

GAMING THE INTERWAR: HOW NAVAL WAR COLLEGE WARGAMES
TILTED THE PLAYING FIELD FOR THE U.S. NAVY
DURING WORLD WAR II

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Military History

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ABSTRACT

GAMING THE INTERWAR: HOW NAVAL WAR COLLEGE WARGAMES TILTED THE PLAYING FIELD FOR THE U.S. NAVY DURING WORLD WAR II, by Lieutenant Commander James Miller, 98 pages.

Wargaming at the U.S. Naval War College began with a lecture in 1886, but did not reach its full potential until the interwar period. The wargames ostensibly served to train naval officers in strategic, operational, and tactical thinking. Wargames also gave guidance for shipbuilding, the creation and refinement of war plans, and the conduct of fleet exercises. Naval officers throughout the fleet were better prepared for World War II against Japan.

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CHAPTER 1

INTRODUCTION

Wargames provide unbelievable opportunities for learning. They pique the interest and passion of the casual tactician or historian and assist the professional military officer in operational planning and execution. Their capacity for imparting knowledge can either supplant or complement lectures. Wargames are a valuable tool for the molding of the professional military officer.

During the interwar period the United States Naval War College (NWC) used wargames extensively as a method of teaching both history and current tactics to aspiring naval officers. The NWC believed in wargaming's value so much, an entire building was dedicated to conducting the curriculum's games. On the game floor wars against Great Britain and Japan were repeatedly fought, and the evolution of multiple war plans stemmed from the spirited debates and uncanny tactics the games generated. An entire generation of naval officer brought what they had learned from the NWC's wargames to the fleet.

Wargames directly benefited the U.S. Navy's interwar Fleet Exercises. The exercises were the pinnacle of the fleet's annual training. The lessons learned in Newport were tested in conditions resembling war. Feedback from the exercises both validated and reputed Newport's theories and the war plans' requirements (which the exercises were built to test).

World War II was the ultimate test of Newport's lessons. Battles at Savo Island in the Solomon Islands, Peleliu, and Samar in the Philippines pointed out strengths and weaknesses in the NWC's strategic and tactical curricula. Looking into how wargames

(simulations) affected war (reality) can provide a model for future training opportunities, particularly in fiscally challenging times; the rising cost of fuel and maintenance of ships underway inspires alternative methods of education and preparation for war.

CHAPTER 2

WHY WARGAMING?

At first glance the terms “game” and “military education” do not belong in the same sentence. Children play whimsical games to keep themselves occupied. Amateurs play games to participate in historical and fantasy realms and mentally compete against one another. Military officers educate themselves through rigorous study in lecture halls, experience on the battlefield, and fastidious devotion to manuals and technical publications. The most studious practitioners of military art and science do not have time to dabble in frivolities and are far too serious to consider a child’s game as an educational experience.

Playing games about war offers an agreeable melding of the two concepts. A wargame has rules, procedures, and conflict, all vital aspects of both recreational games and military exercises.¹ Participants can fight single tactical battles or mammoth strategic wars from any historical era or make-believe land. The replay ability of wargames allows amateur combatants a rematch, or the military strategist the chance to use a different tactic or a different order of battle in a similar situation.

As with any combination of two fundamentally different notions, the juvenile game and the rigid military learning, there are negative connotations. Military personnel that consider games for education often dislike the words “play” or “game,” preferring more soldierly terms like “participate in,” “exercise,” and “simulation.”² Civilian gamers may also revel in being successful fictitious generals; “The Rommel Syndrome,” a phenomenon debated in *Moves* magazine and described in Peter Perla’s book *The Art of Wargaming*, discusses how each wargamer can feel like he or she can become Rommel

and be victorious on the battlefield just by being good at games. Such “delusion” can chafe more egotistical officers who believe it takes more than pure tactics to become a battlefield victor.³

Game enthusiasts have attempted to bridge the gap by noting the educational value in wargames. Philip Sabin, a Professor of Strategic Studies at King’s College London, who has used wargames as a tool to edify British military classes, has noted that wargames cover “the intersection of three broad areas of leisure interest;” the use of past or present enemies and their arsenals, simulated conflicts using those forces, and decisions that must be made to affect the outcome of the prescribed competition.⁴ Wargames can also be used as a way to teach history, and the process of participating in the game, or gaming, can be used to sharpen decision-making in the present for the benefit of the future.⁵

“Those who cannot remember the past are condemned to repeat it.”⁶ Many wargames have been thoroughly researched for historical accuracy; gamers can immerse themselves in any era they choose, taking to the virtual field to analyze why, for example, the French had such difficulty at Agincourt against English longbowmen. Wargames also allow participants to fight the same battle multiple times, using different tactics to see what might have happened, in what Sabin describes as the “ultimate counterfactual sandbox.”⁷ Provided the game is historically accurate, the learning potential is enormous and multi-faceted. The game allows students to witness a battle as it unfolded and better appreciate the situations the two sides might well find themselves in. Students can also use their own prowess and ingenuity to change the outcome of the contest through different tactics and a little luck. After the game players can discuss why they chose

particular lines of reasoning to solve problems encountered in the battle and whether the methods were effective. The participants not only remember and learn from the past but also use the lessons to shape their own way of thinking.

Sabin also posits that humans can “[shape] their futures . . . by taking actions founded on past learning and experience.”⁸ Here you will find the clearest division between the hobbyist’s historical recreation and the military exercise; the hobbyist’s game deals with the past, while the military exercise theorizes about the present and future.⁹ The concept is still the same: play (or participate in) the game (or exercise) to learn and evolve. The military exercise-game not only sharpens the participants’ tactical awareness, but can also explore how best to handle plausible tactical situations against a current or future threat.¹⁰

Wargames in the hands of a military officer can have long-reaching effects on strategy and policy. Battle plans can be formulated and tested and shortfalls identified, mitigated, and corrected. German Field Marshal Alfred Graf von Schlieffen used wargames and field exercises to test his theories of combat against the French, British, and Russians. His efforts were major factors in the formulation of the strategic plan that bore his name and was used at the start of World War I.¹¹ The NWC, through war games against the British Navy in U.S. territorial seas, discovered the great benefit in a Cape Cod Canal to quickly move naval units through internal waters from New York to Boston in 1895.¹² In World War II, war games often translated directly to the battlefield, to be validated or corrected;¹³ the invasion of Luzon in the Philippines in 1944 was played out on the NWC game floor fifteen years previous. Whether the process is called a game, an

exercise, or a simulation, the military has used the process many times in the shaping of battle plans and the correction of strategic and operational deficiencies.

When attempting a new tactic or strategy, risk is assumed. Untried procedures can fail; unproven plans can create an unwanted stalemate. In the spirit of the old adage “practice makes perfect,” the ability to test theories in a structured and protected environment mitigates the risk of using new plans in a complex environment, one that can be influenced by any number of unforeseen circumstances.¹⁴ Mitigating risk through exploratory wargames also mitigates real-world losses of vital personnel and equipment,¹⁵ particularly when dealing with forces that are stationed in remote areas or require weeks of mobilization.¹⁶ By exposing a military theory to a tightly controlled simulated atmosphere the officer or officers can take risks and theorize with forces that either cannot be lost or cannot participate in a true field exercise.

Despite its connotation, the word “game” when connected with wargames might almost instead imply competition or test. The military officer strives for self-improvement; his or her ego seeks ever-challenging tests, which games can provide. Wargames associate the competition of games with the profession of war, encouraging both internal improvement and external strengthening of policy, physical capabilities, and confidence in the military’s ability to meet real or imagined threats.

Educational Military Gaming

Lectures are common forms of education in most academic institutions. The lecturer stands in front of his or her students and imparts raw knowledge upon the class, and the students must glean the wheat from the chaff for the final exam. Massive amounts of information can reach a student’s ears, but often the student is rendered speechless

when required to regurgitate what he or she has learned in the course.¹⁷ Often the lesson requires the student to visualize a conflict's particular situation, which is nearly impossible without at least a visual cue of some kind.

When students lose interest in a lecture's content, usually due to difficulty in understanding, education is more difficult. Daniel T. Willingham, a psychology professor at the University of Virginia, notes that "people are naturally curious, but they are not naturally good thinkers; unless the cognitive conditions are right, people will avoid thinking."¹⁸ Lectures must be interesting and challenging enough to force students to think without being so challenging that the student shuts down. The entire class must be challenged as such. This level of interest can be difficult to accomplish in a common core classroom environment, where all students must attend with varying levels of interest.

Wargames offer a different view to a standard lecture series. The board or playing surface can be laid out to give students a better feel for the situation and the environment. Times and requirements can be discussed to ensure participants appreciate the amount of time leaders have in stressful situations demanding action. Equipment available at the start of a campaign can easily be quantified and placed on the game board, giving a visual effect to the abundance or absence of critical supplies that might only have been hinted at in the corresponding lecture. The game may also complement the lecture, concentrating the massive amounts of material into visual demonstration. Participants, through examination of the board, can empathize with their opponents, if stronger, or be jealous of their opponents' wealth and resources. These types of feelings generally are not obvious to the student who has had a lecture full of figures to digest.¹⁹

Wargaming offers a way to test and critique decision-making and critical thinking skills. After the game, participants can reflect upon their conduct during the game and consider alternative courses of action that would have yielded different, perhaps more successful, results. The learning process benefits from experiencing the dilemma as it unfolds, analysis of the thought process that resulted in the plan of attack used, and observation of the results of the gamers' actions.²⁰ Unlike the classroom environment that best benefits younger scholars, the hands-on experience that wargaming provides is a more fruitful form of learning for mature individuals. By playing war games, theorists and strategists can not only answer original questions, but also discover new questions and contingencies that result from an unexpected turn on the board.²¹

Francis J. McHugh, a gaming expert who spent the majority of his life in the War Gaming Department of the NWC, has noted that wargames grant participants "decision-making experience and decision-making information," but not generally both at the same time. The knowledge granted depends on the type of game played: educational games grant experience, while analytical games grant information.²² The very nature of wargames require decision-making ability in order to even be played; participants are given dilemmas and must determine the course that will best overcome the dilemma and achieve the objective based on the resources at hand.²³ As military officers require superb decision-making capability, the process of wargaming lends itself well to the testing and strengthening of officers' leadership and management abilities.

Warfare is a conglomeration of strategic and tactical dilemmas that must be overcome using a variety of thought processes. Innumerable books and articles have been written about every known battle; the outcomes of the battles never change, even if the

effectiveness of the leaders in each battle is judged differently. Games can be used to show how history could be altered if fortunes or available resources had been different.²⁴ Sabin points out that dealing with military dilemmas first-hand has greater educational potential than simply reading about never-changing battles.²⁵

The institutions of higher military learning, the various war colleges, are designed to refine the raw experiences of young officers and shape thinking towards higher leadership opportunities. Often officers have only caught a glimpse of the intricacies of their superiors' responsibilities before they arrive at their chosen war college, and very few see commanding officers perform under adverse combat situations, so the school must fill in the gaps in knowledge before launching the officer into their great leadership challenge. Wargames offer the chance for officers to experience martial predicaments without the death and destruction associated with reality. By immersing themselves in the role of commander, officers can consider how best to handle a combat situation, even (and especially) if the decided course of action was not the historical norm. They can then use them in the game and ascertain whether their rationale was sound.²⁶

Through the decision-making process of the game, officers (as commanders) must contend with the limits of information available. Additional pressure, easily applied in real combat situations, can be properly simulated in the classroom environment through contradictory intelligence clouding the leader's decision-making.²⁷ If administered correctly, wargames model Clausewitz's fog of war more accurately than the omniscient viewpoint of a book's narrator. The narrator or author portrays all sides of a conflict in an effort to teach as many points as possible; this omniscient view keeps the reader from

experiencing the helplessness of the commander with too little intelligence at his or her fingertips, because the answer is already in the back of the reader's mind.

The author himself has noticed that officers aspiring for command often make great strides in refining their leadership capabilities before arriving at a war college. They have combined their experiences with their ingenuity to form their leadership style and to meet the challenges the school provides. Their cunning drives them to creative solutions to dilemmas. In the interwar naval officers' case, shortfalls in orders of battle identified new concepts and weapons to fill the gaps in capabilities. The intrepid officers explored the potential and devised the concept on the game board far before the equipment ever reached the field. The aircraft carrier, designed early in the interwar period, is a prime example of a concept worked hard on the game board before the weapon reached its first battle.²⁸

Wargames have been used for generations to test concepts, train officers, determine the enemy's likely course of action in conflict and prepare against it.²⁹ They can transcend the chasm between the recreational competitor and the battle-hardened military officer, and are the tools of the amateur educating the professional. Noted war game expert Peter Perla offers the following advice to aspiring military gamers: "We may never know the right answers, but gaming can sometimes help us to learn to ask the right questions."³⁰

A Brief History

Though games depicting conflict had been played for centuries, Baron von Reisswitz, a civilian, initially developed the first wargame used for training purposes in the early 19th century. Players moved blocks of wood, cut to scale to represent unit sizes,

around a sand table that modeled land in three dimensions.³¹ His son, Lieutenant George Heinrich Rudolph Johann von Reisswitz, revised his father's work and introduced the famous predecessor to the modern wargame in 1824. The board was a detailed topographic map drawn to 1:8000 scale (approximately eight inches to one mile) and came with detailed rules covering operations of units up to corps and division strength.³² *Kriegsspiel* (literally, war game) was born in Prussia.

The game spread to nearly every major military in the 19th century.³³ The period was marked by the rise of total war and massive armies that needed innovation to control combat. The British Army published *Rules for the Conduct of the War-Game* in 1884, which was an easily-distributed 33-page pamphlet that depicted two forces squared off in combat against each other.³⁴ Additionally, Alfred Graf von Schlieffen controlled the German armed forces at the turn of the 20th century and extensively utilized wargames to further training and practice in doctrine.³⁵

Major W.R. Livermore, U.S. Army, is generally considered the father of American wargaming. He published a two-volume work titled *The American Kriegsspiel* in 1879.³⁶ A few years later, while stationed at Fort Adams in Newport, Rhode Island, Livermore shared his creation with a retired U.S. Navy lieutenant by the name of William McCarty Little. McCarty Little was an unofficial staff member of the recently-created NWC in Newport and was influential with its first president, Commodore Stephen B. Luce, and perhaps the greatest naval strategist of the late 19th century, Captain Alfred Thayer Mahan.³⁷

War College professor Michael Vlahos outlined the NWC's birth, growth, and ascension during the interwar period in his book *The Blue Sword*. Vlahos writes that the

college was built as a temper to sharpen the new officers being forged at the Naval Academy in Annapolis, honing raw ethos taught at the Academy into seasoned senior officers.³⁸ McCarty Little brought his ideas for wargaming to Mahan's attention when the latter assumed the presidency of the War College; as a result, in 1886 McCarty Little gave his first lecture at the College, "Colomb's War Game." The lecture was based on the first known naval war game of the same name, invented in 1878 by a British captain and studied by McCarty Little in Austria.³⁹

By 1894 all students received a healthy dose of wargaming as a course of instruction; strategic games were played on paper charts with pins and symbols, while tactical scenarios were spread out on checkerboard floors.⁴⁰ The games were regional in nature and limited in scope, helping to prepare for the Spanish-American war in 1898 or possible conflicts with the British in American waters a la 1812.⁴¹ The superiority of the British Navy supplied American mariners with a comparison that would last well into the interwar period. Newport blended wargaming with the more traditional curriculum of lectures on such topics as national strategy; men were urged by the faculty to make the link from merely being a naval officer to being a strategist, a contributor to national policy, and a politic.⁴² By the time of McCarty Little's death in 1915, the NWC was an irreplaceable institution for naval professionalism in the United States; its reputation was based on rigorous instruction and meticulous pondering over nautical charts and hearty discussion about tactics used on the game board.⁴³

Though closed for World War I, the NWC reopened under the leadership of Admiral William S. Sims in April of 1919. Wargaming immediately started again "on casino scale," according to Vlahos, with 86 separate war games played in 1919 alone.⁴⁴

The wargames played a central role in teaching prospective commanding officers that they were not just deck officers leading a handful of sailors under the watchful eye of their captains, but potential strategists following political guidance towards successful conclusion of war.⁴⁵ War was inevitable, a product of human nature. The NWC's focus in the interwar period was to identify the enemy and its strategies and bring about its submission through simulated conflict.

