The Union and Confederate Navies

In order to understand the condition of the United States navy in 1861, it is necessary to glance at the state of affairs during the twenty years before the war. Until the years 1840, naval science during a long period had made but little progress. The various improvements in construction, in equipment, and in ordnance that had been introduced before this date had come about very slowly and gradually, and though numerous small mechanical devices had been adopted from time to time, and old ones had been rendered more efficient, no marked changes had taken place in the art of naval war. Ships were essentially what they had been for two hundred years, and they were rigged, propelled, armed, and fought upon essentially the same principles. But toward the years 1840, the introduction of steam as a motive power marked the beginning of a new era,-an era of developments so rapid and of changes so radical that only the most progressive and elastic minds could follow them. The sailing vessel was about to be laid aside, except for purposes of training. In the next few years it was replaced, first by the paddle-wheel steamer, then by the screw, then by the twin-screw. The rig of the ship was next altered, and her spars and sail-spread reduced until they were merely auxiliary. Gradually it was realized that the danger from falling spars in an engagement was a disadvantage often out of all proportion to the benefits of auxiliary sail-power, and vessels were built with no spars above the deck but a signal-pole forward and aft. Stem brought with it also a new weapon. The ram, which had been the principal engine of naval warfare in the Greek and Roman galleys, had disappeared in the Middle Ages when galleys were superseded by sailing ships. The latter, being dependent upon the wind for their motive power and direction, could not attack an enemy end-on, and hence the ram became useless. Soon after the introduction of steam a few men of inquiring and fertile minds, among them Commodore Matthew Perry and Mr. Charles Ellet, a distinguished civil engineer, perceived that the steam-engine placed a ship-of-war in the same situation as the galleys of the classical period, and that the ram might be employed on the modern vessel to much greater advantage than in ancient times. Presently, the whole system of naval tactics underwent a change, due to the same cause. The close-hauled line ahead, the order of battle for two hundred years and more, gave place to the direct attack in line abreast. To utilize the guns in this new order of battle, they must no

longer be mounted in broadside, but upon elevated citadels, giving them a wider sweep around the horizon. Meantime the guns had undergone a change, and were becoming vastly more powerful. First they were adapted to fire shells, which had hitherto been confined to mortars; next the calibers were increased, then rifling was adopted, giving greater range, accuracy, and penetration, and finally breech-loaders came into use. Following closely upon the improvements in guns, came the idea of protecting the sides of vessels with a light armor, at first of bar iron or or two-inch plates, developed by experiment after experiment into masses of solid steel, twenty-two inches in thickness. Last of all came the torpedo, of which a slight and tentative use had been made as early as 1776, but which only made its way into successful and general employment in the war of 1861.

There were signs of the dawn of this revolution before 1840, and its culmination was only reached during the war. But the twenty years between 1840 and 1860 were those in which the movement was really accomplished. During this period the naval administration had endeavored to follow the changes that were taking place, but it had not fully caught up with them. It had begun by building heavy side-wheelers, first the Mississippi and Missouri and next the Powhatan and Susquehanna. Efficient as these latter vessels were considered in 1847, when they were begun, and even in 1850, when they were launched, their model was promptly dropped when the submarine screw was introduced in place of the vulnerable paddle-wheel. The six screw-frigates were accordingly built in 1855, and they were regarded with admiration by naval men abroad as well as at home. The Niagara, the largest of these, was a ship of 4500 tons. The other five, the Roanoke, Colorado, Merrimac, Minnesota, and Wabash, had a tonnage somewhat over 3000. All of them were heavily armed, and they formed, or were supposed to form, the chief element of naval strength of the United Stats. This reliance of the Government upon its large frigates would seem to have been well grounded, and if a war had arisen with a maritime enemy supplied with vessels of the same general type, they would have given a good account of themselves. In the civil war, however, the enemy had no ordinary vessels of war to be met and conquered in ocean duels, and the waters upon his coast at points vulnerable to naval attack were too shallow to admit the frigates. Hence none of them performed any service at all proportionate to their size and coast of maintenance, except in two or three isolated cases of

bombardment, as at Hatteras Inlet, Port Royal, and Fort Fisher.

