

DISPOSAL OF THE CIVIL WAR NAVY

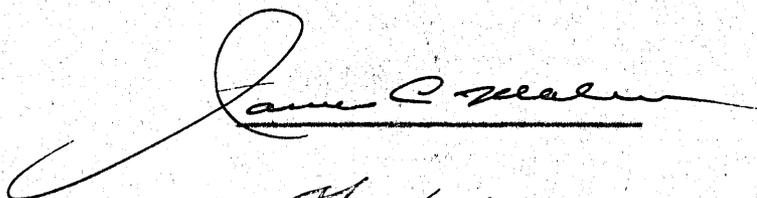
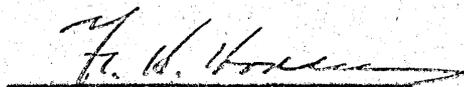
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INTRODUCTION

The outbreak of the Civil War found the United States Navy completely unprepared for the task demanded of it. There were only 90 vessels on the navy list, 42 of which were in commission. Of the 42, only 23 were steamers and in good condition. There was a total of 7,500 men in the Navy.

An active policy was immediately adopted by Secretary of the Navy Welles, supported by Congress and President Lincoln. Appropriations were enormously increased, jumping from \$13,000,000 to \$43,000,000, and following Lincoln's Blockade Proclamations, a three-fold plan of operations was decided upon, new vessels were put under construction, and old ones repaired. The number of seamen jumped from 7,600 to 22,000. And "the merchant marine was combed for vessels that could be made over into fighters."

During the war 208 vessels were built, and 418 purchased at a cost of about \$19,000,000, and converted into war vessels. Of these purchased 313 were steamers.

"The naval campaign during the War of the Rebellion was unlike that of any other naval campaign in History, in that it was fought largely in inland waters. Perhaps the most remarkable feature of the campaign was the ingenuity displayed by both sides, in the design, construction, and handling of vessels of unusual types. To the Confederacy is due the credit of having accomplished so much with so few resources."⁵

At the close of the war the United States Navy consisted of 676 vessels of all classes and conditions. Many of them were built for special purposes, such as work on the rivers and in shallow harbors, and were totally unfit for the ordinary uses of the navy. An outstanding example is that of the Mississippi River iron-clad gunboats. Many were found also to be of faulty design, poorly constructed in haste of unseasoned timber and in a condition demanding disposal. There were in addition the great number of vessels converted from the merchant marine, which were unsuited for ordinary naval purposes. There was moreover an unavoidable accumulation of ordnance, stores of all kinds, provisions etc., part of which while valuable, was in excess of the peace time wants of the navy. There was also a great amount of worn-out, partly decayed, condemned, and obsolete material.

Thus from a standpoint of efficiency as well as economy, a disposal of unsuitable vessels and materials was necessary.

The attitude of the people and Congress also played a large part. "As far as the United States was concerned, the development in the science of naval warfare that had been so rapid during the Civil War ceased abruptly with its close."⁶

The nation demanded to be relieved of the burdens of armies and fleets. There was felt to be little danger of conflict with Europe, and in case we should become involved, it was thought ships could be prepared and men raised rapidly enough to handle the situation without great advance preparation. The navy steadily declined until in 1881, it was inferior to that of any European power. "The most discouraging feature of the situation was that the navy at this time seemed to be without friends in Washington, and the country at large was wholly indifferent to its needs."⁷

The writer from a study of the available material is inclined to think that throughout the period from 1865-1881, the general public thought that the navy was the equal or superior of the navies of the other great powers.

In the History of the United States Navy written by Rear-Admiral Clark and others, this period from 1865-1881 is very aptly characterized as "The Period of Naval Decay."

CHAPTER I

UNARMED VESSELS

The surrender of Lee at Appomattox, April 9, 1865 practically ended the Civil War. The Blockade of the Southern ports was rescinded by proclamation of President Andrew Johnson June 23, 1865.¹ The proclamation was to take effect on July 1, but the naval forces had been previously reduced and some of the vessels already disposed of.

February 24, the Squadron Commanders were instructed by Secretary Welles, to send North such purchased vessels as needed extensive repairs. And about the first of May orders were issued to further reduce the squadrons in our Domestic waters one-half."² A further decrease near the close of May reduced the force to a maximum of 100 vessels. And reductions early in July left only 30 cruisers in Southern waters. The North and South Atlantic Squadrons were consolidated into a single Atlantic Squadron, and the East Gulf, and West Gulf Squadrons were consolidated into one, known as the Gulf Squadron. The foreign squadrons which had been suspended during the war were re-established.³ The Gulf Squadron was maintained until 1867, when the abandonment of the attempt to set up an Imperial Government

in Mexico under Maximilian of Austria, caused it to be consolidated with the North Atlantic Squadron.⁴ In 1866 the two squadrons totalled 25 vessels; the North Atlantic 15; the Gulf 10.⁵ While in 1867, the consolidated squadron had been reduced to 10 vessels.⁶

The Mississippi Flotilla "comprising at one time about 100 steamers was gradually reduced and on the 14th of August wholly discontinued."⁷

At the close of the Rebellion there were 604 unarmored vessels in the service (489 steamers, 115 sailing vessels.), under construction, or their construction authorized and later completed.⁸

These vessels were of all classes and conditions. The number includes (1), the vessels in the navy in 1861, (2), those purchased from individuals and prize courts, and chartered from the War and Treasury Departments; (3), those built by and for the Navy Department.

July 4, 1861, the Secretary of the Navy reported that there was a total of 90 vessels, 46 of which were in the navy, but only 26 steamers and 16 sailing vessels, a total of 42 were in commission. Besides those in commission, there were 27 others laid up, but available in a short time, making a total of 69. The others were on the stocks unfinished, used as stationary storeships or were not worth repairing.⁹

The total number of vessels purchased by and for the Navy Department totalled 497.

The prices charged for the vessels bought from the merchant marine were "outrageously high," the individual owners taking advantage of the pressing need of the government.¹¹ The Mississippi squadron originally under the control of the War Department was transferred to the Navy Department, October 1862.¹³

As stated elsewhere, of the 418 vessels actually purchased and paid for, 313 were steamers. They were hastily procured to enforce the blockade, fitted with arms, and in many cases, repaired at great cost before the close of the war. "It was a heterogeneous collection, a nautical curiosity shop, that they got together-- deepwater boats, inland water steamers, ferryboats, and harbor tugs."¹⁴ The steamers were of both the screw and paddle-wheel type, the Mississippi boats being exclusively the latter. They were almost all of wood. Great Britian had been building iron vessels in large numbers since 1846, but little advance had been made in that line in the United States.

Added to the pre-war navy, and the vessels purchased and transferred were 208 vessels built by or for the government or whose construction was begun before the close of the war.¹⁵ The unarmored vessels

totalled 143, of which there were three general classes. (1) Small heavily-armed gunboats, with screw propellers, of 507 tons displacement, to be used for coast service. There were 23 of these, all built by contract. (2) 62 screw sloops for ocean cruising, varying from 3,713 tons to 593 tons each, and carrying 2 or 3 eleven inch guns besides 2 to 6 smaller guns. All but three were built by the government, many of which were incomplete at the close of the war. (3) For use in the shallow rivers, bays, and bayous, 47 paddle-wheel steamers of from 730 to 1,030 tons each with bows and rudders on each end were built. Only 19 of these were built by the government. There were also 11 tugs built by contract; of the 143 unarmed vessels, 78 were built by the government, 65 by private contract, but all the engines except for a very few screw sloops were built by contract.¹⁶ Of these vessels including ironclads, there were 41 still incomplete in December 1865, and in various stages of construction, all intended for the permanent navy.¹⁷ Since these vessels were designed for the permanent navy and the machinery for many of them was being provided by contractors, they were slowly carried to completion during the following years. In the words of John Lenthall, Chief of the Bureau of Construction and Repair:

"It is obligatory on the part of the government to provide these vessels on account of the contractors for their machinery; but they will not be pressed to a speedy completion, and those vessels for which the machinery is being constructed in the navy yards will be still more retarded, giving an opportunity for selecting more seasoned materials." 18

During the remainder of the administration of Secretary Welles, the Navy was rapidly reduced to a peace footing. Immediate steps were taken to turn the purchased vessels back to commercial purposes. In speaking of the disposal of the naval vessels, Secretary Welles says:

"Such of them as were purchased and no longer required by the government, have from time to time been sold to meet the demands of reviving commerce...the steamers bought from the merchant service for war purposes have to a great extent been returned to their former pursuits." 19

In 1865, 367 unarmored vessels, 249 of which were steamers, were disposed of. All but 19 of them having been purchased or transferred from other departments. 20 These figures are given for the calendar year, with the period from January 1 to March 4, on the years 1869, 1877, and 1881, the years of changes in Administration being added to the previous years, i.e., 1868, 1876, and 1880, for convenience.

A comparison of the purchase and sale price may be made from the statement of Secretary Welles that 418 vessels had been purchased at a cost of \$18,366,681.83 and of them 340 had been sold for the sum

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of \$5, 621,800.27 The government thus paid an average of \$43,939 apiece for these vessels and received \$16,534, or little over one-third.

The explanation for this very low sale price seems to be in the fact that the vessels were purchased at too high a price, and also that the decline of American shipping, which had begun in the 50's, and was greatly accentuated during the Civil War, had ruined the market for American merchant vessels. A study of the Records of these vessels shows that great amounts were spent on them for repairs, while they were in the government service.

These and subsequent sales until May 1872 were made under a provision of the Naval Appropriation bill March 3, 1847. It provided that "all moneys derived from the sale of all stores and other articles belonging to the navy shall revert to that appropriation from which such stores and other articles were originally

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purchased..." The receipts of sales of vessels and other naval property combined with a large surplus following the war enabled the Department in September 30, 1867 to carry to the surplus fund of the Treasury \$65,000,000. As a result, estimates were made for the first time after the close of the war for construction, and repairs of vessels, for steam machinery, ordnance,

provisions and clothing and for equipment, the balance s under the several heads having previously been sufficient.²³

The expenditures for the first two years of peace were large for a peace establishment, because of war liabilities in the form of heavy contracts in the process of fulfillment, for vessels, engines, ordnance, etc. At the end of 1867 however nearly all the liabilities were closed and the expenditures²⁴ greatly reduced.

In 1866 there is a great reduction in the number of vessels disposed of, only 25 compared to 367 in 1865. Of the 25, there were 21 steamers; 18 of the 25 had been purchased, and 7 built by or for the government. Three of the latter were of the class of screw gunboats, 50 tons, built by contract, and 3 were side-wheel, double-enders, built for use in the narrow rivers and bayous, the other was wrecked off Florida.²⁵

The Secretary in his annual report for 1866 calls attention to the fact that most of the captured and purchased vessels have been sold, and that some naval built steamers, hastily constructed, have also been sold.²⁶

Ample proof is found in the Reports of the Secretary of the Navy, and of the Chief of the Bureau of Construction and Repair that most of these

vessels were very hastily built, largely of unseasoned white-oak, since the supply of live oak from the South was cut off. And many of them were improperly designed. In 1866, John Lenthall, Chief of Bureau of Construction and Repair speaking of the vessels built since the war says: --"In three or four years, they²⁷ will scarcely be worth repairing, and the cost of repairs, if they be made, will be much beyond the real value of the vessels."

The Navy was further reduced in 1867 by the disposal of 30 steamers and 8 sailing vessels, 26 of which were built by or for the government, of which 16 were of the side-wheel, double-ender class. All were disposed of by sale except one the Sacramento, wrecked in the Bay of Bengal.²⁸ A very small fraction of the original cost was received for these vessels.

The vessels sold since the war and down to 1875, when sale by public auction was made definitely obligatory, were nearly all sold at public auction. From 1865-67 all but 35 of the vessels sold, were sold at public auction, after appraisal by the department. If the minimum price set by the appraisal board was not bid, the vessel was withdrawn from sale, and the Commandants of the Navy Yards were authorized by the department "to receive tenders and sell them without

sacrifice, on the most favorable terms." In this manner 13 were disposed of, and 10 were sold directly by commanders of squadrons or stations, usually because they were unseaworthy. In addition, 12 had been transferred to other departments at the price of appraisal.²⁹ The proceeds were turned into the Treasury. This policy was pursued until 1872.³⁰

From January 1, 1868 to March 4, 1869, the navy was further reduced by 24 vessels, of which 16 were built by or for the government. All but four were sold.³¹ There were three vessels wrecked, one the Suwanee, off Shadwell Passage, and two, the Fredonia and the Waterree, were stranded off Arica, Peru by a tidal wave, August 13, 1868. They were never launched, the Waterree being sold for \$2,275.

During the Administration of Secretary Welles, 454 unarmored vessels were disposed of, the greater part by sales. Of the total number 386 were vessels purchased for the navy. Of those built by or for the government, 31 were side-wheel, double-enders, and 7 were screw gunboats of 507 tons built by contract. The regular cruising vessels, sloops of war, etc., were in the main continued in the service.

The number of vessels in commission including ironclads was reduced from 471 in January 1865³² to 115 December 3, 1866; 103 in December 1867; and 81 on

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December 7, 1868. The vessels in squadron service were reduced from 471 in January 1865 to 69 in December 1866; 56 in December 1867; and 42 in December 1868. 34

In regards to the vessels originally built for war purposes and the permanent navy, Mr. Welles, while favoring a reduction of expenditures, believed it to be an economy to preserve the efficiency of the navy.

"The true policy of the government with regard to our naval force in time of peace will be to keep our iron-clads laid up in fresh water in perfect fighting order. Our largest steamships should remain in ordinary, distributed among the principal commercial cities, while there should be a force afloat sufficient to visit annually, if necessary, every navigable port on the globe where our trade exists." ³⁵

During the period no new vessels were authorized. Some of the vessels commenced before the close of the war were slowly completed, but most of the work done in the yards consisted of the preservation and repair of the old vessels. There were 23 new vessels under construction in 1866, ³⁶ and eight were launched in that year, and four more launched in 1867, and four others commenced. At the same time however work was suspended ³⁷ on several.

After 1867, because of the disposal of the surplus and the lack of congressional appropriations, an even more stringent retrenchment was necessary. In 1868 as a result of reduced appropriations, work was

suspended on all new vessels except four small ones. And repairs limited to the few necessary to maintain the squadrons, the returning vessels being laid up without repairs.

³⁸ Welles in 1866 stated that the "demagogues" in the House opposed appropriations for the Southern posts, and for Boston because it was a wealthy community. "We have now enough navy to thrash England and France, said one of those small representatives in his ignorance."

³⁹ Also there was an indication that Senator Grimes, Chairman of the Senate Naval Committee, opposed appropriations for Norfolk and Pensacola, because of rancor toward the south.

⁴⁰ In 1867 Welles confides in his diary:

"There is on the part of the more intense party men a rigid parsimony and reluctance to make grants to the Navy, while appropriating immense sums to the military branch of the service." ⁴¹

Welles being a Johnson partisan, this can be easily explained but not justified. He also stated the same day that most of the people and politicians failed to realize that the future foreign wars would be largely maritime.

Again in 1868, he wrote in his diary:

"Unfortunately we have no man in Congress who is at all conversant with Naval affairs and all congressional action is in the wrong direction. Men having selfish schemes and purposes adapt themselves to party ends and find ready supporters regardless of the service." ⁴²

Welles had in January 1868 at the instance of the House

revised the estimates downward from \$47,317,183.95 to \$24,924,478.03, a revision in accordance with the expression of the House, that "it is unnecessary to proceed further at present in building or equipping ships of war."⁴³

With the election of Grant in 1869, Mr. George E. Robeson of New Jersey became Secretary of the Navy, succeeding Borie, Grant's original appointee, who served for only a few weeks. Robeson took office June 25, 1869 and served throughout the Grant Administration, with Admiral David D. Porter as his chief technical adviser. He found a navy consisting of 203 vessels, 151 of which were unarmored and of wood, and 32 of the latter were sailing ships. Only 43 vessels were in the squadrons and only 69 available for immediate service. Those which had returned from duty had been laid up without repairs and 22 of all classes were on the stocks with the whole work suspended.⁴⁴ But one ship was under repair when the new Admiral came in. The lack of sufficient Congressional appropriations after 1847, as stated above, was largely responsible for this condition.

Steps were immediately taken to restore the navy to an effective condition, by making all needful repairs, work being "renewed vigorously at all the navy yards." Also all steamers on being repaired or fitted out, if susceptible, were given full sail power,

with the object of making them independent of steam power except for emergencies.⁴⁵ Steam was first introduced about 1846 as an auxiliary. Sails were gradually discarded in the United States, while in Europe they retained full sail power.

"Since 1869 we have equipped, with full-sail power, 26 ships, besides those already existing and at present, we have no others than full-rigged ships in active service except a few iron-clads, and a few paddle-wheel steamers used for dispatch and surveying vessels." 46

He testified that there was not only a saving of coal but also of boilers, engines and hulls.

Agitation was immediately begun by Secretary Robeson and Admiral Porter for an increase of the navy and for increased appropriations. In his Annual Report 1869, Robeson calls attention to the advance in naval construction abroad especially in the matter of sea-going ironclads. He lays the stress on sea-going ironclads, while Admiral Porter in his Annual Report 1870 declares that wooden vessels are still very necessary, and urges the construction of light, fast wooden cruisers to cut up commerce.⁴⁷ He also urged an increase in our squadrons abroad, particularly in the Mediterranean, Brazil, and the East Indies, with the apparent aim of guaranteeing respect for the flag by a show of force.⁴⁸

A Board on steam machinery appointed by Borie,

in their report made the following remarks:

"Of all the vessels visited not one... effectively fit, in these times, to cruise at large in war with an impunity commensurate with her class, or to cope with the cruisers now possessed by the more formidable powers of Europe."49

These men, of course, only examined those vessels in ordinary or undergoing repairs, and not those actively engaged in cruising.