The War College's Interwar Games

Generally speaking, wargames of the early 20th century followed three basic formats. In "free-play" games, players' decisions were brought to a governing umpire, who determined the effect of the decisions based on their ingenuity, their probability of success, and how the effect will further the educational value of the game. Models, diagrams, tables, and "chance devices,"⁴⁶ by contrast, govern "rigid-play" games. Decisions were made and revealed, effects calculated based on a die roll and consultation of a table or diagram, and damage or position assessed. Semi-rigid games were the third type and attempted to blend the best of free- and rigid-play games. Damage effects were still calculated under rigid-play rules, but an umpire could alter the results of the calculations if the outcome is unrealistic or if a different outcome could further the training value of the game.⁴⁷

Each style of game had its advantages and disadvantages. Rigid-play games offered unmatched realism; a fired broadside, for example, incorporated diagrams for everything from the caliber and penetration capability of the round used, the thickness of the target's armor, and the angle at which the round was expected to hit.⁴⁸ The time required to consult the diagrams meant that games proceeded at an extremely slow rate;

often a single three-minute turn in game time could take more than thirty minutes of real time to complete. Free-play games were generally faster but required competent umpires to quickly determine the results of maneuvers based on their own experiences.⁴⁹ Semi-rigid games mitigated some of the disadvantages of both free- and rigid-play, but umpires needed to take care when altering the findings of rigid-play diagrams to ensure a probable result emerged.

McCarty Little compiled three types of wargames for the NWC. The simplest dealt with single-ship combat, commonly called the Duel. Fleet Tactical games combined maneuvers and engagement of two fleets in contact with each other. The Strategic Game was played at the strategic and operational levels and dealt mainly with major campaigns, dispositions and supply, and operations across an entire theater.⁵⁰

The NWC also established a correspondence course in 1914, with one of the two courses being in strategy and tactics. The course required applicants to solve 12 “solitaire” wargames, an excellent blend of professional development and recreation after a hard day’s work on deck. The popularity of the solitaire wargames was apparent when compared to the other correspondence course, International Law; McHugh writes that by 1926, 31 officers were enrolling in the wargame course as opposed to four officers for law.⁵¹

Civilians assisted in preparation and conduct of the games. The Civil Service title of War Games Expert was created and given to only three men in history: George J. Hazard, Charles Ward, and John Wilson; all three men were employed by the NWC.⁵² Hazard and Ward were at one time the two highest-paid civilians at the college.⁵³

Luce Hall was transformed into the main gaming room, with two boards (one on each end) for the senior and junior classes. Maneuvers began on charts in the students' classrooms, where pins represented ships. As opposing forces came within sight of one another the game was transferred to the larger boards. Lead-metal ships were used on the game boards, snapped onto brass strips made to the scale in use at the time (typically four inches to 1,000 or 2,000 yards). Scaled measuring wands calculated movement; paper or curtains represented smoke screen.⁵⁴

Each class played two major games and a number of other minor games over the course of the curriculum. Games started in the morning and were completed by lunch, with discussion and critique in the afternoon. By limiting the games to the morning hours they ranged in length from a few days to a month and a half.⁵⁵ The entire class (upwards of 60-70 officers) was split in half for each game and students were assigned ships or fleet staff positions, with the college staff acting as high-ranking officers.⁵⁶

A master plot, a separate game board hidden from students, held the positions of all ships and was handled by the civilians in the War Gaming Section. Each fleet commander had a maneuver board to position his fleet for reference, and relied on intelligence and ships' reports to keep track of the enemy. The civilian administrators determined the amount of game time each turn took (usually three, six, or sometimes fifteen minutes). As moves were determined, the Chiefs of Staff of each fleet sent telegrams by marines stationed at each game board, who would take the telegrams to the civilian draftsmen administering the game for positioning and effect. Irregularities in fleet orders, such as excessive speed or illegal maneuver, were returned to the Chiefs of Staff for clarification. Weapon effects were determined after positioning using fire effect

diagrams that became increasingly elaborate through the years. After everything was resolved the next move was called.⁵⁷

Aviators and submariners stayed in separate rooms as the game progressed, but would be called to the master plot if it was determined that their aircraft or submarine was in position to report on enemy fleet movements. Glimpses were typically granted on the balcony overlooking the master plot and ranged in time from a few seconds to a minute in length, to mimic the difficulty a scouting aircraft or submarine experienced simultaneously operating their craft and memorizing the enemy's location.⁵⁸ Aside from visual cues from engaged ships, these reconnaissance reports offered fleet commanders the best view of the opposition during the conflict. The game board existing separate from the master plot closely mimicked Clausewitz's "fog of war" and added a sense of realism.

When Pringle Hall was completed next to Luce Hall in 1934, the game board was enlarged tremendously. Communications were upgraded by installing a pneumatic tube system from the game room to the student rooms on the second and third floor and out into Luce Hall. Marines were still used to transfer messages quickly, typically to and from aviators or submariners for reconnaissance reports. Baskets strung up on tight lines stretching across the game room sent paper messages from the game administrator to the student staffs. Eight to ten phone lines were also installed, allowing direct communication from the game room to the main student planning rooms. The master plot was in a room off the main game room in Pringle Hall; civilian draftsmen would reproduce the movements from the game board to the master plot.⁵⁹ Figure 1 displays a war game in

progress on Pringle Hall's game floor; though the picture is from approximately 1950, the concepts remained the same.



Figure 1. Pringle Hall War Game

Source: John B. Hattendorf, B. Mitchell Simpson III, and John R. Wadleigh, *Sailors and Scholars: The Centennial History of the U.S. Naval War College* (Newport, RI: Naval War College Press, 1984), 110.

The officers loved the game and the opportunities playing the game presented to them. Upon completion of the day's gaming the draftsmen, who had been keeping track of the game the entire time, would recreate the day's events into three-inch-by-four-inch slides for review, discussion, and constructive criticism.⁶⁰ As one draftsman put it, "More than once there was a great deal of commend [congratulations] and occasionally some arguments,"⁶¹ evidence that the officers were getting into the spirit of leadership and professional improvement.

Newport's intellectual focus through the interwar period was on educational games, "that is, games conducted for the primary purpose of providing the players with decision-making experience."⁶² The college placed great effort on producing the most

realistic and educational fleet battle experience available, with the ultimate goal of preparing officers for the war senior leadership envisioned.

¹Francis J. McHugh, *Fundamentals of War Gaming*, 3rd ed. (Washington, DC: U.S. Government Printing Office, 1966), 2.

²Peter P. Perla, *The Art of Wargaming: A Guide for Professionals and Hobbyists* (Annapolis, MD: United States Naval Institute, 1990), 5.

³*Ibid.*, 4.

⁴Philip Sabin, *Simulating War: Studying Conflict Through Simulation Games* (London: Continuum International Publishing Group, 2012), 4.

⁵Perla, 2.

⁶George Santayana, *The Life of Reason: Or, The Phases of Human Progress*, vol. 1 (New York: Charles Scribner's Sons, 1920), 284.

⁷Sabin, 55.

⁸*Ibid.*, 56.

⁹*Ibid.*, 36.

¹⁰Perla, 9.

¹¹*Ibid.*, 41.

¹²Francis J. McHugh, "Eighty Years of War Gaming," *Naval War College Review* (March 1969): 89.

¹³Garry D. Brewer and Martin Shubik, *The War Game: A Critique of Military Problem Solving* (Cambridge, MA: Harvard University Press, 1979), 52.

¹⁴*Ibid.*, 53.

¹⁵McHugh, *Fundamentals*, 1.

¹⁶*Ibid.*, 19.

¹⁷Sabin, 36-37.

¹⁸Daniel T. Willingham, "Why Don't Students Like School?" *American Educator* (Spring 2009): 4.

- ¹⁹McHugh, *Fundamentals*, 20.
- ²⁰Perla, 10.
- ²¹Sabin, 47.
- ²²McHugh, *Fundamentals*, 8.
- ²³Sabin, 4.
- ²⁴*Ibid.*, 37.
- ²⁵*Ibid.*, 31.
- ²⁶*Ibid.*, 7, 17.
- ²⁷*Ibid.*, 10.
- ²⁸Perla, 6, 70-71.
- ²⁹Rudolf Hofmann, *War Games*, Draft translation by P. Luetzkendorf (Washington, DC: U.S. Department of the Army, Office of the Chief of Military History, MS P-094, 1952), 7, quoted in Perla, 41; Brewer, 53.
- ³⁰Perla, 34.
- ³¹*Ibid.*, 23.
- ³²*Ibid.*, 25.
- ³³“The War Game and How It Is Played,” *Scientific American*, 5 December 1914, 470, quoted in Perla, 58.
- ³⁴Sabin, 32.
- ³⁵Perla, 41.
- ³⁶*Ibid.*, 55.
- ³⁷*Ibid.*, 62-63.
- ³⁸Michael Vlahos, *The Blue Sword: The Naval War College and the American Mission, 1919-1941* (Newport, RI: Naval War College Press, 1980), 55.
- ³⁹Perla, 63; McHugh, “Eighty Years of War Gaming,” 88.
- ⁴⁰McHugh, “Eighty Years of War Gaming,” 88.

- ⁴¹Ibid., 89.
- ⁴²Vlahos, 56.
- ⁴³Perla, 69.
- ⁴⁴Vlahos, 66.
- ⁴⁵Ibid., 58.
- ⁴⁶McHugh, *Fundamentals*, 207.
- ⁴⁷Ibid., 14-15.
- ⁴⁸Perla, 37.
- ⁴⁹McHugh, *Fundamentals*, 14-15.
- ⁵⁰Perla, 66.
- ⁵¹Vlahos, 66.
- ⁵²Philip Gaudet, interview by Francis J. McHugh, 7 September 1974, *History of Naval War Gaming*, No. 3, Oral History Program, Naval War College, 1974-1975, 2; McHugh, *Fundamentals*, 63.
- ⁵³Walter Dring, Jr., interview by Anthony S. Nicolosi, 21 September 1975, *History of Naval War Gaming*, No. 3, Oral History Program, Naval War College, 1974-1975, 13.
- ⁵⁴John K. Martin, interview by Francis J. McHugh, 21 September 1974, *History of Naval War Gaming*, No. 3, Oral History Program, Naval War College, 1974-1975, 5-6, 8-9; Gaudet interview 7 September 1974, 3-5.
- ⁵⁵Gaudet interview 7 September 1974, 5-6.
- ⁵⁶Dring interview, 16; Gaudet interview 7 September 1974, 6.
- ⁵⁷Philip R. Gaudet, interview by Francis J. McHugh, 22 September 1974, *History of Naval War Gaming*, No. 3, Oral History Program, Naval War College, 1974-1975, 22-25; Gaudet interview 7 September 1974, 4-5, 10-11, 13-14; Dring interview, 16-17; Martin interview, 8-9.
- ⁵⁸Gaudet interview 7 September 1974, 3, 13; Gaudet interview 22 September 1974, 20.
- ⁵⁹Martin interview, 10; Gaudet interview 22 September 1974, 20-21.

⁶⁰Gaudet interview 22 September 1974, 21-22; Martin interview, 4.

⁶¹Dring interview, 17.

⁶²Francis J. McHugh, "Gaming at the Naval War College," U.S. Naval Institute *Proceedings* (March 1964), quoted in Perla, 70-71.

CHAPTER 3

THE EVOLUTION OF THE ENEMY

The war senior naval leadership envisioned was not the war they encountered. In the early interwar period the enemy was not just Japan (Orange), but also Great Britain (Red). Different reasons motivated planning against each nation, but each plan helped to mold American naval power towards World War II.

Great Britain was the premier naval force at the start of the twentieth century. Longtime Naval War College wargamer Michael Vlahos wrote how the United States viewed the Royal Navy as the standard that American officers must subscribe to.¹ Horatio Nelson's fantastic triumph at Trafalgar a century earlier had bestowed an aura of superiority on the Royal Navy that no other country had diminished in combat. By pitting the growing aspirations of the American navy against the elite Royal Navy, successive classes would learn through challenging wargames how to fight against and defeat the toughest maritime force of the era.

Economics also forced consideration of the British as a potential enemy. After World War I the two greatest powers in the world were the United States and Great Britain. Competition would arise as America expanded its economic interests into areas dominated by the British Empire; such competition had already cropped up shortly after the Great War as America sought oil in the eastern Mediterranean.² If Great Britain were threatened sufficiently by American expansion, war could be a viable alternative to British reactionary economic expansion.³ Great Britain's status as the premier naval power would allow the country to seriously consider conflict as an economic resolution. Mahan's teachings of *guerre de course*, or commerce war, would turn against American

interests, as the British would have an advantage similar to their rule of the French seas directly after Trafalgar.

The War College conducted tactical and strategic wargames against Red naval forces, beginning shortly after World War I.⁴ At first, the reality of Red supremacy permeated the game floor, much to the surprise of confident officer students.⁵ Great Britain's advantage in capital ship strength equated to a strong Red stance at the start of the game. Games in 1923 and 1925 were disastrous for Blue: in 1923 Blue lost all 18 allotted battleships while Red suffered losses of 40 percent, while in 1925 the Red force was diminished by four battleships before the game started, with Red still emerging victorious. In 1924 Blue was only triumphant due to a wave of suicidal torpedo-firing destroyers; the battleships were spared, but the destroyers paid the price.⁶

British pacifism after World War I, however, meant a willing removal of the mantle of superiority. The Washington Naval Treaty of 1922 was the first sign that British desire for war had decreased; Great Britain willingly accepted scrapping capital ships to mirror the America's strength. With the parity promised between American and British naval strengths the Royal Navy essentially ceded the role of the world's naval masters to an Anglo-American coalition. The games modeled this change, and Red's fleet strength came down to match Blue's.⁷ As Blue began succeeding against Red, illusions of American inferiority in the face of the Royal Navy shattered, and American naval officers gained confidence as the rising masters of the oceans.

Despite British parity, pacifism, and the rising threat of Japan, Army planners pushed for the establishment of War Plan Red in 1930. With limited input from the Navy, who had started to look more towards possible Japanese aggression, the Army saw

conflict against Great Britain as a land war in Canada (Crimson). To support this supposed war, the Army delegated security of the sea lines of communication between Great Britain and Halifax, far to the east of American possessions, to the Navy, with secondary goals to capture Jamaica, the Bahamas, and Bermuda to appease naval desires for Caribbean bases.⁸ American land forces would perform the decisive engagements, seizing as much of Canada as possible, and naval forces would defeat the relieving force as it sailed with the Royal Navy, as it had been wargamed by the NWC.⁹ In War Plan Red the United States had a contingency for dealing with a threat from the east.

Through the interwar period Great Britain's role as antagonist faded away due to various events in mainland Europe. The rise of Nazi Germany forced Great Britain to focus on threats closer to home, and the United States found itself allies with the nation it once wargamed against. The War Plans Division, who had pushed for War Plan Red's creation in 1930, noted in 1932 that Britain's casting off of its superior mantle was complete, and that the United States's power and focus "should be increasingly effective, particularly in matters relating to the Western Pacific."¹⁰ In May of 1939 the Chief of Naval Operations, Admiral William D. Leahy, wrote to the Joint Board, essentially ceasing all future iterations of War Plan Red. However, as the plan could be altered on short notice to be used in a possible war with Germany, the plan was to be "retained in its present condition."¹¹ The focus turned entirely to Orange.

If Not Red, Then Orange

Japan was seen as a possible antagonist by virtue of location; as the only other major sea power in the Pacific Ocean the island nation alone could affect America's interests in the region. Washington war planners considered a strategy against Japan as

early as 1907, and by 1911 an official portfolio was before the General Board, an advisory body of senior officers to the Chief of Naval Operations.¹² Mahanian doctrine was evident in the first iterations of the war plan: once war was declared the fleet would rush to America's main naval base in the Philippines to set up a decisive engagement against the Japanese.

