

The Blockade Board of 1861 and Union naval strategy

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Only days after the first rebel shells crashed into Fort Sumter to begin the bloodiest war in American history, President Abraham Lincoln issued a document that would establish the basis for the first element of Union naval strategy--the Proclamation of Blockade.

Essentially a de facto declaration of war against the Confederacy, the proclamation declared that "a competent force will be posted so as to prevent entrance and exit of vessels" from the ports of the states in rebellion. (1) During these early days of the war, it seemed clear to many that the president's first major war measure could reap great dividends. Capt. Samuel F. Du Pont, then commandant of the Philadelphia Navy Yard, declared, "I am anxious for the blockade to get established; that will squeeze the South more than anything." (2) The magnitude of the Union navy's challenge, however, was enormous. The start of the war saw the navy, like the army, totally unprepared for the task at hand. Of the navy's forty-two ships in service in April 1861, Secretary Gideon Welles had but twelve to call upon to enforce the blockade of a coastline stretching 3,500 miles; the remaining ships were either in ordinary (maintenance or overhaul) or in overseas squadrons. In addition, many of these ships were steam frigates: a class of ship too large, too slow and with too deep a draft for effective blockade duty. It was obvious to everyone in Washington that the existing navy was unequal to the task of effective blockade. Welles faced not only inadequate resources and the task of rapidly building a large, modern navy, but also the need to develop an organizational structure to effectively command and control the blockade. (3)

To solve these and other problems related to the blockade, the navy established a Blockade Board. (4) Naval historians and historians of the Civil War have ascribed varying degrees of significance to the board and its work. Most believe the board was important but largely have ignored the strategic aspects of the naval war. As Gary Gallagher has observed: "Beyond perfunctory considerations of Winfield Scott's Anaconda Plan, most discussions of northern strategy virtually ignore its naval component," and because there is no comprehensive, modern naval history of the war, "no historian has written a specialized study about Union strategists and the navy." (5) While several historians recognize that the board played an important role in the conduct of the blockade and its related military and naval operations, few have carefully examined the significance of the board's origins and membership to discover the individual agendas of the participants. This study remedies that omission by evaluating the origins of the board and context of its formation, its composition and operations, and its strategic legacy. (6)

The Blockade Board's importance was not as a joint staff or as a group that planned only naval operations, but rather as an early and largely successful attempt by the U.S. Navy to produce a military (naval) strategy that was coordinated fully with national strategy and government policies. Although some might argue that Gen. Winfield Scott's planning for the Vera Cruz and Mexico City campaigns predated the work of the Blockade Board in formal strategic planning, the board's work was much more comprehensive and lasting. While its early promise was never realized fully, the board created a roadmap for the Union navy to conduct a major portion of its early strategic responsibilities and stood as the role model for later naval boards and commissions. (7)

The effectiveness of the blockade was a sore topic for both the Navy Department and the State Department. By international law, the nation initiating a blockade had to proclaim and enforce it. At a minimum, the blockading nation had to sustain a permanent force for constant patrol of the enemy coastline and ports. The Confederacy vigorously argued that the blockade was not effective and that Lincoln's proclamation violated neutral rights of their primary trading partners, but it failed to persuade Great Britain, which officially recognized the blockade in February 1862. (8) The task of maintaining an effective blockade would prove to be a difficult, but not impossible, undertaking. As naval experts later observed, an effective and legal operation required only a blockade of ports and not the entire coast.

With Lincoln's proclamation, Welles and Gustavus V. Fox, chief clerk of the Navy Department and later assistant secretary of the navy, took immediate steps to deploy an adequate force to patrol the southern coast. First, Welles recalled most of the overseas squadrons: three ships from the Mediterranean, seven ships from the anti-slave trade patrol off the African coast, two vessels from the coast of Brazil, and three men of war from the Far East. By June 1861, all but three ships (the Saratoga off the coast of Africa, the Pulaski off Brazil, and the Saginaw in the East Indies) had returned to augment the blockading squadrons, were enroute to the United States, or remained in maintenance or ordinary. (9)

The next step was to procure ships as rapidly as possible to augment the blockading force. Welles and Fox issued orders to commandants of various naval yards to lease suitable vessels. (10) An example is the following note to Du Pont, commandant of the Philadelphia Navy Yard, two days after the initial blockade proclamation: "By order of the President of the United States, you will forthwith procure five staunch steamers of from ten to twelve feet draft, having particular reference to strength and speed and capable of carrying a 9-inch pivot gun." Welles was clearly sanguine about the length of the war when he concluded his message to the commandants with the optimistic directive

that the captains should charter the ships for a period of "three months, on the best terms available." (11)

Of course, the key to an effective blockade was not merely the number of ships assigned to duty: Welles's note to his commandants makes it clear that the type of ship was also critical. Naval authorities recognized early that the most effective blockade-runner would be a small, shallow drafted, and fast vessel. It followed then that the best weapon for catching such a craft was a small, lightly armed, shallow drafted, fast, and maneuverable ship. Not only did Welles and Fox direct their officers to purchase and lease ships for use on the blockade, but they also sought to acquire ships from other governmental agencies. One of these agencies was the U.S. Coastal Survey. As early as May 1, Welles accepted the offer of the Coast Survey to transfer three research and survey vessels to the Navy Department "for use in the present emergency." (12) Coastal Survey ships routinely conducted their investigations in shallow, inland waters and were thus suitable for blockade duty. Welles would take advantage of this source for many months to come.

Welles initially confronted the problem of command and control of the blockade by dividing the responsibility between two squadrons, the Coast (later the Atlantic) and Gulf Blockading Squadrons. The former's area of operations ranged from Alexandria, Virginia, to Key West, Florida. The latter's responsibility extended from Key West to the Mexican border. (13) The commanders of these squadrons faced challenges that merely enlarging the fleet could not completely solve. To begin with, they had limited local knowledge of coasts, inlets, harbors, river systems, ports, tides, and water depth. Their quarry usually labored under no such handicaps. Second, the commanders quickly recognized that in order to work effectively, they had to establish bases for refueling and reprovisioning. Initially, the blockading squadrons had but two widely separated bases of operations available: Hampton Roads, Virginia, and Key West. As historian James McPherson has observed, "Some ships spent nearly as much time going to and from these bases for supply and repair as they did on blockade duty." (14) Thus, the U.S. Navy faced the strategic problem that confronts most military forces, especially early in a conflict, the tyranny of logistics. Clearly, the navy would have to establish additional, more convenient bases.

Finally, commanders faced a span of control that made it nearly impossible for them to adequately command and communicate with their scattered, overextended forces. The commander of the Atlantic Blockading Squadron, Flag Officer Silas Horton Stringham, initially believed that a mere fifteen ships would be sufficient for him to enforce an effective blockade. The daunting task of shutting down maritime commerce over one thousand miles of coastline, combined with his inability to properly coordinate his forces, caused Stringham to reassess his initially optimistic estimate of the situation. (15)

Meeting the problems of local knowledge, command and control, and logistics would become a central purpose of the Blockade Board. Unfortunately for the Union, in the early days of the war Welles and his small force of assistants and clerks were simply too overwhelmed with the "trees" of details, to see the "forest" of strategic challenges that had to be surmounted if the blockade were to achieve its purpose. Welles personally addressed issues such as promotions, resignations, leaves, recruiting, procurement of equipment, as well as naval operations against the Confederacy. With breathtaking understatement, Welles declared to his wife that "The rebellion has given me labor and trouble and will make more." (16) Indeed, in April and May 1861, in an attempt to provide better information on local conditions to blockading squadrons, Welles and Fox almost daily personally requested copies of charts and maps from the superintendent of the Coastal Survey, Alexander D. Bache. Bache provided charts of the Chesapeake and Delaware Bays the Potomac River area, and other information including sources of fresh water in the Gulf Coast region. (17) The haphazard nature of these requests and Bache's vigorous support of Union military efforts would lead serendipitously to the formation of the Blockade Board.

