

“A SIMPLE TRUST IN BIGNESS:” STRATEGIC CULTURE AND THE U.S.  
NAVY’S REACTION TO THE DREADNOUGHT REVOLUTION, 1903-1910

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## **ABSTRACT**

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(Under the direction of Wayne Lee)

This thesis explores the impact of strategic culture on the United States Navy’s reaction to the dreadnought and battlecruiser ship types introduced by the British Navy under Admiral Fisher. This essay concludes that the strategic culture of the U.S. Navy, shaped in large part by Alfred Thayer Mahan, was unable to adapt to the new environment suggested by Fisher’s ships. While the U.S. Navy adopted dreadnoughts, its leaders and thinkers were unable to grasp the battlecruiser concept, and decided against building them.

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## CHAPTER 1

### INTRODUCTION

1900 was a good time to be an officer in the United States Navy. Yes, the pay was low, and promotion glacial, but the Navy itself was in great shape. The steady naval rearmament since 1890 had borne fruit, and in the recently concluded “splendid little war” with Spain, the Navy had single-handedly captured the Philippines and Guam, and had played a major role in Puerto Rico and Cuba. An admiral, George Dewey, was the foremost hero of the late war, and now led the newly-formed General Board, which promised to rationalize and professionalize the development of naval policy. Although the Navy had only four battleships in commission, the oldest had been commissioned five years earlier, and another ten were building or authorized, with the prospect of more on the horizon. With a new maritime empire, no wars imminent, and the political will to keep building up the fleet, the Navy appeared poised for a comfortable rise to first-rate status.

In a sense, this vision was not incorrect. In the first decade of the twentieth century, there were no wars with foreign powers, and by the end of the decade, the Navy was among the world’s most powerful. In hindsight, however, the turn of the twentieth century was a time of upheaval, a time when “the leaders of major navies were confronted by technical, personnel, economic, administrative and financial problems that

were arguably of greater scale, difficulty, and complexity than that facing the executives of any other department of state or private corporation.”<sup>1</sup> While the ensuing decade did not overly strain the Navy’s ability to build ships, its intellectual capacity to handle these changes in naval affairs was put to the test. Unlike the war with Spain, this struggle would not be entirely successful.

The major agent of change was a British admiral, John “Jacky” Fisher, who was the First Sea Lord from late 1904. Under his lead, the Royal Navy built *HMS Dreadnought* (1906) and *HMS Invincible* (1908), two warships that radically changed the parameters of naval affairs. The two ships encapsulated the major technological leaps of the day: turbine engines offering more horsepower than older reciprocating engines, new guns capable of reaching unprecedented ranges, and the new equipment to ensure that those guns hit their targets. But to argue that *Dreadnought* and *Invincible* merely resulted from applying new technologies to naval design is to ignore the conceptual shift envisioned by Fisher. With the two ships, Fisher yoked new technologies to an equally radical reimagining of naval warfare.

Even before being named First Sea Lord, Fisher had been looking for new ways to revitalize the Royal Navy’s traditional attack-minded mission. In a memorandum, “Naval Necessities, Volume I” submitted in 1904 to the outgoing First Sea Lord and the Admiralty Board, Fisher argued that in accordance with the Royal Navy’s traditional focus on attack, the most important factor in new ship design was “*speed*. . . . Some people don’t want it for battleships, *but they are wrong*, because both strategy and tactics

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<sup>1</sup>Jon Testuro Sumida and David Alan Rosenberg, “Machines, Men, Manufacturing, Management and Money: The Study of Navies as Complex Organizations and the Transformation of Twentieth Century Naval History,” in *Doing Naval History: Essays Towards Improvement*, ed. John B. Hattendorf (Newport, RI: Naval War College Press, 1995), 35.

demand speed.”<sup>2</sup> Combined with increased firepower, Fisher believed that speed held the key to victory, as combat took place “*at a range which will be chosen by the FASTER fleet.*”<sup>3</sup> When Fisher became First Sea Lord, this focus on speed quickly found its way into the Royal Navy’s policies. Upon taking office, he created a reform-friendly Committee on Designs, which rubber-stamped Fisher’s new ships, incorporating his dual goals of firepower and speed into the Royal Navy’s newest designs.

The first of Fisher’s new ships was a new battleship, which he named *HMS Untakeable* in his 1904 “Naval Necessities” memorandum, a design that would become the basis of the *Dreadnought*. As set by the Committee on Designs, *Dreadnought* could reach a top speed of 21 knots, utilizing turbine engines, about three knots faster than contemporary battleships. At the same time, *Dreadnought* was the first completed battleship with what was called an “all-big-gun” armament. Instead of the multiplicity of calibers seen in other battleships, *Dreadnought* mounted ten 12” guns. Fisher wanted his ships to fire accurately at long range—as far as seven miles—in order to, he assumed, capitalize on the better training of British crews. Not only would the 12” guns give the largest weight of fire at long ranges, but the uniform battery increased the efficiency of fire control. At the time, adjustment was based on spotting shell splashes, and the *Dreadnought*’s battery simplified matters greatly by eliminating confusion between, for example, 10” and 12” splashes.

The second new type was an upgraded armored cruiser, eventually dubbed the “battlecruiser.” Originally, Fisher intended for them to be armed with a uniform battery

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<sup>2</sup>John Fisher, “Naval Necessities, Volume I,” May 14, 1904, in *The Fisher Papers, Volume I*, ed. P.K. Kemp (London: The Navy Records Society, 1960), 28. Emphasis in original.

<sup>3</sup>Fisher, “Naval Necessities, Volume I,” October 19, 1904, 43.

of 9.2” guns, the largest carried by cruisers at the time, with a top speed of 25 knots.<sup>4</sup> However, in the months between the memorandum and the first meeting of the Committee on Designs, that had been changed to 12” to match the battleship. Whereas the *Dreadnought* was designed for the battle line, the new cruiser design was built to “force [its] way up to within sight of a fleet and observe,” and to “overtake and annihilate everything that floats except the [*Dreadnought*],” up to and including an enemy battleship fleet.<sup>5</sup> These ships of unprecedented speed and power were the key to Fisher’s conception of warfare, and so it is no surprise that while he only commissioned one *Dreadnought*, he built three *Invincible*-class battlecruisers.

Fisher’s new ships were the catalysts for a wholesale reappraisal of naval affairs. As James Goldrick has noted about the period, “rapid developments in technology changed the fundamental measures by which force structures and thus balance of power were judged from *types* to *capabilities*.”<sup>6</sup> In other words, the designation of a ship—battleship, armored cruiser and so on—mattered less than what that ship could do. *Invincible*, officially designated an armored cruiser, was far more capable than any pre-dreadnought battleship because her speed and firepower were far more important than any classification. Indeed, this new paradigm was “inherently dynamic, not static:” for battleships and battlecruisers, date of construction became almost as important as classification.<sup>7</sup>

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<sup>4</sup>Fisher, “Naval Necessities, Volume I,” 86.

<sup>5</sup>Committee on Designs, “Proceedings,” January 3, 1905, in *The Fisher Papers, vol I*, 220-221.

<sup>6</sup>James Goldrick, “The Problems of Modern Naval History,” in *Doing Naval History*, 18.

<sup>7</sup>Goldrick, “Problems of Modern Naval History,” 18.

But Fisher was not the only one coming up with ways to utilize new technologies and practices in ship design. As early as 1903, the United States Navy possessed a preliminary design for a battleship much like the *Dreadnought*. While British shipyards were recognized as the world's finest, the United States easily had the ability to build such a ship. Instead, the first American all-big-gun ship was not laid down until late 1906, and another year elapsed before the Navy laid down a true dreadnought. By way of comparison, the Japanese Navy had begun building *Satsuma*, an all-big-gun ship (though with a mixed heavy battery) even before the *Dreadnought*, and Germany began construction of their first dreadnought, *Nassau*, in mid-1907. In terms of battlecruisers, the difference is even starker: the U.S. Navy laid down none until 1916.

Clearly, then, the U.S. Navy failed to wholly grasp the changes wrought by Fisher. What explains this hesitation? It was not a question of money or technological prowess. Answering the question requires an inquiry into American naval thought rather than looking strictly at technological developments and ship design. Simply put, the Navy was operating under a set of assumptions that were ill-suited to the changing conditions of naval warfare. Its strategic culture was only able to accept dreadnoughts after a contentious intellectual struggle and could not adapt enough to accept battlecruisers as early as the other three major naval powers.

Dreadnoughts were adopted over traditionalist objections, because dreadnoughts only challenged understandings of naval technology, not fundamental assumptions about the nature of war and battle. To adopt battlecruisers, the Navy would have had to move away from the key assumptions of Alfred Thayer Mahan and other traditional thinkers with great influence in the Navy. In the first decade of the twentieth century, this proved

a step too far for the Navy to take. While the parameters changed to allow for dreadnoughts, the Navy's strategic culture remained essentially Mahanian.

Strategic culture is still a term subject to varying definitions, and a fuller explanation is in order. Originally used to describe culture-based analyses of Cold War nuclear policy, through the 1980s and 90s, it began to be used as an analytical tool outside of its original context. As defined by Alistair Iain Johnston, strategic culture is “an integrated ‘system of symbols which acts to establish pervasive and long-lasting strategic preferences by formulating concepts of the role and efficacy of military force in interstate political affairs, and by clothing these conceptions with such an aura of factuality that the strategic preferences seem uniquely realistic.’”<sup>8</sup> In terms of effect, strategic culture suggests that “elites socialized in different strategic cultures will make different choices when placed in similar situations.”<sup>9</sup>

Strategic culture was developed and first used by political scientists like Johnston, but historians have begun to use it in recent years. Isabel Hull's *Absolute Destruction* (Cornell, 2005), uses this method (though Hull refers to it as “military culture”) to explain how the Germany military “developed a constellation of mutually reinforcing characteristics that enhanced tactical efficacy,” which “propelled the army to ever greater, and in the end, dysfunctional extremes of violence between 1870 and the First World War.”<sup>10</sup> By the end of the book, she has laid out the impact of that military culture on German society as a whole. In other words, Hull used historical analysis to fulfill the

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<sup>8</sup>Alistair Iain Johnston, “Thinking About Strategic Culture,” *International Security*, 19.4 (Spring 1995): 46.

<sup>9</sup>Johnston, “Thinking About Strategic Culture,” 35.

<sup>10</sup>Isabel V. Hull, *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany* (Ithaca, NY: Cornell UP, 2005), 2.

goals of the original practitioners of strategic culture: exploring its impact on national policy and state-level conceptions of violence.

However, some historians have taken the idea of strategic culture and shrunk it to the level of specific military institutions, the sense in which the term is used in this essay. In her *Rhetoric and Reality in Air Warfare*, Tami Davis Biddle provides a definition of “organizational thought,” which neatly adapts the strategic culture idea to the institutional level: “No institution speaks with a single, wholly unified voice, but, among any group of individuals, particular preferences and views come to be privileged, and these form the basis of what may be called organizational thought.”<sup>11</sup> At its core, any service’s strategic culture necessarily rests on a series of assumptions on everything from the nature of warfare, down to the potential efficacy of weapons or weapon systems in combat. While assumptions, like Mahan’s, derived from historical study are frequently privileged over those derived from theoretical thought, both remain untested—and untestable—in the absence of warfare.

Biddle’s book and Hull’s are both organized around the creation and development of strategic culture, but the focus in this essay will be slightly different. By the turn of the twentieth century, the U.S. Navy had a mature strategic culture based primarily on Mahanian thought and so this essay will trace its effects on the Navy’s response to the changes in naval technology and thought prompted by Fisher that quickly spread to the world’s major navies. While it is easy for military historians to overstate the impact of new technology on determining the outcome of wars, by the early twentieth century, managing technological development and fitting doctrine to new technologies was one of,

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<sup>11</sup>Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton, NJ: Princeton UP, 2002), 6.

if not the, key roles of militaries in peacetime. As this essay will argue, the U.S. Navy's strategic culture at the turn of the century retarded that crucial process. While no war came during the years under consideration, contentious debates over dreadnoughts and the refusal to build battlecruisers left the U.S. Navy behind the rival navies of Britain, Germany and Japan. Naturally, then, the most promising avenue for investigation is not the history of the technologies themselves, but the history of the ideas that determined the response to those technologies.

Although the Navy's history after the Spanish-American War is reasonably well covered in the historical literature, the changes in naval technology generated by Fisher have rarely been portrayed as a catalyst for debate. Instead, the dominant narrative of the period centers on the growth of the Navy and its newfound assertiveness. Dudley Knox's *A History of the American Navy* (1936), which set the stage for much future historiography, has nothing to say on the strategic debates of the early 1900s or the shift to dreadnoughts, but their absence speaks volumes. Knox, an Annapolis graduate, was in the Navy during the events covered in this essay and, evidently felt them undeserving of attention, instead focusing on the "Great White Fleet" and its around-the-world journey in 1907-9.<sup>12</sup> Around the same time, Harold and Margaret Sprout's equally influential *The Rise of American Naval Power* (1939) covered the period in more detail, but they merely claimed that "American naval authorities had anticipated [Fisher's] development[s]," and moved on to discuss Roosevelt's fights with Congress over naval funding.<sup>13</sup> While this is

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<sup>12</sup>Dudley W. Knox, *A History of the United States Navy* (New York: G.P. Putnam's Sons, 1948), 377-8.