Distance, however, was a problem in early war planning; the American fleet was primarily on the Atlantic coast, while Manila was halfway around the world. Although the Great White Fleet had sailed around the world in the early 1900s, moving a battle fleet across a wide distance to engage an enemy was farfetched in the early twentieth century, as Russia would prove fighting the Japanese in Tsushima Strait. From the Atlantic coastline, routes to Manila through the newly completed Panama Canal or the established Suez Canal would severely tax the fleet's resources, and if Japan attacked before the fleet was ready in Manila the war would likely be short and disastrous.¹³

Japan, meanwhile, would find it difficult to finance a war against the United States. The Russo-Japanese War of 1904-05 was costly even in victory, and the country suffered from a lack of raw resources. Tensions between America and Japan began to rise after the United States gained a presence near Japanese home waters with the acquisition of Guam and the Philippines at the end of the 19th century. Japan's acquisition of the Mandate Islands (Carolines, Marshalls, and Marianas island chains) from Germany after World War I only served to increase the tension between the two countries. Lectures in Newport, particularly one by Professor John Latani in 1913, further warned of the tenuous political and economic situation with Japan: "Peace with Japan does not rest on traditional friendship, but on Japan's present inability to finance a war, and on our

inability to defend the Philippines. With either condition eliminated, war would be the probable outcome.”¹⁴ Latani’s words were echoed in intelligence intercepts of Japanese newspaper articles titled “War Between Japan and America: A Picture of the Future.”¹⁵

After Blue’s initial gaming comparison with Red following World War I, planning and gaming against Orange became more pronounced and focused. One hundred thirty-six strategic games were played in the interwar period; all but nine focused on Orange.¹⁶ As the game progressed into the 1930s, the year-long curriculum devoted 234 days to tactical and operational war games, another 8 days to the Battle of Jutland, and 17 days to spirited critiques of the games.¹⁷ Lectures and discussion rounded out the classroom environment, but the primary focus of the class was a game-inspired study of how to compete with Orange. Subsequent post-game analysis often showed the students where they could have performed better, and the resulting strategic discussion often pitted students passionate about their particular gameplay against each other.

Staff at the NWC generated the problems proposed to the students,¹⁸ but based their games on the current iteration of War Plan Orange as it was being discussed in Washington. At the onset of the interwar period both Blue and Orange planned for a decisive blow against the opposing fleet. Orange, in close proximity to Guam and Philippines, would attack Blue’s western Pacific possessions. The Blue fleet would assemble and cross the Pacific to relieve the beleaguered outposts, setting up a massive showdown with the inferior Orange fleet, one that was assumed inferior even before the Washington Naval Treaty made assumption fact. In early interwar games Blue emerged victorious,¹⁹ a direct result of American belief that the Orange fleet would wait until Blue’s superior forces were established in the theater before attacking.

Astute American naval officers eventually ascertained the Japanese path to victory without even knowing they had done so. Actual Japanese war plans called for a line of reconnaissance around the Bonin Islands to warn of the impending American fleet's approach. The early warning would allow the Japanese to attack the Americans whenever it was most advantageous. The key was to keep the American fleet from regrouping after its exhaustive transit, similar to the victorious Japanese strategy against the Russians at Tsushima.²⁰ As the Americans approached for the decisive battle, Japanese ships planned to conduct night torpedo attacks and submarine penetrations to whittle down American forces, granting Japan the advantage in the decisive engagement. The Japanese and American naval leadership envisioned a similar war cadence between them, but Japanese reality would have trumped American hubris.

Game after game uncovered that American hubris was hazardous to the fleet's survivability. In a 1923 game, Blue arrived at Manila Bay with fifteen capital ships; by 1928 the game fleet had been whittled down to ten.²¹ Classes realized the cavalry charge across the Pacific in all its hubris was foolhardy. Time and again as the situation was played out on the game floor, the truth was made clear: the straight track to Manila was fraught with peril;²² an alternative would have to be explored.

The dwindling number of surviving battleships in Blue's Philippine-bound fleet was one area of concern that inspired ingenuity. The 1929 class suggested that Blue's inferiority in battleship numbers could be made up by air power. To enable this requirement, the Commander-in-Chief of the Blue force introduced eight aircraft carriers, converted from merchant marine vessels, to transport combat aircraft to the fight. The concept was the forerunner of the escort carrier (CVE).²³

Like the Seventh Cavalry charging to the rescue, the American Navy's rescue "gallop" across the Pacific continued to be gamed as naval officers looked for any way to rescue Manila in Mahanian style. The outcome of the 1933 wargame clearly showed the original concept would not work. The game began with the fifteen battleships, 155 other combat vessels, and 69 auxiliary ships of the Pacific Fleet sailing from Honolulu towards the Philippines. Despite Blue's firepower, the Orange fleet, lying in wait, decimated the fleet with two tremendous night torpedo attacks. Only seven Blue battleships, all heavily damaged, arrived in Manila. Additionally, eighteen of the twenty-four cruisers and all four aircraft carriers were lost or damaged to the point of uselessness. The post-game critique hammered home the awful truth: American forces could not proceed in force straight to Manila and expect to triumph against Japan.²⁴ The strategic impact of such terrible losses was too great to absorb; to compensate for losses in the Pacific, Blue would have had to weaken its Atlantic Fleet tremendously. Though the concept was very difficult to accept, students began to respect Japanese capabilities and rely more on what the game proved than on American invulnerability.

This 1933 critique provides the basis of what formed the war plan of the Pacific. Instructors and students discussed other ways to damage Japanese war-making capabilities; in the course of the debate someone suggested that the Japanese might fear air attacks on its holdings. Fleet aircraft had until this time been primarily used as spotting aircraft for the battle line and reconnaissance. Carrier aircraft could do damage to Japanese cities and factories, but greater payloads (and thus greater damage) came from army bombers, which required land-based airports. The many islands of the Pacific

could be used as airfields for attacks on Japanese cities, but the army alone could not invade and capture those islands for Air Corps use. The Blue fleet had to be involved.²⁵

Wargames after 1933 focused, therefore, on a new tactic: “island-hopping,” the strategy that would ultimately be used during World War II. Games began to mimic the realities of a protracted war with Japan; the decisive action Mahan would espouse was replaced by detachments of surface ships in night actions, convoys with screening ships, and individual island campaigns east of the Philippines.²⁶ Manila continued to be the intermediate goal of war against Orange, as the naval facilities and harbors were still far too valuable to leave in Orange hands. The Philippines’ strategic position was still a necessity, situated on Orange’s sea lines of communication, but by this point in the wargame the Blue fleet would have other suitable harbors from which to base operations.

Truk was seen as an excellent intermediate stop on the way to Manila; it was within bombing range of the Philippines and possessed one of the best natural harbors in the Pacific. Games by 1935 sent the Blue fleet through the Mandate Islands to Truk, where a base would be established to take advantage of its large and deep lagoon. By 1938, the advance became more detailed, winding from Eniwetok to Ponape to Truk. Later that year, the wargame continued past Truk to Yap and Peleliu before ending at Jolo, just south of Mindanao in the Philippines.²⁷ Subsequent wargames brought the Blue fleet, refueled, repaired, and rearmed from newly constructed intermediary bases in the central Pacific, to the Philippines in a much stronger position than had been portrayed six years earlier.

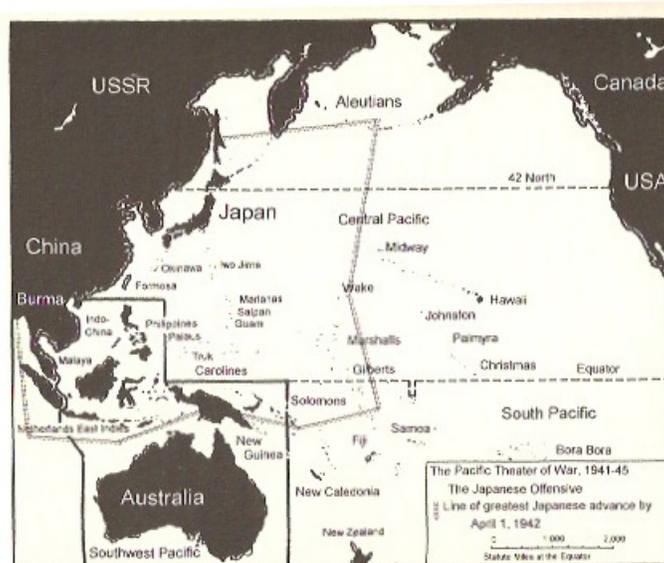


Figure 2. Pacific Theater map

Source: James F. Dunnigan and Albert A Nofi, *Victory at Sea: World War II in the Pacific* (New York: William Morrow and Company, 1995), 5.

The 1939 game started in the third year of a hypothetical war with Orange, with three million Americans in the military and 400,000 troops in New Guinea poised for an amphibious assault on the Philippines.²⁸ By the end of the interwar period, in part due to the 1933 game, planners and wargamers alike realized the war would not be a six-month slugfest between battlelines, but a multi-year endeavor. With American industrial might focused on churning out naval vessels and Japanese economic interests strangled, the drawn-out war of attrition would eventually bring Japan to its knees.²⁹ As the game continued, Blue became stronger, while Orange slowly choked.

Eight years removed from the pivotal 1933 game, war with Orange became a reality. In the interim, naval officers rehearsed the script the wargames presented: island-hopping, strangulation, and amphibious assaults.³⁰ The officer students of the NWC

during the interwar period became fleet admirals and captains during the upcoming war, and thus were given the chance to play the parts their wargamed scripts demanded.

The concept of wargame as a continually refined script can perhaps be attributed to a student in the Class of 1922, Captain Harris Laning. Captain Laning noticed that lessons and experiences gleaned from previous years of wargaming were not handed over to the incoming class, and had written his end-of-the-year thesis as a summary of the tactics he had learned. He hoped that future officers could use his thesis to apply and refine the tactics he and his classmates had used on the game floor. After graduation Laning joined the Department of Tactics staff and discovered that his thesis had been compiled into a pamphlet. This pamphlet, “The Naval Battle,” would become the “connecting link” to further the tactics of previous classes.³¹

Officers that read “The Naval Battle” were encouraged to improve on the tactics described therein.³² Corrections and improvements that the students devised were incorporated into yearly updates to the pamphlet. Although the principles were solid, the officer students’ drive demanded that they improve the system of fighting that the game floor had produced. New and ingenious maneuvers and concepts were imagined, tested, and added to the pamphlet: the aforementioned escort carriers, amphibious assaults, and refueling at sea (unheard of before the interwar period).

Outsiders discovered the concepts the NWC was encouraging. A Harvard University researcher visited in the college in the mid-1920s. He was fascinated by the wargame and how officers used their innovations on the board to strengthen their abilities when they rejoined the fleet. He was also impressed that the wargame could dictate change in naval policy, ship building, and operational capabilities.³³ The wargame not

only taught the players how to play better on the board and on the ship, but also taught the observer how to make the ships and their operations better.

The Game's Effect On War Plan Orange

After reopening NWC after World War I, Admiral Sims realized that the college's power was not just in its ability to train the next generation of ship captains. Sims wanted to prove the U.S. Navy's true capabilities to policymakers in Washington,³⁴ and to show why America needed a seagoing force second to none. The War College drew upon the first iteration of War Plan Orange for its "Strategic Plan of Campaign Against Orange," the bedrock of the campaign on the game floor for years.³⁵ Yet the first plan made two glaring assumptions based on American hubris: that the Japanese battle fleet would accept a Mahanian engagement against a superior fleet in classic battleline, guns blazing away at each other; and that Japan would wait for the U.S. Navy's fleet to recover from its 6,000 mile trek across the Pacific Ocean before engaging.³⁶ The plan had one straightforward requirement: protect American interests.³⁷

Some high-ranking naval officers identified the desperate plight of the Philippines well before the games proved the dilemma. In 1920, Sims himself told the Secretary of the Navy, Josephus Daniels, that NWC "has long held that the retention of Manila Bay cannot be counted on and that any plans based on its retention are in error."³⁸ Such stern warning, although not yet backed up on the game floor, was nevertheless both amazingly prophetic and blindingly obvious. How could anyone believe the Japanese would allow the United States Fleet to steam at maximum speed across the Pacific Ocean to rescue the Philippines without a plan for strong resistance? How could anyone believe the ships of the fleet could arrive ready for battle off the coast of the Philippines as if the 6,000-mile

trek never happened? Yet, thanks in part to the Washington Treaty system, the U.S. Navy had to charge across the ocean to save a besieged Manila. The United States was the greater of two forces in the Pacific; how could the more powerful force sit idly on the defensive?³⁹

Strategic planners in Washington were not fully aware in the early interwar period what NWC studies were capable of, but Captain Laning soon opened their eyes. The recently developed Bureau of Aeronautics under Rear Admiral William A. Moffett sought information from War College studies to provide depth to naval aircraft policies. Prior to Laning's discussion with Moffett, opinions on aircraft varied; the surface navy did not yet know how they were going to be used, while aviators made boisterous claims that they would sink any naval vessel that they could find. NWC wargamers delved into the problem, assigning aircraft to both offense and defense, with the provision that aircraft were operated based on their current capabilities.⁴⁰

The results were impressive. New and innovative uses on offense emerged, only to be innovated against by equally determined defenders. After numerous wargames aircraft standards were agreed upon. Standards of equipment, usage, and capabilities that fleets should expect from their aircraft were determined. Laning communicated the findings to Moffett, who in turn submitted the findings to the General Board. The career surface officer was completely surprised when he was invited to an aviation hearing in Washington some weeks later.

The Bureau of Aeronautics had been preparing to recommend only one type of aircraft, a heavy bomber, for the entire navy to the General Board. Upon reading the results of the college's studies and wargames, however, they submitted Laning's

summary to the Board instead. The Board, believing the aviators to be asking for everything they could, called on Captain Laning to explain the results. Without notes or preparation, Laning spoke for hours on the data the wargames produced; how the fleet needed fighters to protect bombers, how reconnaissance planes were necessary to find opposing fleets, how aircraft carriers and other combatants could only hold a small number of aircraft, and that all roles needed to be considered. Through the course of the Board's interrogation, Captain Laning successfully convinced them of the Bureau's requirements, and of how wargames were the proof. The Board submitted Laning's recommendations without change.⁴¹

Captain Laning's time before the General Board solidified the NWC's ability to assist in policies and plans. To make it easy for information to flow between the game floor and the General Board, the President of the NWC was eventually made a member *ex officio* of the General Board.⁴² Additionally the Joint Army and Navy Planning Committee realized their plans could be used to guide planning and operational testing outside of Washington; a memo to the Joint Board in 1924 outlined that War Plan Orange "is of primary value at the present time in establishing a basis for doing certain things in an orderly manner...its value lies in the training which will flow from the preparation of contributory and operations plans."⁴³

The game's effect on War Plan Orange was especially noticed as the Blue fleet began to bog down against Orange ingenuity. As the number of battleships reaching Manila decreased, especially from 1928 onwards, the expectations of war with Orange began to change within the Plan. The "Estimate of the Situation," the setup on the game board mirrored in the War Plan's own documentation, painted the picture that Japan had

planned for and that NWC students had discovered through wargames: “they [Orange] probably will endeavor in every practicable way to inflict the greatest damage to our forces enroute, and especially after we reach the region beyond Truk, in an effort to reduce our naval superiority through attrition.”⁴⁴

The decline in surviving battleships within the wargame coincided with wavering optimism in the Orange Plan. The plan in June 1928 called for the movement of naval and expeditionary forces as soon as possible upon declaration of war, but was more ambiguous about the location of the advanced fleet base required for sustained operations in the western Pacific. Though the decisive point was still based at Manila Bay, the wording beyond was foretelling: “or at some other location.”⁴⁵ Planners grudgingly admitted that the Philippines might not be available to the navy upon their entry into the area. The game proved the plan wrong.