Alexander D. Bache was a frightened man in early 1861. He viewed the national crisis as a direct threat not only to the Union, but also to the existence of the Coastal Survey, an organization he had led for almost twenty years. The political dislocation of secession and the loss of access to thousands of miles of coastline jeopardized the future of the organization--no coast, no Coastal Survey. Bache revealed his fears in a letter to a friend as early as January 1861 when he lamented that "the terrible disruption of our country ... will sweep our organization away entirely, or sadly cripple it." (18) In this respect, Bache was no different from any other government bureaucrat; he was determined to protect his agency from any threat by proving that it was indispensable.

The Coastal Survey, although technically a temporary governmental agency (after all, sooner or later the entire coast would be surveyed despite the ever-changing channels and coastlines) under the aegis of the Treasury Department, had flourished under Bache's energetic guidance. The actual task of the Coastal Survey was to gather information to aid the navigator. During his tenure as superintendent, however, Bache interpreted his mission much more broadly and explored other scientific pursuits. Indeed, Bache's Coastal Survey investigated tides, astronomy, magnetism, measurements of the Gulf Stream, the use of telegraphy to determine longitude, and standards of weights and measures in addition to geodetic surveys. Despite the wide-ranging activities of the Survey and its international reputation for outstanding scientific accomplishments, Bache could wrest only paltry appropriations from Congress; thus he relied heavily on the temporary assignment of army engineers and naval officers to augment his own scientists and surveyors. Bache also skillfully cultivated cordial relationships with important legislators and members of the

executive branch. His connections with talented military officers and legislators, and his repute as both a scientist and government bureaucrat, would help ensure not only the survival but also the prosperity of the Coastal Survey during and after the Civil War. (19)

In May 1861, however, Gideon Welles and Gustavus Fox were overcome with details. The blockading squadrons were poorly organized, inefficient, ineffective, and ignorant of basic information, and the superintendent of the Coastal Survey feared for the very existence of his agency while being inundated with requests for information. It was within this context that Bache first conceived the idea for the Blockade Board.

Unfortunately for historians, nothing in the papers of Bache, Welles, or Fox or the official correspondence of the Navy Department or the Coastal Survey indicates precisely how Bache first presented his idea for a Blockade Board. However, by May 22, 1861, the plan was sufficiently advanced for Fox to write to Capt. Samuel F. Du Pont: "It is proposed to have a board of persons, say General Totten, Professor Bache, and Captain Du Pont, meet here and condense all the vast information in the Engineers Department, Coast Survey, and Navy, for the use of the blockading squadron. Professor Bache suggested it in answer to the numerous inquiries I have made of him. The Secretary is willing and in talking the matter over with Commodore [Linus] Paulding, I suggested your name.... Will you give up the [Philadelphia Navy] Yard and come with us to the bitter end?" (20)

Fox's letter is the first evidence of the proposed board. Bache was a close friend and professional colleague of both Brig. Gen. Joseph G. Totten, chief of engineers, U.S. Army, and Du Pont; therefore, it was probably Bache and not Fox who recommended the composition of the board. (21) The timing of this letter also makes sense: the number of requests for information to the Coastal Survey reached their zenith in May, overwhelming Bache and his meager organization. Any attempt to streamline and consolidate all of the critical information for the Navy would be welcome. In addition, the formation of a Board composed of such eminent men as Totten and Du Pont, and which was supported and sponsored by Secretary Welles himself, could go a long way toward ensuring the continued importance of the Coastal Survey.

Du Pont's reply to Fox does not exist, but in a letter to his old friend several days later, Du Pont enthusiastically endorsed Bache's idea. "Last week I thought such an event [Du Pont coming down from Philadelphia to Washington] not improbable from what Mr. Fox had written, that there was some talk of a blockade board suggested by you and which I told Mr. Fox I would be ready to serve on at any moment, and that moreover I deemed the suggestion a most important one ... it is greatly wanted and I flatter myself that you and General Totten with my very small aid could turn out something that would be of

infinite value." (22) Clearly, the creation of such a board appealed to Du Pont, who had strong ideas about how to manage a blockade. Du Pont wrote his friend Henry Winter Davis the next day that "I replied to Mr. Fox (who asked me what I thought of it) that I deemed it one of the wisest suggestions that could be made on the subject.... There should be no bungling about this blockade, and there is some just now." (23)

Bache divulged his plans for the board to his friend, Commander Charles Henry Davis, a future member of the Board who was stationed in Washington, D.C. On May 22 (the same day Fox wrote to Du Pont), Davis wrote to his wife that Bache "wishes to establish a military commission, or advisory council, to determine military proceedings and operations along the coast. The coast survey is to furnish the requisite information of the hydrographical and topographical nature. I am to be junior member and secretary of this board.... General Totten is to be the military member of this commission. I have only arrived at a full understanding of this plan this morning. Fox, the chief clerk of the Navy Department, has already been brought into the scheme of the commission--how much farther he had gone, or been advised, in respect to Bache's plans, I do not exactly know. (24) The body that Davis described is considerably wider in scope than what Fox portrayed to Du Pont. Davis suggested that Bache wanted the board to plan military operations and not merely act as a clearinghouse for information. In other words, Bache's vision for the board included strategic planning.

Bache's reasons for forming the board may not have been obvious to Fox or Welles, but his friends were more perceptive. Davis shrewdly observed on June 14 that Bache had found a way to protect the survey by merging it with an important strategic goal of the war. "Bache's ingenuity," wrote Davis, "had been exercised in discovering methods of making the coast survey cooperative in the great movement of the day. The new commission I have already spoke of [the blockade board]; in addition to this, he has made special surveys, made and distributed maps of the seat of war, and, above all, he has managed so as to have calls made on his office for reconnaissance." (25) Du Pont shared Davis's opinion of Bache's motives and noted after the board's first meeting that "[the board] has been instigated by Professor Bache to bring forward the Coast Survey element" and it "is mainly got up to give notoriety to the Coast Survey." (26)

Although he proposed the Blockade Board to highlight the contributions of the Coast Survey, it would be a mistake to assume that his purpose was merely selfish. Bache was a committed public servant who devoted his life to scientific exploration in support of his country. Still, he also knew that the navy had routinely used ad hoc boards and commissions to address substantial and difficult issues, and there was nothing more important or challenging at this

point in the war than the prosecution of the blockade. Although his major object was probably to further the interests of the Coastal Survey, he also desperately wanted to contribute to the war effort. Bache wrote, "This War has ... interest[ed] me to such an extent that I would rather die than not do all that opportunity gives me to do & that my education makes me feel that I can do." (27) The Blockade Board would enable Bache to achieve that goal.