<sup>13</sup>Harold and Margaret Sprout, *The Rise of American Naval Power, 1776-1918*, 3<sup>rd</sup> edition (Princeton: Princeton UP, 1944), 263.

certainly an important facet of the Navy's development, the Sprouts' coverage ignores the intellectual struggle to bring these ideas to fruition.

While American naval historiography has certainly moved on from the prewar work of Dudley and the Sprouts, their blind spots remain in much of the subsequent literature. Brayton Harris's *The Age of the Battleship* (1965) follows the earlier works in ignoring the Navy's internal debate and treating adoption of dreadnought battleships as a given, devoting only a page to the shift. After claiming that "[t]he *Dreadnought* was not so much a startling departure from the norm as it was a logical step forward," Harris moves immediately to the *South Carolina* and *Delaware*-class battleships built by the United States as a response, with no sense of the internal debate.<sup>14</sup>

Even more recent historiography of this period has tended to focus on the politics of the era and the Navy's attempts to match its strategy to those inputs. Richard Turk's "Defending the New Empire" (1978) focuses on the impact of the Philippines on strategy, while Kenneth Hagan's essay "The Apotheosis of Mahan" (1995), is organized around great power politics.<sup>15</sup> While Hagan's essay can be read as a discussion of the Navy's strategic culture, he restricts his argument to strategy, leaving aside its effect on other facets of naval policy. Robert O'Connell's controversial *Sacred Vessels* (1991) has a great deal to say about the Navy's strategic culture and the fleet's makeup, but he takes aim at the concept of battleship fleets and has little to say about the transition to

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<sup>14</sup>Brayton Harris, *The Age of the Battleship, 1890-1922* (New York: Franklin Watts, 1965), 113-4.

<sup>15</sup>Richard W. Turk, "Defending the New Empire, 1900-1914," in *In Peace and War: Interpretations of American Naval History, 1775-1978*, ed. Kenneth J. Hagan (Westport CT: Greenwood, 1978); Kenneth J. Hagan, "The Apotheosis of Mahan: American Naval Strategy, 1889-1922," in *Navies and Global Defense: Theories and Strategy*, ed. Keith Neilson and Elizabeth Jane Errington" (Westport, CT: Praeger, 1995).

dreadnoughts and nothing at all to say on battlecruisers.<sup>16</sup> Most recent work has ignored this period entirely, and focused instead on the interwar period.<sup>17</sup>

Only biographies of individual officers have effectively covered the intellectual ferment of the early 20<sup>th</sup> century.<sup>18</sup> However, these are all rather dated and, more importantly, focus on specific careers rather than the Navy as a whole. Understandably, the culture of the Navy at large takes a backseat. Thus, this essay, with its focus on strategic culture and the makeup of the fleet occupies a relatively empty niche in the literature.

The main forum for intellectual debate in the Navy was *Proceedings of the United States Naval Institute*, a journal published by the semi-official United States Naval Institute, an organization composed mostly of active and retired naval officers. While *Proceedings* was full of articles on naval history, engineering, and high-level mathematics, it was also the forum for naval officers to discuss matters of naval policy and strategy, from the projected course of future wars to new trends in construction. It was here that the major internal debates of the period took place. Other key sources included *The Navy* (another journal), private letters, and the reports of the Navy's General Board, a panel of senior officers set up after the Spanish-American War to advise

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<sup>16</sup>Robert O'Connell, *Sacred Vessels: The Cult of the Battleship and the Rise of the U.S. Navy* (Boulder, CO: Westview, 1991).

<sup>17</sup>See, for example, Craig Felker's *Testing American Sea Power* (College Station: Texas A&M University Press, 2007), Thomas and Trent Hone's *Battle Line* (Annapolis: Naval Institute Press, 2006), or William Still's *Crisis at Sea* (Gainesville: University Press of Florida, 2006).

<sup>18</sup>The edited biography collection *Admirals of the New Steel Navy* (Annapolis, MD: Naval Institute Press, 1990) has a great deal to say about naval culture when taken as a whole, while Elting Morison's *Admiral Sims and the Modern American Navy* (Boston: Houghton Mifflin, 1942), Ronald Spector's biography of Dewey, *Admiral of the New Empire* (Baton Rouge: Louisiana State University Press, 1974) and Paolo Coletta's *Admiral Bradley A. Fiske and the American Navy* (Lawrence, KS: University Press of Kansas, 1979) explore their subject's contributions to the Navy.

the Secretary on general policy. Examined side-by-side, these sources allow us to trace the development of American naval thought throughout the period.

With the pace of technological reform rendering earlier examples increasingly irrelevant at a tactical and operational level and in the absence of modern empirical examples, “operational art transferred itself from a basis of practical experience to a largely theoretical and thus unprovable level.”<sup>19</sup> As a result, Goldrick argues that “the development of doctrine, the planning to operate and fight at sea, had to proceed almost wholly on the basis of theories which, however well-conceived, were resting on intrinsically uncertain foundations.”<sup>20</sup> Officers at the time clearly recognized this weakness. In *Proceedings*, there was a rush to claim the lessons of the Russo-Japanese War and the First World War for one set of theories or another, but these arguments were more concerned with fitting evidence to extant theories rather than using experiences to modify or change theory.

Central to the process were the highly influential ideas of Alfred Thayer Mahan. Any discussion of American naval theory in the early twentieth century is necessarily a discussion of Mahan. Although his last article in *Proceedings* was published in 1907, Mahan continued to loom large over the Navy’s debates. Abroad he was simply the world’s most important naval theorist, whose major work, *The Influence of Sea Power Upon History* (1890) was, even at the time, credited (or blamed) for the multilateral naval arms race consuming steel and money across the globe. By 1904, his position in the eyes of the public both within and outside of the United States was unimpeachable: he had

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<sup>19</sup>Goldrick, “The Problems of Modern Naval History,” 13.

<sup>20</sup>Goldrick, “The Problems of Modern Naval History,” 14.

“transformed naval history” by adding “serious analyses of naval grand strategy and the art and science of naval command.”<sup>21</sup>

Mahan’s influence was even more keenly felt within the United States Navy. Although he retired as a captain, his fingerprints were all over most the important naval decisions undertaken in the 1890s and early 1900s. Not only had the *Influence of Sea Power* played a major role in the United States’ naval revival, but he had allegedly ghostwritten the United States’ first major naval bill in 1890.<sup>22</sup> During that decade, he had also advocated for the annexation of Hawaii, had advised on the conduct of the Spanish-American War, and was a prominent backer of the push for a Central American canal. Mahan was one of the key figures at the Naval War College, which at the time educated promising mid-career officers and served as a semi-official war planning staff for the Navy. Perhaps most importantly, Mahan was a regular correspondent with President Theodore Roosevelt as well as various senators and congressmen, through whom he exerted considerable influence over both the formulation of naval policy and its execution. It is no surprise, then, that the late nineteenth and early twentieth centuries have been referred to as “The Age of Mahan.”<sup>23</sup>

Even if the claim has not always been made so explicitly, Mahan dominates the historiography of the Navy’s intellectual development up to the present. As one historian puts it, “most naval officers unconditionally accepted Mahan’s sea-control doctrine well

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<sup>21</sup>Jon Testuro Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered* (Washington, D.C. and Baltimore: The Woodrow Wilson Center Press and the Johns Hopkins University Press, 1997), 99.

<sup>22</sup>Benjamin Franklin Cooling, *Gray Steel and Blue Water Navy: The Formative Years of America’s Military Industrial Complex, 1881-1917* (Hamden, CT: Archon Books, 1979), 87-8.

<sup>23</sup>Donald W. Mitchell, *History of the Modern American Navy from 1883 through Pearl Harbor* (New York: Knopf, 1946), 121.

after the architect left active service.”<sup>24</sup> The Sprouts called Mahan’s work “the basic doctrine of American naval policy,” and went on to claim that Theodore Roosevelt’s naval worldview was entirely shaped by Mahan’s theories.<sup>25</sup> While Mahan’s reputation has taken something of a beating in recent years, it is still difficult to find works on the American navy that do not treat the entire period under consideration as one in which Mahan was the dominant, if not the only, voice in naval affairs. More to the point, Mahan’s views have shaped those of most American naval historians, stretching back to Dudley Knox in the 1920s and 30s.<sup>26</sup>

But Mahan was not just a theorist and historian. Throughout his career, he wrote on all aspects of naval affairs, and these views must also be understood when taking the measure of his influence. Much like the “cult of the attack” in France, a contemporary ideology of land warfare, Mahan’s writings were the basis of an entire self-contained worldview complete with its own internal logic. On a macro scale, it “placed armaments and considerations of the balance of military force at the very center of interstate relations,” and “entailed a commitment to a competitive arms buildup and to the drive for margins of superiority within the overall balance of force.”<sup>27</sup>

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<sup>24</sup>Craig C. Felker, *Testing American Sea Power: U.S. Navy Strategic Exercises, 1923-1940* (College Station, TX: Texas A&M University Press, 2007), 24.

<sup>25</sup>Sprout and Sprout, *Rise of American Naval Power*, 205, 250.

<sup>26</sup>Kenneth J. Hagan, “The Apotheosis of Mahan: American Naval Strategy, 1889-1922, in *Navies and Global Defense: Theories and Strategy*, eds. Keith Neilson and Elizabeth Jane Errington (Wesport, CT: Praegar, 1995), 115.

<sup>27</sup>Dirk Bönker, “Militarizing the Western World: Navalism, Empire, and State-Building in Germany and the United States Before World War I” (PhD Diss., Johns Hopkins University, 2002), 32-3. While this passage describes “navalism” in general, Bönker argues, and the author concurs, that Mahan’s writings represent its American expression.

Mahan's ideas can be sorted into two categories: policy and strategy suggestions. Within the Navy, Mahan's policy suggestions—the importance of a large fleet and colonies foremost among them—went almost entirely unchallenged. Instead, discussion focused on his strategic and tactical thinking, which was less well-developed than his “big picture” ideas. Essentially, the basis of Mahan's thought, as laid out in *The Influence of Sea Power*, was service propaganda, an attempt to convince policymakers that a large, seagoing navy best suited the national interest. Overshadowed by this main purpose, the details of what to do with such a navy received less attention. While this was not a major problem prior to the Spanish-American War, once the U.S. was confirmed as a world power, the issue of how best to utilize the fleet became an issue of importance. Mahan, who had comparatively little experience with, and almost no interest in sea service, paid very little attention to the technological innovations of the day, and his writings failed to take new developments into account in any but the most superficial ways.

Fisher, more in tune with the times, had a keen sense of the changes wrought by technology, writing in mid-1904 that the old reliance on battlefleets “HAS BEEN ABSOLUTELY ALTERED!” by changes in technology like the mine and torpedo, concluding that battleships’ “one and only function—that of ultimate security of defence—is gone—lost! No one would seriously advocate building battleships merely to fight other battleships.”<sup>28</sup> Ironically Mahan did exactly that, arguing at nearly the same time as Fisher that “[b]ecause an expensive battleship may be removed from the field of

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<sup>28</sup>Fisher, “New Proposals,” 31.

action by an inexpensive torpedo, it by no means follows that control of the sea can be maintained by vessels differing [from] . . . the battleship.”<sup>29</sup>

As this example suggests, despite Mahan’s importance to the Navy, his tactical and operational thought fundamentally remained in the nineteenth century, and was “unprepared . . . to fully appreciate . . . the transformation of naval warfare.”<sup>30</sup> The first years of the twentieth century may have indeed been an “Age of Mahan” but it was only by breaking free of some of Mahan’s views that the navy was able to move into a new era of naval thinking and seriously consider the issues of effectively using warships in combat.

This process did not occur quietly. Traditionally, American adoption of dreadnoughts has been explained as a simple realization on the part of the American naval establishment that dreadnoughts were self-evidently superior. Indeed, in the historical literature, this shift from pre-dreadnoughts to dreadnoughts is treated as an almost-seamless transition. In reality, the change in American strategic culture that allowed for American dreadnoughts was a product of a contentious debate between Mahan and his supporters on one hand and a group of mostly younger officers, most prominently the gunnery expert William Sims on the other. Indeed, the debate was serious enough to require Congressional and presidential intervention. The standard line, that the *Dreadnought*, “rendered all previous vessels obsolete,” may be true in hindsight,

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<sup>29</sup>Alfred Thayer Mahan, “To the Editor of the *New York Sun*,” May 9, 1904, in *Letters and Papers of Alfred Thayer Mahan, Volume III 1902-1914* eds. Robert Seager II and Doris Maguire (Annapolis, MD: Naval Institute Press, 1975), 91.