The Estimate of the Situation in 1929 was more stark: “The Japanese would have comparatively little difficulty in investing Manila and the shores of Manila Bay, and even with Corregidor still in our possession, such an investment . . . would deny to us the use of Manila Bay.”⁴⁶ Planners held on faintly to the hope that the brave garrison in the Philippines, reinforced by native militia and reservists, could hold out against a determined Japanese invasion. The Joint Board was forced to admit that even if Corregidor were held and the island chain not completely in Japanese hands, the port would not be available for American use.

Game focus changed somewhat after the 1929 plan was published. Several exercises were introduced to the NWC game floor that focused more on logistics, economics, and alliances.⁴⁷ The College staff and students sought ways to continue the

direct approach across the Pacific to relieve the Philippines: faster transits, refueling at sea, hardier logistics trains. Wargamer and umpire alike seemed not to accept the grim reality of the Philippine episode, while those that played the role of Orange seemed to relish the continued slaughter.

Manila was destined to fall, as the fleet would not be in the area when Orange belligerence reached a boiling point. The war plan expected Orange to not only attack the Philippines, but also most other suitable islands for fleet bases, and suggested that less-suitable targets be scouted for potential bases to serve as the intermediate steps towards Philippine liberation.⁴⁸ The course change, proven in 1933 to be an absolute necessity, would require not only a change in naval dogma, but in national policy as well.⁴⁹ A new maritime strategy was taking shape,⁵⁰ one that required not a single decisive stroke, but a series of combined operations edging closer to Japan with every island taken.⁵¹

The critical 1933 game was indeed the turning point, not only for wargaming but also for strategic thinking. Captain R. A. Koch's study of the situation succinctly stated what major minds began considering: the battle fleet would not succeed in a rush to Manila, but would instead require deliberate advance and a determined offensive. By Capt. Koch's reflection, at least three years would be required to wear Japan down.⁵²

The college's wargamers stepped up to the challenge. In addition to the aforementioned route to Truk and beyond, the Advanced Class of 1935-1936 accrued their notes from numerous wargames and concluded two things: that proper execution of island-hopping required the reduction of Orange's Air Force, and that Orange could not sustain a prolonged war.⁵³ The case was strengthening for Blue aircraft carriers to shatter Orange's aircraft and secure islands for air bases, before charging into Orange strategic

strongholds. All the while, heavy bombers would inflict maximum damage to a war machine that could not handle the disruption in production.

As Japanese aggression on mainland Asia became more and more pronounced, the United States Army became jittery about losing their Philippine garrison. In 1937 former Corregidor commander General Stanley D. Embick became chief of the army's War Plans Division. While in the Philippines Embick had called War Plan Orange "an act of madness" for its apparent forfeiture of so many American lives in case of war.⁵⁴ Now he was to lead the charge for a new War Plan Orange,⁵⁵ one that would call for 20,000 army troops and aviation personnel for immediate Philippine reinforcement upon the outbreak of war.⁵⁶

Embick's plan called for a withdrawal of naval forces to the invulnerable line of defense bordered by Alaska, Oahu, and Panama. Essentially, Embick was attempting to use the navy as the first line of defense for the army's perimeter in defending the homeland.⁵⁷ Such a role flew in the face of Mahanian doctrine, which called for a robust offensive and decisive battle,⁵⁸ and although the upcoming war would not be decided in one brawl, the best strategy as ascertained by NWC's wargamers was to bring the fight to Japan one island at a time. Plans developed in 1938 to appease both military branches called for an initial defensive position with an eye towards the offensive whenever the situation allowed.⁵⁹

The navy flexed its muscle in planning against Orange, realizing that only the maritime profession had the strength to answer the nation's expected call to arms against Japan. The best way for the navy to intervene in any planning circles was to be well

versed in affecting policy. In 1937 the college course included eight policy lectures and two additional lectures entitled “The Navy as an Instrument of Policy.”⁶⁰

Two decades of wargames brought the navy from blind rush across the ocean to measured island assault. Framed by War Plan Orange and the Joint Board in Washington, and lectured by numerous political commentators giving the officer students guidance on real-world issues affecting naval planning,⁶¹ the plan and the game enjoyed a symbiotic relationship, feeding off each other to feed their own growth. The plan begat the game; the game fed the plan the realism of experience, even if no ordnance was fired.

Additional Children of the Game

The wargame was not just the bulwark of the war plans, but also the test for new concepts and ways of thinking. One advantage of the game board was the consideration (or creation) of operations that were not yet commonplace in navy life. Underway replenishments were considered during the fateful gaming of 1933, fully six years before they were operationally tested in the fleet.⁶² Planning with coalitions, including unlikely allegiances with the Soviet Union and the Netherlands, stemmed from a need for greater striking power in the western Pacific and a necessary assembly area for a Philippine assault.⁶³

Amphibious operations were tested time and again in wargaming before they were practiced on actual beaches with actual Marines,⁶⁴ who were identifying their niche as islands invaders at roughly the same time. A game in 1929 accurately divined an October landing in the Philippines almost fifteen years to the day of MacArthur’s return.⁶⁵ Games considered amphibious operations well before the marines published their seminal work about amphibious operations in 1935.

Technological advances were also blueprinted at NWC and examined on the game floor. Captain Laning fervently believed in thinking of new concepts, trying them on the game floor, and then publishing their findings to the fleet for digestion.⁶⁶ Early comparison with British battleships and cruisers uncovered the unsettling reality that American gunnery at long range was woefully inadequate. The angle the shot arrived at the opposing steel armor was a major factor; American shot was fired at a narrow angle and would glance off British armor at long range. The easiest answer, it was discovered, was to increase the deckplate steel and gun elevation and teach fleet gunners how to arc plunging shots into opposing fleets, using gravity to help the round penetrate decks rather than glance off. Nine battleships were improved due to the college's diligence.⁶⁷

Light cruisers, as a class of ship, sprang wholly into being from the game. The Washington Treaty stated that a certain tonnage of combatant ship could only be used for light cruisers, those carrying six-inch guns or less. The navy had not decided on a particular type of light cruiser, though it had several concepts to choose from, and thus the matter was turned over to NWC for deliberation on the game floor. Over a Christmas holiday the staff itself wargamed the merits and pitfalls of the proposed light cruiser designed and submitted its conclusions. The design agreed upon by NWC's staff formed the backbone of the United States Navy's light cruiser force as long as the Washington Treaty was in effect.⁶⁸

The two largest classes of ship that were shaped by NWC's wargame were submarines and aircraft carriers. The biggest hurdle submarine enthusiasts had to clear was the horror of unrestricted submarine warfare, the barbaric form of combat against merchant shipping that was the awful reality of World War I. Naval planners initially

shied away from submarines on the offensive, looking instead to defensive uses for submarines along the American coastline. Newport gamers submitted that although small coastal submarines were useful around the mainland, deep-sea-capable submarines were required to look after overseas interests.⁶⁹

The submarines' usefulness as a commerce raider was not completely ignored, despite the fears of unrestricted warfare. A major goal of War Plan Orange was the economic strangulation of Japan, and fleet operations would need to be conducted near the main islands of Japan to control import and export of materials to and from the country. Though surface fleets, primarily destroyers, would be tasked as Blue proceeded through the war, War Plan Orange acquiesced to the fact that submarines could affect import and export much sooner in the conflict, and considerations were made to allow submarines that form of combat as soon as possible after hostilities broke out.⁷⁰ Indeed, the plan also discussed the difficulty of complying with international law with regards to the sinking of merchant vessels without removing the civilian crew to safety.⁷¹

Submarines could also be used to warn of impending attack or for scouting ahead of the main battle fleet. Scouting fleets and task forces were born from the game floor, as submarines lurked ahead of the task force seeking contact with the enemy fleet without decisive engagement.⁷² As Blue continually advanced on Orange, submarines shadowing Orange homeports relayed signals whenever the main fleet left in search of a desperate Mahanian struggle with advancing Blue might.⁷³

In 1941 the wargame found a solution to the pesky international law. Noting that Germany and Great Britain were already conducting their own versions of unrestricted submarine warfare, NWC students recommended establishing a war zone in areas of the

Far East where merchant shipping traveled “at their peril.”⁷⁴ Rainbow 3 and Rainbow 5, the successors to the single-color plans of the interwar period, authorized fleet commanders to establish such zones.⁷⁵

Aircraft carriers were the other major addition to the naval arsenal during the interwar period, though their importance was not as readily apparent as that of submarines. Originally aircraft were identified as scouting aircraft for the main battle line, which would use spotters in the planes to help with targeting beyond the visible horizon of the battleships’ main guns.⁷⁶ Aviators believed, as previously stated, that aircraft would sink any surface ship with which contact was made. As Captain Laning explained, “The navy tries every new, feasible, and worthwhile suggestion, hoping to find more certain ways to win a war. It does not however, accept neophyte suggestions.”⁷⁷ In the case of aircraft, rigorous testing would be required to prove aircraft’s worth among the order of battle.

The testing results were evident by the inclusions to the war plan in 1924 and 1929. Early war plans had broad guidance, “To provide for the maximum use of Naval Aviation.”⁷⁸ Air raids on the Japanese home islands would destroy reserves and bases.⁷⁹ War production itself was to be targeted as soon as it was practicable for the army and navy to bomb such installations.⁸⁰ Logistics needed to account for spare aircraft totaling fifty percent of each type of plane already operating in the Pacific, with upwards of twenty-five percent casualties expected from the myriad uses of naval aviation.⁸¹ The NWC wargames had a major effect, introducing a concept that had only been toyed with at the end of World War I and giving it sufficient tasking and purpose as to be an integral part of the overall strategy against Blue’s enemy.

Aircraft carriers themselves were studied in detail in the wargame. Air superiority was a requirement for the various missions that naval aircraft were expected to perform; without air superiority, battleships would be concerned about their spotter aircraft, and reconnaissance aircraft could not effectively find the opposing force. NWC studies ascertained that carrier-borne fighter aircraft were more effective if the aircraft carrier increased the launch rate of aircraft. The controversy raged within the planning circles: more flight decks with less capacity for aircraft, or fewer carriers with greater launch performance.⁸²

The war plan itself betrays the importance that planners considered the aircraft carrier with respect to the battleship. In *Estimates of the Situation for war against Great Britain (Red)*, battleship numbers were always listed first in lines of battle. Aircraft carriers inhabited positions of varied importance, ranging from dead last (after submarines, minelayers, and minesweepers) to just below cruisers, the stepchildren of the heavy gun battle line.⁸³ It was not until the aircraft carrier performed in the fleet's annual exercises that the importance became readily apparent.

The wargames found the issues in the Red and Orange War Plans and helped to engineer solutions to the problems created. Over the course of twenty years eager officer students combined new weapons and new ways of employing existing technology to overcome logistical, technological, and cultural barriers to solidify America's eventual war against Japan. The results of the game board were transported to the fleet, trading lead game pieces for real and simulated armored ships in the annual Fleet Problems.

¹Vlahos, *The Blue Sword*, 100-103.

²Charles M. Melhorn, *Two Block Fox: The Rise of the Aircraft Carrier, 1911-1929* (Annapolis, MD: Naval Institute Press, 1974), 22-23.

³“Memorandum No. 67, Building Program,” Planning Section, London, 21 November 1918, 12, Record Group 45, National Archives, quoted in Vlahos, *The Blue Sword*, 104.

⁴Gaudet interview, 15-17.

⁵Admiral Sims wrote to the Secretary of the Navy that the British fleet enjoyed an “overwhelmingly decisive advantage should by any chance the two fleets come to battle.” This apparently surprised the students when they first arrived on the game floor. See Sims to Secretary of the Navy, 12 October 1922, quoted in William R. Braisted, “On the American Red and Red-Orange Plans, 1919-1939,” *Naval Warfare in the Twentieth Century*, ed. Gerald Jordan (New York: Crane, Russak, and Company, 1977), 171.

⁶Various tactical problem write-ups, Record Group II, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 107-108.

⁷Vlahos, *The Blue Sword*, 107.

⁸Secretary, the Joint Board, to the Secretary of War, “Joint Army and Navy War Plan-Red,” 18 May 1930, in *American War Plans 1919-1941*, vol. 2, ed. Steven T. Ross (New York: Garland Publishing, 1992), 233-236.

⁹Gaudet interview, 15-17.

¹⁰C. J. Meyers to General Board, 26 May 1932, Record Group 80, Secnav’s Confidential Correspondence, 1927-1939, A 16 (0) ND 16, quoted in Braisted, 180.

¹¹Chief of Naval Operations, to the Joint Board, “Joint Army and Navy Basic War Plan Red,” 25 May 1939, in Ross, 334.

¹²R. P. Rodgers, Rear Adm., USN, “Strategic Plan of Campaign Against Orange,” 1911, Record Group XII, Naval War College Naval Historical Collection; “War Portfolio No. 2,” General Board Records, U.S. Navy Operational Archives, Naval Historical Division, quoted in Vlahos, *The Blue Sword*, 116.

¹³W. D. MacDougall, LCDR, USN, “Study of Special Situation,” 5 April 1907, JNOpp, 10 Record Group VIII, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 116.

¹⁴John H. Latani, “The Relation of the United States and Japan,” 1913, 26, Record Group XIV, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 124.

¹⁵“War Between Japan and America: A Picture of the Future,” (ostensibly translated from articles in Japanese newspaper *Manyo*), JNOpP, Record Group VIII, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 124.

¹⁶Vlahos, *The Blue Sword*, 143.

¹⁷*Outline History of the Naval War College* (Newport, RI: Collected Typescript, Bound, 1937), quoted in Vlahos, *The Blue Sword*, 134.

¹⁸Dring interview, 12-13.

¹⁹Class of 1923, “The Battle of the Marianas,” Tac. 96, Record Group II, Naval War College Naval Historical Collection, quoted in Michael Vlahos, “Wargaming: an Enforcer of Strategic Realism: 1919-1942,” *Naval War College Review* (March-April 1986): 14.

²⁰Sadao Seno, “Chess Game with No Checkmate: Admiral Inoue and the Pacific war,” *Naval War College Review* (January-February 1974): 27-28; Ronald H. Spector, *Eagle Against the Sun: The American War with Japan* (New York: Vintage Books, 1985), 44.

²¹Class of 1923, “The Battle of the Marianas,” and Senior Class of 1928, *Operations Problem IV*, 1928, Record Group II, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 144.

²²Vlahos, *The Blue Sword*, 144.

²³U.S. Army War College and U.S. Navy War College, *Operation Problem VI*, 1929, “Joint Army and Navy Operations with Forced Landing,” Part II, Commander-in-Chief, Blue Fleet, “Estimate of Situation and Decision,” 16, quoted in Vlahos, “Wargaming: an Enforcer,” 15.

²⁴Vlahos, “Wargaming: an Enforcer,” 15-16; Vlahos, *The Blue Sword*, 144.

²⁵“Stenographic Notes Taken at Critique,” Senior Class of 1933, *Operations Problem IV*, May 1933, Record Group II, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 146.

²⁶Vlahos, *The Blue Sword*, 150-151.

²⁷“Remarks of President Naval War College Preliminary to Solving Operations Problem III,” Senior Class, 1935, 20 February 1935; Senior Class of 1938, *Operations Problem V (Strategic)*, 1938; Senior Class of 1938, *Operations Problem VII*, 1938, Record Group II, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 144.

²⁸Vlahos, “Wargaming: an Enforcer,” 17.