During Hobson's Administration the unarmored force of the navy was decreased by a total of 45 vessels. The greatest number disposed of in a single year was 16, in 1869, all being sold. Of the 45, the records show that 33 were built by or for the government, 11 were purchased, and one the Vanderbilt was a gift from Colonel Vanderbilt.

There were five side-wheel, double-enders and five screw gunboats of 507 tons included in the number. Forty of the vessels were steamers. ⁵⁰ Of the total, 39 were sold, three lost at sea, two broken up, and one transferred to Roach for part payment on Puritan.

The 33 disposed of which were built by or for the government were either the older vessels of the navy or the screw sloops begun or completed during the war or immediately following, of unseasoned white oak. Referring to the vessels built during the war, Robeson says:

"they were built with great rapidity, of the only material available during the pressing emergencies of the war, and many of them designed for special purposes,

the necessity of which have passed away, and the cost of repairing them would be entirely out of proportion to the results obtained..." 51

Admiral Porter in his report of the same year (1871) decries the rapid decay of the vessels built during the war and the need of new wooden vessels with full sail power, as well as ironclad cruising vessels. 52

Section 2 of the Naval Appropriation Act of May 23, 1872 authorized and directed the Secretary of the Navy "to sell at public sale, such vessels and materials of the United States Navy...as cannot be advantageously used, repaired or fitted out." It also provided for a public advertisement of sale, and for a report to be made to Congress at the beginning of each session, the proceeds to be turned into the United States Treasury. 53

In regard to the manner of making sales, Hancox, Chief of Bureau of Construction and Repair, testified before the House Naval Committee, June 23, 1876, that of 38 vessels sold since July 1, 1869, 29 were sold at public auction, four tender after auction, four tender after survey, these latter being vessels sold to foreign stations which were unable to return home, and one, the Oneida, sunk in Yeds Bay 1870, was sold by the Commander of the squadron. 54

Robeson's administration of the Navy Department was subjected at times to violent condemnation, and to Congressional investigations of frauds and abuses.

Since these are chiefly connected with the disposal of iron-clad vessels, however, it need not be discussed here. Mention should be made of the fact however that the Nevada, an unarmored vessel was, in 1877, transferred to John Roach as part payment for work done on the double-turreted ironclad Puritan.⁵⁵ This act was contrary to the act of May 23, 1872. Also five unarmored vessels were rebuilt under the name of repairs, using the regular annual appropriations for the Bureau of Construction and Repair.⁵⁶ This action characterized by Spears as "disgraceful" was provoked by the Virginus affair, which will be discussed below.

During the years from 1869 to 1877, the Diplomatic energies of the country were directed toward Santo Domingo, Cuba, and the Far East.

Grant secured the lease of Samana Bay, Santo Domingo, November 29, 1869. However his attempts at annexation failed when the Senate rejected the Babcock Treaty in June 1870. And Sumner's resolutions March 27, 1871 opposing annexation effectively killed the whole scheme. A commission sent by Grant to the island early in 1871 was transported there in a war vessel, and 12 vessels were kept in Santo Dominican waters or available thereto during the negotiations.⁵⁷ It apparently had no direct effect however on the general naval policy, regarding the

disposal of vessels, except perhaps to retain a larger force in commission.

With Cuba it was quite different. The Cuban war of revolution from 1868 to 1878, resulted in much friction between the United States and Spain. Numerous references are made to the fact that disturbances in Cuba and attempted filibustering expeditions made necessary the maintenance of a larger fleet in Cuban and Gulf waters than otherwise would have been necessary. 58

As early as 1869, Welles feared that the United States would have war with Spain. He noted in his diary: "I hear of quite a number of vessels being ordered to be fitted out for immediate service." 59 The trouble came to a head with the capture October 31, 1873 by Spain of the filibustering vessel Virginus, sailing under the American flag, and the execution of 53 members of the crew, many of them Americans, by authorities in Cuba. Feeling rose high and a crisis resulted. A large naval force was concentrated at Key West. "Every available wooden and ironclad ship in ordinary was dispatched as rapidly as it could be put in order and properly manned and organized. Part of the South Atlantic fleet and the entire European fleet was recalled and ordered to concentrate at Key West. A total of 29 vessels were gathered at this point. 60

The affair having been settled by a Protocol November 29--although all questions in dispute regarding American interests were not settled until ⁶¹ February 4, 1877, the opportunity was taken to stage a navy drill which lasted until the beginning of April 1874, after which the extra vessels dispersed. ⁶²

Only one vessel was disposed of in 1874, probably as a result of this crisis. Also the maneuvers served to show up the deficiency of the naval force. Admiral Porter in his report of 1874, says:

"I regret to say that the fleet showed itself very unsuitable for war purposes, either to contend against the improved class of vessels now being constructed by all foreign nations, or to cut up an enemy's commerce."

Again:

"The West Indies drill made it apparent... that our combined force of vessels was incapable of a successful fleet 1/4 as large, built on modern principles." ⁶³

While the same year, Secretary Robeson states that the navy was in a better condition than it had been for years. "In conclusion, I am glad to report the fighting force of our navy in good and effective condition." ⁶⁴

At the same time that the concentration and resulting maneuvers were showing the deficiency of the fleet, the work of putting the vessels in effective condition, temporarily strengthened the naval force and delayed its decay.

After the opening of China in 1842, and of

Japan in 1854, American interests in the Far East increased rapidly. American trade with Japan increased very fast after 1868.

In 1867 Commander Shufeldt was sent to Korea to investigate the loss of the American schooner, General Sherman, wrecked in the Ping-Yang river in September 1866. He failed to secure any communication however with the Korean king however. In 1869, Secretary Robeson called attention to the increase of our trade in the Pacific, it being largely the result of the completion of the Pacific Railroad. He urged the need of a strong naval force in Asiatic waters. In 1870 the United States agreed to cooperate with the fleets of other nations in Chinese waters (lasted until 1914). In 1871 a punitive expedition was sent against Korea to force them to protect shipwrecked sailors. Over 240 Koreans and three Americans were killed, but nothing permanent was accomplished.

Admiral Porter in 1871 urged the strengthening of the Asiatic squadron, especially with small vessels to navigate the shallow bays and rivers. Nothing more of importance occurred until 1878 when Commander Shufeldt was sent on an extended tour of the African Coast and East Indies "with special reference to the increase of our commerce." He was also expected to secure the opening of Korean ports. The voyage occupied two years, from 1878

to 1880, but he failed to open the Korean ports. However, Secretary Thompson, in discussing the voyage, concludes that with Alaska, Aluetian Islands, commercial treaties with Japan, Sandwich Islands and Samoa, "the Pacific Ocean opens to our future commerce its broadest and most profitable field."⁷¹

There were added to the navy during Robeson's Administration 13 vessels. Ten were new vessels, authorized and built, two were iron torpedo vessels, authorized in 1871, and eight were steam sloops of war which were provided for in the Naval Appropriation Act of March 3, 1873.⁷² These were built of wood and iron.⁷³ Three vessels were purchased.

There were also 11 vessels rebuilt under the name of repairs,⁷⁴ although classed by the Official Records of the Union and Confederate Navies as Civil War vessels. The work was done under the order of I. Hanscom, Chief of Bureau of Construction and Repair, with the authorization of Secretary Robeson.

In his last annual report Robeson gives an exhibit of the naval forces and makes an apparently favorable comparison with the force in 1869, except as to the number of vessels.⁷⁵

By March 4, 1877, further disposals reduced the remainder of the unarmored vessels of the Civil War navy to 81 steamers and 24 sailing vessels of all

classes and conditions.

Due to the fact that Robeson was leaving office under suspicion, with his policies being condemned by members of the House, and by the press, as a result of investigations of his conduct in office, it is to be expected that he would make an attempt to vindicate his administration of the department. Although without proof to the contrary, except that in no sources coming under observation is a rejuvenation of the navy at this time mentioned, great allowances must be made for Mr. Robeson's statements. However it is true that 13 vessels were added, but these, according to Spears were "in no point superior to other ships already in existence."⁷⁷ The preparations, however, made during the Virginus crisis, combined with the practice of rebuilding vessels under the name of repairs, really amounting to building new ones, probably strengthened these vessels to some extent, or at worst delayed their final decay and deterioration.

R. W. Thompson of Indiana succeeded Robeson, when Hayes took office in 1877. He was faced with an indebtedness of \$7,083,503.25, due to contracts made by his predecessor, part of which were signed after March 1, with the provision however that they go into effect only if Congress appropriated the necessary funds. These contracts were immediately suspended,

leaving an indebtedness of \$3,483,240.16, which
Secretary Thompson referred to Congress.⁷⁸

The Bureaus involved were those of Steam Engineering, Construction and Repair, and Provisions and Clothing, the first two in connection the completion of the double-turreted monitors of which more will be said later.

During his term of office there were no new vessels built and the small appropriations⁷⁹ were used in the repair and preservation of the navy property.⁸⁰

Only five unarmored vessels were disposed of from 1877 to 1881; four of which were steamers, one of sail power, three of them built by the government, and two of them had been purchased.⁸¹ In 1877, the Secretary reported that 20 vessels including iron-clads⁸² were unfit for repairs, and that authority had been given the department to sell white-oak ships which were not worth repairing. However, by act of May 23, 1872 the receipts of the sales of vessels would be covered into the treasury and could not be used for naval purposes without a special appropriation. Thompson objected to this provision and urged that the law be altered to allow the proceeds of sales to be used⁸³ directly in repairing the ships remaining. He repeats this suggestion in 1878, adding that 32 vessels

are unfit for repairs including 10 built during the war.⁸⁴ Again in 1879: "There are 27 vessels un-

fit for naval purposes of any kind whatever, but which are a positive expense...and it would be economy to sell the whole..." He repeated his recommendations of the two previous years that the proceeds of sales should be turned over to the department.⁸⁵

The Act of May 23, 1872 had specifically provided that the proceeds of all sales be turned into the Treasury. Thus the proceeds of vessels sold would be lost to the department unless appropriated by Act of Congress. At the same time the size of the navy would be decreased. This evidently constitutes the main reason for the retaining of worthless vessels during Secretary Thompson's administration of the department.

Speaking of the general condition of the navy, Mr. Thompson in 1879 said:

"The largest part of our Navy... is composed of vessels of the old types, and and while some of them possess excellent qualities, and are equal to any in the world of the same types, yet the Navy, as a whole, cannot be brought up to the modern standard of naval architecture until we shall avail ourselves of existing improvements." 86

The Chief of the Bureau of Construction and Repair declared in 1879 that "our navy is composed to a large extent of ships of a by-gone age..."⁸⁷

The navy reached its lowest point in 1881.

"During the Administration of President Hayes our navy was inferior to that of any European nation..."⁸⁸

It had become as Spears states, "the world's standard of inefficiency."⁸⁹ There were in the navy on

March 4, 1881, a total of 125 vessels, 100 of which were unarmored, not including the 13 added since the war.⁹⁰ Of the 100 unarmored Civil War vessels, 77

were steamers and 23 were sailing vessels. And of the whole, 25 were tugs. It is interesting to note that two of the vessels on the list were the New Orleans and the Virginia, old ships of the line, commenced in 1812 and 1818 respectively, and still on the stocks, never having been completed. Also the Constitution and Constellation built by the War and Treasury Departments in 1797-98, and the Independence built in 1814⁹¹ were included in the list.

Secretary Hunter, who succeeded Thompson in 1881, stated in his first annual report that: "The condition of our navy imperatively demands the prompt and earnest attention of Congress, unless some action be had in its behalf it must soon dwindle into insignificance."⁹²

Admiral Porter testified that: "For war purposes it is nearly worthless, reminding one of the ancient Chinese forts on which dragons were painted to frighten away the enemy."⁹³

President Garfield in his first annual message, December 6, 1881, urged Congress to do something for the navy. "I can not too strongly urge upon you my conviction that every consideration of national safety, economy, and honor imperatively demands a thorough rehabilitation of our Navy."⁹⁴

"If the year 1881 represents the lowest ebb in the American Navy, it marks also the turning of the tide."⁹⁵ Preparations for a new navy were begun with the appointment June 29, 1881 by Secretary Hunter, with the approval of Garfield, of an advisory board of naval officers to prepare a report on the needs of the navy. It is commonly called the Rodgers Board, because its chairman was Rear-Admiral John Rodgers. Their report, included in the Annual Report of the Secretary of the Navy 1881, stated the condition of the navy and recommended the building of 38 unarmored cruisers, five rams, and 25 torpedo boats, at a total estimated cost of \$29,607,000.00, the construction to be extend over a period of 8 years.⁹⁶ Armored vessels were not discussed because "the order explicitly stated that the necessities of the present time were to be provided for." The board recommended several innovations for the American Navy. Steel hulls were recommended for all the larger vessels and for the construction of the new ordnance. Neither vessels or guns had previously been constructed of steel. Only one vessel

recommended by the Rodgers Board was ever built, but the report was well received. Public opinion had already been prepared for progressive action by the writings of naval officers.⁹⁷

Congress then began to take action. Secretary Hunter had urged the sale of useless material, with the proceeds to go to the credit of the navy fund.⁹⁸ In the Naval Appropriation bill of August 5, 1882, Congress provided for a survey of all material of the navy and the disposal of all unserviceable material at public auction, the proceeds however to go into the Treasury.⁹⁹

In the same Act provisions were made for the appointment of a Naval Advisory Board of experts to advise and to assist the Secretary. Also no vessels or engines were to be repaired at a cost greater than 30% of the estimated cost of new vessels or machinery, and provision was made for the building of two new steam vessels if sufficient funds were left over from the appropriations for the Bureaus of Construction and Repair, and Steam Engineering. There was a definite appropriation of \$100,000 made for steel, rifled, breech-loading guns,¹⁰⁰ the first ever authorized in the United States. August 8, a joint resolution was passed providing for a Committee on Conditions of American Shipping to investigate the

decline of the American carrying trade, and to "suggest any remedies which may be applied by legislation..."¹⁰¹

No vessels were constructed under the Act of August 5, 1882, but in 1883, Congress appropriated \$1,000,000 for the completion of the double-turreted monitors; and \$1,300,000 for the construction of three cruisers and a dispatch boat, "of steel of domestic manufacture."¹⁰² This act resulted in the building by contract of the cruisers, Chicago, Atlanta, Boston, and the dispatch boat, Dolphi, all provided with compound engines and armed with modern rifles -- this was¹⁰³ the small beginning of a new navy. The Act of August 5, 1882 provided for the condemnation of vessels by a board of naval officers,¹⁰⁴ and the Act of March 3, 1883, made provision for their appraisal and sale by sealed bids of such condemned ships after advertisement.

The Act also prohibited the repairing of wooden vessels when the estimated cost of repairs should exceed 20% of the cost of a new vessel of equal size.¹⁰⁵ Thus provision was made for the future disposal of vessels unfit for the naval service. The latter provision put an end to rebuilding old ships out of money appropriated for repairs, and "instantly dropped 46 ships from the naval list. Later on the figure was changed from 20% to 10%, and the patchwork policy was definitely abandoned."¹⁰⁶

CHAPTER II

ARMORED VESSELS

Armored or ironclad vessels were first used by the French in 1855 in the Crimean War,¹ and the principles of ironclads were well-known in navy circles before the Civil War.² England constructed the Warrior, the first ironclad in the British Navy in 1860.³

The construction of ironclad vessels was initiated in this country by the Confederates, who laid plans in June 1861 which resulted in the reconstruction of the U.S.S. Merrimac into an ironclad war vessel. They were followed very shortly by the Union naval administration which secured Congressional authorization and an appropriation of \$1,500,000 on August 3, 1861 to build an ironclad or steel-clad vessel. On October 4, 1861, John Ericsson, the inventor of the screw propeller was given a contract for the same type of vessel.⁴ The Monitor was launched January 30, 1862, and engaged the Merrimac, or Virginia as the Confederates christened her, in the world famous battle of Hampton Roads on March 9, 1862. The results were far reaching,

"Probably no naval conflict in the history of the world ever attracted so much attention as did the battle in Hampton Roads, between the Monitor and the Merrimac. It revolutionized the navies of the world, and showed that the wooden ships, which had long held control of the ocean, were of no further use for fighting purposes." 5

The Confederate States, who were first to begin, were soon outstripped in the construction of armored vessels by the Union, which was far superior in establishments and resources.

At the close of the Rebellion there were on the navy list 72 armored vessels of all classes, many of which were incomplete. All were built by contract except four double-turreted monitors. A few of them were built of iron as was the original Monitor, but most of them were built with wooden frames and iron hull and a number with both frames and hull of wood, plated with iron. There was one, three-turreted monitor; two seagoing single turreted monitors; 12 double turreted monitors; 38 single turreted, 20 of which were of very light-draft built for use in river and shallow bays along the coast; 16 ironclad casemated vessels chiefly western river boats, including the remaining four of Eads eight gunboats that formed the nucleus of the western river flotilla.