<sup>30</sup>Felker, *Testing American Sea Power*, 31.

but it was far from obvious at the time.<sup>31</sup> However, even as the strategic culture allowed for dreadnoughts, it could not move far enough to accommodate battlecruisers, which were not accepted in the Navy until the First World War. Although the Navy made strides in the early twentieth century, this cultural inflexibility retarded its development.

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<sup>31</sup>Ronald Spector, *Admiral of the New Empire: The Life and Career of George Dewey* (Baton Rouge: Louisiana State UP, 1974). 172. See also *In Peace and War*, ed. Kenneth J. Hagan (Westport, CT: Greenwood, 1<sup>st</sup> ed. 1978), a standard history of the Navy.

## CHAPTER 2

### SETTING THE STAGE

On September 28, 1903, William H. Moody, Theodore Roosevelt's second Secretary of the Navy, wrote Admiral George Dewey asking for the General Board's opinion on the size and composition of the fleet.<sup>32</sup> While the General Board had made, and would continue to make, suggestions on each year's construction program, Moody asked a more general question: how big should the fleet eventually get? The response, received three weeks later, would remain the general principle behind the Board's construction requests up to the First World War. The General Board wanted "an effective fleet of 48 [battleships]. Sustained [cruising] speed—16 knots. . . . Maximum steaming radius 6,000 miles." Additionally, this ideal fleet would contain 24 19-knot armored cruisers, with a radius of 9,000 miles, as well as 48 protected cruisers, 48 scout cruisers and 48 destroyers.<sup>33</sup>

This plan had two striking features. The first is the sheer size of the General Board's proposal. At the time, the Navy only possessed 10 battleships, and even that number included ships commissioned as far back as 1890, clearly unsuited for frontline

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<sup>32</sup>William H. Moody, "Letter to Adm. Dewey," September 28, 1903, Record Group 80, General Records of the Department of the Navy 1798-1947, Entry 281: General Board Subject Files, 1900-47, File 420-2. NARA Washington, DC.

<sup>33</sup>General Board of the United States Navy, "General Board No. 420," October 17, 1903. GB Subject File 420-2, pp. 1-3.

combat. By way of comparison, the Royal Navy, depending on the method of counting, had a front-line strength of approximately 30 battleships.<sup>34</sup> To create a fleet larger than the Royal Navy was more than national defense; the General Board proposed to make the United States the world's foremost naval power.

At the same time, the letter assumed a great deal of technological stagnation. Depending on the number of battleships authorized each year, the 48-battleship fleet would have been completed sometime between 1914 and 1919. While the Board prudently did not specify armament or displacements, it did specify speed, assuming that a reasonable speed in 1903 would remain so sixteen years later. This assumption of technological stagnation would soon be proven unrealistic, but it was well in line with the Mahanian culture of the Navy, where technology took a back seat to other considerations.

Indeed, a year earlier Mahan had made a forceful argument against the need for speed in battleships in a letter written for President Roosevelt, going further than the Board and weighing in against increases in size as well. Since "the battle ship is meant always to act with others, not alone," homogeneity was more desirable than maximizing capabilities: "Strategically and yet more tactically . . . the battle ship . . . should be harmonized by an antecedent determination of a size to which battleships must conform during a measurable future."<sup>35</sup> In other words, homogeneity created a more manageable fleet in battle, outweighing any gains from improved fighting power.

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<sup>34</sup>B.R. Tillman, Jr., *Navy Yearbook: A Resume of Annual Naval Appropriate Laws from 1883 to 1917, Inclusive* (Washington, D.C.: Government Printing Office, 1916), 616-8, 648.

<sup>35</sup>Alfred Thayer Mahan, "Memorandum for President Roosevelt," October 16, 1902; General Board Subject File 420-6, p. 1.

Mahan went on to apply similar arguments to speed. “Speed is under distinct limitations as a strategic quality,” he argued, “and as a tactical unit it can be sufficiently insured . . . by the armored cruiser . . . in which speed is purchased by some sacrifice of fighting strength—an exception for exceptional purposes.”<sup>36</sup> While Mahan was no fan of armored cruisers, he saw their speed as a somewhat useful adjunct to the main work of the fleet, but he did not see speed as a major issue in battleship design.

Although it is true that Mahan and the General Board spoke with the loudest, most authoritative voices on naval policy, they were not the only sources of discussion on the topic. Indeed the dreadnought, or at least the all-big-gun concept, was developed independently in the United States by low and mid-ranking officers well before Tsushima or the British battleship. In early 1902, Lt. Matthew Signor, writing in *Proceedings*, suggested something similar to the *Dreadnought*, a battleship organized on the principles of “heavy batteries and . . . long range guns.”<sup>37</sup> Signor went on to suggest that such a ship could be given enough speed to take on some of the scouting and screening functions of armored cruisers, which would reduce the need for such ships, and free up more resources for the all-important battleships. Signor suggested that with his proposed battleship “when it comes to a fleet engagement, we shall be stronger than if more of our men and money had been put into cruisers.”<sup>38</sup> A similar article the next year by Lt.

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<sup>36</sup>Mahan, “Memorandum for President Roosevelt,” 1-2.

<sup>37</sup>Lt. Matthew Signor, “A New Type of Battleship,” *Proceedings of the United States Naval Institute*, 28.1 (March 1902): 1.

<sup>38</sup>Signor, “New Type of Battleship,” 5.

Homer Poundstone suggested that for battleships, “[t]he biggest is the best,” in order to carry more armor, bigger engines, and larger guns into battle.<sup>39</sup>

While the logical extension of these arguments suggested something much like *HMS Dreadnought*, their recommendations were general, rather than specific. However, a Lt.Cmdr. W.I. Chambers, attending the Naval War College in July 1903, made a much more specific and influential intervention, including a very basic design sketch that was later forwarded to the General Board by Captain Sperry, the president of the NWC, in early 1904. Like many officers, Chambers believed that the introduction of large (11” or 12”) guns made an increase in average range during battle more likely.<sup>40</sup> Assuming longer ranges, he argued that “[t]he intermediate calibers cannot do the work against armor at probable ranges and the unarmored portion of the ship may be pretty thoroughly wrecked without interfering with the efficiency of the main battery.”<sup>41</sup> At the same time, “the battleship of today carries so many medium and light guns that the distraction on board . . . must count against accuracy and control.”<sup>42</sup> In other words, Chambers had sketched out a preliminary design of an “all big-gun” ship well before Fisher even began his tenure as First Sea Lord.

Chambers’s suggestions must have made an impact, because even before Sperry’s letter reached Washington, the General Board discussed a “new and untried idea [which] had been much talked of at the Naval War College last summer,” adding, “a preliminary

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<sup>39</sup>Lt. Homer C. Poundstone, “Size of Battleships for U.S. Navy,” *Proceedings*, 29.1 (March 1903): 161-5.

<sup>40</sup>As a general rule of thumb, larger guns had a longer effective range.

<sup>41</sup>Lt.Cmdr. W.I. Chambers, “Memorandum,” July 1903. Enclosed in Cpt. O.S. Sperry “Letter to General Board,” February 1, 1904. General Board Subject File 420-6, p. 1.

<sup>42</sup>Chambers, “Memorandum,” 1.

plan of such a ship was made. . . . Some officers regard it as the battleship of the future.”<sup>43</sup> The Board went further and suggested to the Secretary that “the Bureau of Construction and Repair . . . prepare a tentative design for a battleship with a battery of twelve heavy turret guns, none of which shall be less than 10” and at least four of which shall be 12.”<sup>44</sup> Although the eventual design, the *South Carolina*-class ships, were not laid down until late 1906, this was an early adoption of the all-big-gun concept, almost certainly before American officers knew of similar developments in Britain.<sup>45</sup>

While the General Board’s request is indicative of rather impressive forward thinking, one must also keep in mind what the Board missed. Speed was considered a key, if not *the* key, component of the *Dreadnought*’s design by Fisher’s committee, and while Signor suggested the importance of speed, neither Chambers nor the Board considered the issue of speed when discussing the importance of heavy batteries. The Navy, at least in its upper echelons, adhered to Mahan’s worldview, which suggested that maneuver would be unimportant in the naval wars of the future, both because of his focus on major battles and because of his assumptions about the nature of those battles.

Although Mahan arrived at his ideas from intense study of naval history, the decades prior to the turn of century afforded very few examples of naval combat between roughly equal fleets, which in practice meant that American conceptions of naval warfare rested on pure theory. The Russo-Japanese War, which started just days after the General Board’s request for plans, would provide the necessary test of contemporary ships and

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<sup>43</sup>General Board, “All Big-Gun Ship,” January 26, 1904, GB Subject File 420-6, 1.

<sup>44</sup>General Board, “All Big-Gun Ship,” 1.

<sup>45</sup>Tillman, *Navy Yearbook*, 640.

theory and in the end suggested that some of Mahan's key assumptions were outdated. Beyond the intrinsic importance of the territory in question, the war represented the first conflict between major powers since the Franco-Prussian War in 1870-71, and the first test of modern (steel, turreted) warships. Even before the major battle of the naval campaign, Tsushima in late May 1905, naval thinkers were drawing conclusions from the Japanese attack on the Russian fleet in Port Arthur, and its subsequent blockade.

In early May 1904, three months after the war's start, Mahan was already claiming that the lessons of the war backed up his theories. In an article for the *New York Sun*, "The Probability of the Survival of the Battleship," Mahan argued that, despite the sinking of the Russian battleship *Petropavlovsk* by a mine, battleships were still the key to naval power. He then went on to reiterate his objections to speed as a major consideration in battleship design, arguing that battleships "are meant to act strictly in concert with others; an isolated battleship is an anomaly; and a speed much below the highest is all that is likely to be got from several together."<sup>46</sup> More importantly, though, Mahan believed that the sinking of the Russian ship confirmed his position on battleship size: "the fate of the *Petropavlovsk* comes with the old warning not to put too many eggs in one basket, reinforcing the military suggestion to increase numbers by putting some limit on size. . . . [I]t is desirable . . . to regulate the size of the battleship so that the loss of one may not be excessively felt."<sup>47</sup>

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<sup>46</sup>Mahan, "To the Editor of the *New York Sun*," May 9, 1904. In *Letters and Papers of Alfred Thayer Mahan: Volume III, 1902-1914* ed. Robert Seager II and Doris D. Maguire (Annapolis, MD: Naval Institute Press, 1975), 92

<sup>47</sup>Mahan, "To the Editor of the *New York Sun*," 95.

Again, however, Mahan's ideas hardly went unchallenged. Writing in *Proceedings* the next year, Cmdr. Bradley Fiske, a reform-minded officer who would later serve as Aide for Operations, took the exact opposite stance regarding battleships.<sup>48</sup> Speed, Fiske argued, was among the most important characteristics of individual ships and fleets, as "[t]he faster fleet can increase and decrease the range at pleasure; and even withdraw from, or go into battle, whenever it thinks best."<sup>49</sup> On the issue of size, Fiske was even more adamant. Without providing specifics, Fiske maintained that a battleship's effectiveness was, at least in part, a function of size. Only a large ship could carry the necessary engines, armor, and guns and so battleships needed to be as large as scientifically possible.<sup>50</sup> While this viewpoint took aim at Mahan's ideas, Fiske maintained Mahan's single-minded focus on major fleet actions.

Even civilian writers intervened in this debate. In an editorial for the *Navy League Journal*, league president and ex-Secretary of the Navy Benjamin Tracy, expressed views similar to Fiske's, concluding that "[t]he experiences of war have shown in conclusive fashion . . . that the main reliance, the main standby, in any navy worthy the name must be the great battle-ships, heavily armored and heavily gunned . . . so powerfully armed that they can inflict the maximum of damage upon our opponents . . . [and] so well protected that they can suffer a severe hammering in return."<sup>51</sup> Although

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<sup>48</sup>Before it was replaced by the position of Chief of Naval Operations in the 1915 Navy Act, the Aide for Operations, automatically a General Board member, was effectively the highest-ranking officer in the Navy, responsible for advising the Secretary and issuing general orders to the fleet. Although Dewey held a special, higher rank, his post as President of the General Board was strictly advisory.

<sup>49</sup>Cmdr. Bradley A. Fiske, "American Naval Policy," *Proceedings*, 31.1 (March 1905): 14-5.

<sup>50</sup>Fiske, "American Naval Policy," 36.

<sup>51</sup>Benjamin F. Tracy, "From the Presidents Message," *the Navy League Journal*, 3.1 (January 1905): 3.

Tracy's argument was not as explicit as Fiske's, the qualities demanded by Tracy also presupposed as large a ship as possible.