- ²⁹Vlahos, *The Blue Sword*, 146.
- ³⁰*Ibid.*, 145-146.
- ³¹Harris Laning, Admiral, USN (Ret.), *An Admiral's Yarn*, eds. Mark Russell Shulman and the Naval War College Press Staff (Newport, RI: Naval War College Press: 1999), 274.
- ³²*Ibid.*, 277-278.
- ³³*Ibid.*, 276.
- ³⁴Vlahos, *The Blue Sword*, 59.
- ³⁵R. P. Rodgers, Rear Adm., "Strategic Plan of Campaign Against Orange," 52-57, quoted in Vlahos, *The Blue Sword*, 118.
- ³⁶Vlahos, "Wargaming: an Enforcer," 9-10.
- ³⁷*Ibid.*, 7-8.
- ³⁸W. S. Sims, to Josephus Daniels, "Matters Connected with the Pacific," 13 August 1920, Sims Papers, Naval Historical Foundation, Library of Congress, quoted in Vlahos, *The Blue Sword*, 119.
- ³⁹Vlahos, "Wargaming: an Enforcer," 9.
- ⁴⁰Laning, 277-278.
- ⁴¹*Ibid.*, 278-280.
- ⁴²*Ibid.*, 333.
- ⁴³The Joint Army and Navy Planning Committee, to The Joint Board, "Joint Army and Navy Basic War Plan Orange," 20 June 1924, in Ross, 12.
- ⁴⁴The Joint Board, to the Secretary of the Navy, "Joint Army and Navy Basic War Plan-Orange; Estimate of the Situation," 11 January 1929, in Ross, 99.
- ⁴⁵The Joint Board, to the Secretary of War, "Joint Army and Navy Basic War Plan-Orange," 14 June 1928, in Ross, 39.
- ⁴⁶The Joint Board, 11 January 1929, in Ross, 127.
- ⁴⁷Vlahos, "Wargaming: an Enforcer," 10-11.
- ⁴⁸The Joint Board, 11 January 1929, in Ross, 107.

- ⁴⁹Perla, 74.
- ⁵⁰Vlahos, “Wargaming: an Enforcer,” 7.
- ⁵¹The Joint Board, 11 January 1929, in Ross, 110.
- ⁵²R. A. Koch, Capt., USN, “BLUE-ORANGE Study,” 31 March 1933, Record Group VIII, Naval War College Naval Historical Collection, 17, quoted in Vlahos, *The Blue Sword*, 120.
- ⁵³R. R. M. Emmet, Cdr., USN, “Comment on Plan of Operations submitted by Advanced Class of 1935-1936,” Record Group VIII, Naval War College Naval Historical Collection, quoted in Vlahos, “Wargaming: an Enforcer,” 17.
- ⁵⁴Henry G. Morgan, “Planning the Defeat of Japan: A Study of Total War Strategy,” unpublished MS prepared for Office Chief of Military History, 16, in Spector, *Eagle Against the Sun*, 58.
- ⁵⁵Secretary, The Joint Board, to Senior Navy Member-Joint Planning Committee, “Joint Army and Navy Basic War Plan-Orange, directive,” 7 December 1937, in Ross, 158.
- ⁵⁶“Joint Army and Navy War Plan-Orange,” Enclosure X (Navy Draft), in Ross, 203.
- ⁵⁷Morgan, 186, quoted in Spector, *Eagle Against the Sun*, 58.
- ⁵⁸Spector, *Eagle Against the Sun*, 58.
- ⁵⁹Louis Morton, *U.S. Army in World War II, The War in the Pacific, Strategy and Command: The First Two Years* (Washington, DC: Department of Army, 1962), 42, quoted in Spector, *Eagle Against the Sun*, 58-59.
- ⁶⁰Vlahos, *The Blue Sword*, 68.
- ⁶¹Laning, 332.
- ⁶²Vlahos, “Wargaming: an Enforcer,” 16.
- ⁶³*Ibid.*, 13.
- ⁶⁴McHugh, “Eighty Years of War Gaming,” 89.
- ⁶⁵U.S. Army War College-U.S. Naval War College, *Operation Problem VI-1929, Joint Army and Navy Operations with Forced Landing, Part II, Estimate of Situation and Decision*, 1 July 1928, 6, Record Group II, Naval War College Naval Historical Collection, quoted in Vlahos, *The Blue Sword*, 145.

- ⁶⁶Laning, 274.
- ⁶⁷Vlahos, *The Blue Sword*, 108.
- ⁶⁸Laning, 334-335.
- ⁶⁹*Ibid.*, 333-334.
- ⁷⁰The Joint Board, 11 January 1929, in Ross, 102.
- ⁷¹*Ibid.*, 132.
- ⁷²Dring interview, 18.
- ⁷³The Joint Board, 11 January 1929, in Ross, 101.
- ⁷⁴Letter, President of Naval War College, to Chief of Naval Operations, 20 March 1941, Serial 6838, General Board No. 425, General Board Records, quoted in Spector, *Eagle Against the Sun*, 479.
- ⁷⁵Spector, *Eagle Against the Sun*, 479.
- ⁷⁶Melhorn, 92.
- ⁷⁷Laning, 328.
- ⁷⁸The Joint Board, to the Secretary of the Navy, "Joint Army and Navy Basic War Plan-Orange," 15 August 1924, in Ross, 30.
- ⁷⁹The Joint Board, 11 January 1929, in Ross, 102.
- ⁸⁰The Joint Board, 14 June 1928, in Ross, 41-42.
- ⁸¹*Ibid.*, 52.
- ⁸²Department of the Navy, *Proceedings and Hearings of the General Board of the U.S. Navy, 1900-1950* (Washington, DC: National Archives, 1987), microfilm, 801-802, 809; Melhorn, 90-91.
- ⁸³The Joint Board, to the Secretary of the Navy, "Joint Army and Navy Basic War Plan-Red; Estimates of the Situation," 18 May 1930, in Ross, 268, 303.

CHAPTER 4

THE FLEET EXERCISE

“One should not hope to achieve in war, something which one has not learned in peace.” This adage, echoed by Admiral James Richardson, most closely describes the main reason for NWC’s wargames and the Navy’s twenty-one interwar fleet exercises.¹ Peacetime learning incurs minimal casualties and very rarely damages ships and aircraft, whereas lessons learned in war cost valuable lives and property. Technological experience and tacit knowledge are often learned more effectively through on-the-job training;² seeing 14-inch rounds hit their target is more satisfying than a judge voicing similar results. Thus the Navy not only turned to NWC wargames for strategic and tactical conference, but also to Fleet Exercises (or Problems) to test maneuvers and concepts in conditions nearing actual combat.

The United States Fleet gathered twenty-one times to make the jump from the game board. During the interwar period the Navy had very few overseas requirements; ships stayed close to homeport and did not patrol faraway seas, and America’s only conflicts involved South American countries. With large amounts of free time available, the fleet trained thoroughly and often with gunnery and maneuvering exercises. Fleet exercises were the culmination of a yearlong cycle of training that coincided with the start of the fiscal year in July. The training cycle started with individual ships training throughout the summer and fall. The Fleet Problem would proceed after a mid-winter congregation of the available ships and aircraft. After the problem, the ships would detach to continue single-ship maneuvers or visit nearby ports before returning to their homeports in time for the next fiscal year training cycle.³

The objectives for the fleet exercises were simple and unchanging: to train senior leadership to estimate fleet-scale situations and produce operations orders, to train the fleet to maneuver in unison as a fleet, and to study war plans and doctrine.⁴ The War Plans Division worked feverishly to produce scripted plans for execution, but the fleet exercises allowed refinement. The exercises familiarized officers and crew with war-like conditions; participating admirals and umpires determined what concepts worked and gave feedback to the architects for future exercises.

Throughout the interwar period the Chief of Naval Operations (CNO) oversaw the generation of fleet exercises through the suggestion of strategic problems and technologies he believed needed testing. Senior admirals throughout the Navy would supply ideas, which were submitted to an *ad hoc* committee appointed by the CNO to generate more formal problems. The Naval War College and the War Plans Division further provided assistance through concepts that were developed on the game board or the planning board, respectively.⁵ The combination of seagoing senior leadership, researchers from the NWC, and planners from Washington ensured that multiple perspectives were applied to the problems for maximum realism.

Once the problems were handed over to the opposing commanders-in-chief, their staffs developed the operations orders and proceeded as if war had been declared. Operations orders were produced and coordination between individual ships and their commanders commenced, continuing through the exercise's conclusion. Often these exercises represented the best opportunity for interoperability between staffs and subordinate units. The problems were also the proving grounds for emerging missions

and technologies (aircraft spotting for battleships, carriers and anti-submarine screening destroyers, e.g.).⁶

Calling the exercises “training for war” would have alarmed American citizens. Instead, the Navy preferred the term “battle efficiency” to denote the reason for the exercises. The paradox of the average American citizen was his or her desire to have a fully capable, fully trained army and navy ready to respond to any crisis, without the benefit of war planning that might instigate other nations into believing America was belligerent and looking for a fight.⁷

War Plan Orange called for operations in the western Pacific. However, conducting maneuvers near Japan was diplomatically and logistically difficult, especially in the pacifistic interwar period; Japan had just acquired the Mandate Islands after World War I, and saw any American maneuvers in the area as a threat to Japan’s sovereignty. Adapting to these difficulties, exercise developers notionally transposed the desired area of maneuvers (the western Pacific) to fit land masses closer to the United States (the west coast of Central America or the Caribbean Sea).⁸ Central American countries were more likely to grant diplomatic clearance for American naval maneuvers, particularly in exchange for financially stimulating port visits after the exercises. Panama therefore became a popular stand-in for the Philippines. By turning Midway, an American possession, into a Japanese-owned objective for exercise purposes, the navy saved transit time and fuel.

After the fleet assembled for an exercise, ships would be divided in accordance with the requirements and motives of the problem. Some years the focus would be on convoy screens while others would concentrate on the fleet’s initial advance in

accordance with the Orange Plan, and units would be parceled out accordingly. In addition to ships in the American inventory, planners utilized “constructive” or notional forces. One destroyer often represented multiple ships, while a single aircraft could represent an entire squadron. For example, in Fleet Problem One (1923) two battleships masqueraded as aircraft carriers, since none had yet reached the fleet (the *Langley*, the first American carrier, was still conducting initial underway testing).⁹ In Fleet Problem Four (1924) the *Langley*’s complement of fourteen aircraft was notionally increased to fifty-six to simulate the amount of aircraft future carriers (the under-construction *Saratoga* and *Lexington*) would carry into combat.¹⁰ “Constructive” units played a large role in the testing of theories and concepts that the navy was researching because they lacked the appropriate ships, equipment, or capabilities to avoid simulating units.

The Fleet Problems Test the Navy

Fleet Problem One (1923) began approximately eighteen months after Billy Mitchell published his contentious pro-aircraft article “Has the Airplane Made the Battleship Obsolete?” in *The World’s Work*.¹¹ The battleship-turned-aircraft carrier launched its simulated squadron, in reality a single seaplane from the nearby Coco Solo Naval Station, to attack the Gatun Dam spillway. The attack succeeded, and the lone aircraft was judged to have crippled the dam with miniature simulated bombs.¹² Since the attack was conducted with constructive forces using a concept that had not yet been field-tested, i.e. bombs being dropped from a carrier-launched aircraft, speculation and theory abounded. Commander-in-Chief of the U.S. Fleet, Admiral Hilary P. Jones, pointed out how the concept of launching a bomb-laden aircraft had not yet been proven.¹³ The aircraft being simulated were still years from being a reality in the fleet.

Aircraft played another key role in Fleet Problem One. The old battleship *Iowa*, built in 1896, had been converted into a radio-controlled target for gunnery exercises. Aircraft assisted the modern battleship *Mississippi*, spotting the 14-inch rounds from the air as they splashed in the water and relaying back to the ship how far the rounds had missed their target and in which direction. The *Mississippi*'s gunners used the information provided by the aircraft to improve their aim, and the ship quickly zeroed in on and sank the *Iowa*.¹⁴ Extending the visual range of battleship gunners would be one of the first identified uses of aircraft, a role that had been identified in NWC wargames and further discussed the year before when Captain Laning went before the General Board.¹⁵

Fleet Problem One endured failure as much as success. Submarines assigned to the attacking fleet tremendously slowed the overall speed of the formation, both due to the slow sustained speed of a submarine and the numerous material casualties that the submarines suffered from.¹⁶ To keep up with the fleet, submarines proceeded at top speed for long periods of time, wearing engines out. The problems of slow ship speed in general and of submarine speed in particular would both become more apparent in later problems.

The next three exercises, Fleet Problems Two through Four, occurred in rapid succession in 1924 and tested different theories and concepts, including the transit of the Panama Canal for a consolidation of the Atlantic and Pacific Fleets. In Fleet Problem Two subterfuge played a key role; an Ensign made his way from a Black (enemy) ship to Panama via small boat and gained access to the battleship *New York*, then second in line transiting the canal. Through uniform changes and in-character ruses, he reached the magazine of one of the main turrets and “constructively” blew himself and the magazine up, sinking the ship in the narrowest part of the canal and effectively blocking the rest of

the Atlantic Fleet's transit. Vice Admiral Newton A. McCully, Commander-in-Chief of the Black fleet, surmised in the post-exercise critique that "this form of enemy activity [suicidal attacks] is too much relied upon by other powers for us to be insensible to it." Had that warning been taken to heart, the kamikaze squadrons unleashed by Japan in 1944 might not have been so surprising.¹⁷

Fleet Problem Four was more straightforward and in line with the fledgling War Plan Orange's script. The initial goal was to transit the combined fleet across the constructive Pacific Ocean (in reality, the Caribbean Sea altered to mimic Japan and the surrounding islands) "to an advanced base within 500 miles of the vital sea trade routes of the constructive enemy."¹⁸ The United States, represented by Blue and counting constructive forces, was assigned "sixteen battleships, an aircraft carrier, eight cruisers, sixty-eight destroyers, and nearly two dozen submarines" while the Black or Japanese fleet "had only ten battleships, seventeen cruisers, fifty destroyers, and about a dozen submarines,"¹⁹ ratios that were closely in line to what planners believed a U.S.-Japan decisive operation would entail.

Langley played a prominent role in Fleet Exercise Four, the first problem that included an actual aircraft carrier. The *Langley*'s aircraft flew daily reconnaissance patrols and also participated in mock air-to-air battles with Navy and Marine Corps land-based bombers and torpedo aircraft.²⁰ The ability to integrate real carrier-launched aircraft, as opposed to constructive aircraft as in Fleet Problem One, was a validation of concepts that had merely been discussed previously by the General Board, prophesized by Billy Mitchell, and tempered on the NWC game floor.

Logistics had always been a serious consideration on the Newport game board, and Fleet Problems Two and Four accentuated the difficulties of defending the slow-moving supply train. In both problems a new circular formation design was tested, one that would eventually replace the old rectangular formation of ships previously used. The formation was meant to increase effectiveness of screening ships against the risk of penetrating surface ships or submarines alike. The slow-moving supply ships were at the center of the screen and were ringed by escorts: submarine-hunting destroyers on the outer rings, and cruisers closer to the supply ships to handle the enemy's penetrating light cruisers. Although the formation was a huge success, commanders realized that formation speed was as much of a deterrent against submarines as a properly formed destroyer screen. Supply and auxiliary ships of the age were not fast enough for commanders' liking.²¹

The aftermath of Fleet Problem Four suggested a number of conclusions and recommendations, many of them paralleling the discoveries of Newport's wargames. The conclusions from the Fleet Problem include auxiliary ships with a "long radius of action (not less than 7500 miles)," and "a sustained speed of not less than twelve knots." The exercises also concluded the hazard of attempting to seize a defended base without gaining maritime superiority and defeating the enemy's battleline, as well as the need for aircraft carriers (thanks to the *Langley's* hard work).²² The Commander-in-Chief of the U.S. Fleet, Admiral Robert Coontz, gave a strong recommendation for expediting aircraft carrier construction in his report to the CNO: "That the LEXINGTON and SARATOGA be *pushed* [emphasis added] to completion."²³ Carriers, theorized on the game board at Newport, had earned respect at their first opportunity.

The game floor at the NWC did not cover every contingency that commanders would have to face in war; outside influences, difficult to foresee in Newport, became more apparent on the open ocean. During Fleet Problem Five (1925) a Japanese tanker, the *Hyatoma Maru*, shadowed the entire fleet. The *Hyatoma Maru* followed the fleet from San Pedro to San Francisco and then out to Hawaii, forcing commanders to tighten communications security throughout the fleet. After Fleet Problem Five, Japanese ships made regular shadowing visits to the problems in an effort to glean as much signals intelligence and tactical knowledge from American ships.²⁴

Fleet Problem Six (1926) caused almost immediate contact between the opposing fleets due to the close proximity of the fleets' starting positions; the initial and constant contact inspired creativity in aircraft roles. Aircraft from the *Langley*, while providing air defense, spotted a light cruiser on the horizon, closed to identify the ship, and when the contact was determined to be an enemy the aircraft attacked with simulated light bombs and machine guns.²⁵ The attack signified aviators' desire to move away from the aircraft's initial game board-inspired role of battleship spotting and towards more offensive operations.

