Schwarzkopf placed these forces in theater reserve, and only he could order their employment. Because of this, the marines remained afloat awaiting the order for an amphibious assault. In preparation, they conducted training exercises for Sea Soldiers I and II in October and November 1990. In early November 1990, the 13th MEU (SOC) departed the area, leaving the 4th MEB as the lone amphibious force. In this same month, liberating Kuwait became the strategic objective, a shift from defending Saudi Arabia. This led to 4th MEB's reinforcement by the 5th MEB, which arrived via Amphibious Group 3 in December 1990.⁵

In January 1991, these forces participated in Sea Soldier IV, the last amphibious exercise conducted during the Gulf War, and the largest Marine amphibious exercise since 1964. The 13th MEU (SOC) returned with Amphibious Squadron 5 in late January 1991 to execute an amphibious raid. Simultaneously, elements of the 4th MEB were called upon that same month to conduct Operation Eastern Exit, the evacuation of the American embassy in Mogadishu, Somalia. Schwarzkopf, I MEF commander Lieutenant General Walter Boomer, and Vice Admiral Stanley Arthur discussed a potential amphibious assault, but it was deemed that the amphibious forces were more valuable providing a feint due to concerns regarding potential damage in populated areas and Iraqi mines. These units remained afloat for the remainder of the conflict.

Simultaneously, the Navy also provided amphibious shipping and supported operations outside of the Arabian Gulf. In Liberia, the marines of the 22nd MEU conducted a noncombatant evacuation, while in the Western Pacific, units of the 9th MEB provided flood relief in the Philippines for Operation Mud Pack.⁶ Following the Gulf War from May 1993 to March 1994, the 24th and 11th MEUs rotated in and out of Somalia for Operation Continue Hope.

5 Westermeyer, "Shattered Amphibious Dreams."

6 Simmons, "Getting Marines to the Gulf."

After the Gulf War, the ability of the Navy and Marine Corps to deploy 3.0 amphibious groups in a consistent manner rapidly declined. Amphibious ship numbers began to decrease. By 1996, amphibious ship numbers had dwindled from a high of 63 in 1989 to 37 in the fall of 1996.⁷ This reduction was caused by the obsolescence of several amphibious ship classes. Since the mid-1990s, the number of amphibious ships fluctuated between 38 and the mandated minimum of 31 ships. With a lack of capacity to build additional hulls, maintaining these vessels becomes increasingly important to field a 3.0 ARG/MEU capability.⁸

2000 TO PRESENT

From 1991 to 2014, requirements remained stable with one change.⁹ From the end of the Cold War until 2006, the naval services strived to maintain enough ships and a level of readiness to deliver an assault echelon of 2.5 MEBs. In 2006, this requirement was reduced to 2.0 MEBs, which required between 34 and 38 ships.¹⁰

Despite the reduction in assets, demand remained steady, and the US Navy surged forces when needed, as exhibited in 2003 with the invasion of Iraq.¹¹ The 26th MEU (SOC), for example, participated in the invasion of Iraq in April and May of 2003 and Operation Sheltering Sky during the Second Liberian Civil War, serving as the primary tactical unit in the latter operation.¹² The most recent example of heel-to-toe deployments outside of a combat area is Operation Sea Angel II, which lasted from 19 November to 6 December 2007, when the 22nd MEU (SOC) began disaster relief operations off Bangladesh with the 11th MEU (SOC) replacing them on

7 Norman Polmar, *The Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet*, 16th ed. (Naval Institute Press, 1997), 151.

8 Polmar, *Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet*, 16th ed., 151.

9 Maren Leed, *Amphibious Shipping Shortfalls: Risks and Opportunities to Bridge the Gap* (Center for Strategic and International Studies, 2014), 3, https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/140902_Leed_AmphibiousShipping_WEB.pdf.

10 Leed, *Amphibious Shipping Shortfalls*, 3.

11 Peter Swartz, *U.S. Marine Corps Deployment Strategy, 1775–2016* (Center for Naval Analyses, 2021), 42, <https://www.cna.org/analyses/2021/08/usmc-deployment-strategy-from-1775-to-2016>.

12 Marine Corps History Division, “Lineage of 26th Marine Expeditionary Unit,” <https://www.usmcu.edu/Portals/218/26TH%20MARINE%20EXPEDITIONARY%20UNIT.pdf>.

3 December 2007.¹³ While the Gulf War provides the most robust and traditional example of a 3.0 size ARG/MEU deployment, the use of “dirt” MEUs during the Global War on Terrorism may present use on a similar scale, but with de-emphasis on the amphibious portions of the ARG/MEU model.

Amphibious ship readiness is also impacted by maintenance issues. The Government Accountability Office (GAO) reported in December 2024 that 16 of 32 amphibious ships in the inventory were “in unsatisfactory condition.” Deferred maintenance due to operational tempo was identified as a prime cause for these conditions, with ongoing deferred maintenance being a key contributing factor to early divestment.¹⁴

Per the FY24 NDAA, the Secretary of the Navy is required to maintain 31 amphibious warships as part of the 30-year shipbuilding plan. Warships are defined by the NDAA as LHAs, LHDs, LPDs, and LSDs. To enforce this requirement, no more than 50 percent of operation and maintenance funds may be obligated or expended until the secretary submits a plan that meets the requirement.¹⁵ The FY24 NDAA also requires a maintenance plan to keep three ARGs in continuous operation (three amphibious assault ships and six dock ships).¹⁶ Further, as the GAO noted, possession of ships does not equate to readiness, with many existing ships unavailable for years.¹⁷ The USS *Tortuga* (LSD-46), for example, is on the Navy’s amphibious ship inventory but has not deployed since 2013.¹⁸

13 Annette Amerman, *The Marines Have Landed: Eighty Years of Marine Corps Landings, 1935–2015* (Marine Corps History Division, 2016), 28–29, <https://www.govinfo.gov/content/pkg/GOVPUB-D214-PURL-gpo83508/pdf/GOVPUB-D214-PURL-gpo83508.pdf>.