Of a much more useful type for general service were the twelve screw sloops-of-war built in 1858. There were five of these of the first class, among them the Hartford, Brooklyn, and Richmond, which gave and took so many heavy blows while fighting in Foraged's West Gulf Squadron. Hardly less important were the sloops of the second class, of which the Iroquois and Dacotah were the largest and most typical examples. To the same group belonged the Pawnee, a vessel of peculiar construction, whose constant service was hardly surpassed in efficiency and importance by any other ship of her size on the Atlantic coast. Besides the sloops, there were a few other steamers of miscellaneous dimensions and character, some of which had been purchased and altered for naval use; and these comprised all that the Government had secured toward the creation of a modern steam fleet.

The normal strength of the United States navy, if it so to be a navy at all, cannot be figured at much less than from 80 to 100 vessels, and this was the number in 1861. But of the actual total of 90, as shown by the navy list, 50 were sailing ships,-line-of-battle ships, frigates, sloops, and brigs,-which, splendid vessels as they had been in their day, were now as obsolete as the galleys of Themistocles. It was in placing a false reliance upon the these vessels that the Government was at fault: it should have recognized in the course of twenty years that their day was gone forever, that they were of no more use than if they did not exist, that they would only be the slaughter-house of their gallant crews in an encounter with a modern antagonist; and it should by that time have replaced every one of them by war-ships of the period.

At the beginning of President Lincoln's administration, out of the forty vessels composing the steam-fleet, one, the Michigan, was stationed on the lakes, and five were from one cause or another unserviceable. The remaining thirty-four, which comprised the whole of the effective force, were in the scattered situation that is usual in time of profound peace. Nine were laid up in ordinary, and with the traditional methods prevailing at the Navy Department, it would have taken some months to fit them out for sea. No orders had been issued for the general recall of the seventeen ships on foreign service, an operation requiring considerable time in those days, when no submarine cable existed. In the Home Squadron there were seven steamers, two of which, the sloop-of-war Brooklyn and the small steamer Wyandotte, were at Pensacola, two others, the gun-boats Mohawk and Crusader,

were at New York; the Pawnee, a second-class sloop, was at Washington; and the Powhatan, a side-wheeler of 1850, was on her way home from Vera Cruz in company with the gun-boat Pocahontas. Five sailing ships were also attacked to this squadron,-the frigate Sabine and the sloop St. Louis, at Pensacola; the sloops Cumberland and Macedonia, at Vera Cruz or returning thence, and the store-ship Supply, at New York. These twelve vessels, together with the Anacostian, a small screw-tender, at the Washington Navy Yard, were all that could be said to be at the immediate disposal of the Administration.

When the vessels abroad were gathered in, and those in ordinary were fitted out, the Government had a little squadron of about 30 steamers, of which the most important were 5 screw-frigates (the sixth, the Merrimac, having been abandoned at Norfolk), 6 sloops of the first or Hartford class, 4 large side-wheelers, and 8 sloops of the second or Iroquois class. All these were exceedingly valuable as the nucleus of a fleet, but for the war which the Government had now on hand they could be considered as nothing more than this. According to the position which the Administration was very soon compelled to take, the struggle was one a outrance. In a foreign war the conflict usually springs from a collision of rights or of interests, involving only a particular branch of the relations of the two contestants, and the question is ultimately settled by some from of compromise, as soon as financial or military exhaustion leads one party or the other to conclude that a protraction of the contest is not worth its while. In the civil war, however, no compromise was possible, and with the resolution shown by the Southern people, nothing short of complete subjugation would insure the restoration of the Union. In such a war, a little fleet capable of raids upon the enemy's commerce or sea-ports might be advantageous to the insurgents, but the Federal Government required materials and methods of a totally different character. No mere raids would profit it a jot. It must blockade the insurgent territory; and to do this it was not enough to keep a few ships cruising in neighboring waters, but a cordon of fast and efficient steamers must be stretched from end to end, without so much as a gap in the whole four thousand miles of coast. The reduction or even the passage of fortifications required powerful and well-equipped fleets engaged solely in these enterprises. The vest net-work of interior waterways in which the army's base and communications must be protected, could only be occupied successfully by another and equally numerous fleet. Finally, the protection of

commerce demanded, from the very nature of things, far more vessels than its destruction.