Was it Fox or Welles who first recognized the merit of Bache's idea? Historians have argued for years over who was really in charge of the Navy Department during the Civil War. Many have suggested that the real power behind the throne was Gustavus Fox. Du Pont certainly thought so when he stated to his wife that "Mr. Fox ... is the Secretary and well it is." (28) James M. Merrill, a Du Pont biographer, has argued that it was Fox who first approached Bache, that Fox was actually a member of the board, and that it was Fox who was responsible for most of its results. There is absolutely no evidence for this; Fox was never a member of the board. Indeed, Fox himself verified that Bache first raised the idea to the Navy Department. Three years later, Welles would confirm this in his diary when he wrote, "The blockade, requiring a close and minute hydrographical knowledge of the coast, brought me into contact with Mr. Bache of the Coast Survey. Mr. Bache ... intimated, not exactly proposed, a board to take up the subject.... It struck me favorably." (29) Welles's biographer, John Niven, has argued persuasively that Welles was firmly in control of the Navy Department and that he simply recognized and employed the talents of his more flamboyant and publicity-seeking subordinate. This historical debate is beyond the scope of this paper, but while the board was the brainchild of Bache, Welles must receive the lion's share of the credit for having the vision to sanction the board officially and for acting on its recommendations.

Du Pont remained at his post in Philadelphia until June 20, when he finally received orders to report to Washington to chair the board. Because Totten's duties prevented him from participating, Secretary of War Simon Cameron nominated Maj. John G. Barnard, engineer in charge of the defenses of Washington, as the Corps of Engineer's representative. Welles designated Davis, no stranger to naval boards in the pre-war period, as secretary. Finally, Bache himself rounded out the board's membership. Although the board's composition bears Bache's fingerprints--every member was his friend or professional acquaintance--Welles could not have appointed a more competent group. (30)

At the start of the Civil War, Du Pont was perhaps the nation's most experienced, distinguished, and well-respected naval officer. A member of the famous gunpowder manufacturing family of Delaware, Du Pont entered the navy as a midshipman in 1817 and served in positions of increasing responsibility culminating in his assignment as commandant of the Philadelphia Navy Yard in December 1860. His experiences and personality suited him

perfectly for the chairmanship of the Blockade Board. Spending much of his career at sea, Du Pont was familiar with the logistical challenges facing the blockading squadrons. He was also a highly experienced blockader, having commanded the U.S.S. Cyane in the Pacific during the Mexican War. Du Pont recalled in a letter to Bache: "In the Mexican War I probably blockaded more than any one officer in the Navy--and was involved in more correspondence, naval and civil, foreign and diplomatic, than you could conceive, and there learned how valuable this suggestion [Bache's proposal for the board] of yours is." His experience had taught him what difficulties the board faced. "Then too," he added, "I see bungling, and the ideas are crude everywhere: the people are talking of two thousand miles of coast, etc. We have to cover the ports of entry--that is all the foreign interest has to require; all between these ports, of course will have to be looked to, but this is our business; the law of the nations require only the former." (31) Two days before he [author: please verify this is Du Point] arrived in Washington, Du Pont reminded a friend that "during the Mexican War I had two hard years' work at it [blockading duty], with endless correspondence with naval and diplomatic functionaries, for I established the first blockade on the western coast." (32)

Du Pont was also a veteran administrator, having served on the influential Lighthouse and Efficiency Boards in the 1850s. His outspoken denunciation of and impatience with superannuated naval officers found an outlet with his participation on the controversial Efficiency Board in 1855. By retiring officers unfit for active service, this group attempted to revolutionize the navy's traditional system of promotion. Du Pont's reputation prompted the War Department to request his thoughts on the state of America's coastal defenses after the Mexican War. His experiences in that war led him to write the thoughtful pamphlet, Report on the National Defences in 1851, which the secretary of war enthusiastically lauded. In it, Du Pont declared that the mission of the Navy was to "carry the `sword of the state' upon the broad ocean ... in other words, to contend for mastery of the seas." Although historians have ignored the paper, it was not until Alfred Thayer Mahan's influential work on seapower and naval strategy appeared at the end of the nineteenth century that anyone wrote a strategic analysis that compared with Du Pont's report. The combined effects of these experiences had produced an officer uniquely qualified for the chairmanship of the Blockade Board. (33)

Du Pont was fortunate that his fellow members were equally capable. Bache on the eve of the Civil War was one of America's most famous scientists and educators. A great-grandson of Benjamin Franklin and a graduate of West Point, Bache had developed an international reputation and, as we have seen, ably led the Coastal Survey to prominence. A military engineer, professor at the University of Pennsylvania, founder of the National Academy of Sciences, and friend as well as peer of the preeminent scientific minds of the day, including Joseph Henry, B. A. Gould, and Louis Agassiz, Bache more than

anyone else saw the importance of science to the public good. Writing in 1970, Nathan Reingold observed that Bache was "perhaps the most important single person in the evolution of the government's policy toward science and technology in the past century." (34) Bache, like Du Pont, was no stranger to naval boards; he served on the Lighthouse Board and several other ad hoc bodies to report on new and promising technology to the secretary of the navy during the Civil War. Despite his status as the only civilian on the Blockade Board, Bache's contributions proved indispensable. (35)

One of Bache's closest friends was Charles Henry Davis, who was a prominent astronomer. Davis left his studies at Harvard to join the navy as a midshipman in 1817. He served on detached duty with the Coastal Survey in the 1850s and on various boards with Bache. As an acknowledged scientific expert, Davis acted as the head of the Naval Almanac in Cambridge, Massachusetts. The Almanac, an agency related to but separate from the Naval Observatory, produced navigational and astronomical tables. He was also a life-long friend of Du Pont, who called him "a remarkable clever talker," with "great personal influence over those he is associated with." The commander wrote to his wife that the board gave him the opportunity to "revive my pleasant old companionship with Du Pont." Davis began the war assigned to the Bureau of Detail, a staff job that he did not enjoy: "I don't like the duty, and am not particularly suited for it." What he really wanted was to become head of the Naval Observatory, a position he would ultimately obtain. Du Pont firmly believed that Davis should head the observatory; in a letter he questioned Bache, "Can there be any doubt of Charles Davis getting the Observatory eventually?" Although Davis had some seagoing experience, his selection for membership on the board had more to do with his friendship with Bache and Du Pont, his knowledge of the coasts, his scientific expertise, and his accessibility in the capital. (36)

The junior member of the Blockade Board was another West Pointer, Maj. John G. Barnard. Described by Du Pont as "deaf as a post," Barnard had graduated from West Point in 1833 and spent the next twenty-eight years in the Corps of Engineers. Before the war, he had distinguished himself as an expert on the construction of coastal defenses and harbor improvements, and as superintendent of the U.S. Military Academy. Barnard wrote extensively on scientific and engineering subjects throughout his career; because of these writings and his work on coastal defenses, he naturally became familiar with Bache. The two men renewed and strengthened their acquaintance in the early weeks of the war when Barnard was placed in charge of constructing the defenses around Washington. Bache cooperated closely with Barnard in this project; thus, Barnard was an obvious choice for inclusion on the Board when Totten could not participate. Although exceptionally qualified for assignment by virtue of his work on coastal defenses, Barnard was not, as some historians

claim, the army representative to a "joint staff," nor was he the personal emissary of Maj. Gen. George B. McClellan. Barnard was an expert on coastal topography, and he was available when Totten was too busy. Barnard's personality, intelligence, and obvious competency allowed him to fit easily into the already close-knit group of Du Pont, Bache, and Davis. (37)