14 *Amphibious Warfare Fleet: Navy Needs to Complete Key Efforts to Better Ensure Ships are Available for Marines* (Government Accountability Office, 2024), 14–16, <https://www.gao.gov/assets/gao-25-106728.pdf>.

15 National Defense Authorization Act for Fiscal Year 2024, H.R. 2670, 118th Cong., Section 348 (2023), <https://www.congress.gov/bill/118th-congress/house-bill/2670/text>.

16 National Defense Authorization Act for Fiscal Year 2024, H.R. 2670, 118th Cong., Section 352 (2023), <https://www.congress.gov/bill/118th-congress/house-bill/2670/text>.

17 *Amphibious Warfare Fleet*, 8.

18 *Amphibious Warfare Fleet*, 9.

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US NAVY WAR PLANNING IN THE INTERWAR PERIOD

Tyler A. Pitrof



This white paper was written in response to repeated information requests on related topics.

During the interwar period (1919–41), the United States Navy developed an effective service-centric planning system that ultimately produced War Plan Orange, the blueprint for the Central Pacific drive of World War II. This system made use of a pseudo-general staff (the General Board of the Navy), full-scale exercises (the Fleet Problems), and war gaming (the Naval War College) to theorize, exercise, and game out an extensive and specific plan to fight across the Pacific, as well as to use that plan to shape the fleet itself. Although this system was unique in that it came into being and functioned in almost complete isolation from civilian authorities and Army planners alike, it is nevertheless an important model for modern, service-centric planning and force design against a peer competitor.

The American war planning system, as just described, was never a permanent fixture of the Navy. Instead, the institutions that were its component parts, which came into being as part of the professionalization reform efforts of the “New Navy” period, were all introduced with unrelated purposes in mind. Following the Spanish-American War of 1898 and the 1906–1907 war scare with Japan, formal war planning in the Navy commenced with the General Board’s initial studies of a potential Pacific War, with a goal of

preserving the Open Door Policy in China and supporting America's interests. In the aftermath of World War I, and in response to the geopolitical, economic, strategic, and technological challenges facing the sea service, war planning diversified into a network of organizations with the General Board at its center.¹ Despite this decentralization, the clear challenges of a Pacific conflict with Japan encouraged naval officers at all levels of the establishment to pull together, eventually fleshing out the General Board's original concepts with operational plans explored and refined by war gaming and real-world fleet exercises. Given the inherently naval nature of conflict in the Western Pacific (WESTPAC), particularly before the advent of long-range aircraft, the Navy's interwar planning for this contingency was largely unchallenged by the Army or by civilian authorities more interested in arms reduction treaties. This system reached its zenith in the early 1930s, and war gaming in particular gradually fell out of favor after 1934.² Nevertheless, the ranks of the World War II Navy's high command were dominated by men whose careers had matured with War Plan Orange, and the success of US efforts in the Central Pacific owed much to this process.

THE ORIGINS OF WAR PLAN ORANGE

Before the Spanish-American War of 1898, the United States Navy did not possess any kind of strategy or planning organization. The service was instead built around the material bureaus—each of which was responsible for a particular aspect of procurement or maintenance—all in theory answerable to the Secretary of the Navy (SECNAV). In reality, these organizations were virtually independent thanks to the individual supporters each had in Congress. No strategic vision beyond the general guidance of the president and SECNAV directed bureau activities, and for most of the nineteenth century, these authorities had been content to leave the Navy bureaucracy to its own devices.³

The outbreak of war with Spain and the necessity for a clear and decisive strategic direction changed this equation. By 1898, the Navy was over 15 years into what has subsequently become known as the “New Navy”

1 John T. Kuehn, *America's First General Staff: A Short History of the Rise and Fall of the General Board of the Navy, 1900–1950* (Naval Institute Press, 2017), 4–7.

2 Norman Friedman, *Winning a Future War: War Gaming and Victory in the Pacific War* (Naval History and Heritage Command, 2017), 3–4.