The 1926 problem was one of the first to directly mirror War Plan Orange. The Commander in Chief of the U.S. Fleet, Admiral Samuel S. Robison, reported to the CNO that the exercise tested "operations that they [the fleets involved] may be expected to carry out in attempting to establish our seapower in the Western Pacific."²⁶ San Diego, the starting point of the Blue fleet, represented Hawaii. Black was situated around Panama (ostensibly the Philippines), having taken the majority of the country, while a garrison was bravely holding out at Balboa (Corregidor) on the Panama Canal against the

invading Black forces.²⁷ The Blue fleet's goal was to save the garrison by defeating the Black fleet in the waters south of Panama.

Both fleet commanders (Admiral Charles S. Hughes commanding the Blue fleet, and Vice Admiral Josiah S. McKean commanding the Black) realized the situations that War Plan Orange had envisioned and that Fleet Problem Six had laid before them. The Black fleet commander needed a night engagement using his destroyers and a further battle of attrition using his submarines to whittle down Blue's battleships and supply train.²⁸ The Blue commander knew that with *Langley's* aircraft he held air superiority while en route to Panama, but that land-based air forces would tip the scales back in Black's favor.²⁹ The requirement for sufficient aircraft carriers to overcome Japanese land-based and naval aircraft was repeatedly discovered in Newport, enshrined in War Plan Orange, and validated in Fleet Problem Six. Furthermore, when Admiral McKean realized he had to attrite Blue's fleet to balance the strength of the opposing battle lines, he validated the NWC's expectations of Japanese tactics.

After repeated fleet problems, Admiral Robison noted that the "cost in time, fuel, and wear and tear of material [was] fully justified." However, given the fiscal restraints imposed in the mid-1920s repeated major problems could not be funded every year.³⁰ The fleet problem became a constant, a yearly staple in the training cycle that coincided with the required annual fleet concentration to keep costs down. The importance of the NWC wargames could not be overstated at this point, with the costs of repeated games at the college far lower than the fuel and maintenance costs for a single massive fleet maneuver.

Admiral Laning's first experience as a participant in a fleet exercise came during Fleet Problem Eight in 1928, as Chief of Staff of the Battle Fleet. The problem was a mirror image of NWC wargames and War Plan Orange: the Blue fleet was to sail from California to Pearl Harbor without heavy losses against an enemy lighter in surface forces but heavier in submarines. The passage simulated a transit from Hawaii to Manila Bay. The forces were designed to see how the fleet, ostensibly a Philippine relief force, would react to and overcome heavy submarine and light cruiser activity. Laning's solution took advantage of his biggest weakness: the slow speeds of his auxiliary ships. The Black fleet commander expected Laning's Blue fleet to travel nine and a half knots, the speed of the formation's slowest ship. Laning ordered his battleships to tow the slower auxiliary ships and submarines, achieving twelve knots. The increase in speed over the course of the exercise gave Laning an extra 500 miles of ocean to dodge Black's awaiting submarines. By the time the Blue fleet reached Pearl Harbor, Black forces believed the Blue fleet was still 400 miles from the objective.³¹

The battleground shifted to the Caribbean Sea for Fleet Problem Ten (1930). Blue commander-in-chief Admiral Louis Nulton kept his aircraft and carriers close to the fleet in a variety of defensive roles in support of his battleships. His unwillingness to assign search and destroy missions to his aircraft haunted him when the opposing fleet's aircraft (off the *Lexington*) found Blue amidst a rainsquall. Judges deemed the aircraft attack a success and declared Nulton's carriers' flight decks destroyed. Without the carriers' air cover, *Lexington's* aircraft were free to attack the battleline, with significant simulated damage awarded to three battleships.³²

Subterfuge, difficult to act out on the game board in Newport, played a major part in Fleet Problem Fifteen (1934). One early morning submarine *SS-53* was operating in the western Caribbean. The submarine encountered a ship underway without running lights ahead; the submarine captain, not knowing whose side the unlit ship was on, decided to try to pass the submarine off as a party yacht. After some initial drunken signaling, the submarine discovered it had sailed into the middle of the Blue Fleet without being discovered. Playing the ruse as long as possible, the submarine captain eventually fired simulated torpedoes and escaped unscathed.³³ On a game board, the ability for a submarine commander to determine at night whether a game piece is a warship is much more straightforward unless the game goes into extreme detail. The judges either show the submarine commander a warship piece when scanning the simulated horizon or a generic ship piece. If a generic piece is shown, judges must then keep careful note of the identification status of each ship on the table. The cumbersome nature of ensuring fog of war on the game board makes it difficult to practice low visibility and night tactics, tactical issues that would haunt the American navy all the way to Guadalcanal.

Admiral Laning returned to the ocean for Fleet Exercise Sixteen (1935). The goal was to sortie from Pearl Harbor and advance to retake an enemy-controlled Midway Island. The enemy fleet was considerably strong in surface forces and once again held greater strength in aircraft and submarines. Laning's solution was to evade the initial band of submarines lurking outside the harbor, using his aircraft to keep them submerged. By the time the submarines could surface to find and report the location of Laning's fleet,

he had turned in an unexpected direction and sailed away, giving the enemy fleet a much larger area to search to find him.³⁴

Laning's maneuver was significant, as he displayed the ability to overcome difficult odds to defeat forces similar in constitution to the Japanese navy. The problem was also significant in its objective. Rather than cross the notional Pacific Ocean to relieve a battered Philippine garrison, Navy planners began to concentrate on the island-hopping campaign expected against Japan. By using Midway as an intermediate, unnamed objective, rather than the often-used Manila objective, problem developers began to delve into the techniques needed to defeat Japan's formidable forces.

Fleet Problem Eighteen (1937) showed the U.S. Navy one more deficiency that would plague the service throughout the early days of World War II. The Navy could not fight effectively at night, and the problem was designed to highlight this dearth in ability through a series of night engagements.³⁵ The lack of night prowess may be attributed to the safety requirements imposed in previous years; the potential damages from collisions did not outweigh the education senior leaders believed the fleet would gain by night fighting. Oddly enough, early war planners expected the Japanese to become very proficient at night fighting to make up for their insufficient capital ship numbers (which they were). Despite this early warning, the admirals that competed in Fleet Problem Eighteen suffered during the fast-approaching war; Guadalcanal, as discussed in Chapter 5, exposed the glaring error.

Submarines had been used in every fleet exercise as a scout, a screen penetrator, and an attacking force. In Fleet Problem Nineteen submarine commanders were directed to attack "vital centers and coastal shipping." The orders proved Mahanian doctrine still

applied in some situations, as once maritime superiority had been achieved the fleet's mindset shifted to *guerre de course*.³⁶ The concept of unrestricted submarine warfare that had been flirted with in Newport stole its way back into planners' thoughts. The skills required to conduct unrestricted warfare were very similar to those required for fighting warships: stay undetected, attack when least expected from as close a range as possible, and make an escape before escorts converged on your location. The morality would be debated, old ghosts would be dredged up from World War I, but the tactical framework had been laid from previous wargames and fleet exercises.

Fleet Problem Twenty-One (1940), the final exercise before World War II, was divided into two distinct phases separated by a four-day period of special exercises. The first phase again involved two fleets closely resembling the American and Japanese fleet dispositions: the American fleet was strung out along the east and west coasts and Hawaii, while the Japanese were concentrated in the Marshalls and Caroline Islands. The special exercises included refueling at sea, antisubmarine warfare, and rapid changing of formation from antisubmarine to aircraft defense or cruising formations. The second major phase required the Fleet Marine Force, defended by a carrier task force, to take a defended base and hold it against the enemy fleet, a forebear of Tarawa and other island-hopping operations in World War II.³⁷ The second phase finished with a large night battle, and again the fleets displayed their lack of combat ability in darkness. Ships nearly collided, phosphorus rounds illuminated the wrong ships, and several ships missed out on the chance to launch devastating simulated torpedo and gunnery attacks for lack of a visual target. Senior commanders realized the deficiencies in their post-exercise critiques, but war erupted before any further exercises could rectify the lack of training. The

repeated warnings about the disparity between Japanese and American night fighting, highlighted in multiple exercises, would have devastating effects at the Battle of Savo Island.³⁸

With war looming against Japan, suggestions flourished on how to make the Fleet Problems even more tailored to the eventual conflict. Actual capture of island bases were discussed for future problems, as were permanent task forces for advanced base establishment.³⁹ The eventuality of war furthered the realization that the fleet exercises were valuable hands-on training for the fleet. The combined efforts of the Naval War College, the war planners in Washington, and the problems' participants solidified what was required of the United States Navy as it entered World War II.

Similarities and Differences

Communications difficulties imposed in Newport's wargames carried over to the reality of war at sea. In the wargames, limited inter-ship communications were designed to mimic the overcrowded high-frequency paths prevalent in fleet operations. In the fleet exercises the amount of communications desired by decision-makers greatly exceeded available circuits. Admiral H. Kent Hewitt remarked in his memoirs that he learned very quickly to ascertain what his commanders would want to know from him and supply that information succinctly and in a timely manner.⁴⁰

As in the wargames at Newport, the fleet exercises concluded with rigorous after-action critiques, which required senior officers' attendance and highly encouraged junior officers to listen in as well. After Grand Joint Exercise Number Three, which followed Fleet Problem Five (1925), 800 Army, Navy, and Marine Corps officers spent five days critiquing and analyzing the exercises' maneuvers.⁴¹ The critiques proved an excellent

way for the participants, especially junior officers, to fully appreciate how their role in the exercise fit into the grander scheme of maneuver. Robert Taylor Scott Keith, an Ensign onboard the *Utah* (BB 31) during Fleet Problem Nine (1929), commented that the critique “added to my knowledge of the Navy, my interest in what was going on around me.”⁴² Rear Admiral William Pratt, during Fleet Problem Four, cautioned that the “ideas, plans, and methods which are passed down to the younger officers are correct, for the younger men coming on are apt to assume that the lessons learned today from us are the correct lessons.”⁴³

Fleet exercises, like wargames, became an important step in the evolution of the naval officer. After Fleet Problem Six, the Commander in Chief of the U.S. Fleet desired as many officers as possible participate in future problems, recognizing that the opportunity to study naval tactics so early in young officers’ careers would be of greater developmental value than older officers who did not have similar experiences until much later in their careers.⁴⁴ The Naval War College’s game board lessons benefited the captains and commanders who attended, but the fleet exercises reached down to the very junior levels, instilling in ensigns and lieutenants a greater calling for naval tactics and warfare.

Unfortunately, the fleet exercises grew in such stature that the value of lessons learned from immediate experience exceeded the value in a more protracted post-exercise analysis. Fleet Problem Three (1924) required four days of evaluation for a sixty-hour problem. Fleet Problem Nineteen (1938), in contrast, ran forty-six days.⁴⁵ The analysis of later problems was secondary and required too much time for proper study; exercise planners instead focused on the immediate experience that participating in the exercises

instilled. Considering the night fighting and base establishment concerns discovered in later years, analysis and feedback might have served the Navy better. Admiral Richardson also cautioned that the lack of thorough analysis “contained the real hazard of sometimes arriving at erroneous conclusions.”⁴⁶

Participants experienced the psychological effects of attacking aircraft more vividly in the fleet exercises than in wargames. The commanding officer of the *Langley* during Fleet Problem Four expressed a feeling of helplessness when waves of aircraft began to attack his ship.⁴⁷ Naval officers, used to fighting pitched gunfights with battleships several miles distant, began to experience the concept of death at uncomfortably close ranges. The turn-based wargames in Newport could not duplicate the horror of watching death approach at one hundred fifty knots; battleship commanders enrolled in Newport may have only previously experienced war at much slower speeds and far greater ranges.

What Else Was Learned?

As determined at the NWC, refueling at sea made fleet exercises in the vast Pacific Ocean possible. Some fleet exercises, however, displayed what happened when refueling at sea was not compulsory for every unit participating. Fleet Problem Six required the Blue fleet to refuel at sea, allowing the entire fleet to arrive in the vicinity of Balboa, Panama, from San Pedro. Black forces were not required to fuel at sea, and the lack of fuel caused problems during some engagements, as Black destroyers running low on fuel were forced on more than one occasion to break off contact with Blue forces. The lack of fuel was so great that, had the exercise continued beyond 2200 on 13 February, Black’s chances for a successful defense of the Balboa area would have been seriously

compromised.⁴⁸ Conducting operations across wide expanses of water forced commanders to integrate refueling considerations into fleet operations, and by World War II the navy had synchronized the two operations exceedingly well.

One of the greatest discoveries of the later fleet exercises was the need for carrier task forces to handle specialized portions of War Plan Orange and operations in the Pacific. The concept of carrier task forces separated from the main fleet was completely against Mahanian doctrine.⁴⁹ Fleet Problem Nine (1929) saw the first instances of carrier task forces, but very few ships could keep up with carriers to provide adequate air defense. The fast battleship classes *North Carolina*, *South Dakota*, and *Iowa* allowed carriers to operate independently with sufficient defense.⁵⁰ Admiral Richardson focused his training efforts on having ships in a task force work together repeatedly to increase coordination, and had been told that his efforts, and those of his successor as Commander in Chief, U.S. Fleet (Admiral Husband Kimmel), “paid off large dividends during World War II.”⁵¹

The Feedback Loop

More than one NWC president encouraged direct feedback between the fleet exercises and the Newport wargames. Rear Admiral Sims demanded feedback to improve his training at Newport in the early 1920s. Rear Admiral Pratt also stimulated discussion during his tenure.⁵² Laning’s “The Naval Battle” pamphlet was particularly valuable in passing on information learned from the wargames to readers throughout the fleet.⁵³ Officers would read the pamphlet, participate in fleet exercises, and then pass what they had applied and learned back to the NWC either by word of mouth or when they themselves attended.

Fleet Problem Seven (1927), a combined Army-Navy exercise, displayed direct coordination between the exercise planners and Newport's wargamers. Black, the aggressors, attempted to invade Newport itself; the NWC played the part of defense headquarters and also housed the umpires for the exercise. While the Blue and Black fleets were carrying out their maneuvers offshore, War College students were playing a parallel game on the game floor. After the exercise the fleet entered Newport for a week of critique at NWC, joined by the officers conducting the wargames.⁵⁴

The War College added wargaming expertise to the exercises following Fleet Problems Ten and Eleven (1930). In Fleet Problem Ten, Black had gained air superiority and started using their aircraft for spotting during a gunnery engagement. Rules for aerial spotting were not in full effect in the fleet exercises prior to; as a result, Black believed they had a distinct advantage in the battle, whereas Blue dismissed the effectiveness of the aircraft. The battle was transferred to the Newport game floor, where Black's suspicions were confirmed. Admiral Pratt, Commander in Chief of the U.S. Fleet at the time, asked Admiral Laning, president of the college and an observer for Fleet Problem Ten, for a set of rules for the fleet problems based on Newport's games. The rules were implemented for Fleet Problem Twelve (1931) and updated regularly.⁵⁵ This coordination further demonstrated the link Newport had with the fleet exercises and how the two institutions combined to prepare the navy for its upcoming conflict.

Molding Mahan, In Time For War

The Naval War College had greatly advanced the theory of naval warfighting since Mahan's tenure as president. The wargames that began under his direction, in part to further his theory of concentrated naval force in a decisive Trafalgar-like battle,

blossomed into a laboratory for new concepts against old (British) and new (Japanese) foes, both of which had also greatly benefited from Mahan's writings. Wargames shaped the theories required to fight the next war; fleet exercises applied the theories in real-time and hardened the participants. Through the wargames and the exercises, aircraft carriers became capital ships and submarines became independent, molding Mahan's teachings to the available technology and preparing the American navy for war with Japan.