A total of 75 ironclads had been built or

commenced during the war, including 13 originally built for the War department and later transferred, and one vessel the Choctaw, purchased. In the conflict, nine of these vessels were lost or destroyed, but five captured from the Confederates and taken into the service swelled the total to 72 in 1865.⁷

The ironclads built on the Atlantic sea-coast were equipped with screw propellers; those in the western rivers with paddle wheels, completely covered however with armor. The monitor type were with modification copied from the original Monitor which "was, in simple terms, a turret on a raft, and the whole superposed on a flat bottomed boat."⁸ The larger ones generally carried two 15-inch smooth-bore guns to each turret, and the smaller ones two 11-inch smooth-bore Dahlgrens.⁹ The wood used in their construction was chiefly unseasoned since the contractors were unable to secure seasoned timber.¹⁰ They were thus subject to rapid decay especially so because of the effect of the iron plating. Some of these vessels were never completed, and in 1870 it was reported that 11 of the 20 light-draft monitors had never been in commission and were unfit for service.¹¹

The seven ironclad gunboats built by Eads for the War Department in 1861-1862, may be taken as

an example of the western river armored vessels. They were to be built in 65 days "although the birds were teaching their young to fly among the branches of trees that were used in building the hulls of these vessels..."¹² The sides and ends sloped at an angle of 35 degrees and were covered with two and one half boiler plate, and the stern wheel was completely covered with the rear casemate. They drew six feet of water and carried 13 heavy guns.¹³

The Mississippi river ironclads built especially for service in the western rivers were of no value to the navy in time of peace, and as shall be seen, were the first disposed of. The turreted or monitor class of vessel was built for coast defense, although the voyage of the Miantonomah to Europe in 1866-1867, and the cruise of the Monadnock from Hampton Roads, Virginia to San Francisco in 1865-1866, tended to dispel the impression that they could not venture out of the harbors.¹⁴ Admiral Porter, while of the opinion that ironclads of the Monadnock class would make good cruisers, believed that the smaller classes would always require a steamer to tow or to take care of them, and that they were uncomfortable in a seaway, and leaked around the base of the turret.¹⁵

Welles' originally policy in regard to the ironclads in time of peace was to "keep them laid up in fresh water in perfect fighting order."¹⁶

Congress having failed to provide for a fresh water basin for such vessels, those on the Atlantic coast not in commission were sent to League Island on the Delaware, which a committee appointed in 1862, in pursuance of an Act of Congress, had reported to be the most favorable location. The ironclads on the Mississippi were laid up at Mound City, Illinois,¹⁷ or at Algiers opposite New Orleans.

In 1865, a total of eight were disposed of, all of them by sale. All were western river ironclads, sold at auction at Mound City, Illinois November 29. The average price was about \$3,200, not including the plating which was removed and sold separately, as compared to an average cost of about \$50,000.¹⁸

Only two were removed from the list in 1866; one a river vessel, the Choctaw, sold at New Orleans; the other, the New Ironsides, was burned at League Island.¹⁹ Congress however was lax about providing for the preservation of ironclads, failing to authorize the Navy Department to make any preparation or improvements for the "safe-keeping, protection, and preservation of vessels which have cost the government several million."²⁰

It was not until February 18, 1867 that Congress provided for the acceptance of the League Island, which had been offered the government by the city of Philadelphia.²¹

Welles took the question of selling ironclads before the Cabinet September 25, 1866, and their advice was to sell more of the ironclads from the navy.²² There were eight vessels removed from the Ironclad Navy in 1867.²² The Dunderberg and Onondaga were transferred by Act of Congress to the contractors, William H. Webb, and George W. Quintard respectively on payment of the sums advanced to them by the government.²³ Webb had applied to Welles for relief on the plea that he was losing money and wished to sell the vessel to a foreign country in order to prevent a loss, but the Cabinet decided against him.²⁴ Both the Onondaga and Dunderberg were soon sold to the French,²⁵ which would tend to indicate that our ironclad vessels at that time were well regarded abroad. The former Rebel ram, Stonewall, was sold to the Japanese government for \$400,000, while the Tennessee and Texas although probably greatly inferior were sold in the United States for \$7,100 and \$3,200 respectively. The Stonewall was the only vessel sold directly to a foreign nation, and the Onondaga, Dunderberg, and the Catawla and Oneota, sold in 1868 were the only ones to reach foreign hands. Secretary Welles had come to favor a policy of disposing of ironclads

directly to other nations. At a Cabinet meeting, September 24, 1867, Seward proposed that it be understood that no more ironclads be offered for sale because the Turks were making application. Welles stated the Greeks were applying also, and that he was in favor of seelling to any purchaser who was not objectionable. "The truth is they are expensive to keep and will soon go to waste on our hands."²⁶

Congress on February 3, 1868 passed a joint resolution, authorizing the sale of ironclad vessels except those of the "Dictator," "Kalamazoo," "Monadnoch," and "Passaic" classes at a price set by an appraisal board of five naval officers. Reports of sales must be made to Congress and the proceeds turned into the United States Treasury.²⁷

Under the provisons of this act, the Catawba and Oneota were sold April 13, 1868 to Alexander Swift and Company for the appraisal value of \$755,000, and they then sold to the Peruvian government these in turn. Peru was nominally at war with Spain and in pursuance of a House Resolution of May 8, 1867, the vessels were temporarily detained in port.²⁸ Welles was called upon by the House for all documents involved in the sale.²⁹

Representative E. B. Washburne of Maine, on April 28 "introduced a resolution of inquiry into the corrupt sale of Ironclads."³⁰ The resolution carried and Welles was examined orally May 8 by the Retrenchment

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 Committee. June 20, Welles notes in his diary that
 the committee directly charged ^{the} Assistant Secretary
 with fraud and "perhaps" the Secretary himself. Because
 Swift and Company "received a large advance from Peru
 the committee insinuate fraud."³² The only result of
 it all was that it discouraged possible buyers of iron-
 clads.³³ The government had received comparatively
 large prices for these vessels, and no more were sold
 to go outside of the country.

In his last Annual Report, Secretary Welles
 expressed the opinion that all the vessels whose sale
 was authorized by Congress should be disposed of, for
 less if necessary than the appraisement.

"To keep them entails a large annual
 expense upon the government, and in a few years
 if unused, they will become valueless as vessels
 of war and will have to be broken up and disposed
 of as old material."³⁴

This prophecy eventually became true. It is clear that
 to realize any respectable sum from the sale of iron-
 clads, it was necessary to sell them to other nations
 for naval purposes, and for the failure of that plan,
 Congress was largely responsible.

During the Administration of Secretary Welles,
 the enrolled force was reduced by a total of 20 vessels,
 leaving March 4, 1869, 52 ironclads in the navy. During
 this period they were practically all laid up or incomplete.

There were seven incomplete in 1866, six in 1867, five in 1868. The reduction of appropriations for 1868 caused all repairing work to be discontinued. ³⁶

No new ironclads were built or authorized.

The government did not even have the means for the construction of iron hulls for armored vessels. James B. Eads was commissioned at the close of the war to study naval construction in Europe. In his report, he makes the interesting conclusion that vessels of the future will be entirely submerged at will, except that the turret would be left above the water in time of battle. ³⁷ ³⁸

Secretary Robeson on taking office in 1869 found that of the 52 ironclads in the navy, 46 were laid up, none of them were ready for service, and that 32 of them were condemned and ordered to be sold; 26 of them never having been in commission. ³⁹

The monitor type of vessel while performing a valuable service during the war was rapidly becoming antiquated due to advance in construction abroad, especially by England and France, who were building large sea-going armored vessels equipped with sail power, while our monitors were merely steam batteries, not sea-going cruisers. ⁴⁰ As stated above the timber used in these vessels was unseasoned and it decayed rapidly. The light draft monitors were particularly of little value. By 1870, eleven of the 20 had never been in commission, ⁴¹ and Admiral Porter declared them to be worthless, useful only for channel obstructions. ⁴²

In his Annual Report of 1874, he states that the defects of our monitors are a lack of speed, and the inability of the armors and turrets to withstand the fire of modern ordnance; that they were built for a specific purpose, to operate in smooth water against forts and for the defense of harbors. They were effective at the time, but were then no match for the new style of cruising ironclads built in Europe.⁴³ In 1875, he states that over \$20,000,000 had been lost in "light-draft" monitors because of mistakes in construction. He still adhered to the monitor type however, "provided the vessels be of the most approved construction and of great speed."⁴⁴

Secretary Robeson put the ironclads under repair in 1869, and four were put in commission, and the rest kept in order, ready at a week's notice.⁴⁵ Those put in commission were removed from the squadrons however in 1871 and put out of commission. Only a single ironclad, the captured steamer, Atlanta, was sold before 1873.⁴⁶ In 1873, the Marietta and Osceola, formerly called Neosho, western river ironclads, were sold at Mound City, Illinois, for \$16,000 each.⁴⁷

The Virginus affair in 1873, which made apparent the inefficiency of the navy, was followed by a wholesale disposal of ironclad vessels in 1874 and 1875. In the former years, 12 vessels were disposed of, eight of them being sold at auction under Joint Resolution No. 10.⁴⁸ The other four were involved in what Spars

characterizes as an act, "the most disgraceful in the history of the Department."⁴⁹ The vessels were broken up by contract with shipbuilders, and the materials bartered with the same contractors for new materials to be used in rebuilding the double-turreted ironclads, Amphitrite, Miantonomah, Puritan, and Terror.⁵⁰ These vessels were really to be new as the old vessels of that name were also broken up. It was all done however under the pretense of repairing the old ones.

In 1875, eleven more were disposed of. Ten of them in the same manner, and in 1876 one more,⁵¹ making a total of 15 which were broken up and their materials bartered for new materials for use in rebuilding the double-turreted ironclads. The contracts made with Harlan, Hollingsworth and Company, John Hoach, W. Cramp and Sons, C. E. Pennock and Company, and Seybert, McManus and Company were made without advertisement for bids either for the work of breaking up the vessels or for the sale of the material. Of these six had never been condemned.⁵² Figures taken from testimony taken by the House Committee on Naval Affairs included in House Misc. Doc. No. 63, 45th Cong., 2nd, Sess. show that the original cost of the ironclads broken up was \$12,614,390.45; that it cost the department \$101,847.44 to have them broken up and the proceeds amounted to only \$541,831.16, not including the materials retained by

the government. In exchange for new iron, one pound of new for three of old, the government was allowed one and three-fourths cents a pound for the old iron. 53 These transactions were made without the authority or knowledge of Congress, and the regular annual appropriation for construction and repair was used in their building besides the money derived from the exchange of old material.

These actions and other alleged abuses led to an investigation of the administration of the Navy Department by the Committee on Naval Affairs of the Democratic House during the first session of the 44th Congress. W. C. Whitthorne of Tennessee was chairman of the committee. The testimony taken by the committee was submitted to the House April 27 and June 19, 1876, as House Misc. Document No. 170, 44th Congress. It included nine parts compiled in three volumes, (Volumes 6, 7, 8, House Misc. Docs.) It was a very searching investigation of the administration of the whole department, going so far as to examine the bank account of the Secretary. 54 Of some interest is the virtual admission of Cramp that the exchange of one pound of new iron for three of old, contracted with the Bureau of Construction and Repair was a very good contract. 55 It was found that the Bureaus of

Steam Engineering and Provisions and Clothing as well as the Bureau of Construction and Repair had been engaged in the unlawful barter and exchange of materials.

As to the sale of naval property, Admiral Porter testified:

"By these sales great frauds are often committed against the government...immense amounts of material from the 'scrap heap' have been sold at auction for a song, including many valuable articles, engines, boilers, machinery, brass work, etc. This system should be abolished and the 'scrap heaps' should be retained for the use of the government, for there is scarcely anything in them that cannot be utilized in some way or another."

Valuable castings were sold for a trifle and afterwards repurchased at full price for use in vessels.

"Nothing should be sold at a navy-yard except by order of a board of navy commissioners, after a careful survey...to establish the fact that the articles to be sold are of no use to the government.

"From the complicity of persons in the yards, purchasers have abstracted much valuable property, copper and brass being covered up with old iron, and many other devices made use of to cheat the government...Vessels have been sold for \$30,000 or \$40,000...which cost over \$1,000,000, though their hulls and boilers were much worn. By the formation of a ring, honest bidders can be prevented from purchasing..."⁵⁶

The report of the Committee was submitted July 25, 1876 as House Report no. 784, 44th. Congress, 1st Sess. The majority report submitted by Chairman Whitthorne charged the Administration of the Navy Department with the violation of law "in the letting of contracts; in the purchase of supplies; in the destruction and sale of property belonging to the naval service;

in the failure to cover into the treasury the proceeds of sales of property..."⁵⁷ The minority report was submitted by B. W. Harris, concurred in by Charles Hays and L. Danforth:

"Resolved, That in this investigation, no fraud, corruption or willful violation of the law has been committed by the Hon. George M. Robeson, while in the discharge of the duties of Secretary of the Navy; and we find no reason to censure or find fault with his conduct in the administration of the navy department." 58

The count was thus reversed in 1872, when a select Committee of the Republican House investigated charges made against Secretary Robeson and the Navy Department, by Dana of the New York Sun.⁵⁹ The majority Report presented by Sargent of Colorado completely exonerated the Secretary.⁶⁰ The minority Report submitted by Mr. Austin Blair of Michigan, Chairman of the Select Committee acquitted Robeson of personal corruption, but declared that the poor condition of the navy "furnishes the most unanswerable charges against the Administration of the Secretary. It is 'barnacled' all over and if its Administration is not speedily changed for the better the people of this country are likely to be brought to shame on its account."⁶¹

Returning to the investigation of 1876, whatever may have been the motives of Mr. Robeson, it is very clear that the law was violated in the barter and

exchange of materials; in making contracts without advertisement and without authorization of Congress, and in the failure to cover the proceeds of sales into the Treasury. Consideration might be given to the statement of Representative J. H. Burleigh of Maine, made on signing the majority report, "I sign this report, as I believe it is in accordance with the evidence taken, and substantially just. So much of it is of a partisan character I have no sympathy with." 62

Again in 1878-1879, the Committee on Naval Affairs of the Democratic house effected an investigation of the Robeson Administration, in pursuance of a House resolution of January 11, 1878, directing them to inquire into any abuses, fraud in the administration, and execution of existing law, etc. The testimony taken was submitted January 8, 1879, as House Misc. Doc. no. 21, 45th. Cong. 3rd Sess. Their report was based very largely on the testimony previously taken. The chief new factor was the large indebtedness left by Robeson in 1877. The Majority:

"Resolved, That the acts and conduct of the late Secretary of the Navy, George M. Robeson, and of the late Chiefs of the Bureau of Steam Engineering, Construction and Repair, and Provisions and Clothing...in the sale and disposition of public property, in their method of making contracts, and in involving the government in indebtedness...deserve and should receive the severest censure and condemnation." 63

The Minority report, submitted by Mr. John Hanna, exonerated the late Secretary from the charges of "fraud,

corruption, and willful violation of law." ⁶⁴ The House Judiciary Committee to whom the Reports were referred, held in both cases that the charges were not sustained. ⁶⁵

In summing up, it is found that a total of 27 ironclads were disposed of during Robeson's Administration, 19 of them light-draft monitors. There were thus left in the navy when Secretary Thompson took office in 1877, a total of 25 ironclads ⁶⁶ including the incompleated double-turreted monitors. The ironclads remaining were double-turreted or heavier classes of single turret vessels, except the Roanoke, a three turreted ironclad. There were three ironclads on the stocks of white-oak, never having been finished, the Colossus, Massachusetts, and Oregon, all of which were worthless, as was the Roanoke, afloat. The double-turreted monitors, Amphitrite, Miantonomah, and Puritan were in the course of construction, but the work had been suspended, on all but the Miantonomah, which was carried to completion. The Monadnock also was in process of rebuilding, the work having been begun by the previous administration. Secretary Thompson favored the plan of completing these four vessels, and in 1868 and 1869, he recommended appropriations for the purpose. Congress failed to take any action, however, until 1880, when a joint resolution April 2 was passed, providing

for a Board of Naval Officers to examine the double-
turreted monitors and to recommend a course of action. 68
In 1883, an appropriation of \$1,000,000 was made for
the completion of these vessels. 69

Not a single ironclad was disposed of during Secretary Thompson's term of office so that on March 4, 1881, then there were still 25 of these vessels in the service. The Acts of August 5, 1882 and March 3, 1883, referred to in the previous chapter, made provision for the condemnation, appraisal and sale of these vessels when they became unfit for the service.

Four of our friends, the double-turreted monitors, Puritan, Amphitrite, Miantonomach, and Terror 70 were used in Cuban waters during the war with Spain, and seven of the old single-turreted monitors were put into service at various ports for the purpose of harbor defense. They were still equipped with the old 71 smooth-bore guns, however.

APPENDIX TO CHAPTER II

Ironclad vessels whose names were changed in 1869.

Passaconaway, to Massachusetts.*

Quinsigamond, to Oregon.

Casco, to Hero.

Skakamaxon, to Nebraska.

Chimo, to Piscataqua.

Kalamazoo, to Colossus.

Kickapoo, to Kewaydin.

Manayunk, to Ajax.

Naubuc, to Minnetonka.

Neosho, to Osceola.

Sangamon, to Iusen.

Shiloh, to Iris.

Squando, to Algoma.

Tippecanoe, to Wyandotte.

Tunxis, to Otsego.

Waxsaw, to Niobe.

Tonawanda, to Amphitrite.

Agamenticus, to Terror.

* House Ex. Doc. No. 92, 41st Cong., 2nd. Sess.

CHAPTER III

PERSONNEL

When the Civil War began, there were 7,600¹ men in the naval service. Practically all of these men were employed on the vessels in service, only 207 men being available to man the ships which were soon to be put in commission.² Before Secession, there were 1,563 commissioned and warrant officers in the navy, 321 of which resigned to enter the navy of the Confederacy.³ Nearly all of the officers were old, and many of them had never served on a steamer.

"Long years of peace, the unbroken course of seniority promotion, and the absence of any provision for retirement had served the officers as lying in ordinary served white oak ships."⁴

Immediate steps were taken to provide an adequate force. Volunteers were called for, and although great numbers were taken into the service, many being added, there were never enough. The number of seamen increased during 1865 from 7,600 to 22,000. To provide officers, the upper classes at the Naval Academy were taken into the service, many becoming lieutenants before they reached the age of nineteen.

"Volunteer officers were also called for, and 7,500⁵ of them received appointments during the war."