With the membership of the Blockade Board established, the members had but a vague notion of their mission. On June 25, however, Welles provided Du Pont with detailed direction to guide their deliberations. The directive described duties that were much more wide-ranging than those first envisioned by Bache: The Navy Department is desirous to condense all the information in the archives of the Government which may be considered useful to the Blockading Squadrons; and the Board are therefore requested to prepare such matters as in their judgement may seem necessary: first, extending from the Chesapeake to Key West; second, from Key West to the extreme Southern point of Texas. It is imperative that two or more points should be taken possession of on the Atlantic Coast, and Fernandina and Port Royal are spoken of. Perhaps others will occur to the board. All facts bearing on such a contemplated movement are desired at an early moment. Subsequently, similar points in the Gulf of Mexico will be considered. It is also very desirable that the practicability of closing all the Southern ports by mechanical means should be fully discussed and reported upon. (38)

In this order, Welles expanded the original scope of the board as described by Fox in his first letter to Du Pont in May. Not only was the board to gather all pertinent information that might prove "useful" to the blockade, Welles also wanted its members to plan the seizure of two additional bases of operations on the Atlantic Coast, and later others on the Gulf Coast. Therefore, the board was to address two of the key challenges facing the squadrons: lack of local information and the capture of additional bases to ease their logistical burden. Welles took the order one step further with his instruction to examine the "practicability of closing all the Southern ports by mechanical means." In effect, this charged the men with exploring the possibility of blocking channels with sunken vessels as an economy-of-force measure to reduce the number of inlets covered by the blockading squadrons.

The board met for the first time on June 27 in Bache's office at the Smithsonian castle. Davis, in the minutes, wrote that Du Pont read--and the board discussed--its directive. Although the minutes do not elaborate, Du Pont described the board's first meeting in a letter to his wife. (39) He noted that Welles's order did "not cover the whole ground of the question, though it sets forth the two most important points in it: the selection of two ports, one in South Carolina, another in the confines of Georgia and Florida (Atlantic coast) for coal deposits; these will have to be taken and five to ten thousand men landed, to fortify and entrench." He stressed that it seemed "impossible to

supply the blockading fleet without these depots. (40) Then board, therefore, began to lay the groundwork for operational and strategic directions for the blockade and future joint operations with the army.

The board began its work in earnest after the first organizational meeting. Because Du Pont was the only member with no additional duties in Washington, the board was forced to arrange its meetings around the schedules of Bache, Davis, and Barnard. Convening early in the morning, the men frequently worked until midnight several days a week from late June until early September 1861. "All `days are `working' days here now," Du Pont reported to this wife on Independence Day. The board produced six major reports and four supplementary reports--or memoirs--as recommended by Bache. After Bache provided the maps, charts and other geographical data for the reports, members freely discussed each major topic of the day's meeting. Although they reveal little detail, Davis's sparse minutes show that Du Pont's penchant for stern discipline affected the deliberations. The board stuck to one major topic per meeting, and members were encouraged to submit relevant material and opinions in writing. Although they labored under the steely gaze of Du Pont as chairman, the members quickly bonded into a tight-knit group that routinely dined and socialized together. (41)

An undated and unsigned outline titled "Memoir of Topics" provides an indication of the thoughts and discussion of board members. Found in a collection in the National Archives, the memorandum lays out most of the criteria--many of them beyond Welles's directive--that board members believed necessary to address for the Union to achieve an effective blockade. The outline includes such subjects as: Atlantic; Gulf; places to be blockaded; how to be blockaded; water depots; coal depots; operations in rivers; harbors of refuge; naval and military considerations of a blockade; what is an effective blockade; law of nations; defenses; and related topics. The board addressed most of these with the notable exception of the legal requirements for an effective blockade. It is surprising that the members crossed out and did not address one elementary topic on the outline: what force of vessels (number and kind) would be required for the blockade. Members may have known what forces would be available to the blockading squadrons into the fall of 1861, but this was a fundamental oversight by the board. Although not directly mentioned by Welles's directive, the determination of required forces was a fundamental strategic requirement. Essentially, the board began their deliberations by preparing what a military officer today would call an estimate of the situation.

We will never know who deleted the topic or why--although it must have been approved by Du Pont--but the board missed an excellent opportunity to provide the secretary with vital recommendations on the number and type of ships that would be required to make the blockade work. Many of the reports addressed

troop requirements for taking and holding various bases, but there were few shipping recommendations. Because Lincoln approved every one of the board's reports, such a recommendation by Du Pont could have given Welles additional justification to rapidly expand the Navy and thus improve the blockade. Even if Du Pont and the board knew the makeup of the available forces, they should have made suggestions for the composition of the various blockading fleets based on the navigational challenges and enemy forces they might be expected to face. This was one of the board's few failures. (42)

The board's first two reports to Welles on July 5 and 13 got right to the point by confirming the need for extra bases. "It seems to be indispensable that there should exist a convenient coal depot on the southern extremity of the line of Atlantic blockades ... [and it] might be used not only as a coal depot for coal, but as a depot for provisions and common stores, as a harbor of refuge, and as a general rendezvous, or headquarters, for that part of the coast." The best southern base, the board determined, was Fernandina, Florida. As was the case in subsequent reports, the bulk of the first memoir included exhaustive and detailed geographical data on the harbor, its approaches, water depths, tides, availability of fresh water, and key transportation facilities such as railroad links.

The second advisory addressed the need for a second base farther to the north. Concentrating on the South Carolina coast, the board studied three potential sites: Port Royal Sound, Bull's Bay, and Saint Helena Sound. It drew heavily on Major Barnard's expertise (on July 3, Barnard had presented a lengthy memorandum on relevant coastal defenses) to scrutinize the current defenses of likely bases and the suitability for additional fortifications. In other words, the board's criteria (many of which can be found in the "topic memoir") for a suitable base included easy approaches, surmountable defenses, fresh water, anchorages, shelter, shore-based facilities, and the ability of an occupying force to hold the base. (43)

After addressing logistical concerns, the board moved to enhance and streamline the command, control, and organization of the blockade. Two days before the Union debacle at the First Battle of Bull Run, the board submitted its third memoir, followed ten days later with number four. Of its several recommendations, one had a profound impact on the blockade. The group proposed that the blockade "be divided into two sections, one of which will extend from Cape Henry to Cape Romain, about 370 miles, and the other from Cape Romain to St. Augustine, about 220 miles." The third and fourth reports described the conditions along both sections of coastline: the northern portion had fewer and less tortuous inlets and was thus more easily blockaded; the southern section, although shorter, was much more difficult to cover. In other words, the board recommended that the current Atlantic Blockading Squadron be broken into two separate and independent squadrons. The members argued

that "if this plan is adopted ... the commander in chief [of each squadron] while at sea within the limits of his command could, so short is the distance, communicate with the whole line of his blockading squadron, either in person or by his tender, every day, or every two days during ordinary weather." Here the board addressed the issue of the commander's span of control and his ability to effectively communicate with and control the blockading squadron. By dividing the responsibility for the Atlantic blockade between two squadrons, Du Pont was advocating a streamlined command and control arrangement that would greatly ease the burdens of the commanders while increasing the blockade's efficiency. (44)