3 Kuehn, *America's First General Staff*, 26–71.

reforms, a wave of professionalization and expansion championed by technically minded younger officers. These men, whose ranks included the likes of Stephen B. Luce (founder and first president of the Naval War College [NWC]) and Alfred Thayer Mahan (the soon to-be-famous historian and strategist), had begun agitating for the Navy to form a general staff—a professional peacetime planning organization—after witnessing Prussia’s crushing military victories over Austria in 1866 and France in 1870–71. However, forming an American general staff was nearly impossible in the nineteenth century due to the concept’s highly militaristic connotations.⁴ Only once war with Spain began in 1898 was Secretary John Davis Long



An early meeting of the General Board, circa 1900. From left to right, attendees include: Lieutenant Henry H. Ward, USN; Captain Charles H. Stockton, USN; Captain French H. Chadwick, USN; Lieutenant Commander Robert T. Milligan, USN; Rear Admiral Henry C. Taylor, USN; Rear Admiral Arent S. Crowninshield, USN; Captain Asa Walker, USN; Admiral George Dewey, USN; Captain Charles E. Clark, USN; Captain Charles D. Sigsbee, USN; and Captain George C. Reid, USMC. (NHHC, NH 53150)

4 John B. Hattendorf, B. Mitchell Simpson III, and John R. Wadleigh, *Sailors and Scholars: The Centennial History of the U.S. Naval War College* (Naval War College Press, 1984), 43–45; Scott Mobley, *Progressives in Navy Blue: Maritime Strategy, American Empire, and the Transformation of U.S. Naval Identity, 1873–1898* (Naval Institute Press, 2018), 81–113.

willing to appoint an ad hoc “Naval War Board” (of which Mahan appears to have been a star member), and even then its actual activities remained highly secret due to fears of provoking public outrage that military officers were directing strategy.⁵

Under the guidance of Secretary Long and the Naval War Board, the Navy managed itself reasonably well in the short conflict against Spain. Nevertheless, in the aftermath of this ad hoc success, Long recognized that the likelihood of America’s next major opponent proving equally weak was low. The secretary therefore acceded to the progressive demand for a permanent planning organization. In March 1900, he established the General Board of the Navy with the newly famous Admiral of the Navy, George Dewey, as its president. The Board’s mission was nebulous, being merely “to advise the Secretary of the Navy,” and its existence was similarly tenuous without congressional authorization. But Dewey’s presence until his death in 1917 provided critical clout and continuity that led to de facto recognition of the Board as an authoritative strategic voice in the years after World War I. In its earliest days, war planning was the Board’s primary concern.⁶

While Imperial Germany, in its capacity under Kaiser Wilhelm II as a rogue actor in global politics, was initially the Navy’s primary defensive concern, Imperial Japan gained the enduring attention of the Board as early as 1906. Following the Great San Francisco Earthquake on 18 April, local authorities bowed to pressure by the Japanese and Korean Exclusion League to legally bar “Asiatics” from the city’s schools. A war scare ensued thanks in large part to concentrated attention on the matter by both the American and Japanese press, leading President Theodore Roosevelt to formally ask the General Board for contingency plans. At the time, the vast majority of the American fleet was based on the East Coast, meaning that it would take approximately 90 days to concentrate in the Pacific via the Strait of Magellan (as the Panama Canal was not completed until 1914). It

5 Nicholas Lambert, *The Neptune Factor: Alfred Thayer Mahan and the Concept of Sea Power* (Naval Institute Press, 2024), 2–3, 207–26.

6 It is worth noting that Dewey was the only President of the General Board. After his death, the senior member of the Board assumed the title of “chairman.” Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 58–61; Kuehn, *America’s First General Staff*, 33–113.

would then require refitting before sailing across the Pacific to the defense of the most vulnerable American possession of the time, the Philippines.⁷

While USS *Oregon* (BB-3) transferred from the Pacific to the Atlantic during the Spanish-American War, a full American fleet had never attempted such a feat. Therefore, even when the war scare died down in 1907, Roosevelt elected to proceed with a planned “practice” transfer of the fleet to the Pacific as a learning experience for the Navy. This operation became the first phase of the world cruise of the so-called Great White Fleet from 1907 to 1909, with the second phase (the actual movement of the fleet to the defense of the Philippines) drawn out into a return to the East Coast by way of the Suez Canal. Despite the US Navy’s logistical shortcomings that were exposed by the world cruise, the exercise nevertheless proved that the fleet was fully capable of such a maneuver. That said, it also indicated that significant further study of the issue was warranted if the United States was to remain responsible for the Philippine Islands and planned to enforce its Open Door Policy in China.⁸

Although Germany remained the primary focus of US defense planning through 1919, contingency planning for a war with Japan was never long absent from the General Board’s agenda after 1908.⁹ After World War I and the scuttling of the vast majority of the German Navy, only two other major prospective opponents for the US Navy remained: Great Britain and Japan. While Anglo-American antagonism was a very real and tangible thing in the immediate aftermath of the Great War, a general perception among high-ranking naval officers was that Japan’s regional aspirations (especially in China) would inevitably lead to conflict, meaning Imperial Japan quickly came to be considered the US Navy’s primary planning and budgetary enemy. Executive and legislative disinterest in the Navy and in war planning in general effectively enabled this point of view. By 1922, the preponderance of the Navy’s capital ships had been relocated to the West Coast, and the majority of war planning had come to center around what

7 Daniel P. M. Curzon and Tyler A. Pitrof, “A Pacific Effect”: *The United States Navy, Naval Engagement, and the World Cruise of the Great White Fleet* (Naval History and Heritage Command, 2024), 13–36.

8 Curzon and Pitrof, “Pacific Effect,” 87–98; Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 60; Miller, *War Plan Orange*, 19–26.