"Captains and mates from the Northern ports and the Great Lakes were the more valuable sort of this volunteer force, but so great was the need of officers that not a few men who had never been at sea received appointments." 6

When the war came to a close, 51,500 men were in the naval service. As the vessels were returned and put out of commission most of the men were discharged and returned to peaceful pursuits. 7
 By December 1866, only 13,600 remained in the navy. By December 1867, the number had been further reduced to 11,900, as reported by the Chief of the Bureau of Equipment and Recruiting. For the first time since the close of the war a shortage of seamen is noted. Difficulty had been experienced in enlisting men, the average monthly enlistment in 1860 having been one-third greater than in 1867. The reasons given for this falling off in enlistments were: (1). The union of the Italian States and the North German States resulted in increasing their own commerce, and prevented Mediterranean and North country seamen from entering our service; (2). Greater inducements offered and higher wages paid in the merchant marine, the navy paying only \$20.00 a month to seamen, while the merchant service paid \$30.00; (3). The distribution of prize money⁸ caused many men to buy farms and to quit the sea.

Congress took a hand in the matter in 1868, and by the Act of June 17, limited the number of persons authorized to be enlisted in the navy to 8,500, including apprentices and mechanics; a limitation below the maximum which existed before the war,⁹ when the navy was very much smaller. This resulted in the suspension of apprentices, of which more will be said later, and the discharge of a number of them.¹⁰ Inconvenience to the department resulted from this enforced reduction. Secretary Robeson reported in 1869 that there were no men available for relief and that ships had to return home from the squadrons before vessels could be manned to take their places. He presented estimates made on the basis of 12,000 men as the minimum number required for the work, and recommended that the increase be authorized.¹¹ He followed up this recommendation by addressing a letter to the Committee on Naval Affairs in the House on December 15, asking authority to enlist 1,500 men in addition to the 8,500 authorized. He repeated the arguments presented in his Annual Report of that year, and included a letter from the Chief of the Bureau of Equipment and Recruiting, which was to the same effect.¹² Admiral Porter in his Annual Report 1873, stated that on the whole the ships' companies were about 15% below complement.¹³

Failing to secure authorization for an increase of the

seamen, recommendations were made to Congress in 1874 and 1875 to authorize the enlistment of from 500 to 2,000 boys to serve until 21 years of age, in addition to the 8,500 men allowed by law.¹⁴

These recommendations were not heeded by Congress however, which on June 30, 1876, included in the Naval Appropriations Bill for the year 1876-1877, a provision requiring enlistments to cease "until the number of enlisted men is reduced to 7,500."¹⁵ This provision included apprentices and boys. The number of seamen was reduced by this Act to the lowest point since the Civil War and in fact lower than in 1861 before enlistments began, and placed the naval personnel below that of nearly every European nation. In December 1877, there were only 7,012 enlisted men and boys in the service.¹⁶ The training of boys, which had been abandoned following the earlier reduction to 8,500 men, was revived in 1875, and maintained in spite of the reduction of the force to 7,500.

During the years from 1876 to 1879, Congress was urged to authorize the enlistment of 750 boys in addition to the 7,500 men authorized by law and to make the system permanent. The purpose was to increase the quality as well as the quantity of the enlisted men.¹⁶

Congress responded by an Act, passed May 12, 1879, authorizing the enlistment of 8,250 persons including 750 apprentices and boys from 15 to 18 years of age,

to serve until the age of 21; their enlistment was to depend upon the consent of their parents.¹⁸ By June 1880, there were 1,168 boys in the service, 562 of them were on cruising vessels.¹⁹ On June 30, 1881,²⁰ the total number of men and boys equalled 7,974, almost 300 less than the total number allowed by law.

Not only was the total number of men limited by Congress, but many were diverted from purely naval work. They were used in the Coast Survey Service, on Special Surveying Expeditions, and at the Naval Academy. In 1879, there were 275 navy men in the Coast Survey Service, and 100 were used at the Naval Academy in winter and 375 on practice cruises in the summer; thus deduct-²¹ing summer 650 men from the number authorized by law.

While the number of seamen after 1868 was very small, the number of officers was too great, at least in quantity. Secretary Robeson's letter of May 16, 1870 in response to a House resolution of February 12, asking for the number of officers, seamen, and vessels in the navy, gives a statement of the²² number of officers by rank. A comparison made with the Act of July 25, 1866, regulating the number of officers in the navy, shows that the ranks from Lieutenant Commander to Admiral as provided in 1866 were completely filled in 1870; there is a reduction of ensigns and masters, while the number of seamen had been greatly reduced.

In his letter to the House, the Secretary estimated that the number of officers could be reduced by 270. In 1871, Robeson, while stating there were 488 officers of the rank of Lieutenant or above in the navy as compared to 535 in 1859, recommended no further promotions to the ranks of Admiral, Vice-Admiral, and Commodore during time of peace, the increase in cadetship from four to six years, and the dropping of mates on temporary duty.²⁴ These recommendations were repeated in 1871.²⁵

Nothing was done, however to reduce the number, which consisted in 1877 of 829 officers of the line and 594 officers of the Staff on/active list, and 135 officers of the line, and 103 officers of the Staff,²⁶ until 1879. On February 15 of that year, an Act was passed abolishing the Volunteer Navy of the United States. A board of five line officers appointed by the Secretary was to examine all Volunteer Officers and if they were found qualified for the service, the President might appoint them into the Regular Navy. If unqualified, they were to be discharged within six months with one years pay.²⁷

The Act of August 5, 1882, so important in naval history provided for a gradual reduction of the officers of the navy,²⁸ by reducing the numbers in various grades and by providing that no appointments

of Naval Academy graduates should be made until a vacancy occurred, which according to Spears cut off from the younger officers of the navy, their hope of promotion and reward.²⁹

That the quality of the seamen was causing grave concern during the period from 1865 to 1880, as well as the quantity, is evident from a study of the records.³⁰ According to Admiral Porter, the decline in quality began in 1846, with the introduction of steam on a large scale. He declared the seamen were largely employed in coaling ships and hoisting out ashes "to the exclusion of their more agreeable duties," and the officers "had little to do but walk the deck while the vessel was under way."³¹ Undoubtedly the change from sail to steam power had some bad effects on the quality of seamen, but there were other and probably greater factors involved.

The decrease of American commerce, which also had begun about 1846, played a large part as well as the fact that seamen were better paid and perhaps better cared for in the merchant service, and that a poor system of recruiting was in effect.

As early as 1865, an attempt was made to introduce a higher type and better trained seamen into the navy by resuming the enlistment of boys from 14 to 18 years old to serve until 21 as authorized in 1837.

It was hoped that these boys would remain in the service after their term of enlistment expired. In the meantime they were given an elementary education and taught seamanship. It was also hoped to make the navy independent of the merchant marine for seamen; at the same time it was suggested that many of these boys would go into the merchant service after the completion of their training and thus improve its personnel.

One of the chief arguments for the apprentice system was that there were great numbers of foreigners and foreign born in the crews of the naval vessels. A comparison in 1868 of native and foreign born seamen, who were members of the crew of the U. S. Practice ship, Sabine, shows 51 native born and 59 foreign born.

The reduction of the force to 8,500 men in 1868, however resulted in the discontinuing of enlistments as stated above; there having been 783 boys in the apprentice system on January 1, 1868. The following year, in urging the permanent establishment of an apprentice system, the Secretary of Navy Robeson said that the French and English navies were largely manned by native born, as a result of their apprentice systems while the "waifs of the ocean," outnumber the "old man-of-war's men," in the United States Navy.

Admiral Porter continually in his Annual Reports called attention to the lack of Americans in the crews of vessels, and

urged an apprentice system to ameliorate the condition. In 1873, he stated that after a ship returned from a cruise often "about the only nationality she has is her officers and the flag flying at her peak." ³⁷ In the year 1875, he added that the crews were made of many nationalities, many of the men not knowing the American language. ³⁸ A report from the Committee on Naval Affairs of the House, March 26, 1878 said in part:

"The testimony of competent witnesses establishes the fact that at least 60% of the enlisted men of the U. S. navy are the refuse of the national service to whom they owe allegiance, unnaturalized...including Greeks and Chinese, diseased, debauched, uneducated, very inefficient, while American born seamen have not improved because of associations, and the cruel and autocratic naval code." ²⁹

Also, to supply the navy with native born seamen, and to improve the merchant service, the Committee urged the enlistment of 750 boys. The Act of May 12, 1879, mentioned above providing for such a system, followed.

The system of enlistment and the treatment and care of seamen was also object to. The men on enlisting were given an outfit of clothing which was charged up to them, putting them in debt from the start and encouraging desertion. It was continually urged that an allowance for an outfit should be made on enlistment as was done in the Army and Marine Service. ⁴⁰ Admiral Porter in 1870, urged an increase in pay, an addition to the ration, and an outfit of

clothing on enlistment.⁴¹ These evils of small pay, poor food, enforced indebtedness at time of enlistment, and a severe naval code, combined with poor accommodations on board vessels, and better pay and care elsewhere resulted in many desertions. R. W. Shufeldt, Chief of Bureau of Equipment and Recruiting, in his Annual Report of 1877, states that there were 818 desertions during the last year, a decrease however from 1,203 the previous year.⁴² He also called attention to the necessity of maintaining the health of the men.

"It is simply impossible to expect men to retain their health if compelled to berth and mess in the dense and mephitic atmosphere which is the natural result of their crowded quarters." 43

He supported his contention with figures giving the average number of cubic feet of air space for each man on berth decks of vessels. The amount averaged 69 cubic feet for three classes of vessels mentioned.⁴⁴ Shufeldt was able to report however in 1878 that conditions were improving, with fewer desertions, and fewer punishments reported, concluding that there is a "gradual but marked improvement in the moral and professional character of the enlisted men of the navy."⁴⁵

In spite of this apparent improvement and the permanent establishment of the apprentice system, there was much left to be done. Admiral Porter declared in 1881 that:

"Though we have more American seamen in the Navy than we had a few years ago, and the majority of leading petty officers are Americans, yet a large portion of the crews of our ships are foreigners, who might or might not prove faithful to the flag in time of war." 46

He urged the number of apprentices to be increased to 1,400, and the total force to 10,000 because "our vessels of war are not fully manned." 47

CHAPTER IV

ORDNANCE

The naval battles of the Civil War were fought almost exclusively with smooth-bore, muzzle-loading guns, made of cast iron. Exclusive of Howitzers, these cannon ranged from 32 pounders to guns of 15 inches caliber. The best known types were the Rodman and Dahlgren named after their respective inventors. The Rodman gun was made by casting the guns hollow and cooling them from the interior. The Dahlgren gun, designed in the 50's, was made by casting a solid block of iron, then boring out the tube and turning it down to the proper size. They were of large caliber, chiefly eleven and fifteen inches, and were considered the best smooth-bore guns in existence at the time of the Civil War.¹ These smooth-bores fired round shot, canister, and shells; the shells for the Dahlgren guns being provided with time fuses.² The best American guns in 1859 carried a charge of 15 pounds of powder as compared to 12 pounds for the best English guns, while the largest British gun was of 10 inch caliber.³

There was also a class of rifled guns used, named after their inventor Parrott. They were also muzzle-loaders, strengthened by shrinking wrought iron bands on the breech of the cast iron tubes. They ranged up to a caliber of 11 inches, but many of them burst in action and "except for the smaller calibers, were in many cases more dangerous for their crews than for the enemy."⁴

Attempts had been made in 1839 by Ericsson and in 1844 by Captain Stockton to construct serviceable guns of wrought iron, but the latter's guns, the Peacemaker, exploded while on exhibition tour, killing the Secretary of State, Upshur, Secretary of the Navy, Gilmer, and others.⁵ This tended to slow up improvements in guns for the United States Navy.

The small cannon or Howitzers were commonly constructed of bronze.⁶

When the Civil War ended there were left on hand a great quantity of cannon, powder, projectiles, gun-carriages, small arms, etc. It was immediately proposed to conduct a survey to separate the good material from the unserviceable; to store the former and to dispose of the latter.⁷ Besides cannon and other materials, there was on hands, 4,025,178 pounds of powder; 491,026 shells; 233,817 shot; 84,301 shrapnel; 47,802 canister and 21,355 grape of all calibers and description.⁸

It was proposed to store the surplus of cannon on the Cob dock at New York where 2,000 could be accommodated. It was estimated that there were enough good cannon on hands together with those under construction at the close of the war to last several years, and no new contracts for guns were contemplated. The guns contracted for, before the close of the war, were carried to completion, and all had been completed and delivered by December 1867, except a few of the 15 inch class. Otherwise, the foundries were allowed to return at once to peace time pursuits.

A. N. Wise, Chief of the Bureau of Ordnance, in 1865, in discussing the materials and construction of ordnance, declared that the art of making wrought iron or steel cannon was in its infancy here, and an unsettled question abroad, and that the advantage claimed for rifled cannon over smooth-bores was largely "visionary." He adhered to the cast iron ordnance, declaring the 15 inch guns were the best of their kind. He expressed the opinion that with the strength and prestige of our navy we could afford to wait for the results of trials abroad before building. Although breech-loading steel cannon were being built by Krupp, "they find no favor in England." No change in cannon was planned except the substitution of iron gun-carriages for

those of wood.¹³ Plans were on foot however, to adopt breech-loading small arms using metallic cartridges into the service, the expense to be partly defrayed by the sale of the old arms.¹⁴ The gradual introduction of Remington breech-loading small arms into the service and the introduction of iron gun carriages were the only advances in ordnance made during the Welles Administration.

In 1868, J. A. Dahlgren, Chief of the Bureau of Ordnance reported that "on account of the want of funds the experimental operations of this Bureau have ceased entirely."¹⁵ In the same report, however, he urged the necessity of experiment to keep pace with the nations abroad and to determine the best type of ordnance to use against the improved armored vessels.¹⁶

During the calendar year 1865, ordnance and ordnance stores to the value of \$95,276.79 were sold from the service.¹⁷ In 1866 boards of officers at various navy yards conducted surveys of all cannon and ordnance material with a view to disposing of all un-serviceable material and all equipment not needed by the fleet. As a result, the proceeds of sales rose to \$392,058.53 for the calendar year 1868.¹⁸ In 1867 the sales totaled \$273,462.21, and in 1868 and to March 4, 1869, the combined sales were \$66,657.12.¹⁹

The major part of the sales were made at public auction, a few by private sale, including ordnance and ordnance stores for the ironclads, Dunderberg, Onondaga, and Stonewall, the former two sold back to the contractors and the latter sold to the Japanese government. The articles sold consisted of condemned stores, refuse wood, powder, unserviceable and condemned cannon, broken shot and shell, chips, castings, canister, gun-carriages, small arms, etc. The proceeds of the sales, which totaled \$827,454.65 during the Welles Administration, were deposited in the Treasury to the credit of the Bureau of Ordnance,^a and used by the Bureau under the Act of March 3, 1847,²⁰ which authorized that procedure.

Some idea of the price received from the ordnance material may be gained from a statement of H. A. Wise, Chief of the Bureau of Ordnance, in 1866 that 944 cannon had been sold for \$44,445 or \$48.25 each, and that 29,767 barrels of gunpowder sold for \$292,919.²¹ The ordnance property sold in 1867 included material from the western flotilla which had been deposited at Jefferson Barracks, St. Louis.²²

The amount sold represented a very small percent of the surplus on hand. J. A. Dahlgren, Chief of Ordnance, in his Annual Report 1868, says:

"The value of ordnance and ordnance stores remaining from the supply accumulated during the war were valued June 30, 1868 at about \$17,000,000. No material diminution of this stock has been produced by the very moderate demands for the limited number of vessels in commission. The charges for their preservation and keeping makes considerable drafts on the small appropriation of \$264,500 for ordnance expended for the year ending June 30, 1868." 23

The reason for not selling more material is not clear. Until May 1871, the proceeds were used by the Bureau to meet expenses. ²⁴ The explanation probably lies in the fact that the survey boards failed to condemn a greater amount of the material, considering it to be of use to the navy.

During Secretary Robeson's first Administration of the Department from March 4, 1869 to March 4, 1873, very little ordnance or ordnance stores were disposed of outside of the wear and tear of service. Before he was succeeded by A. Ludlow Case in 1869, Dahlgren had ordered a survey of cannon and ordnance stores at the northern navy yards to determine what material was unserviceable with a view to disposing of any such unserviceable material by public sale. Case reported that the survey was made during the summer of 1869, and that material at New York had been sold for \$30,500. ²⁵ He stated that the condemned material at other yards would be sold likewise. The total amount sold from March 4, 1869 to February 2, 1872 resulted in proceeds

of \$158,170.17, the greater part, \$110,084.24 resulting from sales in 1869. The property sold as in the preceding administration consisted of powder, cannon, condemned stores, small arms, gun-carriages, etc.

It is evident from a study of the record of sales as given in House Ex.Doc., no. 250, 42nd. Cong., 2nd. Sess., that after March 4, 1869 private sales far exceeded sales at auction, while previous to that date, the opposite was true. ²⁷ The proceeds were deposited in the Treasury to the credit of the Bureau of Ordnance, but no money from sales was used by the Bureau after May 1871. There is no record of further sales during the period from March 4, 1869 to March 4, 1873. The Act of May 23, 1872, requiring the proceeds of all sales to be turned into the general fund of the Treasury, thus definitely deprived the Bureau of its use, and may have produced some effect on sales.