Confederate victory at Bull Run lent a sense of urgency to the proceedings. Welles must have kept Lincoln acquainted with the board's progress, because the president, in his "Memoranda of Military Policy Suggested by the Bull Run Defeat" issued on July 23, declared: "Let the plan for making the Blockade effective be pushed forward with all possible dispatch." Four days later, after receiving Welles's approval, Du Pont presented the first three reports to a group of senior officers including Commanding General Winfield Scott. After anxiously awaiting the chairman's return, Davis proudly informed his wife that Du Pont had "just been in to tell me that the general pronounced them [the board's reports] to possess high ability, and he said he endorsed every word of them." In a rare display of his dry wit, Du Pont wrote his wife that Welles had "agreed to occupy two of the points recommended, Fernandina and Bull's Bay ... I hope it will not be made a `Bull Run.'" (45)

The next step for the board was to secure presidential approval. Welles presented the reports to Lincoln and the rest of the cabinet on July 26. Fox must have been present on this occasion because Du Pont reported "The President has been told up and down by Mr. Fox ... that the blockading squadron cannot keep at sea in winter without depots for coal, etc." Did Fox convince Lincoln to act, were the board's advisories sufficient, or did General Scott report favorably to the president? We will probably never know, but we do know that Lincoln approved the most important recommendations: the proposed expeditions to seize two Atlantic coast bases of operations. This was the essence of military strategy, and Lincoln saw that the board's recommendations for the conduct of the blockade campaign well supported his national strategy and war aims. In the summer of 1861, Lincoln had precious few tools with which to take the fight to the Confederacy. The blockade was one of these tools, and the board's proposals promised to make the blockade work. (46)

The board then shifted its attention to improving the Gulf coast blockade and recommending joint military operations against the key ports, submitting its first report on August 6. With its complex of tortuous and constantly shifting channels, the Mississippi Delta required the longest description of any coastal

region examined by the board. The members pointed out to "the careful reader of this memoir" that, due to the geographic complexity of this region, "the blockade of the river ... does not close the port [of New Orleans]." The memoir then recommended, due to the prohibitively large naval and military force required, that the capture of New Orleans be placed on the strategic back burner until "we are prepared to ascend the river with vessels of war sufficiently protected to contend with the forts." Contradicting its previous statement, the board advised instead that the navy's approach to New Orleans concentrate on "shutting it up, suspending its trade, and obstructing the freedom of its intercourse with the ocean and with the neighboring coasts, feeling assured that the moral affect of such a course will be quite as striking as that of its possession by the United States." The board was quite right in its call for initiating a blockade before attempting to seize the great Southern port; the Union simply lacked the resources in mid-1861 to conduct an expedition directly against the fortifications protecting New Orleans. It was disingenuous, however, to claim that a blockade would have been as effective strategically as capture of the port. Instead of seizing New Orleans, the board recommended capturing Ship Island (a barrier island located midway between the ports of New Orleans and Mobile) as the headquarters and logistical base for the Gulf squadron. A base of operations was undoubtedly important, but the seizure of New Orleans, the largest city in the Confederacy, would have a much greater strategic impact than the mere obstruction of its approaches. Ultimately Union operations would mirror the board's recommendations, with Ship Island being used as the base of deployment for the capture of New Orleans in April 1862. In this case, though, Du Pont's keen strategic sense deserted him. (47)

Days before the board finished its first Gulf coast memoir, Welles ordered Du Pont to execute a major portion of the board's recommendations. Du Pont was directed to cooperate with the infantry commander for a joint "invasion and occupation of the sea coast of the states in rebellion." Welles emphasized that "the importance of this expedition on the flank of the enemy cannot be overestimated. (48) Welles was referring to the expedition to seize Port Royal; Du Pont would command the naval forces in cooperation with Gen. Thomas W. Sherman. Du Pont's new assignment was but the first direct consequence of the Blockade Board. (49) Welles noted in his annual report to Congress that he had chosen Du Pont, in part, because "as chairman of the [blockade] board ... [he had] special qualifications and thorough preparation for the highly responsible position assigned to him. (50) Du Pont proudly told his wife that "the order is in the highest sense complimentary" and "I find myself suddenly thrown up in connection with the most important armament ever made in this country. (51) To his good friend Henry Winter Davis, a prominent Radical Republican, Du Pont wrote, "The labors of my board produced their effect and I have been selected to carry out the projects. (52) Du Pont went to New York to

collaborate with Sherman on assembling America's first major amphibious operation since the Mexican War.

With Du Pont's attention divided as a consequence of his new seagoing command, the board's next memoir was not completed until September 3. This report summarized the geographical and topographical characteristics of the rest of the Gulf, including the Florida Keys and the entire coast of Texas. (53) Finally, on September 19, the board submitted its final advisory. The briefest of all the board's works, this memoir supplemented the first Gulf report by describing the defenses of Ship Island. (54) Now fully engaged in his duties as head of the Port Royal expedition, Du Pont nevertheless requested that the Navy Department allow the board to complete one additional analysis "which to us as individuals, and to the Department for convenience, it is most desirable to finish." This report was to be the "manual" for the blockade; it would "furnish the basis of instructions to the different squadrons, while it will be most attractive to the general reader. (55) Unfortunately, Welles and Fox failed to act on Du Pont's request, and the final report was never published.

The Ship Island memoir marked the end of the board's formal activities, but the experience strengthened the already close professional bonds among its members. Their exchange of letters in the following weeks demonstrated their mutual affection and friendship that would last the rest of their lives. On October 2, Du Pont and Davis, painstakingly assembling the Port Royal expedition, informed Bache that "On closing for the present the labors of the Mixed Conference ... [we] cannot but express the high opinion [we] have been led to entertain of the usefulness of the Coast Survey to our knowledge of the sea coasts, sounds, and bays of the Atlantic and Gulf borders of the United States, without which the deliberations of the Conference could not have been successfully conducted." Bache thanked his colleagues and stated how gratified he was that although the Survey was "primarily designed as an aid to commerce ... in an emergency it can supply information applicable to the military and naval defense of the coasts." Finally, on the same day, Bache sent the following warm note to the newly promoted Barnard: "I have just returned from New York where I had a parting opportunity of a conference with Commodore Du Pont and Commander Davis. We only wanted our general (once our major) to make our quadrilateral complete." In the pressure cooker atmosphere of wartime Washington, the members of the Blockade Board forged close personal bonds while accomplishing what no other military body would achieve throughout the war: the thoughtful and deliberate gathering and analysis of information to develop a coordinated and viable military strategy. (56)

Membership on the Blockade Board acted as a springboard to advancement for some; for others, it was simply another example of selfless service to the nation. Du Pont's appointment to command the South Atlantic Blockade Squadron led to the high point in his career--the successful capture of Port