9 This was at first due in part to the fact that Japan was the only opponent for which a major shift in the Navy’s operational forces from east to west would be required.

was known as War Plan Orange, with the ultimate objective of restraining Japanese imperialist ambitions and maintaining the Open Door Policy of equal access to China.¹⁰

THE WAR PLANNING SYSTEM

The familiar title for the plan for war against Japan was inherited from a color-coded system created by the Joint Army and Navy Board (JANB) in the interwar period. This board, which was manned by four members of the General Board of the Navy and four from the Army's General Staff, was created under the administration of Theodore Roosevelt to coordinate inter-service matters that had proven problematic during the Spanish-American War. It was nominally the body that carried out the actual war planning process, but in reality, the JANB did not meet regularly or evenly distribute its workload; one service generally took planning priority over the other depending on the plan in question. As the Army believed that defending the Philippines against a Japanese attack at the end of a 6,000-mile supply line from the West Coast was no more than a forlorn hope, it effectively ceded all control over the Orange Plan to the Navy for the vast majority of the interwar period. The plan, therefore, evolved not within the JANB but through the Navy's own three-part planning system.¹¹

By 1922, the General Board was acknowledged as the active-duty Navy's primary voice of authority. Officially, the Board turned over its war planning duties to the JANB in 1909 following the world cruise, but while that organization signed off on iterations of the Orange Plan throughout the interwar years, it was ultimately the JANB's four members from the General Board who brought the material forward from the Navy for joint approval (which, given the Army's disinterest in WESTPAC, was usually a forgone conclusion). Additionally, the General Board had acquired two other important jobs in the interim. The first of these was oversight over fleet design; thanks to its active role in the debates over the first American dreadnought battleships, by 1922, the Board was expected to determine what new ships were needed for the Navy and establish their desired characteristics before any detailed work was done. This power was further enhanced when

10 Steven T. Ross, ed., *American War Plans, 1919–1941, in Five Volumes* (Garland Publishing, 1992), xi.

11 Miller, *War Plan Orange*, 13–15.

SECNAV Edwin Denby delegated the responsibility of enacting the terms of the Washington Naval Treaty to the Board. The treaty introduced naval arms controls in the form of overall tonnage limits for all signatories as well as individual ship type and weapon limitations. Granting the General Board power over how these conditions would be met essentially gave that organization control over what is now known as force design—the overall architecture of the fleet and, by extension, what it was designed to do. This responsibility was effectively codified by the Board’s issuance of the 1922 US Naval Policy establishing how the Navy would meet the new treaty requirements. Most of the General Board’s decisions on this front during the interwar period were shaped by the demands of War Plan Orange.¹²

Between 1919 and 1932, the General Board was composed of twelve officers. Six or seven of these men were admirals coming from or going to major sea commands, and one or two were usually an O-5 (commander) or O-6 (captain) Board secretary. The remaining four were ex officio members of significant influence elsewhere in the Navy: the Chief of Naval Operations (CNO, established in 1915 and nominally equal to the Board’s senior member), the Commandant of the Marine Corps, the president of the Naval War College, and the director of naval intelligence. Unlike the JANB, the permanent members of the General Board met five days a week, and the ex officio members joined them at least once per month. These meetings were either “open” or “closed”; the former often included outside experts invited to share their opinions on matters under the Board’s consideration (and were well documented), while “closed” meetings were generally more informal discussions limited only to the Board itself (and were less thoroughly recorded). In both types of proceedings, the General Board functioned as a democracy and usually only issued a single position paper to the Secretary of the Navy signed by the senior member as chairman of the Board. In this way, the Board had become not only an authoritative voice but also a sort of supreme court for the Navy—a forum in which major debates could be resolved and all voices could be heard.¹³

12 Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 61–65; Kuehn, *America’s First General Staff*, 4–7, 141–50; Tyler A. Pitrof, *Too Far on a Whim: The Limits of High-Steam Propulsion in the US Navy* (University of Alabama Press, 2024), 69.

13 Kuehn, *America’s First General Staff*, 7, 152–65; Pitrof, *Too Far on a Whim*, 87–88.

The roles of two of the ex officio members of the Board—the CNO and the president of the Naval War College—were particularly significant to war planning in the first decade of the interwar period. The CNO’s office worked out the details of war plans with the aid of large-scale exercises, while the War College supported these efforts directly with campaign-level simulations and strategic training of young officers.

Following the creation of the Chief of Naval Operations and accompanying office (OPNAV) in 1915, detailed (operational rather than strategic) war planning passed to OPNAV’s War Plans Division (WPD). The work of this organization was vital to the General Board’s fleet design process during the interwar period, and WPD planners were regularly consulted in open meetings of the Board as to what characteristics and capabilities would be ideal for War Plan Orange and the other secondary color plans. This came in the form of “Basic War Plans” that outlined the immediate actions that the Navy should take based on the current location of all major assets, should war break out in the immediate future. The Basic War Plans were periodically expanded upon via “Contributory War Plans” created by the bureaus. All of these were derived in part from, but additionally contributed to, the CNO’s regularly updated “Estimate of the Situation” that summarized the Navy’s current position vis-à-vis its rivals.¹⁴

The contributions of OPNAV to war planning were additionally aided by large-scale tactical exercises known as “Fleet Problems,” which were carried out 21 times between 1923 and 1940.¹⁵ As opposed to regular fleet maneuvers, the Fleet Problems were unscripted operations involving the vast majority of the Navy’s active warships and were the culmination of the Navy’s training year. For each problem, the fleet was typically divided into two sides (usually “Blue” for the United States and “Orange” for Japan) with opposing objectives and set starting conditions. The commanders of each

14 Thomas C. Hone and Curtis A. Utz, *History of the Office of the Chief of Naval Operations, 1915–2015* (Naval History and Heritage Command, 2020), 60, 76–78, 109–10; John T. Kuehn, *Agents of Innovation: The General Board and the Design of the Fleet that Defeated the Japanese Navy* (Naval Institute Press, 2008), 12–14; Friedman, *Winning a Future War*; Albert A. Nofi, *To Train the Fleet for War: The U.S. Navy Fleet Problems 1923–1940*. (Naval War College Press, 2010); Thomas Wildenberg, *Gray Steel and Black Oil: Fast Tankers and Replenishment at Sea in the U.S. Navy, 1912–1995* (Naval Institute Press, 1996), 45–46.