During the period there were some small additions to the naval ordnance. A board appointed in 1869 to decide on a system of breech-loading small arms recommended the Remington system, and 10,000 Remington rifles, caliber 50, were ordered by the Bureau in 1870. ²⁹ The muzzle loaders were to be sold. Congress made appropriations in 1871, and 1872 for the contracting of twenty 15 inch cannon, which were completed and delivered. ³⁰ They were however the old type, smooth-bores

of cast iron. Congress also authorized the department on March 3, 1871 to contract for 25 gatling guns, which were delivered in 1872.³¹ However, appropriations for experimental purposes, recommended in 1869, 1870,³² and 1871, were refused by Congress; although some experiments were made by order of the department with prismatic and large grain powders,³³ the means for carrying on experiments were almost totally lacking. In the words of Chief of Ordnance, Case, in 1871:³⁴

"Our present condition is really a virtual abandonment of all effort to solve the great ordnance questions of the day. Even the smaller nations of Europe are greatly in advance of us in experimental practise."³⁵

Admiral Porter in 1870 in urging the establishment of a government experimental foundry declared that we were without the means of making valuable experiments. He indicated at length the progress being made in England by Whitworth and Armstrong, the former having designed a steel gun, cast under great pressure. The Armstrong gun adopted by the British was a "built up gun" made of iron and steel. Until recently the 15 inch cast iron guns of the United States Navy were considered the best for smashing armor, but since that time, the British and Prussians had designed rifle guns to pierce 20 inches of armor, while the Dahlgrens were built when naval men thought that no ship could carry over eight to ten inches of iron armor. He attributed the neglect of experiment

to the limited appropriations allowed by Congress,³⁶
 and to the lack of proper ordnance proving ground.
 The following year he repeated his recommendations,
 declaring:

"In one arm of defense, viz., heavy
 rifled guns, we are singularly deficient, and
 it is with these that every foreign-fighting
 ship is armed."

Smooth-bores were declared to be out of date, and since
 rifled guns could not be made in the United States, it
 was necessary to establish a government foundry or to
 purchas³⁷d them abroad.

Throughout Robeson's second Administration,
 navy men pointed out the deficiency of the naval
 ordnance; while other nations had adopted rifled,
 breech-loading guns, the United States Navy still
 retained the old smooth-bore muzzle loaders of the
 Civil War period.³⁸ The rifled guns possessed greater
 penetrating power, a factor of utmost importance, since
 the adoption of armored vessels by all naval powers.
 They had a longer range and were more accurate than
 the old smooth-bores, because of the spinning effect
 given the shell by the "rifling" grooves in the barrel.
 Congression^{al}/appropriation lacking, attempts
 were made to convert smooth-bores to rifled guns.

Mr. Norman Waird, under the nominal supervision of the
 department made an unsuccessful attempt in 1873 and 1874.

The cast iron cannon burst from the pressure of the
 extra heavy charge used in rifle ordnance. ³⁹

In 1875 an attempt was made to convert
 11 inch Dahlgren smooth-bores into eight inch rifled
 guns by inserting a wrought iron tube into the smooth-
 bore, practice which had been found practicable in the
 army. ⁴⁰ By December 1877 ten of these guns had been
 prepared with 20 more in the process of conversion. ⁴¹
 It was estimated that the conversion added 25% to the
 power of the gun at the muzzle and doubled it at
 1,000 yards.

March 3, 1875, the Secretary was authorized
 by Congress to dispose of useless ordnance at public
 sale, Congress appropriating an amount equal to the
 proceeds to be used to buy needed material. ⁴² During
 the year material amounting to \$92,877.91 was sold. ⁴³
 Chief of the Bureau, Jeffers, testified before the
 House Committee on Naval Affairs in 1876 to sales
 made by the Bureau since April 1873 that totaled
 \$117,777.25. ⁴⁴ The materials sold included small arms,
 projectiles, miscellaneous stores, bronze, old guns,
 gun-carriages, composition, lead, etc. The old guns
 sold at a price of from five dollars to \$18.50 a ton.
 The small arms included Plymouth rifles of .69 caliber,
 Sharp's and Hankins, .52 and .56 caliber, Springfield
 muskets of .58 and .59 caliber.

The advances made in ordnance since 1869 were: The introduction of a uniform system of breech-loading small arms, which was begun, however, in 1867; use of Gatling guns; introduction of breech-loading howitzers, and the conversion of some 11 inch smooth-bores into eight inch rifle guns; and the conversion of some Parrott muzzle-loading rifles into breech-loading rifles by the insertion of a wrought iron tube from the rear and then adding the breech mechanism. 45

No new cannon were authorized by Congress during Secretary Thompson's term of office, but the process of conversion of guns continued. The conversion of 11 inch smooth-bores into eight inch muzzle-loading cannon was considered successful. The necessity of providing a modern system was urged in the Annual Reports of the Chief of the Bureau of Construction and Repair, Jeffers. However in 1879 he expresses the opinion that the rapid developments resulting from the race between armament and ordnance had not resulted in a final solution of the problem of ordnance, and that nothing had been lost by enforced delay, but that all the older systems of ordnance were obsolete. 46 Secretary Thompson in his last Annual Report in 1880, while advising the procuring of modern guns, thought that at the same time it was not advisable to make large expenditures for new guns "until it shall be decided what is to be their future type." 47

Some excuse can be found for the failure of Congress to provide for the upkeep of the navy in the fact that due to the rapid changes in progress, the naval experts themselves could not agree on a definite program.

The only disposals of ordnance recorded from 1877 to 1881 was the sale of 13,207 small arms, caliber .50 and 1,200,00 rifle cartridges, caliber .50. Congress on June 30, 1878 had authorized the sale of the .50 caliber arms then used, the proceeds to be appropriated for the purchase of .45 caliber arms.⁴⁸ This material was sold in 1879 and 1880. The 13,207 Remington Carbines and rifles sold for \$4.50 each. The Winchester Company purchased 1,529 of the total. The cartridges sold for \$2.25 a thousand.

The report of the subcommittee on ordnance of the Rodger's Board in 1881 summed up the condition of the ordnance of the United States in the following words:

"Our ordnance consists mainly of smooth-bores, supplemented by a limited number of rifles converted from the old guns. Of these, the smooth-bores are entirely obsolete; and the converted guns, although strong enough to be perfectly safe under all ordinary circumstances of use, will not admit of high charges and are therefore greatly deficient in power."⁴⁹

Nothing in our navy larger than howitzers was equal to foreign guns.

The use of steel for big guns construction had

been recommended by Jeffers in 1880,⁵⁰ and again by
 Montgomery Sicard, his successor, in 1881.⁵¹ Because
 of a lack of progress in naval ordnance construction
 in this country, no American foundry was equipped to
 produce the large steel masses or ingots required.⁵²
 If the steel producers could not provide for the build-
 ing of big guns, they would have to be purchased
 abroad. The Rodgers Board also recommended the use of
 steel, and the Act of March 3, 1883, which authorized
 the construction of three steel cruisers, also authorized
 the expenditure of \$100,000"for steel rifled breech-
 loading guns with carriages and ammunition..."⁵³ This
 Act marks the first great step in the development of
 modern naval ordnance in the United States since the
 Civil War. In 1885 when the new vessels were ready
 for their armament, the government was obliged to pur-
 chase forgings and castings abroad.⁵⁴ In five years,
 however, by the creation of a home market for ships and
 guns, manufacturing plants were developed in America
 capable of turning out the highest types of large
 caliber and machine guns, as well as every other
 requisite for the construction of a modern battleship.⁵⁵

CHAPTER V

STEAM MACHINERY

The first steam vessel of war was planned by Robert Fulton in 1813, and was launched October 29, 1814. It was propelled by a paddle-wheel, driven by an engine which had a 48 inch cylinder and a stroke of five feet.¹ This vessel, the U.S.S. Fulton, was blown up June 4, 1829 by an explosion in her powder magazine. A vessel called the Fulton 2nd was launched in 1837 to take her place.² In 1839 Captain Robert F. Stockton, induced John Ericsson, whose screw propeller, patented in 1836, had failed to convince the British of its value, to come to the United States.³

As a result the first screw warship, the U.S.S. Princeton was launched in 1843, the United States Navy leading the navies of the world in adopting steam power for war purposes.⁴ The success of the Princeton led to further appropriations for steam vessels until the United States had a number of screw frigates and some screw sloops.⁵ These vessels were equipped with sail power as well as steam, and not until 1885 was a regular United States man-of-war built without provision for sail power.⁶

The vessels built by or for the government during the Civil War were all steamers, and exclusive of the peculiar paddle-wheel double-enders, all were equipped with screw propellers. However all the vessels intended for the permanent navy, exclusive of ironclads, were also equipped with sails.⁷ The machinery for these vessels was constructed both by the government and by private contract, largely the latter. The engines built and in use at the time were of the low pressure single expansion type. The cylinders ranged up to 100 inches in diameter as in the Florida, with a stroke of usually at least three feet.⁸

At the close of the war there were a number of incomplete engines in the navy yards. There were also a number contracted for which had not been completed and delivered. In December 1865 there were 12 pairs of new engines being constructed in the various navy yards, ranging in size from 36 to 100 inch diameter of piston. These engines were being slowly completed, the workmen being employed in the new work during the intervals when repair work was slack.⁹ This policy of slowly completing machinery began before the war closed and was continued until 1868 when from the lack of appropriations, the work on new engines was suspended.¹⁰ The contracts with individuals were fulfilled and the

engines placed in new vessels, or stored in the navy yards if the vessels were incomplete.¹¹ By December 1867 twenty pairs of screw engines contracted before the close of the war for first-class steamers had been completed and installed, or were in the process of erection in the vessels. These engines while built by contract had been designed by the Bureau of Steam Engineering.¹²

No new engines were commenced in the navy yards during Welles Administration, but the Chief of Steam Engineering, Isherwood, contracted for some engines and boilers in 1868, of which more will be said later.

Some experiments on engines and boilers were carried on in 1865, including work done by individuals under the direction of the Bureau.¹³ Again in 1867 experiments were conducted in the Brooklyn Yard testing the value of petroleum as fuel for steam engines. The Board decided against it on the grounds of its inconvenience, unhealthfulness, and the fact that it was considered unsafe, and that it cost eight times as much as coal.¹⁴

The opinion of Chief Engineer, Isherwood was that engines could be constructed cheaper in the government yards than by private contract. He urged an increase

in the facilities at the various yards for the building of steam machinery.¹⁵

Of some interest is the fact that a screw machine built in England in competition to machinery designed by the Bureau for duplicate vessels, when erected and tried, was found to have a maximum speed of seven miles per hour, while the Bureau designed machines drove their vessels 12 miles an hour.¹⁶

Very little property belonging to the Bureau was disposed of during Secretary Welles's Administration, except engines in vessels sold by the Bureau of Construction and Repair. In answer to a House resolution in February 1872 relative to sales of naval property, the Chief of the Bureau presented a statement showing that materials to the value of \$218,094.99 had been sold from July 1, 1865 to February 1, 1872.¹⁷ Of the total only \$88,857.64 was credited to the period from July 1, 1865 to March 4, 1869; and over half of that or \$46,551.12¹⁸ in 1868. Also during the period covered by the statement, a sum of \$692,850 was transferred from the Bureau of Construction and Repairs for payment for the engines in vessels sold by the latter Bureau. The amount credited to Welles's Administration was not stated. The property sold exclusive of the engines in the vessels consisted of old oil, oil barrels, condemned stores, old boilers, old machinery, scrap iron, old engines, etc.

Almost all of it was sold at public auction throughout the period. Of the proceeds, \$37,605.72 was carried to the surplus fund of the Treasury September 30, 1867; \$165,520.96 was used by the Bureau plus the \$692,850 transferred from the Bureau of Construction and Repair, or a total of \$858,370.96; and \$14,968.31 remained in the Treasury to the credit of the Bureau. All of the proceeds were originally deposited in the Treasury to the credit of the Bureau.¹⁹

In 1868 the lack of appropriations forced the suspension of work on new engines as stated above and resulted in vessels returning from cruises being laid up without needed repairs on their machinery, and no contracts for materials were entered into during the year.²⁰ As a result, when J. W. King succeeded Isherwood on March 17, 1869, he found the steam property in a very poor condition. The machinery of only two vessels was under repairs; none of the ironclads were in condition, and many of the vessels in the squadrons also needed repairs on their machinery. The appropriation and surplus for the year 1869-1870 amounted to the sum of about \$800,000, while contracts to the amount of \$770,060 had been made by Isherwood for boilers, engines, and tools and machinery for the yards. The contracts for boilers and engines amounting to \$424,068 were cancelled and the material taken over for \$259,068.40,

and stored in the yards. The tools were completed
 and delivered²¹ and the contractors paid. The Bureau
 then proceeded with "vigor to repair the machinery of
 vessels laid up, and of others ordered prepared for the
 service.²² Thirty-six vessels were under repair at
 the time of the report and nine ironclads and seven
 new vessels, which were in an advance state had been
 prepared for the sea.²³

Appropriations remained smaller however, and
 in 1871, King made the following statement:

"The appropriations for the last four
 years have been so small and inadequate to its
 requirements as to render the completion of new
 machinery for vessels under construction impossible,
 or to repair that in vessels at the yards, that
 may at any time be required for service; or in-
 deed, to keep in a good state of preservation
 the machinery laid up in ordinary."²⁴

Contracts for supplies were not made in either 1869,
 1870, or 1871, because of restriction of expenditures.²⁵

As stated in an earlier chapter, many vessels
 were given increased sail power in 1869 and 1870. A
 Board on Steam Machinery appointed in 1869 recommended
 a change from the four-bladed propellers in common use in
 the United States Navy to the two-bladed type, which by
 offering less resistance, was expected to allow the ships
 more freedom of maneuvering under sail power. Accordingly,
 the department ordered that all steam vessels when pre-
 paring for sea should be equipped with the two-bladed

propellers. ²⁷ The experiment however proved a failure. The screw ports of the vessels were too small to accommodate a two-bladed screw with a total area equal to that of the four-bladed formerly used, and a loss of power and speed followed, and the four-bladed were eventually restored, ²⁸ though some two-bladed were still in use in 1878, when orders were issued to replace them with the four-bladed type. ²⁹ It was estimated in 1876 that up to that date the making and fitting of these screws, combined with the coal wasted, had cost the Bureau \$109,536.22 ³⁰ on some 22 vessels.

The first compound, high pressure engines used in the United States Navy were commenced during Secretary Robeson's first administration of the department. Admiral Porter in his Annual Report of 1870 called attention to the great improvements being made in marine engine construction in England, while

"owing to the decadence of our commerce and the decline of steamship building, there is very little emulation among our machinists, and little or no improvement in marine steam-engines."³¹

In the following year Chief of Steam Engineering, King, ³² made a visit of investigation in Europe. He reported that both steam pressure and expansion had been increased; that boilers had been improved, and that compound engines perfected by Mr. John Elder, a Scotch Engineer, had been adopted and introduced into the British Navy and also had ³³ been adopted by many large steamship companies.

He recommended

"that all cruising steamers for the navy hereafter put afloat be engined on the compound system, and that all the steam machinery stored in the navy yards that cannot be used to advantage in the old vessels, or converted into compound, be disposed of by public sale, or broken up and used as old material..." 34

The latter alternative was extensively employed as shall be seen later.

Mr. King's recommendations were accepted by the department and a board was appointed to "examine the engines now on hand to ascertain if any of their parts could be used to advantage..." in constructing compound engines and to "study the design for the new machinery." 35

It was planned by the department to rebuild six cruising vessels and to equip them with with the compound engines. The board decided to reconstruct four pairs of engines, partly completed for vessels which had never been built, and to convert them into compound engines for the rebuilt vessels. 36

The work was begun at the Boston, New York, and Washington Navy Yards. The high pressure cylinders were to be 42 inches in diameter, and the low pressure cylinders were to be 64 inches in diameter. The pressure in the boilers was to be 80 pounds to the square inch. 37

Disposal of property by sale reported by the Bureau from March 4, 1869 to February 1, 1872 amounted

to \$127,550.85, the greater part or \$100,708.02 being received in 1869, not including the part which was received after March 4, 1869, of the \$692,850 received for engines in sold vessels from July 1, 1869 to February 1, 1872. The character of material, manner of making sales, and disposition of proceeds was apparently very similar to that noted above during the Welles Administration.³⁸

During Secretary Robeson's second administration the conversion of six pairs of simple into compound engines was completed with appropriations granted by Congress.³⁹ The Swatara, the first vessel equipped with the new type machinery, made a trip around the world with very satisfactory results, especially in the matter of economy of coal consumption.⁴⁰ These engines were constructed for the rebuilt cruising vessels.

The engines constructed for the eight new sloops of war authorized by Congress in 1873 were also of the compound-type, designed by the Bureau of Steam Engineering.⁴¹ They were built by contract. Chief of Steam Engineering, Wood, in 1875 stated that the shortening of the hours from ten hours to eight hours a day in the government yards, increased labor expense and much work was turned over to private yards because it had proven to be cheaper.⁴² It was estimated that

that these engines were 45% more economical than the old low pressure, single expansion, kind.⁴³

The investigation conducted by the House Committee on Naval Affairs in 1876 and 1878 revealed the fact that after 1872 the Bureau was engaged in the illegal practice of the barter and exchange of material with contractors, without advertisement, for new material or for work performed. The law of May 23, 1872 required public sales after advertisement, with reports to Congress and the money to be turned into the Treasury.⁴⁴

In 1876 William Wood, Chief of the Bureau, testified that material for which \$351,806.58 had been received, had been delivered to parties in exchange for other material or for work done.⁴⁵ The material consisted of old scrap and boiler iron, old boilers and engines, copper, cast iron, composition, brass, lead, old steel, etc.