Royal, promotion to rear admiral, and the formal thanks of Congress. His excellent relationship with Welles would collapse into mutual acrimony and mistrust by April 1863, when Du Pont failed to capture Charleston, South Carolina. Relieved of his command in July 1863, Du Pont served on various naval boards and commissions but was never recalled to active service afloat. He died in June 1865, mercifully after witnessing the end of the war. Bache stopped agonizing over the future of his Coastal Survey. Having proved its indispensability, he continued his close relationship with the navy by dispensing freely his advice and specialized knowledge for the good of the Union. Bache modestly claimed in his annual report to Congress that the "usefulness" of the Coast Survey "has been rather increased than diminished" by the exigencies of war. (57) Welles often called upon Bache to sit on a number of boards evaluating new technologies for the navy. Although suffering a debilitating stroke in 1864, he continued as superintendent of the Coastal Survey until his death in 1867. Not until the late twentieth century did Bache attract attention from historians of science and technology, who have belatedly recognized him as one of America's foremost nineteenth-century scientists. (58)

Charles Henry Davis's membership on the Blockade Board led directly to his appointment as Du Pont's chief of staff and fleet captain for the Port Royal expedition. Promoted to flag officer in May 1862, Davis got his first Civil War command and soon saw combat on the Mississippi River. He became chief of the Bureau of Navigation and was promoted to rear admiral in July 1863. He finally achieved his dream job as Superintendent of the Naval Observatory and served as commander of the South Atlantic Squadron after the war. Davis continued on active duty until his death in 1877.

John G. Barnard would be the last surviving member of the Blockade Board. Barnard became chief engineer of the Army of the Potomac and was promoted to brigadier general in September 1861. He energetically supported McClellan's Peninsula campaign by supervising the siege of Yorktown and performing valuable reconnaissance missions. After a falling out with McClellan, Barnard returned to his previous position as engineer in charge of the defenses of Washington until June 1864, when he became Grant's chief engineer. Barnard received a brevet promotion to major general of volunteers for his outstanding service at the end of the war and remained on active duty until his retirement as a regular army colonel in 1881. He continued his engineering and scientific pursuits until his death in 1882. (59)

The board's legacy was significant. First, the Navy Department adopted many of its recommendations. Welles moved rapidly to split the Atlantic Blockade Squadron into the North and South Atlantic Blockade Squadrons under Flag Officers Louis M. Goldsborough and Du Pont respectively. Second, Lincoln and the War and Navy Departments immediately began to prepare joint operations based on the board's detailed analysis and recommendations--Cape Hatteras in

August 1861, Port Royal and Ship Island in November 1861, and Fernandina in March 1862, in many ways the first major Union victories of the war. Third, the success of the Blockade Board led Welles to establish other commissions, including the Board for Purchase of Vessels, the Board of Naval Examiners, the Board on Ironclad Vessels, the Permanent Commission, and the Board on Claims; all of these organizations made significant contributions to the naval war? Finally, the commanders of the blockading squadrons now had at their disposal a thorough, ready-made, and timesaving analysis of their areas of operations along with all applicable charts. The administration did not adopt all of the board's recommendations, and the board addressed only one part of a multifaceted strategic problem; however, the Civil War saw non comparable organization, staff, or agency that systematically formulated naval or military strategy. Still, the board's most important contribution and its greatest legacy were to determine where and how the Union navy would conduct the blockade campaign.

There is plenty of credit to go around for the successes of the Blockade Board. To Bache goes the honor of the initial idea and for recommending the board's membership. Welles's vision and administrative abilities allowed him to see the value of Bache's idea and act upon it, despite the myriad competing demands for his attention and the shortage of experienced officers necessary to man such a commission. Welles provided guidance that was clear, concise, and coordinated with Lincoln's national strategic concept. Lincoln and Scott recognized the excellence of the board's work and without exception endorsed its reports. Du Pont and Welles both instinctively grasped strategist Carl von Clausewitz's admonition that both statesmen and commanders must understand the "kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something alien to its nature." (61) Although Du Pont's pre-war writings foreshadowed a Mahanian-like naval strategy, a viable plan for the early blockade posed an entirely different set of problems. In the absence of a significant naval threat, Du Pont directed the board to develop a set of strategic recommendations to identify and take key bases of operations, occupation of which would give the Union a decisive advantage. Du Pont's insight, experience, and leadership ensured that the board would create a quality product that defined the Union blockade for the remainder of the war; no other element of Union military strategy was formulated as early and lasted as long as the Blockade Board's proposals. It is one of the most interesting historical ironies of the war that the Union army, with a well-developed bureaucracy, a body of strategic writing and theory, and a general-in-chief, was unable to formulate a coherent military strategy until the war was almost three years old. On the other hand, the U.S. Navy, with none of the army's advantages, developed a superb strategic concept in less than three months that lasted, with few changes, until the end of the war.

(1.) Abraham Lincoln, "Proclamation of Blockade," April 19 and 27, 1861, in Roy P. Basler, ed., *The Collected Works of Abraham Lincoln*, 9 vols. (New Brunswick: Rutgers Univ. Press, 1953), 4:338-39, 346.

(2.) Du Pont to William Whetten, May 3, 1861, Samuel F. Du Pont Papers, Hagley Library, Greenville, Delaware (hereafter cited as Du Pont Papers).

(3.) For the challenges faced by the U.S. Navy in the early days of the war and in particular the blockade, see James M. McPherson, *Battle Cry of Freedom: The Civil War Era* (New York: Oxford Univ. Press, 1988), 313-14, 369; Robert M. Browning Jr., *From Cape Charles to Cape Fear: The North Atlantic Blockading Squadron During the Civil War* (Tuscaloosa: Univ. of Alabama Press, 1993), 1; and Gideon Welles, "The Annual Report of the Secretary of the Navy, December 1861," *Senate Executive Documents*, Firestone Library, Princeton University Microfilm Collections, 9-12.

(4.) Historians have often erroneously referred to this panel as the Strategy Board. Welles called it a "Commission of Conference," or "Mixed Conference," and the board members variously referred to their undertaking as a "board," "conference," "Commission of Conference," and "Blockade Board." Welles to Charles Henry Davis, June 26 and 29, 1861, Navy Subject File, RG 45, National Archives (hereafter cited as Navy Subject File); Samuel F. Du Pont to Alexander D. Bache and to Charles H. Davis, Oct. 2, 1861, Records of the Coast and Geodetic Survey, RG 23, National Archives (hereafter cited as Records of the Coast and Geodetic Survey). Only much later did historians and the navy describe it as the "Strategy Board." I will refer to these proceedings as either the Blockade Board or simply the board.

(5.) Gary W. Gallagher, "Blueprint for Victory," in James M. McPherson and William J. Cooper Jr., eds., *Writing the Civil War: The Quest to Understand* (Columbia: Univ. of South Carolina Press, 1998), 32.