These two pieces argue against some of Mahan's deeply-held opinions, yet both men owed an intellectual debt to Mahan. The two articles simply assumed that the purpose of a navy was to fight major fleet actions, a key assumption of Mahan's and a major tenet of the Navy's strategic culture.<sup>52</sup> Indeed, Fiske and Tracy were equally contemptuous of cruisers, ships seen as too weak to stand up to the punishment of battle. Fiske argued that the role of armored cruisers was "not accurately defined," making them a complete waste of money unless armored to a near-battleship standard.<sup>53</sup> Tracy, along the same lines, noted, "cruiser after cruiser has been destroyed whenever the hostile squadrons have gotten within range of one another's weapons."<sup>54</sup> While there was debate about some of Mahan's conclusions, his key assumptions on the nature of naval warfare remained unchallenged. For American naval thinkers, the Navy existed for major battles, and anything distracting from that mission was unnecessary. Even though cruisers could and would play a role in major battles, like the upcoming Battle of Tsushima, they were designed for other roles, such as screening. In the early twentieth century Navy, it made cruisers grudgingly accepted at best and a useless drain on resources at worst.

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<sup>52</sup>While this may seem like a key tenet of *any* naval theory, the French "Jeune École" emphasized anti-commerce warfare, while British conceptions of naval war added layers of nuance. Julian Corbett, the foremost British naval writer of the period, made a distinction between gaining "command of the sea" with major battles and exercising "control of the sea," a cruiser-centric concept that emphasized contesting control of sea lanes and local superiority through engagements other than major battles. For a fuller explanation, see his *Maritime Strategy* (1912).

<sup>53</sup>Fiske, "American Naval Policy," 37.

<sup>54</sup>Tracy, "From the President's Message," 3.

The General Board also weighed in on the early stages of the Russo-Japanese War, and argued that the course of the war only intensified their earlier support of an all big-gun ship. In October 1904, the Board sent Paul Morton, the new Secretary, a letter suggesting that the preliminary design requested by the Board after receipt of Chambers's initial plan be the basis for the next class of battleship. The war, claimed the Board, had confirmed that because of "[t]he greater accuracy at long ranges of heavy guns . . . [and] their greater collective effectiveness against armored ships . . . battles will be most often fought at long range," which demanded "increasing the number of heavy guns at the expense of the intermediate battery."<sup>55</sup> As a result, the Board again recommended a battleship with "a battery of heavy turret guns, none of which shall be less than 10", and at least four of which shall be 12" without intermediate battery," although the letter was silent on the issue of ideal speed.<sup>56</sup>

Indeed, if one compares the resultant *South Carolina* design to the *Dreadnought*, the differences between the American and British navies stand out. Although the two ships were designed around the same time to fulfill the same role, differences are apparent. While the *South Carolina* would have a uniform battery, it would do so at the same size and speed of her *Connecticut*-class predecessors: 16,000 tons and 18 knots, respectively.<sup>57</sup> On the other hand, *Dreadnought* was a full three knots faster than the preceding *Lord Nelsons*, 21 knots against 18, and displaced 18,000, as opposed to 16,000

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<sup>55</sup>General Board, "General Board's Report on Building Program," October 28, 1904. General Board Subject File 420-2, p. 7.

<sup>56</sup>General Board, "Report on Building Program," October 28, 1904, 8.

<sup>57</sup>Siegfried Breyer, *Battleships and Battle Cruisers, 1905-1970*, trans. Alfred Kurti (Garden City, NY: Doubleday, 1973), 192, 194-6.

tons.<sup>58</sup> In the event of battle, a fleet of *Dreadnoughts* would have been able to steam circles around the slower *South Carolinas* and carried heavier armament: ten 12” guns to *South Carolina’s* eight.

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<sup>58</sup>Breyer, *Battleships and Battle Cruisers*, 110.

## CHAPTER 3

### TSUSHIMA AND ITS AFTERMATH

The Battle of Tsushima, May 27-8, 1905, could not challenge the primacy of major battle in the minds of Americans, but it challenged assumptions about the nature of those battles. On its face, though, Tsushima was a poor test. The fresh Japanese Combined fleet faced the Russian Baltic Fleet, at the end of its round-the-world journey, in need of a refit and overloaded with coal. With a newer, faster, better-maintained fleet, in many ways Admiral Togo Heihachiro needed to do little more than show up. While the battle did take place at heretofore unprecedented ranges, beyond 8,000 yards at times, the fleets were close enough for secondary weapons to be brought to bear. Naturally, the Japanese fleet was victorious, ensuring Japanese control of the seas around Korea and Manchuria for the remainder of the war.<sup>59</sup> While Tsushima was far from an ideal contest between two equal fleets, it was also the only major fleet action for writers to analyze since Lissa in 1866.

Among the first American responses to Tsushima was written by Lt.Cmdr William Sims. Although he was a relatively junior officer, he was the Navy's foremost expert on gunnery. In 1900 Sims, then a lieutenant, was assigned to *USS Kentucky*, a battleship on the China Station. There, he was able to observe the development of a new

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<sup>59</sup>Julian Corbett. *Maritime Operations in the Russo-Japanese War, 1904-1905, Volume II*, (Annapolis, MD: Naval Institute Press, 1994), 242-6. This text was originally released in 1915 as a confidential Admiralty report, but most of it was written some years earlier.

system of targeting and firing developed by a British officer, Captain Percy Scott, also stationed in China.<sup>60</sup> Indeed, Sims was so taken with Scott's system that he sent a letter about it directly to President Roosevelt in late 1901. The next year, Roosevelt personally recalled Sims to Washington where he was promoted and installed in the newly created position of Inspector of Target Practice, while serving as an unofficial naval advisor to Roosevelt.<sup>61</sup>

Soon after Tsushima Sims prepared a memorandum on battleship design for Roosevelt. In it, Sims laid out the "Requirements of a Modern First-Class Battleship," ostensibly based on seven lessons from the recent battle:

(1) The increased and increasing rate of fire of heavy guns (12-inch); (2) The established accuracy of such guns at long ranges . . . (3) The known ability of heavy guns to insure penetration . . . at all practicable ranges; (4) the ability inherent in a broadside fire of numerous heavy guns to hold off (or sink or disable) a ship with guns that are inferior either in caliber or number; (5) the vital consideration of fire-control . . . with a battery of heavy guns that are uniform in caliber; (6) The great importance of superiority in speed; (7) The necessity for high water-line protection. . . . The above facts are established on the practically unanimous opinion of the principal naval authorities who have discussed recent naval events.<sup>62</sup>

Sims, who had visited England in mid-1905 and maintained very good relations with important British officers, especially Scott, knew the basic parameters of the forthcoming *Dreadnought* and here he essentially wrote a justification of the dreadnought

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<sup>60</sup>Scott's new firing system depended on salvo fire controlled from a central position, rather than allowing individual batteries to fire at will. In theory, this prevented confusion during readjustment, determined at the time by shell splashes. If all guns fired at the same time, with the same settings, aim for the entire ship could be adjusted at the same time, eliminating the problems of determining which splashes came from which turret.

<sup>61</sup>Evelyn M. Cherpak, "Register of the Papers of William S. Sims" (Newport, RI: Naval Historical Collection, 2002), 1.

<sup>62</sup>Lt. Cmdr. William Sowden Sims, "Method of Designing Battleships," October 1905. Box 15, William Sowden Sims Papers, Manuscript Room, Library of Congress, Washington, D.C., pp. 7-8.

ideal. Where Fisher's original ideas were derived from theory, Sims gave those same concepts the legitimacy of assumed empirical proof. Not only did Sims claim the legitimacy of the battle but concluded the letter by suggesting that the U.S. copy *HMS Dreadnought* outright, the assumption being that the foremost naval power was worth emulation: "Great Britain has laid down one battleship . . . of 18,000 tons trial displacement, 21 knots speed, and a battery of twelve 12-inch guns . . . [I]t is apparent that a vessel carrying a smaller number of such guns cannot be considered a modern vessel . . . capable of performing her full duty in the line of battle."<sup>63</sup>

Sims's letter brought up two more key points. Sims, a gunnery specialist, was convinced that high speed was necessary for modern battleships, mentioning it as a key lesson from the battle. After all, what was the use of heavy guns without the ability to deploy them as advantageously as possible? Still, this justification of speed was subtly different from that put forth by Fisher's committee. In discussing battleships, the Committee on Designs argued that "the first desideratum in every type of fighting vessel is a greater speed than that possessed by a similar class of the enemy's ships."<sup>64</sup> While they went on to discuss speed in the context of gunnery, it is clear that in Britain, at least in the upper echelons of the Navy, speed was considered to be desirable in and of itself, not just as an aid to firing.

Sims also considered the experience of Tsushima as corroboration of his previous views. Almost to a man, those who wrote on the subject of Tsushima were firmly convinced that the battle validated their preconceived opinions. While this would prove

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<sup>63</sup>Sims, "Method of Designing Battleships," 8.

<sup>64</sup>The Committee on Designs, "Proceedings," January 3, 1905. In *The Papers of Admiral Sir John Fisher*, vol. 1, ed. P.K. Kemp (London: The Navy Records Society, 1960), 219.

unproblematic for writers like Sims, whose views were basically sound, other writers whose views were somewhat behind the times failed to use Tsushima as a learning experience, and cherry-picked examples that seemed to fit with prior worldviews.

Captain Richard Wainwright, later the Aide for Operations, wrote the first major published piece on Tsushima in the U.S. Rather than discussing the battle as a whole, Wainwright zeroed in on firepower, which he considered the key factor in the Japanese victory. The article was essentially an endorsement of the all big-gun ship, with empirical evidence from Tsushima replacing theory. The battle, Wainwright argued, showed that intermediate batteries were useless. While they could devastate a ship at close range, another vessel armed solely with large guns could pummel it without coming into range of the intermediate battery. For Wainwright, Tsushima provided a textbook example; while Togo's battleships had the standard intermediate batteries, the battle took place at ranges where the Japanese advantage in heavy guns provided the margin of superiority.<sup>65</sup> Tellingly, Wainwright neglected to mention speed as an important factor.

Captain Seaton Schroeder, the head of Naval Intelligence at the time, and an ex officio General Board member, weighed into the debate in early 1906 with a more thorough treatment of the battle. Written with the benefit of more time in which to consider the battle, Schroeder's article, "Gleanings from the Sea of Japan," attempted to lay out the lessons learned from Tsushima. Schroeder came down firmly in the long-range camp regarding the nature of future battles and suggested the ranges of Tsushima made both rams and intermediate batteries obsolete, while making all big-gun ships a

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<sup>65</sup>Cpt. Richard Wainwright, "The Battle of the Sea of Japan," *Proceedings*, 31.4 (December 1905): 801-5.

necessity.<sup>66</sup> Tsushima “developed nothing new concerning the influence of speed,” Schroeder wrote, “[t]he victory was won by the faster fleet, but that does not necessarily carry the conclusion that speed was a determining factor,” although he admitted that speed had “an undeniable value . . . in attaining positions of strategical and even of tactical importance in individual operations.”<sup>67</sup> All told, Schroeder’s was a rather tepid endorsement of speed, especially compared to contemporary accounts, many British, which highlighted speed as providing a key margin of superiority for Admiral Togo.<sup>68</sup>

Schroeder was more definite in criticizing armored cruisers, the predecessors of battlecruisers, attacking their ever-increasing size and cost. He went so far as to claim, “throughout this entire war armored cruisers have played no important part,” and that “the armored cruiser has failed to justify its existence.”<sup>69</sup> Instead, all available money for large vessels should be funneled into the production of battleships. Despite subsequent changes, including the introduction of battlecruisers in Britain, Germany, and Japan, Schroeder’s opinions basically summarize official Navy policy for the next several years. After Tsushima, the Navy laid down no armored cruisers until the 1920s.

Tsushima also made a strong impression on the General Board. While the original design parameters of the *South Carolina* class called for a mixed battery of different-sized heavy guns, by September 1905 the board was convinced that “the fire of a mixed battery at fighting ranges cannot be accurately placed when two or more calibers . . . are

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<sup>66</sup>Cpt. Seaton Schroeder, “Gleanings from the Sea of Japan,” *Proceedings*, 32.1 (March 1906): 76.

<sup>67</sup>Schroeder, “Gleanings from the Sea of Japan,” 76-8.

<sup>68</sup>See, for example, Julian Corbett’s *Maritime Operations in the Russo-Japanese War, 1904-1905* (Annapolis, MD: Naval Institute Press, 1994), originally written as a confidential Admiralty report.

<sup>69</sup>Schroeder, “Gleanings from the Sea of Japan,” 91-2.

firing at the same time.”<sup>70</sup> Instead, “the modern battleship must have a homogenous battery of 12-inch guns.”<sup>71</sup> Furthermore, the Board suggested a thawing on the issue of speed, claiming that “speed must be obtained to as great a degree as possible after the greatest number of properly protected big guns have been secured”<sup>72</sup>

In the Board’s October 1905 “Report on Building Program” the basic parameters of the next class of battleships were laid down: “Main Battery to consist of not less than ten 12-inch guns. . . . Speed not less than 19 knots for four hours.”<sup>73</sup> Although the proposed speed for the new battleships, later *Delaware* and *North Dakota* was one knot faster than those of the *South Carolinas*, the Board’s endorsement of speed was still tepid compared to their British counterparts.<sup>74</sup>

Since almost *all* American naval officers and civilian “navalists” were products of a Mahanian culture—even Sims, his future antagonist—Mahan’s opinion still carried extra weight, not only because of his prominence outside of the Navy, but also because of his status as the Navy’s foremost mind. More to the point, previous discussions on the subject, while based on a Mahanian worldview, obviously failed to match the impact of

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<sup>70</sup>General Board, “Letter to the Secretary of the Navy,” September 30, 1905. General Board Subject File 420-6, p. 1.