Had the material of the navy of 1861 been such as it ought to have been,-composed, lt us say, of ninety modern war-steamer of fair quality; with such an organization that those laid up in ordinary could have been fitted out in two weeks at farthest, as should always be the case; with a reserve of a hundred, or even of fifty merchant-steamers, constructed with a view to conversion into war-vessels, at short notice, which is an easy matter to accomplish; with some system by which the latest problems in naval science, especially in reference to iron-clads, had been considered and, in part at least, carried to solution; and finally, with a corps of officers graded more or less by merit, or the promise of growing fitness for command, instead of by age, or the promise of growing unfitness,-had all these plain, practicable, and sensible measures found a place in the naval administration, it is perfectly safe to say that a single years would have seen the opening of the Mississippi, the occupation of North Carolina, the fall of Richmond, Charleston, Savannah, and Mobile, and probably the end of the Confederacy. During the first six months of the war, there was really nothing to oppose the vigorous attack of such a force, and there was little more during the six months following.

As the naval material was not on a respectable peace-footing, and as no provision had been made for its conversion to a war-footing, the measures adopted for its increase were chiefly makeshifts to which the Government was driven by the exigencies of the moment. The vessels purchased by the Department during the war amounted to 418, and included every variety of merchantman and river steamboat roughly adapted in the navy yards for war service. Three types of wooden vessels were built: 14 screw sloops of the Kearsarge, Shenandoah, and Ossipee classed; 23 crew gun-boats, called from the rapidity of their construction the "ninety-day" gun-boats; and 47 side-wheel steamers, known as "double-enders," for service in narrow channels, where they could move ahead or astern without turning.** Later in the war forty-eight additional sloops or corvettes of various sizes were projected, but few of these were ever finished, and hardly and before the close of the struggle.

In the matter of iron-clads, the extreme slowness with which the Navy Department moved shows that it failed to comprehend the magnitude of the struggle, and that it was unfamiliar with the recent

progress of naval warfare. The advantages of a light armor-plating for vessels-of-war had been demonstrated by the experience of the French floating batteries Devastation, Lave, and Tonnante, in the attack on Kinburn in 1855, during the Crimean war. These vessels were protected by 4 1/2-inch plates, and the experiment had been deemed so conclusive that both France and England had already constructed new war-ships incased in armor. It was to be expected that a navy with a war on its hands would have directed its attention from the first moment when it was convinced of the probability of hostilities to securing some of these formidable vessels; and if a hesitation due to the want of statutory authority had led the Department to defer building until after Congress met, it would at least by that time have digested its plans so thoroughly that the work could begin at once. Nevertheless, for four months after Mr. Welles entered upon his office no steps were taken, even of the most elementary character, toward procuring iron-clads. In his report of July 4th, 1861, at the opening of the special session of Congress, the Secretary, by way of calling attention to the subject, makes the following somewhat ponderous observations:

"Much attention has been given within the last few years to the subject of floating batteries, or iron-clad steamers. Other governments, and particularly France and England, have made it a special object in connection with naval improvements; and the ingenuity and inventive faculties of our own countrymen have also been stimulated by recent occurrences toward the construction of this class of vessel. The period is, perhaps, not one best adapted to heavy expenditures by way of experiment, and the time and attention of some of those who are most competent to investigate and form correct conclusions on the subject are otherwise employed. I would, however, recommend the appointment of a proper and competent board to inquire into and report in regard to a measure so important; and it is for Congress to decide whether, on a favorable report, they will order one or more iron-clad steamers, or floating batteries, to be constructed, with a view to perfect protection from the effects of present ordnance at short range, and make an appropriation for that purpose."