(6.) Bern Anderson, *By Sea and By River: The Naval History of the Civil War* (New York: Knopf, 1961), 40; Douglas B. Dodds, "Strategic Purpose in the United States Navy During the Civil War, 1861-1862" (Ph.D. diss., Queen's University, Kingston, Ontario, 1985), 30-33. For the exaggerated characterization of the board as an example of a joint staff, see U.S. Naval History Division, *Civil War Chronology, 1861-1865* (Washington, D.C.: GPO, 1971), iii, 17; and Richard Fillmore Selcer Jr., "The Friendly Sea, the Hostile Shore: A Strategic Study" (Ph.D. diss., Texas Christian University, 1980), 41. Several authors overstate the importance of the board by claiming that it devised an overall strategic plan for the entire war. See Herman Hattaway and Archer Jones, *How the North Won: A Military History of the Civil War* (Urbana: Univ. of Illinois Press, 1983), 135, which errs in noting that Secretary of War Edwin Stanton established the board and that it continued throughout the war);

James M. Merrill, *Du Pont: The Making of an Admiral* (New York: Dodd, Mead, 1986), ix; and the excellent Browning, *From Cape Charles to Cape Fear*, 8-9. Many historians misstate aspects of the board. Rowena Reed's deeply flawed *Combined Operations in the Civil War* (Annapolis: Naval Institute Press, 1978), 7-10, provides what the most comprehensive although misleading account of the board, but states that Secretary of the Treasury Salmon P. Chase first devised the idea for the board; an assertion for which there is no supporting evidence. John Niven, *Gideon Welles: Lincoln's Secretary of the Navy*. (New York: Oxford Univ. Press, 1973), 358, claims that Bache was the chairman of the board; Du Pont actually assumed that role. Richard E. Beringer, Herman Hattaway, Archer Jones, and William N. Still Jr., *Why the South Lost the Civil War* (Athens: Univ. of Georgia Press, 1986), 134-35, claim that the board concerned itself with purely naval matters when in reality it examined extensive joint operations. Finally, other naval historians fail to even mention the board, such as Virgil Carrington Jones, *The Civil War at Sea: The Blockaders* (New York: Holt, Rinehart and Winston, 1960).

(7.) Unlike the Union army, the navy never established positions such as "Admiral in Chief" or "Chief of Staff" during the Civil War. Consequently, responsibility for the formulation of Union naval strategy fell to Welles, his senior officers, and ad hoc boards.

(8.) Anderson, *By Sea and by River*, 34-35.

(9.) Welles, "Annual Report of the Secretary of the Navy," 9-11.

(10.) Welles to Du Pont, May 25, June 1, 3, 8, 12, 1861, Correspondence of the Secretary of the Navy, National Archives, Records Group 45 [hereafter cited as Correspondence of the Secretary of the Navy].

(11.) Welles to Du Pont, April 21, 1861, in John D. Hayes, ed., *Samuel Francis Du Pont: A Selection from his Civil War Letters, Vol.1: The Mission: 1860-1862* (Ithaca: Cornell Univ. Press, 1969), 1:56.

(12.) Bache to Gideon Welles, May 1, 21, 1861, Correspondence of the Secretary of the Navy.

(13.) Browning, *From Cape Charles to Cape Fear*, 6-7.

(14.) McPherson, *Battle Cry of Freedom*, 369.

(15.) Stringham bitterly complained that he needed more ships for the Hatteras operation in August 1861. Cited in Browning, *From Cape Charles to Cape Fear*, 7.

(16.) Welles to Mrs. Welles, April 14, 1861, Gideon Welles Papers, Library of Congress.

(17.) Both the Navy and the War Departments for months inundated Bache and the Coastal Survey with requests for charts and maps. Bache to Lincoln, April 26, 1861, Records of the Coast and Geodetic Survey; Bache to Welles, May 3, 1861; Lieutenant W. P. Palmer [Deputy to Bache] to Welles, May 17, 1861; Welles to Bache, May 18, 1861; Bache to Welles, May 20, 1861; Welles to Bache, May 21, 1861; Bache to Fox, May 21, 1861; Bache to Welles, June 5, 1861; and Bache to Fox, June 19, 1861, Correspondence of the Secretary of the Navy.

(18.) Bache to C. Boutelle, Jan. 3, 1861, as quoted in Robert V. Bruce, *The Launching of American Science, 1846-1876* (New York: Knopf, 1987), 298.

(19.) Bruce, *Launching of American Science*, 297-99; A. Hunter Dupree, *Science in the Federal Government: A History of Policies and Activities to 1940* (Cambridge: Harvard Univ. Press, 1957), 100-105; and Nathan Ringold, "Alexander Dallas Bache: Science and Technology in the American Idiom," *Technology and Culture: The International Quarterly of the Society for the History of Technology* 11 (Apr. 1970): 165-73.

(20.) Fox to Du Pont, May 22, 1861, Samuel F. Du Pont Papers.

(21.) Although Du Pont, as Commandant of the Philadelphia Navy Yard, was relatively close to Washington, there were other senior officers stationed in the area who could have been chosen to sit on the board. The fact that Du Pont was pulled away from this critical position demonstrates the importance that Welles and Fox placed on the board's activities.

(22.) Du Pont to Bache, May 30, 1861, Du Pont Papers.

(23.) Du Pont to Henry Winter Davis, May 30, 1861, Du Pont Papers.

(24.) Charles Henry Davis to Mrs. Davis, May 22, 1861, in Charles H. Davis Jr., ed., *Life of Charles Henry Davis, Rear Admiral, 1807-1877* (New York: Houghton, Mifflin, 1899), 121-22.

(25.) Davis to Mrs. Davis, June 14, 1861, in *ibid.*, 124.

(26.) Du Pont to Mrs. Du Pont, June 28, 30, 1861, Du Pont Papers.

(27.) Bache to Wolcott Gibbs, September 26, 1863, as quoted in Bruce, *Launching of American Science*, 299.

(28.) Du Pont to Mrs. Du Pont, July 26, 1861, Du Pont Papers, italics added.

(29.) Welles, diary entry for Aug. 23, 1864, in Howard K. Beale, ed., *Diary of Gideon Welles, Secretary of the Navy Under Lincoln and Johnson* (New York: Norton, 1960), 2: 17-18. For a very small part of this vigorous historical debate see James M. Merrill, "Strategy Makers in the Union Navy Department, 1861-1865," *Mid-America* 44.1 (1962):19-32; Bern Anderson, "The Naval Strategy of the Civil War," *Military Affairs* 26.1 (1962):11-21; Niven, Gideon Welles. Merrill writes also that the board existed through the fall and winter of 1861-1862 under Fox's leadership, when it actually dissolved in September 1861.

(30.) Davis was appointed to the board on June 25, 1861, and Barnard on June 26, 1861. Bache was officially released for duty on the board on June 24, 1861. Welles to Chase, June 24, 1861, and Welles to Davis, June 25, 1861, *Correspondence of the Secretary of the Navy*. Welles to Barnard, June 26, 1861, in *Navy Department, Official Records of the Union and Confederate Navies in the War of the Rebellion*, 30 vols. (Washington, D.C.: GPO, 1927), ser.1, 12:195 (hereafter cited as ORN).

(31.) Du Pont to Bache, May 30, 1861, Du Pont Papers.

(32.) Du Pont to William Whetten, June 23, 1861, Du Pont Papers.

(33.) Samuel Francis Du Pont, *Report on the National Defences* (Washington, D.C.: Gideon and Company, 1852), 4.

(34.) Nathan Reingold, "Alexander Dallas Bache: Science and Technology in the American Idiom," *Technology and Culture*, 11:2 (1970), 165.