15 Kuehn, *America’s First General Staff*, 4–7, 102–13.

side—the same who would be expected to actually lead the fleet should war break out—were free to pursue their objectives and were limited only by their imagination. Engagements were umpired by select individuals on each ship (with the Commander in Chief, United States Fleet serving as chief umpire). Initially, umpires were simply instructed to use their “professional judgment,” but later guidance in the form of rules developed by the Naval War College provided a standard structure to these exercises. Scenarios originated with the CNO and included input from the General Board and Naval War College; each had a specific set of objectives behind it, but in general, all of the problems aided the Basic War Plans by testing out how the fleet might fight if war broke out in the immediate future. In doing so, they simultaneously served as a critical source of near-realistic leadership experience and as a way to field test new doctrine and tactics. Ultimately,



Battleships and other vessels of the US Fleet anchored in Panama Bay on 26 February 1929 at the completion of Fleet Problem IX, in which USS *Saratoga* (CV-3) executed a surprise dawn mock-strike on the Gatun and Miraflores Locks. (NHHC, NH 75711)

the Fleet Problems were the practical laboratory where basic concepts of fleet combat in a future campaign were tested out.¹⁶

While Fleet Problems were suitable for tactical simulations, large-scale campaigns were instead the responsibility of the Naval War College (itself a part of OPNAV from the latter's inception until 1934), which utilized a well-developed war-gaming system to test out the broader implications of tactics, design, and technological change. While the NWC had largely functioned as a staff adjunct to the General Board before 1909 (with many of its students even writing theses on current strategic issues facing the Navy) and had utilized war gaming as early as 1887, no formal records were kept on this account prior to 1922, nor did the practice have a standard place in the Navy's thinking.¹⁷ The entire range of concepts that made up War Plan Orange, from cruising formations to how to properly write orders, were thoroughly tested in NWC war games, and the results were duly reported to the General Board and the CNO for the majority of the interwar period.¹⁸

Between 1922 and 1934, the NWC trained all the officers involved in refining War Plan Orange in a specific strategic approach best exemplified by the aforementioned "Estimate of the Situation." This was an applicatory, or learning by doing, approach to planning. The estimate was an analysis of a situation in which the planner would first establish a list of possible enemy actions in response to a specific problem or objective. The individual would then work out a list of their own possible courses of action in response to these possibilities, with the most likely scenarios emphasized. War gaming at the NWC essentially pitted two opposing estimates of the situation against one another, teaching officers how to refine their own strategic assessments. Once trained in the basic practice of creating estimates, officers attending the NWC would then learn how to play the war games that the institution had developed by observing a game or two before participating in a minimum of eight games at the tactical and operational level, each lasting up to a few days. The classes concluded with a final, "big game" at the campaign level, which more often than not was trans-Pacific. Additionally, students were required to write a thesis for each of the four

16 Nofi, *To Train the Fleet for War*, 1–3, 19–24, 27–42.

17 Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 60, 64–65; Nofi, *To Train the Fleet for War*, 28.

18 Friedman, *Winning a Future War*, 33, 142.

NWC departments that usually included the major strategic or operational issues that would be faced in a potential war with Japan. By the 1930s, this training was effectively a prerequisite for positions in the WPD, and every major commander of the Pacific War was familiar with the thinking and practice behind the NWC's war games, the Estimate of the Situation, and War Plan Orange by these means.¹⁹

Sitting at the intersection between warship and force design, detailed war planning, large-scale exercises, war gaming, and strategic training, the General Board was the nexus for this information and planning cycle. War plans were developed in OPNAV's WPD, and the needs this imposed upon the fleet brought to the General Board for consideration in the context of fleet architecture and individual warship design. These concepts were then further refined at the tactical, operational, and campaign levels by the Naval War College, which utilized war games to develop the actual methods by which a given war plan would be implemented. Simultaneously, Fleet Problems put tactical and sometimes operational developments into practice in as realistic a way as possible and the results were in turn fed back into the NWC's activities. Data from both the Fleet Problems and the NWC's war games were then forwarded to the General Board, where they were discussed and influenced the next round of war planning and warship design. This was a never-ending, iterative process that by 1934 produced the blueprint for the war against Japan.

EVOLUTION OF WAR PLAN ORANGE AND THE PLANNING SYSTEM

As early as 1914, the General Board established the basic framework of War Plan Orange that would endure through the interwar period and characterize the Pacific War. This envisaged a three-phase conflict without allies on either side. Phase I and Phase III were more or less finalized by World War I, but Phase II was the subject of intense debate right up to World War II and was most profoundly affected by political and planning system changes.