<sup>71</sup>General Board, “Letter to the Secretary of the Navy,” September 30, 1905, 3. It is likely that this realization contributed to the delay in building the *South Carolina* –class ships. While the two ships were authorized in mid-1905, construction was not started until December 1906.

<sup>72</sup>General Board, “Letter to the Secretary of the Navy,” September 30, 1905, 1. This can be compared to the first meeting of Fisher’s Committee on Designs in early 1905, which declared: “There is no question whatever that the first desideratum in every type of fighting vessel is a greater speed than that possessed by a similar class of the enemy’s ships. It is the ‘weather gauge’ of the olden days.” “Committee on Designs: Proceedings,” in *The Papers of Admiral Sir John Fisher, Volume I*, ed. Lt.Cmdr P.K. Kemp RN (London: Navy Records Society, 1960), 219.

<sup>73</sup>General Board, “Report on Building Program,” October 28, 1905. General Board Subject File 420-2, p. 2.

<sup>74</sup>However, when the new battleships were laid down in 1907, their designed speed was 21 knots.

Mahanian thought directly from the source. Although his “Reflections, Historic and Other, Suggested by the Battle of the Japan Sea,” was not published in *Proceedings* until June 1906, it represented the most thorough and credible attempt to integrate the lessons of the battle into the Mahanian worldview. As Mahan himself realized, a great deal of previous naval theory “was necessarily discussed and determined upon a priori reasoning,” and Tsushima gave him the chance to “see what further light may seem to be thrown . . . by the events of the war itself.”<sup>75</sup>

As one might expect, Mahan began his piece by discussing the value of speed. Mahan started this section by discussing speed in a strategic, rather than tactical, context. Mahan wrote under the assumption that “to get to Vladivostok [the Russian objective] without fighting was impossible under any probable conditions of speed.”<sup>76</sup> On that rather tenuous base, he proceeded to clarify his position through rhetorical questions: “What bearing would the highest speed of [Russian] battle ships have had upon [Russian] movements? . . . [W]hat advantage would it be if the gain of time [in meeting the Japanese fleet] has been due to speed obtained at the sacrifice of fighting power? . . . [W]ould it have been worth while for the Russians . . . to have 2 knots greater fleet speed . . . to achieve the mere result of running away?”<sup>77</sup>

Mahan’s stated assumption, that battle was inevitable regardless of speed, was questionable; the gap between Korea and Japan is about 100 miles wide at its narrowest point, enough space for a well-led faster fleet to slip through while refusing combat.

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<sup>75</sup> Alfred Thayer Mahan, “Reflections, Historic and Other, Suggested by the Battle of the Japan Sea” *Proceedings*, 32.2 (June 1906). Reprinted in “Size of Battleships,” 59th Congress, 2<sup>nd</sup> session Senate Document 213 (Washington, D.C.: Government Printing Office, January 14, 1907), 4.

<sup>76</sup> Mahan, “Reflections,” 9.

<sup>77</sup> Mahan, “Reflections,” 4-5, 10.

More important, though, was his unspoken assumption that speed necessarily came at the expense of “fighting power.” The position of Admiral Fisher’s design committee and Americans such as Sims was that speed’s contribution to fighting power was very significant indeed, Fisher going even further to defined speed as a virtue in its own right. Even if one defines “fighting power” at its most narrow, as solely weapons carried, Mahan was only right up to a point. *Dreadnought*, which Mahan knew enough about to discuss in the article, managed to combine a great deal of firepower and speed by being larger than other contemporary battleships. Even in the face of empirical evidence, Mahan refused to change the parameters of his worldview, and his final word was “speed is at best a less valuable factor . . . than fighting power . . . it must be kept severely in its proper place of subordination in the design of battle ships.”<sup>78</sup>

Mahan then went on to discuss firepower. In his reading of the battle, long-range fire with heavy guns was not the key instrument of destruction. Rather, the battle confirmed his pre-existing notion that “the so-called ‘secondary battery’ is really entitled to the name ‘primary,’ because its effect is exerted mainly on the personnel.”<sup>79</sup> His only attempt to back up that assertion with data from the battle was a rather weak argument that because most Russian ships were sunk by gunfire instead of torpedoes, the more numerous, faster-firing, secondary batteries must have played the main role.”<sup>80</sup> To attack the prevailing opinion that heavy, long-range gunnery won the day, he was reduced to claiming that fleets reliant on long-range fire “assumed the moral tone and temperament

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<sup>78</sup>Mahan, “Reflections,” 11.

<sup>79</sup>Mahan, “Reflections,” 10.

<sup>80</sup>Mahan, “Reflections,” 14.

associated with the indisposition to close. . . . [T]he navy which for any reasons habitually seeks to keep its enemy at a distance . . . usually fails to achieve more than a defensive success for the occasion.”<sup>81</sup> Of course, this claim had nothing to do with the battle; the Japanese fleet that made use of its long-range weapons achieved a resounding victory.

Along the same lines, Mahan left aside the specific case of Tsushima to fire his own broadside against newer strains of naval theory and the *Dreadnought*, their exemplar. The British battleship, Mahan claimed, “has no immunity from the common lot of all battle ships. In a fleet to-day her speed will be that of her slower sisters; more *Dreadnoughts* must be built to keep up with her; and upon them in turn, according to the prevalent law of progress, she will be a drag, for here successors will excel her.”<sup>82</sup> Of course, Mahan was quite right here, but he simply hit upon the essential dynamic of modern arms races, reliant on capabilities as well as numbers. Rather than being a problem, it was merely the new paradigm.

What made Mahan’s thinking antiquated was not the problem he identified, but in thinking of it as a problem rather than a basic parameter of modern policy. To Mahan, however, “[t]his willful premature antiquating of good vessels is a growing and wanton evil . . . The moral effect . . . is inducing in the Navy as in the public a simple trust in bigness, and what is worse, an absence of trust in anything but bigness.”<sup>83</sup> Here, Mahan betrayed his fundamental misunderstanding of naval policy in the new century. The

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<sup>81</sup>Mahan, “Reflections,” 16.

<sup>82</sup>Mahan, “Reflections,” 11.

<sup>83</sup>Mahan, “Reflections,” 11.

fascination with new, larger, battleships had nothing to do with their size, but instead the *capabilities* that size allowed: a faster top speed and more heavy guns.

To Mahan, though, this focus on “bigness” ignored the important factors in determining naval effectiveness. While he conceded that “if all other things—skill courage, numbers, combinations, fortitude—are the same on both sides, bigness . . . will carry the day,” he went on to ask, “but when have all other things been the same? We are putting in the foremost place of consideration that which military history shows to be the least of several factors.”<sup>84</sup> This viewpoint may have made sense when technological change was glacial and a ship of the line could serve for several decades, but in the new paradigm, Mahan’s views were simply old-fashioned. If nothing else, Mahan’s “Reflections,” showed just how hard—if not impossible—a task it was to reconcile pure Mahanian thought with the example of Tsushima.

The best encapsulation critique of Mahan came from William Sims, the gunnery expert and unofficial advisor to President Roosevelt. In fact, although Roosevelt maintained a cordial relationship with Mahan, he was firmly convinced by 1906 that the all-big-gun ship was the future of naval design, no doubt influenced by Sims and Sims’s 1905 memorandum suggesting the adoption of dreadnought-type ships. At any rate, after the publication of Mahan’s article, Roosevelt asked Sims for his opinion on the piece. Sims ran with the assignment and wrote a 26-page rebuttal of Mahan’s argument. This letter became arguably the most influential piece of naval theory written in the U.S. during this era. Not only was the letter later turned into a pamphlet and mailed to selected naval officers in the U.S. and U.K., but it was also reprinted in *Proceedings* and, along

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<sup>84</sup>Mahan, “Reflections,” 11.

with Mahan's "Reflections," made it to Congress as a Senate Document, "Size of Battleships."<sup>85</sup>

The letter to Roosevelt started respectfully enough, with Sims claiming "had he [Mahan] been in possession of certain important information, his conclusions would have been considerably modified."<sup>86</sup> In truth, it is clear from the letter and other writings that Sims saw Mahan's entire mode of thinking as flawed, hardly something that could be rectified with better information. Despite the respectful tone adopted at the beginning, what Sims attempted was a nothing less than a thorough dismantling of Mahan's views on battleships. In the article version, Sims went on to claim that Mahan's "conclusions are . . . opposed to those reached by practically all naval officers who have given this subject serious consideration; but so great is the weight of Captain Mahan's opinions that they would doubtless be accepted," by non-experts.<sup>87</sup> Still, it must be reiterated that Sims was, in essence, trying to save Mahan the theorist from Mahan the commentator; throughout his career Sims remained devoted to "those measures required to build a great fleet of the kind that Captain Mahan advocated—one prepared to defeat any opponent and able to achieve general and lasting command of the sea."<sup>88</sup> As contentious as this debate was, it was a generational spat, not a culture shift.

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<sup>85</sup>Lt.Cmdr William S. Sims, "The Inherent Tactical Qualities of All-Big-Gun, One-Caliber Battleships of High Speed, Large Displacement and Gun-Power," *Proceedings*, 32.4 (December 1906). Also, Mahan and Sims, "Size of Battleships," 59th Congress, 2<sup>nd</sup> session Senate Document 213 (Washington, D.C.: Government Printing Office, January 14, 1907).

<sup>86</sup>Lt.Cmdr. William Sims, "Letter to Roosevelt," September 24, 1906. William Sowden Sims Papers, Library of Congress, box 15, p. 1.

<sup>87</sup>Sims, "Inherent Tactical Qualities," 1337.

<sup>88</sup>David F. Trask, "William Sowden Sims: The Victory Ashore," in *Admirals of the New Steel Navy: Makers of the American Naval Tradition, 1880-1930* ed. James C. Bradford, 285.

Sims mirrored Mahan's approach and began by discussing the issue of speed, explicitly linking it to what Mahan called "fighting power." In addition to allowing Togo's fleet to engage the Russian fleet in the first place, superior speed gave the Japanese commander the ability to change his position "with reference to the head of the enemy's fleet . . . [and] the battle therefore resolved itself into a competition between the fire-control officers of the two fleets as to which could make the most hits under conditions selected by the Japanese—these conditions being, of course, very unequal."<sup>89</sup> Instead of Mahan's categorization of speed as simply a tool of the weak, Sims believed speed allowed Togo to press his advantage and put his ships in the best possible position to attack the Russian fleet. Speaking more universally, he claimed "a superiority of speed that will enable a fleet frequently to concentrate its fire on an enemy . . . is more important than the additional guns corresponding to the weight (in boilers and engines) required to give this superiority in speed."<sup>90</sup>

When Sims turned to gunnery, his personal specialty, his critiques became even more pointed as the Navy's Inspector of Target Practice brought his technical knowledge to bear. While Sims considered Mahan misguided on the subject of speed, the letter/article painted Mahan as entirely ignorant on the subject of modern gunnery. Sims was familiar with and an advocate of Admiral Scott's fire control reforms in Great Britain, where guns were aimed from a central location instead of singly. This development, Sims argued, made "the evolution of the all-big-gun battleship . . . a

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<sup>89</sup>Sims, "Size of Battleships," 21.

<sup>90</sup>Sims, "Size of Battleships," 23.

foregone conclusion,” as a uniform caliber was necessary for optimal efficiency.<sup>91</sup> Instead of arguing what mix of guns to put on a battleship, the new important decision was deciding, “what [single] caliber for each class of ship,” a question that would always be answered by the largest practicable guns.<sup>92</sup>

Sims then turned to Mahan’s advocacy of smaller caliber weapons. Unsurprisingly, Sims found that Mahan’s ideas were “based upon certain mistaken assumptions in regard to the efficiency of these [secondary battery] guns.”<sup>93</sup> Indeed, Sims argued, a fleet of dreadnoughts, “*at modern battle ranges* will actually deliver,” more firepower “than a fleet of mixed-battery ships of the same nominal power,” since bigger guns fired heavier shells and were more accurate at the longer ranges Sims assumed for future battles.<sup>94</sup>

Even assuming that Mahan’s preferred six-to-eight inch guns could hit the target, Sims pointed out that on the *Dreadnought* the fighting crew, save for the fire control party atop a mast, would be behind the heavy armor belt, “therefore, neither the ship nor her personnel can be materially injured by small caliber guns.”<sup>95</sup> Indeed, “it would be extremely unwise to equip our new ships with a large number of small guns that are incapable of inflicting material damage” to enemy fleets.<sup>96</sup> At the end of his discussion of gunnery, Sims even allowed a bit of naked disdain to show through: “As for the

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<sup>91</sup>Sims, “Letter to Roosevelt,” 21-2.