It was disposed of to the Pacific Rolling Mill Company, C. E. Pennock and Company, William Cramp and Sons, John Roach, American Tube Works, and others, chiefly for new iron, new tubing, etc., and for repairs made on vessels. These transactions were made without advertisement, without a report to Congress, and the proceeds, of course, failed to reach the Treasury. The stated object of the Bureau was to utilize the material which would otherwise never have been used by the navy;

that its conversion to usable material would cost more than new material. It was argued that the property would have brought very little sold at auction, and an added expense would be incurred in making the sale, while in all cases the value received was equal to or greater than the current market prices. Also the material had been surveyed, condemned, and recommended for sale.⁴⁶

The investigation in 1878 produced testimony to the fact that since July 1, 1878 material for which \$622,491.81 had been received had been

"disposed of by sale, barter or exchanged in part payment for work performed or material furnished or to be furnished." 47

Almost half or \$304,618.04 worth had been transferred to John Roach, prominent ship builder of Chester, Pennsylvania. A comparison with the disposals testified to in 1876 shows a duplication of some of the items reported in 1876, but apparently not all of the latter are included in the record of 1878. A study of the testimony submitted in 1878 shows that the transactions were made chiefly on the order of William Wood, Chief of the Bureau. In some cases on the order of Secretary Robeson, or by his orders executed through Wood or W. H. Shock, Chief Engineer and part time acting Chief of the Bureau.⁴⁸

Most of the material had been condemned. All of it was

sold or exchanged by private transactions without advertisement, with the exception of some old engines sold at public auction to John Roach for \$46,000.⁴⁹

It is interesting to note that a statement was inserted above the chart, that showed the transactions, to the effect that the "Law under which sales, contracts, etc., were made was not known to the Bureau."⁵⁰ Most of these transactions apparently related to the construction of engines for the double-turreted monitors, which were being rebuilt by the department.

The Majority Report of the House Committee on Naval Affairs urged condemnation "of the late Chief of the Bureau of Steam Engineering" along with the Secretary of the Navy for his acts and conduct in office since May 1872.⁵¹ It will be recalled that May 23, 1872 was the date of passage of the law definitely requiring public sales, reports to Congress, and the deposit of all proceeds into the general fund of the Treasury.

On March 1, 1877 the Bureau was in debt to the amount of \$1,661,547.08 for contracts for machinery, boilers, materials, etc., and on March 3, contracts for work on the double-turreted monitors, totaling \$1,165,000 were made with the proviso that no money be paid unless appropriated by Congress. On March 7 and 10, apparently before W. H. Shock, who succeeded Wood, had taken over the work of the Bureau, boiler contracts for \$331,621.09

were let, making a total indebtedness of \$3,158,168.77⁵²
As Congress appropriated no money the contracts were
suspended. All contracts made for boilers by the
Robeson Administration were subsequently completed, and
the indebtedness, exclusive of the suspended contracts,
provided for by a deficiency appropriation.⁵³ Also
some compound engines commenced during the previous
administration were completed during Secretary Thompson's
term of office,⁵⁴ and thirty-seven boilers and twenty-
three engines were built for steam launches.⁵⁵ The
machinery for one of the double-turreted monitors was
completed and recommendations were made in 1879 and in
1880 for the other four.⁵⁶ Appropriations for the
completion of these vessels were not made until 1883.⁵⁷

No sales or conversions of engines were
reported during the Thompson Administration. In 1878
the Chief of the Bureau, Shock, recommended the amend-
ment of the law relating to sales of old materials, to
allow the proceeds to be used directly by the Bureau to
provide new material.⁵⁸ In 1880 he reported that the
stores had been examined and inventoried and that stores,
materials, and machinery which cost \$326,683.25 (war prices)
were on hand, most of which was of old and obsolete
pattern and unfit for issue because of deterioration.⁵⁹
He repeated his recommendation of 1878.

Little mention is made of steam machinery in the report of the Advisory Board in 1881, although they recommended the construction, for the proposed new vessels, of compound engines designed to carry 90 pounds. 60

From a study of the records it appears that the steam machinery was in comparatively better condition than the vessels themselves, and their ordnance. This would be expected since the engines were continuously used in time of peace as well as war, but the evidence is not wholly conclusive.

CHAPTER VI

MISCELLANEOUS DISPOSALS

The following topics do not admit of a satisfactory and adequate treatment; first, because of a lack of information contained in the publications of the Navy Department and the public documents; and second, with the exception of the timber reserves, the materials dealt with are not of a permanent nature.

(1) Bureau of Equipment and Recruiting

This Bureau had the two-fold function of equipping vessels for sea service with coal, cordage, etc., and the recruiting of seamen. The present treatment will deal with the former function.

The close of the war left a large surplus in the hands of the Bureau. ¹ This surplus combined with the reduction of the naval force made unnecessary, with few exceptions, any contracts for supplies for three years. ² At the same time the price of coal fell from \$8.25 a ton in Philadelphia in 1864 to \$3.33 ³ a ton in 1868.

An advance in rigging was made by adopting wire rope for all standing rigging. A machine was ⁴ purchased in 1869 to manufacture the new rigging.

In answer to a House resolution in February 1872 relative to the sales of property by the Navy Department, William Reynolds, Chief of the Bureau of Equipment and Recruiting, presented a statement giving all sales for that period.⁵ Sales totaling \$577,831.41 had been made, including such articles as condemned stores, coal, coal-barges, sunken coal, anchors and chains, and cordage.⁶ No doubt the introduction of wire rope into the service effected the disposal of cordage. Throughout the period the major portion was sold at public auction. Some private sales of coal were made to officers, and other private sales were made to merchant vessels and small amounts of material to foreign vessels. The proceeds were deposited in the Treasury to the credit of the Bureau as provided for by the law of 1847, but all except \$87,407.06⁷ had been carried to the surplus fund of the Treasury. Up to March 4, 1869, receipts amounted to \$431,401.24.⁸ The greatest amount received for a calendar year was \$246,686.14 in 1866. Receipts of \$146,401.24 were recorded during the Robeson Administration up to February 26, 1872. The inference is that the unserviceable equipment was largely disposed of by 1869. This inference is borne out by the fact that R. W. Shufeldt testified before the House Committee on Naval Affairs in May 1876 that sales by the Bureau since July 1, 1869

amounted to \$208,000,⁹ which would included over \$100,000 worth sold before February 26, 1872. He testified that all sales had been by public auction with no exchange or barter, and that the proceeds were deposited in the United States Treasury.

No further disposals are recorded in the Annual Reports. In 1881 Secretary Hunter declared there were large accumulations of condemned and useless material in the navy yards which should be surveyed and sold,¹⁰ although reference is made to no particular bureau.

(2) Bureau of Navigation

The close of the war, followed by orders from the Secretary to retrench, found the Bureau of Navigation with a great amount of material, nautical instruments, etc., on hand, much of which it was planned to reissue, but in some cases the articles were of inferior quality selected for coasting and inland navigation and unfit for further use.¹ It was planned to sort and to examine the instruments, and to sell those that were worn out and to repair the others.² In 1867 Thornton A. Jenkins, Chief of the Bureau, reported that

"the supplies of navigation stores which had accumulated prior to 1865, and which still remained undisposed of, have been carefully examined, and articles unfit for reissue and not worth repairing have from time to time been sold at public auction, and the proceeds turned into the United States Treasury." ³

Again in 1868 he stated:

"Since the date of the proceeding report, additional sales of articles, after careful surveys, have been made from time to time, and the proceeds turned into the United States Treasury." 4

Included in subsequent sales were boxes of charts used during the war, all of which were disposed of. 5

The United States was at the time still largely dependent on foreign importations, mainly from England, for charts, sailing directions and other material publications. The Hydrographic office had been established in 1866 by Congress to provide such publications, but had been unable to supply the demand because of limited appropriations. 6 The publications of the office were supplied to all war vessels, distributed to universities, and sold to commercial interests at the cost of paper and printing, the proceeds being turned into the Treasury. 7 Much of the proceeds of sales credited to his bureau were not from sales of old Civil War material, but from new charts and nautical publications of all kinds. In 1874 some 1,338 books and 6,770 charts were sold. 8 These sales were, of course, private.

Daniel Ammen, Chief of the Bureau, in February 1872 in answer to a House resolution asking for information relative to the sale of naval property, reported that sales totaling \$52,329.90 had been made during the period from July 1, 1865 to February 1872. 9

Of the total \$32,315.16 was credited to the appropriation, "Navigation," and included condemned stores, flags, etc., while the others consisted of charts, publications, old almanacs, etc. The proceeds were all deposited in the Treasury to the credit of each particular appropriation. 10
No further records of disposals appear.

In 1880 the Chief of the Bureau inferring that a lack of appropriations made necessary the retaining and reissue of much old material, stated that there remained from

"the late war large quantities of obsolete lamps, signaling and sounding apparatus, etc., which the Bureau desires to dispose of, if legislation can be obtained authorizing the use of the proceeds from sales for the purpose of purchasing improved implements." 11

(3) Bureau of Construction and Repair
(does not include vessels)

The chief disposals under cognizance of the Bureau of Construction and Repair were vessels. However other articles were sold from time to time. The first clear statement relative to disposals by this Bureau is a statement prepared by I. Hanscom, Chief of the Bureau, in March 1872, which was transmitted by the Secretary in answer to a resolution of the House relative to sales of naval property. 1 Receipts from sales totaling \$10,344.066.19, the greatest part however received from the sale of vessels, was reported. It had been deposited

in the Treasury to the credit of the Bureau, but most of it was carried in November 30, 1867 to the surplus fund. The materials sold other than vessels included refuse wood, tools, boats, timber, materials from wrecks, etc. With few exceptions the sales were made at auction or at the appraised value of the material.²

July 5, 1876 Hanscom testified to the House Committee on Naval Affairs to the sale of material totaling \$123,411.35, since March 4, 1869. This did not include any vessels.³ The material consisted of wood and chips, old lumber, old iron, old pitch and rosin, old shot, paint, sperm-oil, scrap-iron, lead, etc., including coal and other articles to distressed vessels. As to the manner of sale he testified that

"sales without advertisement have been made in the following cases: first, to vessels in distress...; second, of a small stick of lumber or other article absolutely needed by a private party, and only to be found in a navy-yard; third, of old wood, chips, etc. to officers of the yards."⁴

Since May 8, 1872 the proceeds had all been turned into the general fund of the Treasury.

Not all disposals had been made by sale, however. To the same Committee, Hanscom testified that 24,629,385 pounds or 12,314.6 tons of old iron had been transferred to contractors to be rerolled; one pound of rerolled iron for three pounds of old iron.⁵ This did

not include materials from the vessels which were broken up, and which has been discussed in Chapter II.

John Roach was the chief contractor, taking 10,620,531⁶ pounds of the total.

Transactions of this type led the majority of the House Committee on Naval Affairs on February 12, 1879 to include the "late" Chief of the Bureau of Construction and Repair in a resolution of "censure and condemnation" for "acts and conduct" in the "sale and disposition of public property, etc."⁷

No sales of property were reported by the Thompson Administration. It is probable, however, that the statements of Secretary Hunter in 1881 concerning accumulations of condemned stores and materials referred, in part, to property owned by the Bureau of Construction and Repair.

(4) Bureau of Provisions and Clothing

In common with the other bureaus, the reduction of the naval force at the close of the war left a large stock of stores in the hands of the Bureau of Provisions and Clothing.¹ In 1867 it was reported that

"the large stock of stores on hand at the close of the war has been reduced to meet the current wants of the service..."²

The Act of Congress, June 17, 1868, reducing the naval

force to 8,500 men, resulted in further reduction of the supplies on hand "by sales at auction as rapidly as was consistent with the interests of the government." 3

As late as 1871 Admiral Porter stated that seamen were still using the remains of a great amount of inferior clothing purchased during the war, which had deteriorated with time, but was still being served out to them at high cost. The Commanding officers had complained about this clothing, pronouncing it "far inferior to that of other navies,"⁴

From June 30, 1865 to March 5, 1872 Proceeds totaling \$608,965.58 had been received from sales of provisions, clothing, small stores, including tobacco, and contingent supplies.⁵ Nearly all was sold at public auction. The money was deposited in the Treasury to the credit of the Bureau under the Act of 1847, except \$43,092.15 which was retained by paymasters for use of vessels and foreign stations, their accounts being settled at the Treasury.⁶

During the investigation of the department in 1876, J. H. Watmough, Chief of Provisions and Clothing, declared that proceeds amounting to \$175,275.95 had been received for the sale of provisions, clothing, and small stores.⁷ The investigation of 1878, however, also revealed the fact that from October 1873 to January 11, 1876 provisions and clothing were bartered for new supplies.

8

The transactions amounted to \$234,039.05. This period was contemporaneous with the Cuban troubles and the deals were possibly influenced by the foreign relations of the United States at the time. Provisions, clothing, tobacco, mess utensils, etc. were sold without advertisement contrary to the Act of May 23, 1872, and the Bureau received new provisions, clothing, etc. in payment. Most of these transactions amounting to \$205,538.39 were made with one man, William Matthews. The result was that Watmough, Chief of the Bureau, at the time was cited for censure February 12, 1873 by the majority of the House Committee on Naval Affairs, for unlawful sale and disposition of public property, etc.

(5) Timber Reserves

As early as February 25, 1799, an Act was passed by Congress which authorized the President to purchase "growing or other timber, or of lands on which timber is growing..." for naval purposes. The Act of March 1, 1817 made more definite provision for reserving live-oak, and red cedar timber lands which were un-occupied, to be "appropriated to the sole purpose of supplying timber for the navy." Again in 1827, Section 3 of "an act for the gradual improvement of the Navy of the United States," authorized the President

"to preserve the live oak timber growing on the lands of the United States and... to reserve from sale such lands...as may be found to contain live oak, or other timber in sufficient quantity to render the same valuable for naval purposes."³

In pursuance of these Acts, timber lands were reserved for naval purposes in Florida, Alabama, Mississippi, and Louisiana. Secession carried these lands out of the hands of the Union government, and at the same time, other sources of supply in the South of live oak and yellow pine were cut off. This resulted in most of the ships built during the war being constructed of unseasoned white oak.

With the restoration of peace, Joseph Smith, Chief of the Bureau of Yards and Docks, whose Bureau administered the reserves, asked for an appropriation to re-establish the agencies to protect the live oak and pine timber reserves from trespassers.⁴ It was not until 1871, however, that Congress made any appropriation for their care or protection.⁵

February 10, 1868 President Johnson sent a message to the House transmitting a communication from the Secretary of the Navy, Welles, in regard to the timber lands reserved for the navy.⁶ Welles pointed out that agencies formerly appointed to protect the reserves had not been revived since the war. He had received more news from the Treasury Department,

through the collector of customs at New Orleans, that persons had been trespassing on the live oak reservation near Biloxi, Mississippi, and that live oak wood from the government reserve had been supplying the Biloxi market with fuel. The damage was estimated at from \$10,000 to \$20,000.⁷ Since the close of the war unsuccessful attempts had been made to find the maps and papers relating to these lands, and it was a question of whether they had been merely misplaced

"or were abstracted by those who had access to and charge of them, but who fled South at the commencement of the Rebellion..."⁸

By an examination of deeds and records however, which were available in the department with the locations placed as accurately as possible without the maps, these reserves were found to include 264,449 $\frac{77}{100}$ acres, 197,739 $\frac{44}{100}$ of which were in Florida.⁹ The Secretary had doubts concerning the value of these lands to the government. He said in part:

"Measures for the preservation of live-oak were commenced as early as 1817, and it was represented at that time that many of the trees had obtained their full growth. Yet it is not known that any timber has ever been procured from these lands for the government, but, so far as ascertained, every stick of live-oak which has been used by the navy has been purchased, and there is little doubt that much of it was cut and taken from the timber reservations which had for years been protected by government agents at great annual expense to the government."¹⁰

His conclusion was that the policy of reserving timber

lands "is a costly failure and should be abandoned," and the land office should take up the lands and sell them on the market.¹¹

Secretary Robeson in his first Annual Report in 1869 urged the importance of preserving live-oak, pointing out that the Constitution built of that material over 70 years ago was still in use, with half of her original timbers in her, while white-oak vessels had long since decayed. He had appointed officers to look after the lands, but urged "stringent laws, strictly enforced," to save the timber.¹²

In answer to a Senate Resolution of December 6, 1869, asking for information concerning naval lands held in Louisiana, the Secretary places the amount of live-oak reservations at approximately 19,553.61 acres, located on Pecan, Cypress, and Navy Commissioners Islands, and islands adjoining Cypress Island.¹³

The figures are evidently a correction of those given by Welles in 1868. Also in answer to a Senate Resolution of December 16, 1869, in regard to naval lands in Florida, the Secretary replied, giving the location of all naval reserves in that State, using information supplied by the General Land Office.¹⁴

An officer appointed to visit the timber reserves reported in 1870 "that there are large quantities of valuable timber upon these lands, and that...many

depreations have been and are now being committed." ¹⁵
 Appropriations of \$5,000 a year to protect these lands
 were made by Congress for the fiscal years ending
 June 30, 1872, 1873, 1874, and 1875. ¹⁶ The appropriations
 requested for the year ending June 30, 1876 was rejected ¹⁷
 however by Congress, and the timber agents were discharged.

Some excuse for this action of Congress can
 be found in the testimony regarding timber agents in
 Florida, taken by the House Committee on Naval Affairs
 in 1876. ¹⁸ The testimony of Franklin W. Sanborn,
 assistant Superintendent of naval reserve lands from
 1873 to 1875, and others, brought out the facts; that
 an appointment as inspector depended on political
 influence with the pay apportioned according to the re-
 lative political influence; that agents seldom lived
 near the reservations, and often never visited them, and
 some did not even know where they were; that the timber
 was continually being stolen; and the law providing
 agents was a dead letter. ¹⁹ Sanborn also testified
 that very little of the naval timber in Florida was of
 any value to the government; that much of it had no
 timber, it being largely prairie land, swamp land or
 land swept by fire. The Republican Governor Stearns
 of Florida testified that to his knowledge the timber
 agents "have never left their homes or their plows or

whatever they were doing at any time," and that the
 20
 reservations were being trespassed upon. This and
 similar evidence led the majority of the committee in
 their report of July 25, 1876 to condemn the practice.
 In speaking of the \$5000.00 yearly appropriation for
 the protection of the reserves against trespassers, they
 said:

"The consumption and plunder of it by
 political agents and thieves is the real use made
 of it by the appointees of the Department. Parties,
 ignorant and unskilled, who live remote from the
 lands...are the character of people selected to dis-
 charge this duty, some of whom are informed at the
 time of their appointment that they are expected
 to do nothing; and in one case a citizen of New Jersey,
 Rensselear W. Dayton, who visits Florida for about
 two months in the winter, is permitted to draw his
 salary, at the rate of \$1,000 per year for 10
 months..." 21

February 18, 1878 the Senate called on the
 Secretary of the Navy for a report on the extent and
 condition of the naval reserve lands in Florida. The
 Secretary in reply transmitted diagrams prepared by the
 general land office, but professed a lack of information
 22
 about the condition of the lands and the timber.