(35.) There is only one full-length biography of Bache: Merle M. Odgers, *Alexander Dallas Bache: Scientist and Educator, 1806-1867* (Philadelphia: Univ. of Pennsylvania Press, 1947). For more comprehensive analyses of Bache's contributions, see Reingold, "Bache," 163-77; Dupree, *Science in the Federal Government*, 100-34; Bruce, *Launching of American Science*, 301-4. For Bache's participation in two ad hoc boards to examine new technologies for the navy, see Bache to Welles, July 9, 18, 1861, *Correspondence of the Secretary of the Navy*.

(36.) Davis, *Life of Charles Henry Davis*, 86-87, 121; Du Pont to Bache, May 30, 1861, Du Pont Papers.

(37.) Du Pont to Mrs. Du Pont, June 28, 1861, Du Pont Papers. For the

correspondence between Bache and Barnard during Barnard's assignment as chief engineer for the defenses of Washington, Barnard to Bache, May 1, 16, 17, 27, 30, 1861, Records of the Coast and Geodetic Survey. In these letters, Barnard and Bache exchanged various topographical maps and survey data of the Washington area. For Barnard, see Ezra J. Warner, *Generals in Blue: Lives of the Union Commanders* (Baton Rouge: Louisiana Univ. Press, 1964), 19-20. Barnard wrote extensively on many subjects, but he was at his best when writing on coastal defenses. His strongest pre-war publication was *Notes on Sea-Coast Defence: Consisting of Sea-Coast Fortifications, the Fifteen-Inch Gun, and Casement Embrasures* (New York: Van Nostrand, 1861). Reed, *Combined Operations in the Civil War*, 39, claims that Barnard was the personal representative of McClellan to the Blockade Board. The only evidence cited by Reed for this claim is a letter from Davis to his wife in which he describes meeting McClellan. Finally, Barnard was promoted to brigadier general and chief engineer of the Army of the Potomac on Sept. 23, 1861, after the board was dissolved.

(38.) Welles to Du Pont, Bache, Davis and Barnard, June 25, 1861, Confidential Letter Book of the Secretary of the Navy, Correspondence of the Secretary of the Navy.

(39.) Charles Henry Davis, Minutes of the Strategy Board, June 27, 1861, Navy Subject File. They also informally discussed the organization of the board (unfortunately, Davis's minutes do not indicate the nature of this organization). Bache also produced the appropriate maps and charts for the board's use. They did not meet on June 28, 1861 as originally scheduled, due to Du Pont's unspecified duties.

(40.) Du Pont to Mrs. Du Pont, June 28, 1861, Du Pont Papers.

(41.) Davis, Minutes of the Strategy Board, June 27 and 29 and July 15, 1861, Navy Subject File. The papers of Davis and Bache are replete with references to the board members dining and socializing together. For a description of the long hours endured by the board, see Du Pont to Mrs. Du Pont, July 4, 1861, Du Pont Papers.

(42.) Several of the memoirs did address ship numbers and types such as "a small number of shallow drafted vessels are required to patrol this area." But there is no systematic recommendation. Unsigned and undated topic outline, Navy Subject File.

(43.) ORN, ser.1, 12:195-98. War Department, The War of the

Rebellion: A Compilation of the Official Records of the Union and Confederate Armies (Washington, D.C.: GPO, 1898), ser.1, 53:67-73 (hereafter cited as OR). The board's reports are located in several locations in both the OR and ORN; this has led to some confusion. In the ORN, ser.1, vol. 12, the third report is incorrectly listed as the second report. The actual second report is located in the OR. Barnard also submitted a long, undated memorandum in which he advocated the use of a standing amphibious force to threaten the entire right (Atlantic) flank of the Confederacy. Apparently, Du Pont felt that Barnard's memo was beyond the scope of the board's charter. See Barnard, undated memorandum to the Blockade Board, Navy Subject File.

(44.) ORN, ser.1, 12:198-206. The Board also recommended that the Gulf Squadron be broken into two separate commands.

(45.) Davis to Mrs. Davis, July 27, 1861, in Davis, *Life of Charles Henry Davis*, 127; Du Pont to Mrs. Du Pont, July 26, 1861, Du Pont Papers.

(46.) Lincoln, "Memoranda of Military Policy Suggested by the Bull Run Defeat, July 23, 1861," in Basler, *Collected Works*, 4:457. There is nothing in the written records of Welles, Fox, Lincoln, Nicolay, or the members of the board to suggest that Lincoln was aware of the Board's progress. However, given the text of the president's July 23 memoranda, Welles must have kept Lincoln well informed.

(47.) ORN, ser.1, 16:618-30.

(48.) Welles to Du Pont, Aug. 3, 1861, *Correspondence of the Secretary of the Navy*.

(49.) Although the Board had recommended Fernandina and Bull's Bay for future amphibious operations, Welles gave Du Pont discretion in choosing his objective. See Du Pont to Mrs. Du Pont, Oct. 17, 1861, Du Pont Papers. The evidence suggests that Fox convinced Du Pont that Port Royal was the best alternative. Du Pont Letters, lxx, 169-71 A reluctant Flag Officer Stringham with his capture of the Hatteras Inlets on Aug. 28-29, 1861, conducted the first military operation advocated by the Board.

(50.) Welles, "Annual Report to the Senate, Dec. 2, 1861." *Senate Executive Documents*, 7.

(51.) Du Pont to Mrs. Du Pont, Aug. 4, 1861, Du Pont Papers.

(52.) Du Pont to Henry Winter Davis, Aug. 5, 1861, Du Pont Papers.

(53.) ORN, ser.1, 16:651-55.

(54.) Ibid, 680-81.

(55.) Du Pont to Fox, Sept. 27, 1861, in Gustavus Vasa Fox, Confidential Correspondence of Gustavus Vasa Fox, Assistant Secretary of the Navy, 1861-1865, eds. Robert M. Thompson and Richard Wainwright (New York: Naval Historical Society, 1918), 2:51-52.

(56.) Du Pont and Davis to Bache, Oct. 2, 1861; Bache to Davis and Du Pont, October 16, 1861; and Bache to Barnard, Oct. 16, 1861, Records of the Coast and Geodetic Survey.

(57.) Bache, "Annual Report of the Coast Survey," Nov. 5, 1861, 1-2, Records of the Coast and Geodetic Survey.

(58.) Hayes, ed., Samuel Francis Du Pont, lxxvii-cviii; Reingold, "Bache," 163-177; Dupree, Science in the Federal Government, 100-105, 130-35.

(59.) Davis, Life of Charles Henry Davis, and Warner, Generals in Blue, 19-20.

(60.) Stringham resigned in September 1861. The next day Welles appointed Du Pont and Goldsborough to their new commands. Welles to Stringham, Sept. 18, 1861; Welles to Goldsborough, Sept. 18, 1861; and Welles to Du Pont, Sept. 18, 1861, Confidential Letter Book of the Secretary of the Navy, RG 45, National Archives.

(61.) For Jomini's discussion of the strategic importance of bases of operations, see Antoine Henri de Jomini, *The Art of War* (Novato: Presidio Press, 1992), 77-84. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton Univ. Press, 1984), 88-89.

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