¹James O. Richardson, *On the Treadmill to Pearl Harbor: The Memoirs of Admiral J.O. Richardson, as told to George C. Dyer, Vice Admiral, USN (Ret.)* (Washington, DC: Naval History Division, Department of the Navy, 1973), 217.

²Craig C. Felker, *Testing American Sea Power: U.S. Navy Strategic Exercises, 1923-1940* (College Station, TX: Texas A&M University Press, 2007), 6.

³Albert A. Nofi, *To Train the Fleet for War: The U.S. Navy Fleet Problems* (Newport, RI: Naval War College Press, 2010) (Nook E-book), 26-27, 38. Admiral Laning remarked in his memoirs that the Battle Fleet he commanded in 1927 followed previous years' schedules: six months of gunnery and tactical training, three months of "major war exercises and games at sea," and three months for minor exercises in San Francisco Bay or Puget Sound; Laning, 311.

⁴Timothy K. Nenninger, *Pamphlet Describing M964-Records Relating to United States Navy Fleet Problems I to XXII 1923-1941* (Washington, DC: National Archives and Records Service, 1975), 7-24.

⁵Nofi, 50-51; Thomas C. Hone, Norman Friedman, and Mark D. Mandeles, *American and British Aircraft Carrier Development, 1919-1941* (Annapolis, MD: Naval Institute Press, 1999), 35.

⁶Felker, 1-3.

⁷Richardson, 215, 254.

⁸CINCUS to CNO, "United States Fleet Problem No. 2," 3 March 1924, 2, quoted in Nofi, 49.

⁹Nofi, 56-57.

¹⁰Felker, 43.

¹¹BGen William Mitchell, USA, "Has the Airplane Made the Battleship Obsolete?" *The World's Work* 41, no. 6 (April 1921): 550-555.

¹²Felker, 33-34; Melhorn, 102.

¹³Felker, 35.

¹⁴Nofi, 88.

¹⁵Laning: "If you let the enemy use spotting planes and you don't have them, you suffer the equivalent of 4,000 yards loss in range . . . thus, having control of the air, if only for spotting gunfire, can become the decisive factor in battle." "Naval Aeronautic Policy," 7 November 1922, *Proceedings and Hearings of the General Board of the U.S. Navy, 1900-1950* (Washington, DC: National Archives, 1987), roll 17, 37.

¹⁶"Report on Fleet Problem One, February 1923, 83-87," *Records Relating to United States Navy Fleet Problems I-XXII 1923-1941* (heretofore *Records*), roll 1, quoted in Felker, 65.

¹⁷Nofi, 100.

¹⁸Commander in Chief, to Chief of Naval Operations, "United States Fleet Problem Number Four—Report on," 30 April 1924, *Records*, roll 4, 1.

¹⁹Nofi, 54-55.

²⁰Felker, 42-43.

²¹Felker, 79; the Commander of the Fleet Base Force outlined the need for speed as follows: "The leaving behind of certain vessels in this problem [to meet the required timetable] represented the abandonment of at least sixty vessels comprising over ninety percent of the entire fuel train." Commander Fleet Base Force, to Commander in Chief, U.S. Fleet, "Fleet Problem IV," *Records*, roll 4, 2.

²²Commander in Chief, to Chief of Naval Operations, "United States Fleet Problem Number Four – Report on," 30 April 1924, *Records*, roll 4, 4-5.

²³Commander in Chief, 30 April 1924, 6.

²⁴Nofi, 114-115.

²⁵Commander, Aircraft Squadrons, "Procedures in Handling Air Forces During Problem Six," "Fleet Problem Six, Report of Operations," *Records*, roll 7, 4.

²⁶Commander in Chief, U.S. Fleet, to Chief of Naval Operations, "U.S. Fleet Problem No. 6—Report on," 14 March 1926, *Records*, roll 7, 1.

- ²⁷Nofi, 125.
- ²⁸Commander Black Naval Forces, “Combined Night Attack with Battleships, Light Cruisers and Destroyers: Estimate of the Situation,” 13 February 1926, *Records*, roll 7, 1.
- ²⁹“Blue Estimate of the Situation–U.S. Fleet Problem VI,” 21 December 1925, *Records*, roll 7, 2.
- ³⁰Commander in Chief, U.S. Fleet, 14 March 1926, 1.
- ³¹Laning, 312-313.
- ³²Felker, 53-54.
- ³³Felker, 61-62.
- ³⁴Laning, 371-374.
- ³⁵Richardson, 117.
- ³⁶Felker, 73.
- ³⁷Richardson, 238-240.
- ³⁸*Ibid.*, 223, 250.
- ³⁹*Ibid.*, 280.
- ⁴⁰Adm. H. Kent Hewitt, USN (Ret.), *The Memoirs of Admiral H. Kent Hewitt*, ed. Evelyn M. Cherpak (Newport, RI: Naval War College Press, 2004), 162.
- ⁴¹Nofi, 118; the Army participated in several joint exercises, mainly to test their ability to defend islands, particularly Hawaii and the Philippines, with garrisons.
- ⁴²Robert Taylor Scott Keith, *Reminiscences of Vice Admiral Robert Taylor Scott Keith, USN (Ret.)*, interviewed by Paul Stillwell (Annapolis, MD: United States Naval Institute, 1990), 9-10, quoted in Nofi, 72.
- ⁴³Commander Battleship Division Four, to the Chief of Staff, U.S. Fleet, “Remarks on Problem 4,” *Records*, roll 4, 1.
- ⁴⁴Commander in Chief, U.S. Fleet, to Chief of Naval Operations, “U.S. Fleet Problem No. 6–Report on,” 14 March 1926, *Records*, roll 7, 8.
- ⁴⁵Nofi, 73.
- ⁴⁶Richardson, 219-220.

⁴⁷“Remarks by Captain S. H. R. Doyle, U.S. Navy,” 8 February 1924, *Records*, roll 4, 3-4.

⁴⁸Commander in Chief, U.S. Fleet, to Chief of Naval Operations, “U.S. Fleet Problem No. 6—Report on,” 14 March 1926, *Records*, roll 7, 4-5.

⁴⁹Felker, 83.

⁵⁰Nofi, 330.

⁵¹Richardson, 221-222.

⁵²Hone, Friedman, and Mandeles, 159.

⁵³Laning, 274; Nofi, 50.

⁵⁴John B. Hattendorf, B. Mitchell Simpson III, and John R. Wadleigh, *Sailors and Scholars: The Centennial History of the U.S. Naval War College* (Newport, RI: Naval War College Press, 1984), 132.

⁵⁵Nofi, 58; Richardson, 238.

CHAPTER 5

THE GAMES CARRY OVER

The Imperial Japanese Navy's bombing of Pearl Harbor and subsequent Pacific expansion significantly altered the carefully laid out interwar plans. Within the first few days of the war the Philippines were under siege; General Douglas MacArthur followed the guidance of War Plan Orange and withdrew to the mouth of Manila Bay (the Bataan Peninsula).¹ Japan assaulted Wake Island and Guam on December 8th. The American Navy was on high alert for another possible air raid on Pearl Harbor. War Plan Orange called for a quick offensive from established bases, but the fleet had been pushed back to the west coast of America. The island-hopping campaign, which had been suggested and refined in Newport, was quickly considered and adopted. The CNO, Admiral Harold Stark, called for the destruction of Japanese bases in the Marshall Islands as early as December 17th.²

The entire rhetoric of the war plans prior to Japan's attack resembled disbelief: that an upstart nation like Japan would dare to invade a poorly defended, poorly supported advanced base of the most powerful nation in the world. War College students, expecting the hammer to fall on the Philippines, tried in vain to save the besieged island in countless wargames in Pringle Hall. War plans suggested that alternative advanced bases might be necessary in case Manila fell, a half-hearted expectation that the Philippines might hold out long enough for America to save its garrison. The opening moves of the Japanese offensive brought reality into sharp focus.

The logistical requirements for the vast island-hopping campaign had been wargamed, exercised, and envisioned through the interwar period. At-sea refueling,

conceived and practiced on the game floor and in the fleet exercises, enabled American fleets to continually operate while naval planners determined what South Pacific islands, originally identified in War Plan Orange, would best suit the fleet's needs. Supply ships, oil tankers, hospital ships, floating drydocks, and cranes were all brought forward with the fleets to quickly establish forward support.³

The Solomons: Tactical Issues

The Battle of Savo Island is the best illustration of American tactical readiness after the interwar gaming and fleet exercises. On the morning of 8 August 1942, a Japanese force of five heavy and two light cruisers and a destroyer sailed toward Ironbottom Sound to break up the American landing force. An Australian pilot sighted the Japanese ships and mistakenly identified two of the ships as seaplane tenders. Admiral Kelly Turner believed the ships to be headed toward the central Solomons to establish a seaplane base and paid them no mind.⁴ The destroyer *Blue*, patrolling just west of Ironbottom Sound, completely failed to notice the Japanese cruisers. The *Patterson* spotted the ships, but could not send a warning message before the Japanese opened fire. The Japanese cruisers engaged the Australian cruiser *Canberra* and American cruiser *Chicago* in textbook fashion. In naval parlance the Japanese ships had “crossed their T” of the allied cruisers by crossing in front of their bows and were firing full broadsides into the *Canberra* and *Chicago*. *Canberra* sank without firing a shot, and *Chicago* likewise was forced to retire without counterattacking.⁵

The Japanese force continued on in one fluid motion, splitting into two columns and engaging the American heavy cruisers *Vincennes*, *Astoria*, and *Quincy*, quickly setting them ablaze. *Quincy* managed to score a hit on the Japanese flagship *Chokai*'s

staff chart room, killing 34 men, but that was the only notable damage. Forty minutes after the first Japanese eight-inch guns fired, four allied heavy cruisers were lost and the victors retired to regroup.⁶

The Battle of Savo Island exposed several glaring problems that wargames and fleet exercises either failed to identify or failed to correct. The United States believed Japanese torpedoes had similar characteristics to American ones, and that both sides' ranges were far shorter than that of accurate naval gunfire. Game rules required a ship closing a target for a torpedo attack to be under the target ship's constant gunfire, and the torpedo ship would usually suffer severe damage before coming in range to launch their attack. When conducting the research for light cruisers, the NWC staff focused on how to employ the cruiser as a medium-strength gunship; torpedoes were a secondary consideration.⁷ The Japanese, however, researched the "Long Lance" torpedo during the interwar period, a torpedo far more dependable than American torpedoes. The Long Lance carried a dependable 1,080-lb. warhead twenty kilometers at forty-nine knots, or forty kilometers at thirty-six knots. American Mk 14 torpedoes, in contrast, carried a 643-lb. warhead four kilometers at forty-six knots and eight kilometers at thirty-one knots.⁸ Newport knew nothing about the Long Lance; Orange torpedo statistics (and the employment thereof) in wargames mirrored the far less capable Blue torpedoes. With a longer-range weapon torpedo attacks became a viable option for the Japanese, a tactic used to dangerous effect in the Solomons and beyond.

American wargamers believed that Japan would use cruisers in roles similar to those of American cruisers: reconnaissance, defense of destroyer screens, and anti-aircraft platforms. The lack of a reliable torpedo kept American cruisers from adopting

more attacking roles. Light cruiser classes *Pensacola*, *Chester*, *Portland*, and *Astoria* (designed and built during the interwar period) all carried a single three-torpedo launcher on each side, while Japanese cruisers of the same period (armed with the Long Lance) carried up to double the available weapons.⁹ Japanese tactics matched their ships, turning the cruiser into a decisive offensive weapon that carried powerful weapons in two forms.

Newport very rarely wargamed night actions, despite having associated rules for such a game. Prior fleet exercises had exposed the American navy's inability to fight at night; the problems persisted as World War II started. Furthermore, wargames and fleet exercises suggested that Japan would use night attacks to equalize the force prior to decisive engagement, yet the ships destroyed at Savo Island were not at their highest degree of combat readiness despite being picket ships for the beachhead.¹⁰ The *Chicago* was so disoriented after taking an initial torpedo that the ship chased her own destroyer away from the fight,¹¹ another idiosyncrasy that Newport's wargames could not duplicate. The Japanese, equipped with superior night vision devices and used to working in darkness and low visibility, used their advantages to deadly effect.

The NWC wargames did not train expediency. The half hour required for some three-minute game turns in Newport allowed for leisurely decisions to proposed tactical issues. The entire battle of Savo Island, however, took less than forty minutes, and a myriad of life-and-death decisions were necessary in that short amount of time. Often officers on deck had mere seconds to determine who was friend and foe, what direction to turn to evade torpedoes or gunfire, and assess damage control efforts after taking hits.

The American island-hopping offensive against the Japanese began in the Solomons, and would continue along the path envisioned by Newport's wargames. The

games could not envision every problem the Americans would encounter, nor could it train for every contingency. Also, lessons that the games did teach needed to be accepted and used; the American navy's aversion to night combat, a problem the games and fleet exercises pointed out, was not addressed prior to Savo Island, mainly because the navy ran out of time. The exercises had just started stressing night combat with Fleet Exercise Twenty-One (1940), and it is likely that succeeding exercises would have addressed the issues. Japanese aggression, however, forced America into combat before training could correct the night fighting problem.

Peleliu: Too Rigid a Path?

As the war progressed, the island-hopping campaign continued through the southern and central Pacific, a two-pronged approach toward the Philippines. Naval planners had identified Yap and Peleliu during the Newport games as excellent staging points for a final assault on the Philippines; Peleliu's airstrip would be a vital addition to gaining air superiority in the region. Adding Ulithi and its natural deep-water harbor to the objective list, the task forces of Third and Seventh Fleet headed for the Palaus to assault the small islands.

Admirals William Halsey and Marc Mitscher expected stiffer resistance from Japanese aircraft as they neared the Philippines. But after 2,400 sorties launched against the central Philippines on the twelfth and thirteenth of September 1944 failed to find significant opposition, Halsey considered moving up the assault on the Philippines. A downed aviator learned from natives that the Japanese were not in Leyte in force. The aviator's eventual recovery and debriefing convinced Halsey to seek invasion two months earlier.¹²

Halsey needed higher authorization to conduct the maneuvers required to invade Leyte in October. He had told the Joint Chiefs of Staff in June that an assault on any Palau island would be prohibitively costly and would contribute little to the Philippines invasion. Admirals Ernest King, Chief of Naval Operations, and Chester Nimitz, Commander-in-Chief of the Pacific Fleet, believed MacArthur's invasion required at least two of the four major islands in the group for support; Nimitz's private message to King specifically pointed out that Palau and Ulithi were essential.¹³ After the downed aviator's testimony in September, Halsey wrote to Nimitz and King again with a new plan: take the lightly-defended Ulithi, cancel all other Palau operations, and use the Yap landing forces at Leyte in October. Nimitz responded quickly, ordering Halsey to "carry out first phase of Stalemate [the Peleliu and Angaur invasions] as planned" and occupy Ulithi. Yap's elimination came shortly thereafter. Nimitz offered two separate alternatives for the Yap force: Halsey's idea at Leyte, or an accelerated assault on Iwo Jima."¹⁴

Halsey knew that reversing Peleliu was going to be difficult; frogmen were clearing mines, the naval bombardment had already started, and troops were scheduled to land in two days. Leaving Peleliu would be a huge morale boost to the Japanese, a moral victory that Roosevelt would not allow.¹⁵ Additionally, naval intelligence believed the island to be flat and easy to invade, an observation not rectified by frogmen as they cleared obstacles. Invasions just prior to Peleliu had been quick affairs, as the Japanese defenders attempted to sweep the Americans off the beach in vain. These factors probably weighed in on King's and Nimitz's decision to continue with the assault;

indeed, Nimitz wrote to commanders around the Philippines that he expected the Peleliu vessels to be available for Philippine activities a mere ten days after Marines landed.¹⁶

The Japanese were determined to hold Peleliu for longer than ten days. Unbeknownst to American intelligence, Japanese island defense doctrine had just changed. The defenders had learned that naval bombardment made defense at the beaches futile, so Japanese construction troops instead created an elaborate network of tunnels, pillboxes, and other stone obstacles impervious to shelling and aerial bombing.¹⁷ As Newport's wargames dealt primarily with naval operations, and the few joint army-navy exercises involved army garrisons in American ports, the concept of fortifications inside mountains was unforeseen. Fighting was literally accomplished one tunnel at a time; nearly 2,000 American soldiers and Marines lost their lives against the dogged Japanese defense. The island took two months to completely subdue.