The Act of March 3, 1879 authorized the
 Secretary to examine all timber lands in Florida, and
 all, which were no longer needed for ^{the} navy, were to be
 23
 restored to the public domain for entry and sale. An
 examination was made the following year and apparently
 24
 most of the land was found to be of no value to the navy,

though its final disposal does not appear in the naval records. March 3, 1895 the Secretary of the Navy was "authorized to cause to be certified to the Secretary of the Interior, for restoration to the public domain, the whole or such portion or portions" of the naval reserves in Mississippi and Alabama, "as are no longer required for the purposes for which they were reserved or for any other purposes connected with the naval service..."²⁵ Finally on February 16, 1923, a similar act was passed providing for the restoration of all naval reserves in Louisiana, which were no longer required²⁶ for naval purposes, to the public domain.

NOTES

INTRODUCTION

1. Green, Fitzhugh, Our Naval Heritage, Century Co., New York and London, 1925, p. 208. (Hereafter referred to as Green, Our Naval Heritage.)
2. Ibid., p. 209.
3. Ibid., p. 209.
4. Annual Report of the Sec. of the Navy, Welles, 1865, p. XIII.
5. Official Records of the Union and Confederate Navies in the War of the Rebellion. Published under the Direction of the Hon. Josephus Daniels, Secretary of the Navy, by C. C. Marsh, Captain, U. S. N. Retired Officer in charge Naval Records and Library Government Printing Office, Washington, 1921. Series II, Vol. I. Preface, page 14. (Hereafter referred to as Official Records of the Union and Confederate Navies.)
6. Clark, George E., William O. Stevens, Carrol S. Alden, Herman F. Kraft, A Short History of the United States Navy, J. B. Lippincott Company, Philadelphia, 1927, p. 407, 408. (Hereafter referred to as Clark, History of the United States Navy.)
7. Ibid., p. 407.

CHAPTER I

1. 13 U. S. Stat. No. 44.
2. Annual Report of Sec. Welles, p. IX, X.
3. Ibid., p. IX.
4. Annual Report of Sec. Welles, 1867, p. 9, 10.
5. Report Sec. Navy, 1866, p. 17, 22.
6. Annual Report of Sec. Navy, Welles, 1867, p. 9, 10.
7. Annual Report of Sec. Navy, Welles, 1865, p. IX.
8. Official Records of the Union and Confederate Navies.
The record has been checked and corrected by statistical information on vessels given in House Ex. Docs. Nos. 280 and 282, 40th Cong. 2nd. Sess., and House Misc. Doc. No. 63, 45th Cong., 2nd. Sess. All figures of numbers of vessels given in this chapter are taken from the above sources unless otherwise stated.
9. Annual Encyclopedia 1861, p. 500.
10. House Ex. Doc. No. 280, 40th Cong., 2nd Sess., May 7, 1868. Navy Report, 1865, p. XIII, gives 418, which number is also stated in general works. Evidently that does not include the Mississippi river vessels, transferred by the War Department, and numerous other vessels captured and not adjudicated, etc.
11. Spears, John B., The History of our Navy from its Origin to the End of the War with Spain 1775-1898, in 5 volumes. Charles Scribner's Sons, New York, 1899,

12. Vol. IV, p. 37. (Hereafter referred to as Spears.)
13. Spears, Vol. IV, p. 349.
14. Spears, Vol. IV, p. 37.
15. Annual Report of Sec. Navy, Welles, 1865, p. XXXII,
16. Harper's Annual Encyclopedia, 1864, p. 559-60, also
House Ex. Doc. No. 280, 40th Cong., 2nd. Sess.
17. Annual Report of the Sec. Navy, Welles, 1865, p. XXXII.
18. Annual Report of the Chief of the Bureau of Construction and Repair, Lenthall, 1865, p. 235.
19. Annual Report, 1865, p. III & IV.
20. Official Records of Union and Confederate Navies.
341 were sold including three of which had been wrecked and subsequently raised (Ida, Pettit, Scioto). Nine of these were sold to other Departments (five to the Lighthouse Board, one to the Treasury Department, and three to the War Department.) One vessel, the Galatea, was sold to Haiti for \$54,000. Of the 16 which were not sold, two were returned to their owners, having been chartered or borrowed; two were returned to Lighthouse Board; two to Coast Survey; six to the War Department; one was ordered broken up and three were lost at sea.
21. Annual Report Sec. of Navy, Welles, 1865, p. XIII.
22. 9. U. S. Stat. p. 169, March 3, 1847.
23. Annual Report of Sec. of Navy, Welles, 1867, p. 25, 26.
24. Annual Report of Sec. of Navy, Welles, 1867, p. 27.

25. Official Record of the Union and Confederate Navies.
26. Annual Report, Sec. of Navy, Welles, 1866, p. 10, 11.
27. Annual Report of Chief of Bureau of Construction and Repairs, Lenthall, 1866, p. 95.
28. Official Records of the Union and Confederate Navies.
29. House Ex. Doc., No. 280, 40th Cong. 2nd., Sess., May 7, 1868, p. 26-33.
30. House Ex. Doc., No. 250, 42nd Cong., 2nd., Sess., April 6, 1872.
31. Official Records of the Union and Confederate Navies.
Included in the 16 built by or for the government were 12 side-wheel, double-enders, and four screw gunboats, two of them being of the 507 ton class built by contract.
32. Annual Report of Sec. of Navy, Welles, 1865, p. X.
33. Annual Reports of Sec. of Navy, Welles, 1866, 1867, and 1868.
34. Ibid.
35. Annual Report of Sec. of Navy, Welles, p. XXI.
36. Annual Report of the Chief of Construction and Repair, Lenthall, 1866, p. 159.
37. Annual Report of Sec. of Navy, Welles, 1867, p. 29.
38. Annual Report of Sec. of Navy, Welles, 1868, p. 30.
39. Welles Diary, Vol 2, p. 430, February 10, 1866.
40. Ibid., p. 444.

41. Ibid., Vol. 3, p. 103, June 4, 1867.
42. Ibid., p. 382, June 12, 1868.
43. House Ex. Doc. No. 111, 40th Cong., 2nd. Sess.,
p. 7.
44. Annual Report of Sec. of Navy, Robeson, 1869, p. 3-5.
45. Annual Report of Sec. of Navy, Robeson, 1869, p. 7, 8.
46. Annual Report of Admiral Porter, 1870, p. 158, 159.
47. Annual Report of Admiral Porter, 1870, p. 162.
48. Ibid., p. 169.
49. Report of Board of Steam Machinery, included in
Annual Report of the Navy, 1869, p. 206.
50. Official Records of the Union and Confederate Navies.
51. Annual Report of Sec. of Navy, Robeson, 1871, p. 3, 4.
52. Annual Report of Admiral Porter, 1871, p. 46.
53. 17 U. S. 154, 42nd Congress, 2nd. Sess., May 23, 1872.
54. House Misc. Doc. No. 170, Part 5, 44th Cong., 1st Sess.,
p. 604, 605, June 23, 1876.
55. Official Records of the Union and Confederate Navies.
56. House Misc. Doc. No. 170, Part 5, 44th Cong., 1st Sess.,
p. 411.
57. Senate Ex. Docs. No. 45, 41st Cong., 3rd. Sess.
58. References are found in Annual Navy Reports from
1868 to 1875.
59. Welles Diary, Vol. 3, p. 572., April 7, 1869.
60. Annual Report of Sec. of Navy, Robeson, 1874, p. 9-11.
61. Bemis, Samuel Flagg, The American Secretaries of State
and their Diplomacy, Alfred A. Knopf, New York, 1928.

- Joseph V. Fuller, Hamilton Fish, p. 189.
62. Annual Report of Sec. of Navy, Robeson, 1874, p. 11, 12.
63. Annual Report of Admiral Porter, 1874, p. 198, 199.
64. Annual Report of Sec. of Navy, Robeson, 1874, p. 24.
65. Johnson, Emory R., History of Domestic and Foreign Commerce of the United States. Published by the Carnegie Institute of the Washington D. C., 1915, Vol. II, p. 75. (Afterwards referred to as Johnson's, History of Commerce.)
66. Annual Report of Sec. of Navy, Welles, 1867, p. 45-50.
67. Annual Report of Sec. of Navy, Welles, 1869, p. 10, 11.
68. Bemis, Vol. VII, Joseph V. Fuller, Hamilton Fish, p. 154, 155.
69. Ibid.
70. Annual Report of Admiral Porter, 1871, p. 41-43.
71. Annual Report of Sec. of Navy, Thompson, 1880, p. 27-28.
72. 17 U. S. Statutes, Chap. 230, 42nd. Cong., 3rd Sess., March 3, 1877.
73. House Misc. Doc. No. 170, Part 5, 44th Cong., 1st Sess., p. 14.
74. Ibid., p. 411.
75. There were in the navy in 1869, 151 unarmored and 52 armored vessels or a total of 203. Of these, 95 were unfit for fighting purposes, leaving an available force of 108 vessels. This force of 203 vessels had been reduced to 134 by December 1876. (46 were sold, 18 broken up, five lost at sea.)

75. There had been added 12 vessels since 1869, (this does not include the purchased launch Seaweed) making a total of 146 vessels, all but 16 or 136 of which were available at short notice as compared with 108 in 1869. The materials used in repairing and rebuilding were chiefly of iron or live-oak, and only 41 white-oak vessels remained. Seventeen steamers had been given compound engines and nearly all had had their machinery extensively repaired, and a supply of live-oak timber sufficient for 35 new vessels was stored in the navy yards. "This statement shows that after 8 years of active service of every kind...our navy is now, in the character and condition of its ships and material, in a condition far superior to that in which it was in 1869, and indeed far more powerful for our warlike purposes than it has ever before been in time of peace." It does not compare with the forces of European nations but for defensive purposes--"Our navy is not without strength..."

Annual Report of Sec. of Navy, Robeson, 1876, p. 4,5.

76. Official Records of the Union and Confederate Navies.
77. Spears, History of our Navy, Vol. 5, p. 27.
78. Annual Report of Sec. of Navy, Thompson, 1877, p.28-31.
79. 1876-77: \$13,592,932.90; 1877-78, \$14,435,152.30
1878-79, \$14,528,431.70; 1879-80, \$14,502,250.67.

79. A balance was reported for the latter 3 years.
80. Evidence is found in Annual Reports of Secretary Thompson.
81. In 1877 the Potomac, a sailing frigate, and the Powhatan, a large side-wheeler, were sold
In 1879, the Gettysburg, a captured blockage runner, was sold in Genoa, Italy, unable to come home, and the Wyandank, a side-wheel ferryboat was broken up.
In 1880 the steam tug Spuyten Duyvil was dropped from the navy list.

Official Records of the Union and Confederate Navies.

82. Annual Report of Sec. of Navy, Thompson, 1877, p.5,6.
83. Ibid., p. 11.
84. Annual Report of Sec. of Navy, Thompson, 1878, p. 4.
85. Annual Report of Sec. of Navy, Thompson, 1879, p.3.
86. Annual Report of Sec. of Navy, Thompson, 1879, p.25.
87. Annual Report of Bureau of Construction and Repair, p. 309.
88. Clark, History of the United States Navy, p. 407.
89. Spears, Vol. 5, p. 27.
90. Official Records of the Union and Confederate Navies.
Secretary Hunt's report in 1881 places the total number at 141. This discrepancy is probably caused by the failure to include some very small boats in the Official Records.
91. Ibid.

93. Annual Report of Admiral Porter, 1881, p. 96.
92. Annual Report of Sec. of Navy, Hunt, 1881, p.3.
94. American Naval Policy as outlined in Messages of the Presidents of the United States from 1790.
Published by the Navy Department, 1922, p. 9,10.
95. Clark, History of the United States Navy, p. 408.
96. Recommendations of the Advisory Board included in the Annual Report of Sec. of Navy, Hunter, 1881, p. 28-38.
97. Spears, p. 27, 28.
98. Annual Report of Sec. of Navy, Hunter, 1881, p. 26.
99. 22 U. S. Stat. Chap. 396, p. 296, 47th. Cong., 1st Sess.
100. Ibid.
101. 22 U. S. Joint Resolution No. 79, 47th Cong., 1st Sess.
102. 22 U. S. Chap. 97, p. 477, 47th Cong., 2nd. Sess., March 3, 1883.
103. Spears, Vol. 5, p. 34-38.
104. 22 U. S. Chap. 391, 47th Cong., 1st Sess.
105. 22 U. S. Chap. 97, 47th. Cong., 2nd. Sess.
106. Clark, History of the United States Navy, p. 411.

CHAPTER II.

1. Clark, History of the American Navy, p. 261.
2. Ibid.
3. Fitzhugh, Our Naval Heritage, p. 182.
4. Ibid.
5. Clark, History of the American Navy, p. 285-286.

The quotation is taken from Knox, Decision Battles since Waterloo, p. 228.

6. 1. Three turreted: Roanoke
- 3 Seagoing Casemated: Dunderberg, New Ironsides, Tennessee.
- 2 Seagoing turreted: Monadnock, Miantonomah, Agemanticus, Amphitrite, Onandaga, Winnebago, Chickasaw, Kickapoo, Kalamazoo, QuirSigamond, Shakamaxon, Passacomaway.
- 38 Single-turreted: Canonicus, Mahopac, Manhattan, ~~Saugus~~, Tippecanoe, Catawba, Oneota, Manayunk, all of 1,034 tons. Passaic, Camanche, Sangamon, Lehigh, Montauk, Catskill, Nantucket, Nahant, all of 844 tons. Yazoo, Waxesaw, Napa, Tunxis, Umpqua, Klamath, Yuma, Naubue, Etah, Modoc, Nausett, Shawnee, Shiloh, Squando, Suncook, Wassuc, all of 614 tons, and the Osage and Neosho of the Mississippi flotilla.
- 16 Ironclad Casemated: Chillicothe, Tuscumbia, Atlanta, Benton, Carondolet, Louisville, Pittsburg, Essex, Texas, Albermarle, Galena, Choctaw, Ozark, Marietta, Nashville, Stonewall.

7. Official Records of the Union and Confederate Navies.
8. Clark, History of the United States Navy, p. 276.
9. Official Records of the Union and Confederate Navies.
10. Annual Report of Sec. of Navy, Welles, 1864, p. XXVI-XXVII. Ample evidence of this statement is found in
11. the Annual Reports of the Secretary, and Chief of Bureau of Construction and Repair from 1865 to 1881.
11. House Ex. Doc. No. 92, 41 st Cong., 2nd. Session,
Jan. 22, 1870, p. 2.
12. Spears, History of Our Navy, p. 244.
13. Ibid., p. 245.
14. Annual Report of Sec. of Navy, Welles, 1866, p. 23,24.
15. Annual Report, Secretary of Navy, Welles, p. 190-192.
16. Annual Report of Sec. of Navy, Welles, 1865, p. XXI.
17. Annual Encyclopedia, 1865, p. 602.
18. They were the Benton, Carondolet, Chillicothe, Essex, Louisville, Ozark, Pittsburg, sold at Mound City.
19. Official Records of the Union and Confederate Navies.
19. Ibid.
20. Annual Report of Sec. of Navy, Welles, 1866, p. 28.
21. 14 U. S. p.396, 39th Cong., 2nd Sess.
22. Welles Diary, Vol. 2, p. 602, September 25, 1866.
23. 14 U. S. p.543, 39th Cong., 2nd. Sess., March 2, 1867.
24. Welles Diary, Vol. 3, p. 28, Jan. 25, 1867.
25. Ibid., p. 92, May 7, 1867.
26. Ibid., p. 206-7, September 24, 1867.

27. 15 U. S. Statutes, Joint Resolution No. 10, 40th Cong., 2nd. Sess.
28. House Ex. Doc. No. 294, 40th. Cong., 2nd. Sess.
29. Ibid.
30. Welles Diary, Vol. 3, p. 341, April 28, 1867.
31. Ibid., p. 348, May 8, 1867.
32. Ibid., p. 387, June 20, 1867.
33. Annual Report of Sec. of Navy, Welles, 1868, p.25.
34. Ibid.
35. Annual Report of Sec. of Navy, Welles, 1866, p.11; 1867, p. 1; 1868; p.7.
36. Annual Report of Chief of Bureau of Construction and Repairs, Lenthall, p. 95.
37. Ibid.
38. Report of James B. Eads on Ironclads of Europe and this Country, House Ex. Doc. No. 327., 40th Cong., 2nd. Sess.
39. Annual Report of the Sec. of Navy, Robeson, 1869, p.5.
40. Ibid., p. 11-14.
41. House Ex. Doc. No. 92, 41st., Cong. 2nd. Sess., p.2.
42. Annual Report of Admiral Porter, 1870, p. 176.
43. Annual Report of Admiral Porter, 1874, p.200-201.
44. Annual Report of Admiral Porter, 1875, p. 298-304.
45. Annual Report of Sec. of Navy, Robeson, 1869, p.8.
46. Official Records of the Union and Confederate Navies.
47. Ibid.

48. They were the Chickasaw, Etlah, Klamath, Umpqua, Yuma, Kewaydin, Winnibago, and Yazoo; all but the Chikasaw, Kewaydin, and Winnebago being light-draft monitors.