<sup>92</sup>Sims, “Letter to Roosevelt,” 11.

<sup>93</sup>Sims, “Letter to Roosevelt,” 11.

<sup>94</sup>Sims, “Letter to Roosevelt,” 15.

<sup>95</sup>Sims, “Letter to Roosevelt,” 11.

<sup>96</sup>Sims, “Letter to Roosevelt,” 11.

comparative moral effect of the explosion of 12-inch and 6-inch shells, it seems to be that when we compare the difference in weight of bursting charges (that of the 12-inch is 38 pounds, while the 6-inch is only 4 pounds) . . . there can be no doubt that the moral effect of the former is very much greater.”<sup>97</sup>

Size, then, was more than a “simple trust in bigness” to Sims. Instead, “the reason for the great increase in displacement . . . [was] simply that you cannot build an efficient [battle] ship . . . less than about 20,000 tons because you cannot mount more than two 12-inch turrets [four guns] to advantage upon a battleship of much less displacement.”<sup>98</sup>

That, perhaps, is putting his case a bit strongly. After all, the 18,000-ton *Dreadnought* mounted five turrets. Still, as Sims made clear, the demands of modern war required bigger battleships.

Sims ended his letter by claiming that Mahan’s conclusions were “founded largely upon mistaken facts, mistaken principles of gun-fire, and upon an apparent failure to consider the inherent . . . qualities of large vessels.”<sup>99</sup> While previous naval theorists had disagreed with Mahan, none, at least within the Navy, had gone directly after him in so public a manner. As a result, this piece became particularly influential within naval circles and, as mentioned earlier, even reached the attention of Congress. Throughout, Sims’s argument was couched in terms of capabilities—large guns, large displacement, high speed—before classification; the specific capabilities of the ship were more important that whether or not it was a battleship.

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<sup>97</sup>Sims, “Size of Battleships,” 28.

<sup>98</sup>Sims, “Letter to Roosevelt,” 22.

<sup>99</sup>Sims, “Letter to Roosevelt,” 26.

Roosevelt, well versed in naval affairs, took the time to enclose a copy of the pamphlet of Sims's argument in a letter to Mahan, requesting a response.<sup>100</sup> Mahan's first response, two days after receiving the letter, was wholly inadequate; Mahan resorted to trying to deflect the question: "I do not pretend to be fully equipped in tactical resource, and hold myself retired, as a rule from such discussion, though I present my views when asked. The Institute asked me for a paper."<sup>101</sup>

His more substantial response sent two weeks later was hardly more convincing. At one point, Mahan claimed "the tactical advantage constituted by superior speed. . . confers the offensive," a contradiction in spirit, and most likely fact, from his "Reflections" article, which claimed that that speed gave little more than the power to run away.<sup>102</sup> Although the letter did try to rebut Sims, by the end Mahan was reduced to conceding that "[t]he field is one which should be exhaustively studied by men younger and less occupied than I; by the coming men, in short, rather than by one of the past."<sup>103</sup>

The "coming men" certainly concurred. In the aftermath of his letter's publication as a pamphlet and *Proceedings* article, Sims received a number of approving letters from American and British officers. The responses of his peers, mid-level officers, were often quite vitriolic. To Fiske, Sims's paper showed that "Mahan fell down because. . . he applied his general principles to conditions that did not exist, and so arrived at conclusions absolutely false."<sup>104</sup> An officer of Sims's rank "regretted that I was not on

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<sup>100</sup>Seager and Maguire, *Letters and Papers of Alfred Thayer Mahan*, vol. III, 178.

<sup>101</sup>Mahan, "To Theodore Roosevelt," October 8, 1906, in *Letters and Papers of Alfred Thayer Mahan*, 180.

<sup>102</sup>Mahan, "To Theodore Roosevelt," October 22, 1906, in *Letters and Papers of Mahan*, 187.

<sup>103</sup>Mahan, "To Theodore Roosevelt," October 22, 1906, in *Letters and Papers of Mahan*, 188.

<sup>104</sup>Bradley Fiske, "Letter to Sims," November 7, 1906, William Sowden Sims Papers, Library of Congress.

the opposition side, for then I should have had the pleasure of being thoroughly convinced that I was entirely wrong.” He later expressed “surprise that a man for the soundness of whose opinions I had conceived a great respect should write such a weak article.”<sup>105</sup> The most vicious letter, though, claimed that “it would be an excellent thing for the Service,” if Mahan, who “never was brilliant as an officer. . . would keep quiet. . . and solace his old age with pleasant historical and literary reminiscence.”<sup>106</sup>

Sims’s article did more than encourage true believers, though. Senior officers also found Sims’s work impressive. Charles Beresford, the commander of the Royal Navy’s Mediterranean Fleet, to whom Sims had sent a pamphlet (despite the pamphlet’s cover which declared it “For private circulation among U.S. Naval Officers only”<sup>107</sup>), asked permission to send the article along to the Admiralty.<sup>108</sup> Closer to home, Stephen B. Luce, the founder and first president of the Naval War College sent a congratulatory letter, although he stopped short of attacking Mahan, his longtime colleague and friend. The most thoughtful response among the senior leaders came from Rear Admiral Caspar F. Goodrich, the commander of the Pacific Fleet: “I used to think with Mahan but, a couple of years ago, I changed my mind. . . I realized that nothing mechanical will stay ‘put’—that you may fix a size to anything you please. . . but—while you back is turned the . . . thing has swelled to twice its former size.”<sup>109</sup>

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<sup>105</sup>Lt.Cmdr Stammworth, “Letter to Sims,” November 12, 1906, Sims Papers, Library of Congress.

<sup>106</sup>Cmdr. Hood, “Letter to Sims,” November 28, 1906, Sims Papers, Library of Congress.

<sup>107</sup>Seager and Maguire, *Papers of Mahan*, 178.

<sup>108</sup>Admiral Charles Beresford RN, “Letter to Sims,” December 3, 1906, Sims Papers, Library of Congress.

<sup>109</sup>Rear Admiral Caspar F. Goodrich, “Letter to Sims,” November 9, 1906, Sims Papers, Library of Congress.

Outside of the Navy itself, the Navy League, the main civilian organization of “navalists,” took Sims’s side, which was unsurprising given that Sims had written a number of anonymous journal articles for them over the years. A January 1907 editorial in the League’s new journal called the prospect of the Navy building more dreadnoughts “a lamentable and inexcusable blunder. . . . What is the use of deliberately making a new ship inferior to those abroad?”<sup>110</sup> The next month, another dealt specifically with the dispute, taking the stance that Mahan lacked “the technical knowledge fairly to be demanded from an ‘authority.’” Tellingly, though, the author also suggested that Mahan failed to utilize “a consistent and rigid application of his own principles,” suggesting again that the problem was not Mahan’s ideas, but his insufficient familiarity with modern technology to effectively apply them.<sup>111</sup>

It did not take long for the influence of Sims’s paper to spread outside of the naval community. During debate over the 1907 Navy Estimates, Roosevelt himself wrote the House Naval Affairs Committee and asked for two battleships “of the maximum size and speed and with their primary battery of all 12-inch guns,” demonstrating the influence of Sims’s ideas. Indeed, it is very possible that Sims ghostwrote the letter.<sup>112</sup> Additionally, both Sims and Wainwright, who had also written an article on behalf of all-big-gun ships, were invited to the House Naval Committee to discuss the issue in late 1906.<sup>113</sup> While

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<sup>110</sup>“Don’t give up the Dreadnought” *The Navy*, 1.1 (January 1907): 5. In late 1906, *The Navy League Journal* folded, and the Navy League joined forces with a preexisting publication to create *The Navy*.

<sup>111</sup>Benjamin Baker, “Mahan Sims, and the Facts,” *The Navy*, 1.2 (February 1907): 18.

<sup>112</sup>Theodore Roosevelt, “Increase of Navy—Letter from the President,” January 11, 1907, *Hearings Before the Committee on Naval Affairs of the House of Representatives on Estimates Submitted by the Secretary of the Navy, 1906-1907* (Washington, D.C.: Government Printing Office, 1907), 367.

<sup>113</sup>*Hearings Before the Committee on Naval Affairs of the House of Representatives on Estimates Submitted by the Secretary of the Navy, 1906-1907* (Washington, D.C.: Government Printing Office, 1907).

neither man said anything new, the fact that Congress asked them to testify highlighted the effect those articles, especially Sims's, had at the time.

More importantly, Sims had an effect on the Navy's professional leadership. Not only was his article influential, but on a trip England in late 1906, he was secretly allowed on the still-uncommissioned *Dreadnought*, "principally through personal considerations," obtained from senior British officers and composed a report on her for the Office of Naval Intelligence, which called the *Dreadnought* "the greatest modern advance in the design of ships that are intended to fight in the open sea."<sup>114</sup> Although the intelligence dossier contained little in the way of new information, it and the article undoubtedly played a role in the General Board's acceptance of the dreadnought type in January 1907.<sup>115</sup> The General Board's secretary later recorded the memorandum in favor of dreadnoughts as "setting forth the arguments in favor of battleships of large displacements, of great offensive and defensive power and provided with a battery of one caliber heavy guns," a neat paraphrase of the title of Sims's published article.<sup>116</sup> While speed was not mentioned in the letter, the resultant *Delaware*-class battleships shared the same 21-knot top speed as the *Dreadnought*.<sup>117</sup>

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<sup>114</sup>Cmdr. William S. Sims, "Dreadnought Report," January 12, 1907, William Sowden Sims Papers, Manuscript Room, Library of Congress, Box 16, p. 1, 47.

<sup>115</sup>General Board, "Memorandum for the Secretary of the Navy," January 9, 1907, RG 80, E281, GB Subject File 420-6, NARA Washington.

<sup>116</sup>"January 29, 1907," *Proceedings and Hearings of the General Board of the U.S. Navy 1900-1950* (Washington, D.C.: National Archives Microfilm Publications, 1987), Roll 2, 40. The article version of Sims's letter to Roosevelt was titled "The Inherent Tactical Qualities of All-Big-Gun, One-Caliber Battleships of High Speed, Large Displacement and Gun-Power."

<sup>117</sup>There is some confusion over which ships—the *Delaware* class or the preceding *South Carolina* class—should be regarded as the first American dreadnoughts. While the *South Carolinas* had an all-big-gun layout, the greater size, speed and firepower of the *Delaware* class make them a more fitting analogue.

Despite the contentious debate between Sims and Mahan, the General Board came down on the side of dreadnought type battleships and independently developed an all-big-gun design. This was because the *Dreadnought* did not challenge the dominant Mahanian strategic vision of the Navy at the time, while being clearly superior than her predecessors at the business of fighting and winning major battles. Even though Mahan himself railed against all-big-gun ships, this was, as Sims demonstrated, due more to unfamiliarity with modern equipment and practice than any sort of larger mental block. To the General Board, Sims, and the Navy at large, dreadnoughts represented the best way to contest major fleet actions, still seen as the only proper use for a navy. In other words, dreadnoughts were consistent with the Navy's larger strategic culture.

Although it ended with a consensus, the struggle to bring dreadnoughts into the fleet was intense enough to demand congressional attention and presidential intervention. By way of contrast, Fisher's other new ship, the battlecruiser, also inspired intense feelings, but this time all on the same side of the debate. The dreadnought episode demonstrated that the Navy's Mahanian culture was robust enough to recognize clear progress, but early American responses to Fisher's battlecruisers show the limits of that culture.

## CHAPTER 4

### THE SHADOW OF MAHAN: EARLY CONCEPTIONS OF BATTLECRUISERS

Fisher's Committee on Designs also reimagined the armored cruiser, returning with the battlecruiser, a conception radical enough that it soon required a new name.

According to the Committee:

The fast armored cruiser renders all other cruisers useless. With this speed of 25 knots, and with an armament of 12-inch guns, the armored cruiser can overtake and annihilate everything that floats except the proposed battleship. . . . However, the armored cruiser has another mission to perform. She has to overtake and keep touch with a fleeing battle fleet, and possibly bring it to bay by the wounding which her 12-inch guns are capable of . . . Indeed, these armored cruisers are battleships in disguise!<sup>118</sup>

The Committee assumed that other nations would soon build dreadnoughts, so the battlecruiser was not originally intended to fight in the heart of major fleet action.

Although battlecruisers were deemed capable of standing in the line of battle, if necessary, they were really designed for filling other roles: the scouting, harrying and pursuit functions that could not be undertaken by battleships. While dreadnoughts were designed to fight in line, battlecruisers were intended to play a freer, more independent role, detached from the line.