Wargames may have contributed an additional factor in the decision to take Peleliu. Newport's lessons continually taught officers to seek the offense whenever possible. Continuing to attack Peleliu, despite having a chance to bypass it, kept the Japanese reeling from continual invasion prior to the Philippines. The combination of an attack on Peleliu, followed quickly by a major assault at nearby Leyte, ensured the Americans maintained the initiative throughout the region, keeping the Japanese off-balance while obtaining objectives, albeit at higher cost than expected.

Peleliu is a good example of the importance of operational flexibility. Newport's wargames identified Peleliu as a vital stepping-stone from which to launch air attacks on the Philippines. King and Nimitz further realized Peleliu's central location affected an eventual push by naval forces towards Formosa and China as well. The cost was

impossible to foresee, especially considering the information Nimitz, King, and Halsey had to work with. They had essentially two choices: take Peleliu at seemingly little cost, or bypass it to give the Philippines more land forces, but one less airstrip to launch bombers from. The cost of not following the wargames' lesson (thus bypassing the island) was too costly in terms of air power and propaganda; the 10,000 casualties sustained assaulting the island continues to be a touchy point in World War II history.

Samar: Spirit of the Underdog

The naval forces arrayed for the landings in the Philippines were severely lopsided. The Japanese navy deployed seven battleships, four aircraft carriers, two hybrid battleship carriers, twenty cruisers, and twenty-nine destroyers, supported by a mere 150 aircraft. Sailing in defense of the American beachheads, the combined Third and Seventh Fleets mustered twelve battleships, thirty-two carriers, twenty-three cruisers, a hundred destroyers and nearly 1,400 planes.¹⁸ Yet in the ensuing campaign one battle was reminiscent of an old Red-Blue tactical wargame, a game in which the American fleet was the underdog: Samar.

Early tactical wargames with Red in Newport often portrayed Blue as the weaker force; the intent was to force naval officers to fight at a disadvantage and use their wits to succeed in the face of difficult odds. When Halsey kept Task Force 34 with him to chase Admiral Ozawa's decoy carriers north of the Philippines, San Bernadino Strait was clear for Admiral Takeo Kurita's Center Force to sail unmolested toward the landing beaches. Admiral Clifton "Ziggy" Sprague's six escort carriers (CVEs) and six destroyers and destroyer escorts faced the superbattleship *Yamato*, three other battleships, six heavy and two light cruisers, and two squadrons of destroyers.

Admiral Sprague, who did not attend one of the full yearlong classes at the NWC, nevertheless reacted as if he had rehearsed the situation on a game board; his ships proceeded away from the oncoming Japanese force (though only at half the top speed), his destroyers produced a disorienting smoke screen (a standard obscuration maneuver on the game floor at Newport) and an equally disorienting attack on the much larger and better armed ships, and his carriers hastened to get their aircraft off deck. He intended to buy time with his small fleet, hoping that help would arrive before the Japanese reached the transports.¹⁹ Sprague may not have played the wargame, but the games produced the tactics of the smoke screen and rapid launching of aircraft. Wargaming's influence reached beyond the officers that played and affected the entire fleet's way of thinking.

The confusion Sprague hoped to cause with his force succeeded beyond his wildest dreams. The Center Force did not at first realize whom they were attacking; some Japanese lookouts believed they were part of Task Force 38 (Mitscher's fast carriers), while others thought they were Ozawa's dummy carriers far to the north.²⁰ Luck played a major part as well; the rainsqualls around the battle, combined with the tremendous amounts of smoke generated by Sprague's destroyers, completely befuddled Japanese fire control solutions. Aircraft from Sprague's escort carriers, which were armed with ineffective anti-personnel bombs and depth charges, spooked the Japanese into believing they were under attack by fully-capable combat aircraft. Kurita, eventually believing he had found Mitscher's fast carriers, ordered "General attack!" instead of a more disciplined approach that would have been far more effective a tactic.²¹ Kurita's order further generated confusion in a battle situation getting more confusing by the minute.

Sprague said after the battle that “the failure of the enemy . . . to completely wipe out all vessels of this task unit can be attributed to our successful smoke screen, our torpedo counterattack, continuous harassment of enemy by bomb, torpedo, and strafing air attacks, timely maneuvers, and the definite partiality of Almighty God.”²² Luck or divine providence seemed to be with the Americans from the initial destroyer torpedo attack. The *Johnston*, *Hoel*, and *Heerman* fearlessly closed on the much larger Japanese battleships and cruisers. Between the destroyers’ torpedo attacks and numerous bombs from the CVEs’ planes, three Japanese heavy cruisers were forced out of action due to damaging attacks. The massive *Yamato*, Kurita’s flagship, turned so far away from the battle line evading torpedoes that she never caught back up with the formation, costing Kurita valuable situational awareness.²³

The Red-Blue wargames at the NWC sought to cultivate the indomitable American spirit and the will to fight on in the face of formidable odds. Whether the wargames specifically affected the participants in Samar may never be known, but the American spirit of never giving up, the target of the Red-Blue wargames, was present nonetheless. The destroyers and destroyer escorts made continuous runs at the Japanese warships despite expending their entire magazine in earlier runs; the *Heerman*’s commanding officer was quoted as saying “Anything we could do from now on would have to be mostly bluff.”²⁴ Likewise, aircraft from the CVEs continually strafed the Japanese surface ships long after their ordnance was expended, giving the Japanese more aircraft to worry about, more to aim at and attempt to shoot down. Torpedo attacks from the small destroyers and destroyer escorts, while marginally destructive, succeeded in repeatedly turning the battleships and cruisers away from the fragile escort carriers.

When it seemed the Japanese finally gained the position required to finish off the small fleet, Kurita pulled his ships away to regroup; one signalman near Sprague, in spirited defiance despite the odds, shouted “Goddamnit, boy, they’re getting away!”²⁵

Just over an hour after Samar’s battle died down, six Japanese aircraft found the escort carriers and proceeded in an attack “that had to be seen to be believed.”²⁶ The aircraft, flown by zealous but green pilots, aimed their aircraft at the CVEs and attempted to fly into them. Three of the six were shot down; two more caused cosmetic damage to two CVEs. The sixth flew through the flight deck of the *St. Lo* and exploded, eventually causing the carrier to sink. The *kamikaze*, the one weapon from World War II Nimitz would later say had never been wargamed at Newport,²⁷ was created.

The Aftermath of the Wargames

For the majority of World War II the lessons of Newport’s wargames and of the fleet exercises guided naval leadership in a positive direction. The island-hopping campaign had been identified and rehearsed on the game floor a decade prior to its use in war. The use of carrier task forces in later fleet exercises would serve to simply command and control through the multitude of simultaneous operations happening at any one time during the war. Refueling at sea made continuous operations and maneuvers against the Japanese a reality. The eventual retaking of Manila Bay, a polarizing concept in diplomatic circles, was theorized and worked throughout the interwar period.

Thomas Buell wrote in Admiral Raymond Spruance’s biography: “Spruance was intellectually stimulated by naval warfare problems . . . when later confronted with the crises and complexities of the Pacific war, he could resolve them systematically and effectively. He would treat the war in the Pacific with the same emotional detachment

that he treated war games in Newport.”²⁸ The intense problem-solving mantra, the pursuit of victory no matter what the odds, the constant competition to succeed, all combined at the NWC to create naval officers capable of winning World War II against a combat-minded, disciplined, determined, and often desperate enemy.

¹George W. Baer, *One Hundred Years of Sea Power: The U.S. Navy, 1890-1990* (Stanford, CA: Stanford University Press, 1994), 210-211.

²*Nimitz Gray Book: War Plans and Files of the Commander-in-Chief, Pacific Fleet*, vol. 1 (Bolton Landing, NY: American Naval Records Society, 2010), 70.

³Ronald H. Spector, *At War At Sea: Sailors and Naval Combat in the Twentieth Century* (New York: Penguin Putnam, 2001), 276.

⁴E. B. Potter, ed., *Sea Power: A Naval History*, 2nd ed. (Annapolis, MD: Naval Institute Press, 1981), 305.

⁵Potter, *Sea Power*, 305-306; John Costello, *The Pacific War 1941-1945* (New York: Rawson, Wade, 1981; republished by Harper Perennial, 2009), 325.

⁶Potter, *Sea Power*, 306; Costello, 326.

⁷T. J. McKearney, “The Solomons Naval Campaign: A Paradigm for Surface Warships in Maritime Strategy” (Masters thesis, Naval Postgraduate School, 1985), 92-93.

⁸James F. Dunnigan and Albert A. Nofi, *Victory at Sea: World War II in the Pacific* (New York: William Morrow and Company, 1995), 142-143.

⁹McKearney, 86-87.

¹⁰Potter, *Sea Power*, 305.

¹¹Costello, 325.

¹²Joseph H. Alexander, “What Was Nimitz Thinking?” *U.S. Naval Institute Proceedings* 124, no. 11 (November 1998): 42-43.

¹³*Nimitz Gray Book*, Vol. 5, 530.

¹⁴Alexander, 43; Costello, 493-494.

¹⁵Alexander, 45.

- ¹⁶*Nimitz Gray Book*, Vol. 5, 532.
- ¹⁷Potter, *Sea Power*, 339; Costello, 496.
- ¹⁸Costello, 501.
- ¹⁹*Ibid.*, 513.
- ²⁰Samuel Eliot Morison, *History of United States Naval Operations In World War II*, vol. 12 (Boston, MA: Little, Brown and Company, 1958), 248.
- ²¹Spector, *At War At Sea*, 298.
- ²²Morison, 297.
- ²³Costello, 513-514.
- ²⁴*Ibid.*, 515.
- ²⁵*Ibid.*, 516.
- ²⁶*Nimitz Gray Book*, Vol. 5, 288.
- ²⁷Nimitz gave a ringing endorsement of wargaming after World War II; see Matthew Caffrey, Jr., LtCol, USAFR, "Toward a History-Based Doctrine for Wargaming," *Aerospace Power Journal* (Fall 2000): 48.
- ²⁸Thomas B. Buell, *The Quiet Warrior: A Biography of Admiral Raymond A. Spruance* (Annapolis, MD: Naval Institute Press, 1987), 60.

CHAPTER 6

CONCLUSION

Wargames are not only fun, but also educational. To highlight the educational capacity of wargames, the stigma that a wargame is more than “just a game” must be removed. Sometimes the change needs only to be semantic; Admiral Edward Kalbfus, NWC President from 1934-1936, renamed the War Gaming Department to The Maneuver Section in an effort to stress that wargames were more than “just a game.”¹

Wargames cultivate critical thinking, either in conjunction with or in place of lectures. Education analyst Edward J. Rotherham paired with Willingham in 2009 to write that problem-based learning techniques “that allow students to collaborate, work on authentic problems, and engage with the community” are “widely acclaimed” by teachers but unused in their classrooms.² Such learning techniques teach critical thinking skills, essential in the development of senior military officers. Wargames, as Spruance and other officers at the NWC discovered, were excellent tools to enhance critical thinking skills specific to fighting a naval war.

Money is always a concern for training; fuel costs were a limiting factor in the interwar period and remain so to this day. Volatile fuel prices often cause drastic changes in operational schedules to keep the navy’s budget under control. Additionally, underway time means more wear and tear on equipment; on older ships, equipment broken from constant use can be difficult and expensive to replace. Fleet exercises in the interwar period coincided with the annual fleet concentration because it was impossible to justify the fuel and equipment costs to gather the ships of the fleet more than once a year.³

Wargame costs, however, do not depend on the volatile fuel market. Institutions that use

wargames must have contracts in place for civilian game administrators or computer programmers, but the costs for fuel are generally far greater. For example, in 2011 the Navy purchased \$13.7 million of biofuel for a two-day voyage involving three ships.⁴ While conventional fuel at the time cost approximately one-fourth as much as biofuel, the numbers are still startling.

What Works?

Wargames work when dealing with a strategic or operational focus. Newport's wargames during the interwar period helped to develop a successful War Plan Orange and the island-hopping campaign required to execute the plan. Game turns took as much as a half hour to play a single three-minute turn; players could take their time to view the entire picture before making decisions. Games at the strategic and operational level should not stress time requirements; without time constraints on a game turn, participants can discuss strategies without the stress of rapid decision-making.

Wargames help identify gaps in capability and can spur innovation to create new weapons or platforms to fill an identified need. The NWC noticed the need for at-sea refueling years before the fleet integrated refueling operations into wartime operations. Early interwar games realized that war with Japan would require aircraft, and ships to carry them to battles; the aircraft carrier, the premier naval vessel for the last seventy years, was developed in great detail in Newport and refined in the fleet exercises. Applying wargaming techniques to current or expected conflicts can identify whether sufficient force is available for anticipated operations. War with a future enemy may well help to identify and develop the next generation of capital ship to replace the aircraft carrier.

Newport was successful in conceptualizing war with Japan and providing an expected path to victory. Its curriculum was focused on developing a winning strategy while leveraging bright military minds to challenge and refine that strategy. Wargames allowed naval officers to play and replay the accepted plan while giving them leeway to offer newer strategies. The path to victory became second nature to officers, but the open-mindedness that repeated wargames promoted helped to refine that path. Keeping that open-mindedness is critical when using wargames to plan for future conflict.

What Doesn't Work?

Newport stressed tactical warfare through wargames, and useful lessons emerged from the game floor: the use of smoke screens, circular screen formations, aircraft launch rates, and other tactical advances. Interwar games did not teach the importance of timely decision-making; the system of consulting tables for hit probability and damage made timely judgments impossible. Computer games of the twenty-first century can take advantage of processing speeds and rapid calculation to determine the effects of participants' actions. Several naval bases and schools, including Newport's Surface Warfare Officer School, use computer games to teach tactical situations in real-time.

Wargames are most effective when the enemy's capabilities are known. The Japanese invention of the Long Lance torpedo severely impacted Orange tactics during wargames; had Newport known of the Long Lance, Japanese torpedo attacks might have been more seriously considered as a counter to accurate ranged gunfire. Additionally, wargamers playing the part of the enemy must truly think like the enemy. Army Red Team members attempt to follow this tenet during plan wargaming; they wrap cultural

considerations and known tactics into their decisions, rather than using American tactics against the American plan.

The statistics involved in Newport's wargames were constantly updated to reflect the latest ordnance capabilities, personal experience of officers reporting to the game, and the latest tactics and techniques developed during fleet exercises. Computer games today are not as easy to update. The author has noticed on more than one occasion that newly-developed weapons and tactics had not yet been incorporated into the computer games he played because the contractor coding the game had not completed the update. Playing a game with outdated equipment, tactics, or enemies detracts from the learning capacity the wargame offers.

And So . . .

Wargames can be a vital tool in training aspiring naval officers. Their capacity to teach critical thinking aligns with the thought processes of twenty-first century students. Wargames can help naval officers to fight future conflicts. By providing feedback, participants can add their own insights to the learning process, further improving the wargame and its strategic implications. The NWC built McCarty Little Hall in 1999 specifically for wargaming; more naval institutions need to add wargaming to their curricula.

¹Martin interview, 11-12.

²Andrew J. Rotherham and Daniel T. Willingham, "21st Century Skills: The Challenges Ahead," *Educational Leadership* 67, no. 1 (September 2009), <http://www.ascd.org/publications/educational-leadership/sept09/vol67/num01/21st-Century-Skills@-The-Challenges-Ahead.aspx> (accessed 17 November 2013).

³Commander in Chief, U.S. Fleet, 14 March 1926, 1.

⁴Jeanette Steele, "Navy's Green Fleet Runs Into Fiscal Storm," *Union-Tribune San Diego*, 9 June 2012, <http://www.utsandiego.com/news/2012/jun/09/navys-green-fleet-runs-into-fiscal-storm/?page=1#article-copy> (accessed 18 April 2013).

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