Based upon Japanese actions in the First Sino-Japanese War (1894–95) and the Russo-Japanese War (1904–1905), as well as geographic realities that permitted Japan to concentrate its forces rapidly, Phase I anticipated a sur-

19 Friedman, *Winning a Future War*, 47–54; Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 70–71, 125–28; Kuehn, *Agents of Innovation*, 31–33.

prise Japanese attack on the limited American forces in the Western Pacific. While the bulk of the American fleet was in the Atlantic prior to 1919 and then in California until 1941, and therefore considered immune to surprise direct attack, it was also too far away to quickly intervene. Japan would therefore follow up on its surprise attacks with the rapid and easy occupation of its objectives—potentially including the Philippines. It would then establish a defensive perimeter of island bastions, as its inferior strength and distant position rendered it unable to directly attack the United States itself.²⁰

In Phase II, the United States would be forced to advance across the Pacific Ocean and penetrate this defensive perimeter to reclaim its lost positions and engage the Imperial Japanese Navy (IJN) in a decisive battle.²¹ The exact details of how this would be carried out swung between two primary schools of thought, generally referred to as “thrusters” and “cautionaries.” The “thruster” faction, which included General Board President Dewey, generally dominated the debate until the mid-1930s. They initially argued that the creation of a heavily fortified naval base comparable to Gibraltar in the Western Pacific (particularly at Subic Bay in the Philippines or Apra Harbor on Guam) would provide an impervious lodgment to which the fleet could be rushed at the outbreak of hostilities. This would save the Philippines and thereby lead to a rapid, decisive battle with the IJN and, by extension, a short war. While this represented a significant investment, it was necessary, “thrusters” argued, because the American public did not have the stomach for what would otherwise be a long war to penetrate the Japanese defensive perimeter. “Cautionaries,” on the other hand, argued instead that Americans could endure a long war in the Pacific for a good cause but would not support a conflict in which the fleet was quickly lost to a reckless gamble such as the “thruster” faction’s proposal. Their argument for a gradual advance across the Central Pacific was generally disregarded at first because members of this faction tended to be younger and occupied

20 Miller, *War Plan Orange*, 4.

21 In the aftermath of the 1905 Battle of Tsushima, in which the Imperial Japanese Navy destroyed the Russian Second Pacific Squadron, a similarly decisive battle became the planning goal of most major navies. While the indecisive Battle of Jutland (1916) called this approach into question, it nevertheless remained at the heart of both American and Japanese naval planning up to World War II.

fewer positions of power—but as time went on, an increasing number of NWC-educated officers began to expand their ranks.²²

Regardless of the approach used, once the US Navy penetrated the Japanese defensive barrier, reoccupied its lost bases in the Western Pacific, and engaged and defeated the IJN, Phase III would begin. Japan would ultimately be defeated by an economic blockade and air and sea bombardment that would destroy its economy and force the Japanese government to sue for peace. No invasion of the Japanese home islands was ever seriously considered for War Plan Orange, and as a result, the Imperial Japanese Army (IJA) was never to be engaged in large numbers. It was in part for this reason that the US Army was content to allow the Navy to work on War Plan Orange on its own for the majority of the years between the World Wars.²³

After the initial outlining of the plan, four waves of significant change occurred in the Navy's planning apparatus that affected the conceptualization of Phase II. These were centered on the establishment of OPNAV between 1915 and 1921, the Washington Naval Treaty of 1922, the removal of the NWC from OPNAV in 1934, and the effective end of the planning system with the establishment of the Rainbow Plans in 1939–40.

While “thrusters” initially favored the establishment of a bastion in the Western Pacific, this particular approach to War Plan Orange came under threat almost from the moment of its proposal. Early surveys of Subic Bay indicated that any position around its coast was particularly vulnerable to landward attack, thanks in part to the high hills nearby. In the Russo-Japanese War, the fortified Russian naval base at Port Arthur initially served as a secure haven for the inferior Russian Pacific Squadron, but fell rapidly after the nearby heights were occupied by the IJA and used to bombard the harbor.²⁴ US Army planners in particular viewed the similar vulnerability of Subic Bay with considerable alarm and energetically opposed any Navy attempts to commit the former's forces to the landward defense of such a base. A secondary choice, Apra Harbor on Guam, had a different

22 Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 146; Miller, *War Plan Orange*, 4–5, 77–85.

23 Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 127; Miller, *War Plan Orange*, 4–5, 150–66.

24 David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887–1941* (Naval Institute Press, 1997), 129–32.

set of problems. Small, undeveloped, and too shallow to host major warships without expensive dredging operations, a base at Apra represented a monumental investment beyond what Congress was willing to appropriate in an era in which European powers were generally considered a more significant threat. Despite the problems of both base proposals, the General Board (particularly under Dewey) was reluctant to let the issue drop. But the gradual delegation of detailed war planning to the WPD after 1915 fractured the political front that the Navy presented Congress and the Army on this matter, ensuring that no great headway would be made before the bastion approach was rendered a non-starter in the early 1920s.²⁵