While the *Dreadnought* presented American naval thinkers with a new type of battleship, battlecruisers were something new altogether, a problematic new classification

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<sup>118</sup>“Committee on Designs: Proceedings,” in *The Papers of Admiral Sir John Fisher*, vol. I, 220-1.

resting uncomfortably between the recognized classes of armored cruiser and battleship. Although the Navy was able to adopt the new battleships, they represented a repudiation of Mahan's understanding of tactics and gunnery, not his vision of the function and role of the Navy. The existence of a large, heavily armed ship whose purpose was something other than taking and dealing punishment in the midst of a major battle represented something entirely alien to this worldview. How, then, would naval thinkers in the U.S. react to this new type of ship?

The British construction of the first set of three battlecruisers was undertaken under greater secrecy than that of the *Dreadnought*. Nevertheless, once launched, the American worldview that discounted the importance of cruisers led to little discussion of the construction and capabilities of the *Invincibles*. Although the battlecruisers and the *Dreadnought* were authorized under the same bill, only the battleship attracted immediate notice within the United States. The December 1905 "Professional Notes" section of *Proceedings*, where foreign navies were discussed, brought up the *Dreadnought* and her design at length, with no mention of the new cruisers.<sup>119</sup> Although the new cruisers were mentioned in the next issue, it was almost as an afterthought. An extract from a British journal noted that the new cruisers "will, we understand, be the most powerful that have yet been built," but the *Dreadnought* still dominated the section on the Royal Navy.<sup>120</sup>

However, the *Navy League Journal* was far more comfortable discussing new ideas, and in August, 1907, it published an article on "Battle-ship Cruisers." The article appears to have been written without the benefit of detailed knowledge concerning the

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<sup>119</sup>"Professional Notes," ed. Philip Alger, *Proceedings*, 31.4 (December 1905): 992.

<sup>120</sup>"Professional Notes," ed. Philip Alger, *Proceedings*, 32.1 (March 1906): 347.

*Invincibles*, which explains the author's conception of battlecruisers as "an ideal ship for preying on a peaceful trade route," since "all the ordinary convoying cruisers in the world could do nothing to check them."<sup>121</sup> Although the author got the justification for the battlecruiser almost exactly backwards, the article had a better understanding of the battlecruiser concept than the next few years of *Proceedings* and pronouncements from the General Board would. If nothing else, he imagined the battlecruiser operating in an independent role, detached from major fleets, an understanding that the General Board could not match.

Not until the next year would writers in *Proceedings* begin to grasp the significance of battlecruisers, and when they did, the reaction was uniformly negative. A run of articles in *Proceedings* during 1907 attacked the concept of speed as a desirable quality in warships after the specifications of the first battlecruisers became more widely known. While the 21 knot speed of dreadnought battleships was not challenged, authors in *Proceedings* took aim at what they saw as *excessive* speed; in short, battlecruisers.

The most interesting of these generally polemical essays was a French article, translated by Philip Alger, the editor of *Proceedings* and a professor at the U.S. Naval Academy. The author argued that speed was "an essentially precarious policy . . . a speed remarkable at one time is considered ridiculously small some few years later."<sup>122</sup> On the other hand, the author saw armor as timeless, setting up a distinction between "the permanence of the service which effectively armored ships can render in comparison with the short-lived value of fast ships with little or no protection," obviously taking aim at the

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<sup>121</sup>Ernest H. Rigg, "Battle-ship Cruisers" in *The Navy League Journal*, 4.7 (August, 1906): 153.

<sup>122</sup>E. Beaufailly, "Armor and Speed (Vitesse, C'est Faiblesse)" trans. Philip R. Alger, *Proceedings*, June 33.2 (1907): 717.

fast, lightly armored battlecruisers, an interesting contrast to Mahan's criticism of a "simple belief in bigness."<sup>123</sup> The article ends with: "Armor is the best of weapons; on the other hand, 'Vitesse, c'est faiblesse.' (Speed is weakness)."<sup>124</sup> "Armor and Speed" was certainly not a subtle article, and its translation by the editor of *Proceedings* highlighted the stance of the journal. All articles on speed in *Proceedings* took the same stance against, to paraphrase Mahan's Tsushima essay, a simple trust in speed.

One article in 1908's first issue made the point even more explicitly, attacking battlecruisers in particular, rather than the concept of speed in general. Harkening back to Mahan, the author of "The Question of Speed in Battleships," Ensign R.R. Riggs, argued that Tsushima did not demonstrate the value of speed. He then proceeded to paraphrase Alger's translated article in claiming that out of the major components of battleship design—speed, armor and firepower—speed was "the most unreliable of these . . . elements."<sup>125</sup>

More important than his rehash of old debates, though, was his attack on armored cruisers and their larger cousins. An armored cruiser, Riggs argued, "is nothing in the world but a battleship in which guns and armor have been sacrificed for three knots' speed," putting them at a disadvantage when matched against battleships.<sup>126</sup> If not designed for fighting battleships, Riggs asked, "what *is* she intended for? Surely not as a scout, . . . for vessels of a fifth the displacement could do this work as well . . . .By escaping from a stronger enemy she will never win wars. History teaches that it is only

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<sup>123</sup>Beaufailhy, "Armor and Speed," 718.

<sup>124</sup>Beaufailhy, "Armor and Speed," 720.

<sup>125</sup>Ensign R.R. Riggs, "The Question of Speed in Battleships," *Proceedings*, 34.2 (March 1908): 235.

<sup>126</sup>Riggs, "The Question of Speed," 236.

by the shock of armed fleets that this is done. . . . Every argument against [armored cruisers] holds good against the battle-cruisers of the *Invincible* type.”<sup>127</sup> This highlights again the American obsession with major battles to the exclusion of other forms of warfare.

In summing up his argument, Riggs revealed the influence of Mahanian doctrine when he argued that wars were “not to be decided by skirmishing or cross-raiding, but by one or more pitched battles. . . . [E]very nerve should be strained both in peace and war to prepare for these *battles*. As armored cruisers have been shown not to be as valuable . . . as are battleships, they are a mistake.”<sup>128</sup> This sentiment could have come directly from the pen of Mahan in 1905 and demonstrates again that while Mahan was unsuccessful in preventing the adoption of dreadnoughts, his ideas remained the bedrock of naval culture in the U.S. The assumptions remained, repurposed here in an attack on cruisers.

As unfulfilling and unspecific as *Proceedings*’ Mahanian rearguard action was, it demonstrated the way Mahan permeated American naval thought. Both the attacks on speed and Riggs’s anti-battlecruiser article relied on some of the same arguments that Mahan made in his discredited Tsushima piece. While *Proceedings* is just one journal, surely it is telling that the main professional journal in the United States either would not, or could not find a pro-battlecruiser essay to publish until 1915, a year into the First World War.<sup>129</sup> For better or worse, Riggs’s article stands up as a précis of *Proceedings*’ policy towards the new ships. Indeed, despite his lowly rank, Riggs neatly summed up

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<sup>127</sup>Riggs, “The Question of Speed,” 239.

<sup>128</sup>Riggs, “The Question of Speed,” 240.

<sup>129</sup>Cmdr. Ralph Earle, “Naval Scouts: Their Necessity, Utility, and Best Type,” *Proceedings*, 41.4 (July-August 1915).

the Navy's policy on cruisers: after the last *Tennessee*-class armored cruiser was commissioned in 1908, the Navy built no more until the mid-1920s, and of course the Navy did not lay down battlecruisers until late 1916.

The General Board was also cool towards battlecruisers, perhaps the result of a lack of understanding. Instead of seeing battlecruisers as armored cruisers writ large, the Board perceived the *Invincibles* in 1906 as, "in reality battleships . . . very fast and powerful ships designed to form a part of the battle line."<sup>130</sup> As with Riggs's Mahanian understanding of the non-value of speed, the General Board's report suggests an inability to come to grips with battlecruisers in a conceptual sense. Instead of the hybrid role envisioned by the British Committee on Designs, the General Board was unable to see a role for a 12-inch gun ship except in the line, where its superior speed would be irrelevant.

In all fairness, if one conceives of battlecruisers as ships intended primarily to augment the line of battle, they were nearly useless. With their 1910 "Report on Building Program," the General Board asserted exactly that. After four years of silence on the subject of battlecruisers, the Board returned to the subject of battlecruisers in their annual report request for ships. The section on battlecruisers started promisingly enough by describing their development as an offshoot of armored cruisers: "Since 1904, by increasing enormously the size of the armored cruiser it has been possible to make the sacrifice of gun power by reducing the number of main battery guns whilst maintaining their size. Reduction in protection has been made."<sup>131</sup> However, the new ships were

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<sup>130</sup>General Board, Memorandum, October 24, 1906.

<sup>131</sup>General Board, "Report on Building Program," September 28, 1910. General Board Subject File 420-2, NARA Washington, 6-7.

judged by their ability to take the place of a battleship: “[t]he characteristics of this type of vessel therefore preclude their effective use as an integral part of the fighting line.”<sup>132</sup>

Overall, the Board concluded, “we can for the present defer the construction of large armored cruisers whose cost and complement equal that of the battleship, and whose value in war is to some extent, as yet, problematical.”<sup>133</sup>

Despite the gap of four years, the General Board still discussed the battlecruiser in terms of its role in the line of battle, not independent operations or even as a “flying wing” with the main fleet, but out of the line. Again, judged on these merits, the General Board’s opinion was reasonable and, in light of future events, entirely correct. The problem did not lie in the answer, however, but in the question. The battlecruiser was explicitly *not* designed to fit into the battle line, yet that is exactly where the General Board thought of it. Even if Fisher himself conceded that battlecruisers *could* join the line in a pinch, efficacy in major battles is only a part of what makes a ship valuable, yet to the General Board, it was the sole factor in determining the utility of the battlecruiser.

As reaction within the Navy to battlecruisers proves, the shadow of Mahan still lay over naval thought. The debate over the Russo-Japanese War and dreadnoughts challenged Mahan’s technological and tactical expertise, but not his basic system of thought. Mahanian thought, then, was larger than the man himself. While the namesake could not integrate speedier battleships into his worldview, his heirs as naval intellectuals could, seeing the extra speed of dreadnoughts as a bonus in combat, as long the displacement was large enough to avoid reductions in armor and firepower.

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<sup>132</sup>General Board, “Report on Building Program,” 7.

<sup>133</sup>General Board, “Report on Building Program,” 7.

The even greater speed of battlecruisers, however, was not congenial to this system. Battlecruisers matched the increased displacement of battleships, but the extra weight was given over to propulsion, not protection. Battlecruisers were fast, powerful, and markedly superior to any previous cruisers, but their ideal place was not in the line. The General Board, already uneasy with armored cruisers, could certainly not conceive of a useful strategic niche for battlecruisers.

At the Naval War College, amongst the cream of the naval intelligentsia, the battlecruiser was discussed on its own terms, but still not yet welcomed. In 1909, one of the questions considered concerned “fast battleships,” and whether it was better for such ships to have “a powerful battery with limited protection,” or, “a moderate battery with heavy protection.”<sup>134</sup> Echoing Fisher’s original arguments, the panel charged with answering the question concluded that “the value of ships . . . is largely increased when these ships have sufficient speed to place themselves wherever needed in the shortest possible time . . . .A fast battleship squadron is a necessary part of a modern fleet.”<sup>135</sup> However, instead of these fast battleships taking after battlecruisers, the committee suggested instead that “with a given displacement and speed a moderate battery with heavy protection is superior.”<sup>136</sup> Allowing for speed as the primary goal of such a ship, these officers suggested that firepower be sacrificed in the name of protection. Even though the report argued against battlecruisers, the committee couched its arguments in

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<sup>134</sup>Cmdr. J.W. Oman, Cmdr. L.A. Cotton and Cmdr. [William Sims?], “Report of Reconciling Committee on Question 20,” August 12, 1909. William Sowden Sims Papers, Manuscripts Department, Library of Congress, Washington, D.C, Box 19, 1.

<sup>135</sup>Oman, et. al., “Report on Question 20,” 1-2.

<sup>136</sup>Oman, et. al., “Report on Question 20,” 3.

the language of capability, rather than type, a key move away from Mahan's system of thought.

Of even more interest is the minority report, written by Cmdr. C.S. Williams. Although Williams made it clear that if a fast battleship was needed, "an increase in the displacement seems to be the logical and inevitable solution." Given the choice asked in the question, he favored "the ship with a heavy battery and reduced armor," not least because a commander would not feel tempted to plug it into the battle line, where either type would be at a severe disadvantage.<sup>137</sup> Despite his evident unease, Williams went as far as suggesting that the United States build a few battlecruisers "as Great Britain, Germany and Japan already have such vessels it would seem good policy for this country to build a certain number of [battlecruisers]."<sup>138</sup>

Although Williams's argument was unpopular in 1909, the Navy did eventually come around to the idea of battlecruisers, although it was a much more difficult process than the adoption of dreadnoughts. As the majority report, and the General Board's letters demonstrate, American naval culture placed a premium on ships with enough armor to survive in the thick of the melee. Unlike dreadnoughts, battlecruisers were incompatible with pure Mahanian strategic thought. To shift the Navy's leadership in favor of battlecruisers would require a subtle, but nonetheless real, culture shift—no easy task. While American dreadnoughts were built after a relatively short period of empirical and theoretical debate, the long road towards acceptance of battlecruisers would take years,

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<sup>137</sup>Cmdr. C.S. Williams, "Minority Report on Question 20," September 8, 1909. William Sowden Sims Papers, Manuscripts Department, Library of Congress, Washington D.C., Box 19, 3-8.