Official Records of Union and Confederate Navies.

49. Spears, History of Our Navy, Vol 5, p. 27.
50. House Misc. Doc. No. 63, 45th Cong., 2nd Sess., p. 330-331. The vessels were the Suncook, Piscataqua, the Koha, and the Algoma. All were light-draft monitors.
51. Ibid. In 1875 the ~~Hero~~, Cohoes, Nausett, Niobe, Mcdoc, Napa, Nebraska, Otsego, Shawnee, and Wassuc. In 1876 the Minnetonka; Waxsaw was also broken up, but apparently was not bartered.
52. Ibid.
53. Ibid.
54. House Misc. Doc. No. 170, 44th. Cong. 1st, Sess. Part 5, p. 295, fg.
55. Ibid., part 3, 411.
56. Ibid., Part 5, p.404.
57. House Report No. 784, 44th Cong., 1st Sess., p. 159-160-161. It was signed by W. C. Whitthorne, B. B. Lewis, R. Q. Mills, Benjamin A. Willis, Frank Jones, John Robbins, Jas. Williams, and J. H. Burleigh with reservations.
58. House Report No. 784, 44th Cong., 1st Sess.

59. House Misc. Doc. No. 201, 42nd Cong., p.198, 2nd. Sess.
60. House Report No. 80, 42nd. Cong., 2nd Sess., p. 25. Signed by Sargent of Cal., Peters of Me., Warren of N. Y. Archer of Md., while wishing to exonerate Robeson of fraud believed him to be guilty of acting contrary to law.
61. House Report No. 81, 42nd. Cong, 2nd Sess., p. 12, 13.
62. House Report No. 784, 44th. Cong., 1st Sess.
63. House Report 112, 45th Cong., 3rd Sess. P. 28 . Signed by W. E. Whitthorne, Frank Jones, Leopold Morse, W. Kimmel, John Goode, Benjamin A. Willis, Thomas A. Crittenden.
64. Ibid., p. 108. Signed by John Hanna, B. W. Harris, L. Danford, Alfred C. Harmer.
65. Encyclopedia of American Biographies, Federal Book Co., of Boston, Boston, Mass., 1903, Vol. IV, p. 504.
66. Official Records of Union and Confederate Navies. A list given in the Annual Report of the Sec. of Navy, Thompson, 1877, gives 24, but leaves out the Galena built almost contemporaneously with the original monitor. They were the Ajax, Amphitrite, Canonicus, Gamanche, Catskill, Colossus, Dictator, Jason, Lehigh, Mahopac, Manhattan, Massachusetts,

66. Miantonomah, Monadnock, Montauk, Nahant, Nantucket, Oregon, Passaic, Puritan, Roanoke, Saugus, Terror, Wyandotte.
67. Annual Report of the Chief of the Bureau of Construction and Repair 1877, p. 274.
68. 21 U. S. p. 305, 46th Cong., 2nd. Sess.
69. 22, U. S. Stat. Chap. 97, p. 477.
70. Spears, History of Our Navy, Vol. 5. p. 86.
71. Ibid., p. 93.

CHAPTER III

1. Annual Report of Sec. of Navy, Welles, 1865, p.13.
2. Spears, History of Our Navy, Vol. 4, p. 35.
3. Ibid., p. 27.
4. Ibid., p. 25.
5. Clark, History of the United States Navy, p. 241,242.
6. Spears, History of Our Navy, p.36.
7. Annual Report of Sec. of Navy, Welles, 1866.
8. Annual Report of Chief of Equipment and Recruiting, Smith, 1867, p.117,118.
9. Annual Report of Sec. of Navy, Welles, 1868, p.23.
10. Annual Report of Chief of Equipment and Recruiting, Smith, 1868, p. 80, 81.
11. Annual Report of Sec. of Navy, Robeson, 1869, p.23,24.
12. House Misc. Doc. No. 12, 41st Cong., 2nd. Sess.
13. Annual Report of Admiral Porter, 1873, p. 272.
14. Proof of this statement is found in the Annual Reports of Admiral Porter, 1874, 1875; Chief of Bureau of Construction and Repair, 1875; and the Annual Report of Secretary Robeson, 1875.
15. 19 U. S. Stat. p. 65, 44th Cong., 1st. Sess.
16. Annual Report of the Secretary of Navy, Thompson, 1877, p. 7.
17. Proof is found in the Annual Reports of Sec. Robeson and Thompson, Admiral Porter, and the Chief of the

17. Bureau of Equipment and Recruiting.
18. 21 U. S. Stat., p. 3, 46th Cong., 1st Sess.
19. Annual Report of the Chief of Equipment and Recruiting, English, 1880, p. 106-108.
20. Annual Report of Sec. Hunter, 1881, p. 17.
21. Annual Report of the Chief of Equipment and Recruiting, English, p. 110.
22. House Ex. Doc. No. 277, 41st Cong., 2nd Sess. 2 pp.
23. 13 U. S. Stat., p.222, 39th Cong. 2nd. Sess.
24. Annual Report of Sec. of Navy, Robeson, 1871, p.16-18.
25. Annual Report of Sec. of Navy, Robeson, 1872, p. 17,18.
26. Annual Report of Sec. of Navy, Thompson, 1877, p.7.
27. 20 U. S. Stat., p. 294, 45th Cong., 3rd. Sess.
28. 22 U. S. Stat., Chap. 391, 47th Cong., 1st Sess.
29. Spears, Vol. 5, p. 42.
30. Proof is found in the Annual Navy Reports and the appended material for those years.
31. Annual Report of Admiral Porter, 1870, p. 158.
32. Annual Report of Chief of Navigation, Thornton A. Jenkins, 1865, p. 163.
33. Annual Report of the Chief of Navigation, Jenkins, 1866, p. 132, 133.
34. Of the foreign born, 12 were Germans, 16 English, 19 Irish, and nine Italians, House Ex. Doc. No. 266., 40th Cong., 2nd. Sess., p. 6-9.
35. Annual Report of Chief of Navigation, Jenkins, 1868, p. 80, 81.

36. Annual Report of Sec. Robeson, 1869, p. 21-23.
37. Annual Report of Admiral Porter, 1873, p. 273.
38. Annual Report of Admiral Porter, 1875, p. 296.
39. House Report, no 432., 45th Congress, 2nd Sess.
40. Proof of these statements is found in the
Annual Reports of the Navy from 1869 to 1877,
including the Reports of Admiral Porter and the
Chief of the Bureau of Construction and Repair.
41. Annual Report of Admiral Porter, 1870, p. 157.
42. Annual Report of Chief of Equipment and Recruiting,
Shufeldt, 1877, p.122.
43. Ibid., p. 123.
44. Ibid.
- (1). Swatara class: 5.83 ft. between decks.
officers----324 cu. ft. each.
men -----58 cu. ft. each.
- (2). Richmond class: 5.83 ft. between decks.
officers----273 cu. ft. each.
men----- 68 cu. ft. each.
- (3). Miantonomah class: 7 ft. between decks.
officers----1,158 cu. ft. each.
men----- 81 cu.ft. each.
45. Annual Report of the Chief of Equipment and Recruiting,
Shufeldt, 1878, p. 61-63. There were 6,366 punish-
ments inflicted in 1866-67, as compared to 864 in
1867-68. Desertions: During last year- - - 669.
During previous year -818.
Two years ago- - - -1,203.
- A decrease of nearly 50%.
46. Report of Admiral Porter, included in Annual Report
of the Sec. of Navy., Hunter, 1881, p.103.
47. Ibid., p.116.

CHAPTER IV

1. Clark, History of the United States Navy, p.60.
2. Spears, p. 21.
3. Ibid., p. 21.
4. Ibid., p. 24.
5. Ibid., p. 21.
5. Green, Our Naval Heritage, p. 196.
6. Annual Report of the Chief of Ordnance, H. A. Wise, 1865, p. 177.
7. Ibid., p. 175, 176.
8. Ibid.
9. Ibid., p. 177.
10. Annual Report of the Chief of Ordnance, Wise, 1867, p. 142.
11. Annual Report of the Chief of Ordnance, Wise, 1865, p. 177, 178.
12. Ibid., p. 177-179.
13. Ibid., p. 179-180.
14. Ibid., p. 181.
15. Annual Report of the Chief of Ordnance, Dahlgren, 1868, p. 72.
16. Ibid., p. 72, 73.
17. House Ex. Doc. No. 250. 42nd Cong., 2nd Sess., p.2-7.
18. Ibid.
19. Ibid.

20. Ibid.
21. Annual Report of the Chief of Ordnance, Wise, 1866, p. 148.
22. Annual Report of the Chief of Ordnance, Wise, 1867, p. 143, 144.
23. Annual Report of the Chief of Ordnance, Dahlgren, 1868, p. 71, 72.
24. House Ex. Doc. No. 250, 42nd Cong., 2nd Sess., p. 2.
25. Annual Report of the Chief of Ordnance, Case, 1869, p. 67.
26. House Ex. Doc. No. 250, 42nd. Cong. 2nd. Sess.
27. Ibid.
28. Ibid., p. 2.
29. Annual Report of the Chief of Ordnance, Case, 1870, p. 55.
30. Annual Report of the Chief of Ordnance, Case, 1872, p. 52.
31. Ibid.
32. Proof is found in the Annual Reports of the Secretary and the Chief of Ordnance for those years.
33. Annual Report of the Chief of Ordnance, Case, 1872, p. 51, 52.
34. Statements to that effect are found in the Annual Reports of the Chief of Ordnance, Case, for 1872 and 1873.

35. Annual Report of the Chief of Ordnance, Case, 1871, p. 8, 9.
36. Annual Report of Admiral Porter, 1870, p. 170-174.
37. Annual Report of Admiral Porter, 1879, p. 44.
38. Ample proof of this statement is found in the Annual Reports of the Navy for those years.
39. Annual Report of the Chief of Ordnance, Jeffers, 1874, p. 81, 82.
40. Annual Report of the Sec. of Navy, Robeson, 1875, p. 19, 20.
41. Annual Report of the Chief of Ordnance, Jeffers, 1877, p. 128.
42. 18. U. S. Stat., p. 388.
43. Senate Ex. Doc. No. 3, 45th Cong., 2nd Sess.
44. House Misc. Doc. No. 170, Part 5, p. 599,400. 44th Cong., 2nd.Sess.
45. Annual Report of the Sec. of the Navy, Robeson, 1876, p. 20.
47. Annual Report of the Sec. of the Navy, Thompson, 1880, p. 10.
47. Annual Report of the Sec. of the Navy, Thompson,
46. Annual Report of the Chief of Ordnance, Jeffers, 1879, p. 62.
48. Annual Report of the Chief of Ordnance, 1880, p.80,81.

49. Report of the Advisory Board, included in the Annual Report of the Secretary of the Navy, Hunter, 1881, p. 60.
50. Annual Report of the Chief of Ordnance, Jeffers, 1880, p. 79, 80.
51. Annual Report of the Chief of Ordnance, Sicard, 1881, p. 183-186.
52. Ibid.
53. 22 U. S. Chap. 391, p. 288.
54. Clark, p. 411.
55. Ibid.

CHAPTER V

1. Spears, p. 3, 4.
2. Ibid., p. 11.
3. Ibid., p. 10, 11.
4. Clark, 261.
5. Spears, p. 15, 16.
6. Clark, p. 411.
7. Annual Report of the Sec. of Navy, Welles, 1865, p.13.
8. Official Records of the Union and Confederate Navies.
9. Annual Report of the Chief of Steam Engineering, Isherwood, 1865, p. 306.
10. Annual Report of the Chief of Steam Engineering, Isherwood, 1868, p. 119.
11. Annual Report of the Sec. of Navy, Welles, 1867, p.16.
12. Annual Report of the Chief of Steam Engineering, Isherwood, 1865, p. 172, 173.
13. Annual Report of the Chief of Steam Engineering, Isherwood, 1865, p. 306, 308.
14. Annual Report of the Chief of Steam Engineering, 1867, p. 174-178.
15. Proof of these statements is found in the Annual Report of the Chief of Steam Engineering, Isherwood, 1865 to 1868.
16. Annual Report of the Chief of Steam Engineering, Isherwood, 1868, p. 172, 173.

17. House Ex. Doc. No. 250, 42nd Cong., 2nd Sess.,
p. 41-44.
18. Ibid.
19. Ibid.
20. Annual Report of the Chief of Steam Engineering,
Isherwood, 1868, p. 119.
21. Annual Report of the Chief of Steam Engineering,
J.W. King, 1869, p.102,103.
22. Ibid.
23. Ibid.
24. Annual Report of the Chief of Steam Engineering,
King, 1871, p. 137, 138.
25. Annual Reports of the Chief of Steam Engineering
for these years.
26. Annual Report of the Chief of Steam Engineering,
1869, p. 154.
27. Annual Report of the Chief of Steam Engineering,
1870, p. 124.
28. Annual Reports of the Chief of Steam Engineering,
1872, 1873, 1874, 1875, 1876, 1878.
29. Annual Report of the Secretary of the Navy,
Thompson, 1878, p. 11.
30. Annual Report of the Chief of Steam Engineering,
William Wood, 1876, p. 253, 255.
31. Annual Report of Admiral Porter, 1870, p. 163.

32. Annual Report of the Chief of Steam Engineering,
1871, p. 140.
33. Ibid., 140-142.
34. Ibid., 142, 143.
35. Annual Report of the Chief of Steam Engineering,
1872, p. 119-121.
36. Ibid., p. 121.
37. Ibid.
38. House Ex. Doc. No. 250, p.41-44, 2nd. Cong., 2nd
Sess.
39. Annual Report of the Chief of Steam Engineering,
Wood, 1873, p. 127.
40. Annual Report of the Chief of Steam Engineering,
Wood, 1875, p. 117, 118.
41. Annual Report of the Chief of Steam Engineering,
Wood, 1873, p. 127-129.
42. Annual Report of the Chief of Steam Engineering,
Wood, 1875, p. 121.
43. Annual Report of the Chief of Steam Engineering,
Wood, 1876, p. 258.
44. 17 U. S. Stat., p. 154, 42 nd. Cong., 2nd Sess.,
45. House Misc. Doc. No. 170, p. 544, 543, 44th Cong.,
1st Sess.
46. Ibid., p. 544.
47. House Misc. Doc. No. 63., p. 181, fg., 44th Cong.,
2nd. Sess.

48. Ibid.
49. Ibid.
50. Ibid., p. 181.
51. House Report No. 112, p. 28, 45th Cong., 3rd Sess.,
52. Annual Report of the Sec. of Navy, Thompson, 1879,
p. 28-31.
53. Annual Report of the Chief of Steam Engineering,
Shock, 1878, p. 271-274 and 1879, p. 160.
54. Annual Report of the Chief of Steam Engineering,
Shock, 1879, p. 161.
55. Annual Report of the Chief of Steam Engineering,
Shock, 1878, p. 274.
56. Annual Report of the Chief of Steam Engineering,
Shock, 1879, p. 161-163, and 1880, p. 163.
57. 22 U. S. Stat. Chap. 97, 47th. Cong., 2nd Sess.
58. Annual Report of the Chief of Steam Engineering,
Shock, 1878, p. 276.
59. Annual Report of the Chief of Steam Engineering,
Shock, 1880, p. 162.
60. Report of the Advisory Board included in the
Annual Navy Report for 1881, p. 28, 38.

CHAPTER VI

(1) Bureau of Equipment and Recruiting

1. Annual Report of the Chief of Equipment and Recruiting, A. N. Smith, 1866, p. 151-153.
2. Annual Reports of the Chief of Equipment and Recruiting, Smith, 1865, 1866, 1868.
3. Annual Reports of the Chief of Equipment and Recruiting, Smith, 1865 and 1868.
4. Annual Report of the Chief of Equipment and Recruiting, William Reynolds, 1870, p. 63.
5. House Ex. Doc. No. 250, p. 8-14, 42nd Cong., 2nd Session.
6. Ibid.
7. Ibid., p. 8.
8. \$53,876.44 in 1865,; \$246,686.14 in 1866; \$64, 733.05., in 1867; \$66,105,61 in 1868, and including the period to March 4, 1869.
9. House Misc. Doc. No. 170, p. 533, 44th Cong., 1st. Sess.
10. Annual Report of the Sec. of Navy, Hunter, 1881.
11. Annual Report of the Sec. of Navy, Hunter, 1881, p.25,26.
- 12.

(2) Bureau of Navigation

1. Annual Report of the Chief of Navigation, Thornton A. Jenkins, 1865, p. 159, 160.

2. Ibid., p169.
3. Annual Report of the Chief of Navigation, Jenkins, 1867, p. 126, 127.
4. Annual Report of the Chief of Navigation, Jenkins, 1868, p. 78.
5. Annual Report of the Chief of Navigation, Alden, 1869, p. 60-63.
6. Ibid., p. 50.
7. Annual Report of the Chief of Navigation, Ammen, 1872, p. 88.
8. Annual Report of the Hydrographic office, R. H. Wyman, Hydrographer, 1874, p. 65, 66.
9. House Ex. Doc. No. 250. p. 22-30, 42nd Cong., 2nd Sess.
10. Ibid.
11. Annual Report of the Bureau of Navigation, 1880, p.111.
- 12.

(3) Bureau of Construction and Repair

1. House Ex. Doc. No. 250, p. 45-55 42nd. Cong., 2nd Sess.
2. Ibid.
3. House Misc. Doc. No. 170, p. 445-449, 44th Cong., 1st Sess.
4. Ibid., p. 449.
5. Ibid., p. 622.
6. Ibid.
7. House Report No. 112, p. 28, 45th Cong., 3rd Sess.

(4) Bureau of Provisions and Clothing

1. Annual Report of the Chief of Provisions and Clothing, Bridge, 1865, p. 373.
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