The second major shift in Phase II came with the signing of the Washington Naval Treaty in 1922. Following the conclusion of World War I, the naval arms race that preceded that conflict resumed, with the United States in particular continuing Woodrow Wilson's 1916 intention to build a navy "second to none." However, the Great War turned the American and European public decisively against naval expansion, as it was popularly seen as a major contributing factor to the war. In this environment, and seeing an opportunity to massively cut costs, President Warren G. Harding and his administration called for a naval disarmament conference in 1921, which resulted in a broad global reduction in naval strength (famously capped at a 5:5:3 ratio for the United States, United Kingdom, and Japan) and a ten-year moratorium on capital ship construction. As discussed previously, this resulted in the effective delegation of force design to the General Board through its mandate to decide how the US Navy met its treaty obligations, but Article XIX of the treaty additionally banned the construction of new fortifications or naval bases in the Pacific. This, combined with the awarding of custody of the formerly German-owned Mariana, Caroline, and Marshall Islands to Japan by the League of Nations in 1919 (referred to as the Japanese Mandate or simply the "Mandates"), not only put the final nail

25 Kuehn, *America's First General Staff*, 120–22; Miller, *War Plan Orange*, 53–76.

in the “thrusters” Western Pacific bastion concept’s coffin but additionally problematized the “cautionary” Central Pacific approach to Phase II.²⁶

Prior to 1922, the general planning assumption had been that the islands that had become the Mandates would either be safely bypassed neutrals or else be seized by the United States or Japan, and fortification work would only begin after the outbreak of war. With the Washington Naval Treaty, the “thrusters” and “cautionaries” both now had to contend with the possibility that the Mandates would be secretly fortified in defiance of Article XIX. This led to the first, brief acceptance of the “cautionary” approach to Phase II while “thrusters” struggled to realign their short-war approach from a rapid deployment to a fortified location to a pell-mell rush to an improvised base. Despite the clear problems with a rush approach, the greater political weight of the “thruster” camp restored them to a position of primacy in 1923. That year featured a brief surge in the importance of the JANB, propelled by the appointments of General John “Black Jack” Pershing as chair of that board and retired Major General Leonard Wood as governor-general of the Philippines. Firm believers in a benevolent American colonial obligation to the Philippines, they adamantly argued that the Army was capable of holding Manila until relieved. In this environment, and with the Navy as a whole diminished and underfunded in the aftermath of the Washington Naval Treaty, the “thruster” short-war approach once again appeared to be the only remotely viable option for war with Japan, and it continued to hold sway into the 1930s. Largely prevented from constructing new ships by a hostile president and Congress after 1922, the General Board instead focused on modernization and concepts in support of an improvised base and long-range operations—legacies that would prove useful under a different approach during the Pacific War.²⁷

26 That said, Hawaii was specifically exempted from the conditions of Article XIX, and therefore was gradually built up before World War II. Kuehn, *Agents of Innovation*, 30–33, 38–39; Kuehn, *America’s First General Staff*, 122; Miller, *War Plan Orange*, 86–99; Steven T. Ross, ed., *Plans for War Against The British Empire and Japan: The Red, Orange, and Red-Orange Plans, 1923–1938*, vol. 2 (Garland Publishing, 1992), 16–29.

27 Kuehn, *America’s First General Staff*, 122–24; Miller, *War Plan Orange*, 86–87, 122–31, 180–83; Ross, *Plans for War Against the British Empire and Japan*, 33–154, 155–228.

The “cautionaries” finally gained the upper hand in the third major shift in planning under CNO William H. Standley in 1934. By the early 1930s, repeated compromises between the “thruster” and “cautionary” camps gradually brought the target of the improvised base 500 miles south to the southern Philippines. This represented the ultimate recognition that it would not be possible for the Navy to save the Manila garrison and opened the door for further deviations in the plan. That these came in 1934 was thanks to Standley’s predecessor, Admiral William V. Pratt, who had been president of the Naval War College from 1925 to 1927 and was a major proponent of war gaming and the “Estimate” system. The influence of the NWC’s findings reached their peak under Pratt, and repeated disasters for the blue fleet in the college’s “big game” as it attempted to rush across the Pacific, finally persuaded the General Board and OPNAV that the time had come to seek an alternative solution. During Pratt’s tenure, this approach developed at the NWC and the WPD into what would be called the “Royal Road”: a gradual amphibious drive westward through the Marshall Islands (including the establishment of a forward fleet base at a favorable location) with the ultimate goal of establishing a “Fleet Base 2” at Truk (Chuuk) atoll that could be used as a springboard for further advances toward Japan to provoke the decisive battle or to liberate the Philippines. This approach was ultimately adopted under Standley, a NWC-trained, former WPD planner (1923–26), along with the condition that no detailed plans would be made beyond this point outside of War Plan Orange’s basic conceptual framework due to both the uncertainty of Japanese dispositions at that point in the conflict and the availability of earlier detailed Phase III plans.²⁸

While Pratt’s tenure featured the apogee of NWC war gaming and the coming together of the plan that would ultimately form the backbone of the American effort in the Pacific War, it also initiated the decline of the Navy’s planning system. In 1932, Pratt requested that Secretary of the Navy Charles F. Adams III terminate the ex officio memberships of the General Board, reducing that organization to its core six to nine everyday members and eliminating its direct link to OPNAV and the NWC, which appears to have been carried out without marked disagreement. While Pratt does

28 Friedman, *Winning a Future War*, 3–4; Hattendorf, Simpson, and Wadleigh, *Sailors and Scholars*, 143–46; Miller, *War Plan Orange*, 139–49, 167–68, 203–12.