<sup>138</sup>Williams, "Minority Report on Question 20," 8.

and draw in substantive critiques of Mahanian strategy, theorizing, and the empirical evidence from the first year of the First World War.

## CONCLUSION

By 1910, the contentious debate in the United States surrounding dreadnoughts had been almost forgotten, and the new ships were considered the backbone of the fleet: ten all-big-gun ships were in service or under construction, with more to follow. These ships, however, fulfilled the same role as pre-dreadnought battleships in Mahanian thought. The Navy at large still saw battleships as the ultimate arbiters of naval warfare and discounted the importance of speed in fleet engagements, not to mention the role scouting, screening, and other “lesser” tasks played in warfare. Although the debate was contentious, once debate ended and dreadnoughts were built, they were easily integrated into the prevailing system.

Battlecruisers, however, suggested that the opposition to dreadnoughts did not just stem from a lack of technical knowledge. The navy’s strategic culture left it unable to fully grasp Fisher’s innovations. The critiques leveled by the General Board against battlecruisers betrayed a conceptual lack of understanding. It is clear from looking at the internal British documents, not to mention ships themselves, that battlecruisers were intended to take the place of armored cruisers in the fleet, but the General Board was unable to see them as anything but a type of battleship. It may be true, as many historians have argued, that battlecruisers were a mistake, making the General Board’s decision to reject the type a blessing in disguise. Even if the decision was correct, it was made under false pretenses, highlighting the old thinking at the heart of the Navy.

With the benefit of hindsight, we can decry this lack of intellectual depth, but without keeping strategic culture in mind, we cannot begin to understand it. There are any number of immediate reasons that the General Board would consider battlecruisers to be a subset of battleships, but without the basic understanding that this mode of thought was firmly embedded in the Navy's strategic culture, any analysis remains superficial. Despite his humiliation at the hands of Sims, Mahan's ideas retained a strong pull over the Navy and continues to do so, although this pull was especially strong until the First World War. The only way to explain the influence of Mahan is by understanding the ways in which his ideas formed the basis of the Navy's strategic culture. Mahan did not color Navy culture as usually understood: traditions, patterns of action and so on, but instead he affected the way which the Navy understood war.

Mahan's writings created a set of strategic assumptions that the overwhelming majority of American naval thinkers internalized. Even when arguing against his specific ideas, men like Sims and Fiske showed their intellectual debt to Mahan's system of thought. In turn, these assumptions affected the issues of design and procurement discussed above. Without understanding the influence of Mahan on American thought, the decisions and debates of the early twentieth century are impossible to properly analyze.

During the first decade of the twentieth century, the Navy was in the midst of a furious expansion, and most historians deal with the period by analyzing that buildup and its expression in the "Great White Fleet" voyage. As this thesis has shown, however, this impression of a single-minded focus on building ships ignores the flux at the heart of the period. Even if acceptance of battlecruisers had to wait until the next decade, the shift

from pre-dreadnoughts to dreadnoughts was far more contentious than the traditional literature would allow. It took some acceptance of new thinking to understand the importance of the *Dreadnought*, and that acceptance did not come overnight.

The experience of the U.S. Navy in this period highlights the importance of strategic culture in exploring military institutions. In a purely analytical sense, the approach allows us to understand the Navy's hesitance to build dreadnoughts, and even greater resistance to battlecruisers, both otherwise baffling decisions. More importantly, it provides the best framework for studying military institutions in the absence of warfare. We cannot know for sure how the Navy would have fared in a war in the early twentieth century, but we can understand how the Navy *envisioned* war, and it paints a somewhat sobering picture. The sort of war the Navy was preparing for was a thing of the past, and the state of naval thought in the U.S. reflected that. Mahan may have helped drag the Navy into the modern era in the 1890s, but by 1910, his ideas were a brake on progress.

## **BIBLIOGRAPHY**

### **Archival Sources**

#### **Manuscripts Department, Library of Congress, Washington, D.C.**

George Dewey Papers

Stephen B. Luce Papers

Alfred Thayer Mahan Papers

William Sowden Sims Papers

#### **National Archives and Records Administration, Washington, D.C.**

“Letters, Reports and Other Communications Sent by the Naval Attaché in London,”  
compiled 04/04/1889-09/22/1914. Entry 278, Record Group 45.

“Office of the Secretary of the Navy, General Correspondence. RG 80.2.1.

“General Board Subject Files 1900-1947.” Entry 281, RG 80.

File 418

File 420

File 420-2

File 420-6

File 425

File 428

File 434

“General Board of the Navy; War Portfolios, 1902-1923.” Entry 289, RG 80.

The Josephus Daniels Papers, 1863-1947. Collection # 00203. Southern Historical Collection, Louis Round Wilson Special Collections Library, University of North Carolina at Chapel Hill

### Other Primary Sources

Corbett, Julian. *Maritime Operations in the Russo-Japanese War, 1904-5, Volume II*. Annapolis, MD; Naval Institute Press, 1994.

*Annual Reports of the Navy Department* and other assorted reports. Washington, D.C.: Government Printing Office, 1914-16.

Daniels, Josephus. *The Cabinet Diaries of Josephus Daniels*, ed. E. David Cronon. Lincoln, NE: University of Nebraska Press, 1963.

Kemp, P.K. *The Papers of Admiral Sir John Fisher*. London: Navy Records Society, 1964

Mahan, Alfred Thayer. *The Interest of America in Sea Power, Past, Present and Future*. Boston: Little, Brown, 1917, first printing 1897.

——— *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*. Edited by Robert Seager II and Doris D. Maguire. Annapolis, MD: Naval Institute Press, 1975.

——— *The Influence of Sea Power upon History, 1660-1783*. Boston: Little, Brown, 1890.

——— *Naval Strategy*. Westport, CT: Greenwood Press, 1975. Reprint of 1911 edition.

——— *The Problem of Asia and its Effect upon International Policies*. London: Sampson Low, Marston, 1900.

*Proceedings and Hearings of the General Board of the U.S. Navy, 1900-1950*. Washington, D.C.: National Archives Microfilm Publications, 1987.

“War Plan Black, July 1915.” In *Strategic Planning in the U.S. Navy: Its Evolution and Execution, 1891-1945*. Wilmington, DE: Scholarly Resources, 1977.

*The Navy League Journal*. New York: The League Publication Company, 1905-6.

*The Navy*. Washington, D.C.: The Navy Publishing Company, 1907-15.

*Proceedings of the United States Naval Institute*. Annapolis, MD: United States Naval Institute 1903-16.

### Secondary Sources

Andrade, Ernest. "The Battle Cruiser in the United States Navy." *Military Affairs*, Volume 44, No. 1 (February, 1980).

Besch, Michael D. *A Navy Second to None: The History of U.S. Naval Training in World War I*. Westport, CT: Greenwood Press, 2002.

Braisted, William Reynolds. *The United States Navy in the Pacific, 1897-1909*. Austin, TX: University of Texas Press, 1958.

———. *The United States Navy in the Pacific, 1909-1922*. Austin, TX: University of Texas Press, 1971.

Bradford, James C., ed. *Admirals of the New Steel Navy: Makers of the American Naval Tradition, 1880-1930*. Annapolis, MD: Naval Institute Press, 1990.

Breyer, Siegfried. *Battleships and Battle Cruisers, 1905-1970*, trans. Alfred Kurti. Garden City, NY: Doubleday and Company, 1973.

Clinard, Outten Jones. *Japan's Influence on American Naval Power, 1897-1917*. Berkeley and Los Angeles: University of California Press, 1947.

Coletta, Paolo E. *Admiral Bradley A. Fiske and the American Navy*. Lawrence: The Regents Press of Kansas, 1979.

Cooling, Benjamin Franklin. *Gray Steel and Blue Water Navy: The Formative Years of America's Military Industrial Complex, 1881-1917*. Hamden CT: Archon Books, 1979.

Corbett, Julian. *Naval Operations: Volume I, To the Battle of the Falklands, December 1914*. London: Longmans, Green & Co., 1920.

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

Goldrick, James, "The Problems of Modern Naval History." In *Doing Naval History: Essays Towards Improvement*. Hattendorf, John B., ed. Newport, RI: Naval War College Press, 1995, 11-24.

Goldrick James and Hattendorf, John B., eds. *Mahan is not Enough: The Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond*. Newport, RI: Naval War College Press, 1993.

- Hackemer, Kurt. *The U.S. Navy and the Origins of the Military-Industrial Complex, 1847-1883*. Annapolis, MD: Naval Institute Press, 2001.
- Hagan, Kenneth J. "The Apotheosis of Mahan: American Naval Strategy, 1889-1922." In *Navies and Global Defense: Theories and Strategy*, eds. Keith Neilson and Elizabeth Jane Errington. Westport, CT: Praegar, 1995, 93-116.
- *This People's Navy: The Making of American Sea Power*. New York: Macmillan, 1991.
- Harris, Brayton. *The Age of the Battleship, 1890-1922*. New York: Franklin Watts, 1965.
- Hattendorf, John B. *The Influence of History on Mahan: The Proceedings of a Conference Marking the Centenary of Alfred Thayer Mahan's The Influence of Sea Power Upon History, 1660-1783*. Newport, RI: Naval Institute Press, 1991.
- Hattendorf, John B. and Jordan, Robert S., eds. *Maritime Strategy and the Balance of Power: Britain and America in the Twentieth Century*. New York: St. Martin's Press, 1989.
- Hone, Thomas C. and Trent. *Battle Line The United States Navy, 1919-1939*. Annapolis, MD: Naval Institute Press, 2006.
- Jane, Fred T. *Heresies of Sea Power*. London: Longmans, Green & Co., 1906.
- Jones, Jerry W. *U.S. Battleship Operations in World War I*. Annapolis, MD: Naval Institute Press, 1998.
- Knox, Captain Dudley W. *The Eclipse of American Sea Power*. New York: American Army & Navy Journal, 1922.
- *A History of the United States Navy*. New York: G.P. Putnam's Sons, 1948. (1948)
- Kraft, Herman F. and Norris, Walter B. *Sea Power in American History*. New York: Century, 1920.
- Klachko, Mary and Trask, David. *Admiral William Shepherd Benson: First Chief of Naval Operations*. Annapolis, MD: Naval Institute Press, 1987.
- Lambert, Nicholas A. *Sir John Fisher's Naval Revolution*. Columbia: University of South Carolina Press, 1999.
- Livezy, William. *Mahan on Sea Power*. Norman, OK; University of Oklahoma Press, 1947.

Marder, Arthur. *From the Dreadnought to Scapa Flow: The Royal Navy in the Fisher Era, 1904-1919*. Oxford: Oxford University Press, 1961-78 (five volumes).

McBride, William. *Technological Change and the United States Navy, 1865-1945*. Baltimore: Johns Hopkins University Press, 2000.

Mitchell, Donald W. *History of the Modern American Navy From 1883 Through Pearl Harbor*. New York: Knopf, 1946.

Morison, Elting E. *Admiral Sims and the Modern American Navy*. Boston: Houghton Mifflin, 1942.

O'Connell, Robert. *Sacred Vessels: The Cult of the Battleship and the Rise of the U.S. Navy*. Boulder, CO: Westview Press, 1991.

Padfield, Peter. *Aim Straight: A Biography of Admiral Sir Percy Scott*. London: Hodder and Stoughton Limited, 1966.

Spector, Ronald. *Admiral of the New Empire: The Life and Career of George Dewey*. Baton Rouge: Louisiana State University Press, 1974.

——— *Professors of War: The Naval War College and the Development of the Naval Profession*. Newport, RI: Naval War College Press, 1977.

——— *At War, at Sea: Sailors and Naval Warfare in the Twentieth Century*. New York: Viking, 2001.

Sprout, Harold and Margaret. *The Rise of American Naval Power, 1776-1918*. Princeton, NJ: Princeton University Press, 1944.

Still Jr., William N. *Crisis at Sea: The United States Navy in European Waters in World War I*. Gainesville, FL: University Press of Florida, 2006.

Sumida, Jon Tesutro. *In Defence of Naval Supremacy*. Boston; Unwin Hyman, 1989.

——— *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*. Washington, D.C. and Baltimore: The Woodrow Wilson Center Press and the Johns Hopkins University Press, 1997.

Sumida, Jon Testuro and Rosenberg, David Alan, "Machines, Men, Manufacturing, Management and Money: The Study of Navies as Complex Organizations and the Transformation of Twentieth Century Naval History." In *Doing Naval History: Essays Towards Improvement*. Hattendorf, John B., ed. Newport, RI: Naval War College Press, 1995, 25-40.