Admiral William V. Pratt, President of the Naval War College (1925–27) and Chief of Naval Operations (1930–33). (NHHHC, UA 484.08)

not appear to have been an avid planner himself, the intent behind this reform seems to have been to increase the General Board's effectiveness as the independent and balanced voice of the fleet by untethering it from the influence of higher authorities, and indeed Pratt continued to solicit the Board's advice on various important topics. Nevertheless, this change had the effect of removing the CNO's direct input from the Board, although it

could and did continue to request the CNO attend certain meetings as a source of information. It also gradually distanced the Board's day-to-day activities from those of OPNAV, lessening successive CNOs' perceived value of the institution. Compounding these changes, in late 1934, the NWC was removed from OPNAV and returned to BuNav under the aegis of the Navy's education system. The reasons for this reorganization are not clear and may merely have been administrative, but the move nevertheless terminated the college's role as the tactical and campaign laboratory of the planning system. Together, these actions removed the vital links between the General Board, OPNAV and WPD, and the NWC, and effectively meant that the planning system could no longer function as it had since World War I.²⁹

Despite the dislocation of the Navy's planning system, the WPD continued to effectively refine the "Royal Road" variant of War Plan Orange from its adoption in 1934 through repeated challenges by the Army up to 1939. The fourth and final major shift in the Navy's planning process occurred with the surge in importance of the JANB to Pacific planning as the international situation deteriorated with the outbreak of the Second Sino-Japanese War (1937–45) and as German rearmament and expansionism accelerated. Starting in 1937, the Army became increasingly restive about any sort of aggressive Navy planning, particularly that which involved the former's resources.³⁰ While this was initially driven by a concern for home defense, in 1939 and 1940, this gave way to the general anticipation of a global conflict rather than one limited to the Pacific. In response to the Army's criticisms and this expectation, the JANB, through its subordinate Joint Plans Committee, began work in 1939 on the first of five "Rainbow Plans" to supplant all previous color plans, so-named as they envisioned wars on multiple fronts against multiple enemies rather than a one-on-one conflict. Plan Rainbow 5, which envisioned a maximum effort in Europe against Germany and Italy and a holding action in the Pacific against Japan,

29 Friedman, *Winning a Future War*, 33, 142–59; Kuehn, *America's First General Staff*, 172–77, 223.

30 This is also highly ironic in light of (then–military advisor to the Philippines) General Douglas MacArthur's claims in 1940–41 that he could hold the Philippines if only he was given enough men and material, a demand that was to a great extent met and proven false. Henry G. Gole, *The Road to Rainbow: Army Planning for Global War, 1934–1940* (Naval Institute Press, 2003), 118–19.

would eventually be formally adopted and put into action in 1941, superseding War Plan Orange and the Navy's independent planning system.³¹

CONCLUSION

The Navy's informal interwar planning system did not survive in an effective form beyond 1934. Nevertheless, despite War Plan Orange's formal replacement with Plan Rainbow 5, the Navy's actions in the Pacific Theater adhered to the major points of the former plan, complete with the near-total lack of allies on either side for the Central Pacific drive. This was due in large part to the dramatic expansion of the Navy's forces authorized by the Two-Ocean Navy Act of July 1940, which enabled simultaneous operations in both the Atlantic and the Pacific. Additionally, the extensive planning effort of the interwar period bore fruit in the form of the "Estimate of the Situation" approach to strategic thinking (used by all major American naval commanders in the Pacific); tactical and operational innovations developed during war games and Fleet Problems (cruising formations, refueling operations, forward base construction, and others); warship design (long range and survivability); and the "Royal Road" Central Pacific Campaign. Lacking money and manpower, the interwar US Navy instead hurled itself into a critical analysis of what it would need to defeat its most likely rival, and this effort paid off handsomely once the requisite resources were available.³²

That the planning system that produced War Plan Orange and its accompanying innovations ultimately worked despite its service-centric, ad hoc, and decentralized nature was due primarily to the situation that the Navy found itself in between 1919 and 1941. A single problem—fighting across the Pacific to bring an adversary in WESTPAC to its knees—dominated Navy thought in the interwar period. While the planning system itself remained mercurial in form due to its ad hoc nature, close ties between the General Board of the Navy (itself never a real general staff due to a lack of statutory authority and popular fear of creeping militarism), the Chief of Naval

31 Gole, *The Road to Rainbow*, 117–21; Miller, *War Plan Orange*, 213–32, 267–75; Ross, *American War Plans*, xii–xv.

32 For some examples of the General Board's work, such as the refinement of floating drydocks or the uses and needs of the new "light" and "heavy" cruiser types, see Kuehn, *Agents of Innovation*, 5, 106, 108–10, 126, 130, 132–33, 139–41; Pitrof, *Too Far on a Whim*, 81–104.

Operations and his office (OPNAV), and the Naval War College, nevertheless, produced its finest work at the very moment that it was dislocated, its creators perhaps not fully understanding how and why it worked. In retrospect, such a system appears to be precisely what was required for an era in which war planning was politically dangerous but would be hard—if not impossible—to replicate today. Instead, what has value to today's Navy is the example of the planning system's cooperative work: OPNAV as a generator of detailed planning and coordination, the NWC as a staff laboratory for tactics and applicatory strategic thinking, Fleet Problems as a means to realistic leadership experience, and the General Board as a nexus of ideas, communities, and design. While the present-day Navy is making strides in its preparations for renewed great power competition in WESTPAC, perhaps the interwar period might best be leveraged as a checklist of the types of forums and unity of higher-level direction necessary to plan as a service to fight a peer competitor at sea.

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