In consequence of this recommendation, which, it must be confessed, was hardly such as the urgency of the measure demanded, Congress, a whole month later, on the 3d of August, passed an act

authorizing the Secretary to appoint a board of officers to investigate the subject, a think which was certainly within the scope of ministerial powers without any special legislation, and appropriating $1,500,000 for the work. After another delay of five precious days, on the 8th of August the board was appointed, composed of Commodores Smith and Paulding and Commander Davis. The board took occasion to remark that it approached the subject "with diffidence, having no experience, and but scanty knowledge in this branch of naval architecture." Inconceivable as it seems, this statement was literally true; for although five months had elapsed since the new administration had come in; although it knew, or should have known, what the Confederates were doing at Norfolk, and that time was of vital moment, the very best men whom it could select took six weeks to reach a conclusion on the subject. Even at the close of its protracted deliberations, so little did the board understand the tremendous importance of its work that in its final report it sagely remarked:

"Opinions differ amongst naval and scientific men as to the policy of adopting the iron armature for ships-of-war. For coast and harbor defense they are undoubtedly formidable adjuncts to fortifications on land. As cruising vessels, however, we are skeptical as to their advantages and ultimate adoption. But whilst other nations are endeavoring to perfect them, we must not remain idle. . . . We, however, do not hesitate to express the opinion, notwithstanding all we have heard or seen written on the subject, that no ship or floating battery, however heavily she may be plated, can cope successfully with a properly constructed fortification of masonry."

The same inability to understand the situation is shown in the Secretary's report transmitted to Congress in December, in which he contents himself with this perfunctory utterance:

"The subject of iron armature for ships is one of great general interest, not only to the navy and country, but is engaging the attention of the civilized world."

The board selected three plans, offered respectively by Bushnell & Co., of New Haven, Merrick, & Sons, of Philadelphia, and John Ericsson, of New York, from which were subsequently built the Galena, the New Ironsides, and the Monitor. The choice of plans was wise, although the

Galena totally failed to accomplished what was expected of her, and neither she nor the Ironsides was afterward duplicated. The Ironsides, however, proved a very efficient vessel within her sphere of action; but so overwhelming was the success of the Monitor that hardly any other model was afterward adopted.

The main features of the Monitor were the revolving turret, the low freeboard, and the projecting overhand. By means of these devices the ship was made to present a very small target, and her engines, battery, screw, rudder, and anchor, as well as her crew, were thoroughly protected, and neither rams nor guns could make much impression on her. On the other hand, the low freeboard had also one distinctive disadvantage, in that it rel's rese, thus making it possible for a small influx of water to sink her. The idea of mounting guns in a revolving circular turret had been suggested before at various times, but had never been carried to the point of useful application. In 1842 Timby had proposed a system of coast fortification based on this idea, but the plan had been found defective, and had been rejected. In 1854 Captain Ericsson had submitted to the Emperor Napoleon III. a design of an iron-clad battery with a hemispherical turret. In the next year Captain Cowper Coles, R. N., had suggested a vessel in the form of a raft with a stationary shield for protecting the guns; and in 1859 he had improved upon this design by adding a revolving cupola. But it was left to the genius of Ericsson to develop by itself the perfected application of the principle, and to construct a navigable turret iron-clad which should be nearly invulnerable to every weapon but the torpedo.

When the Navy Department finally understood Ericsson's plan, it immediately adopted it. According to Captain Ericsson, "The Committee of Naval Commanders . . . occupied me less than two hours in explaining my new system. In about two hours more the committee had come to a decision. After their favorable report had been [made] to the Secretary I was called into his office, where I was detained less than five minutes. In order not to lose any time, the Secretary ordered me to 'go ahead at once.' Consequently, while the clerks of the department were engaged in drawing up the formal contract, the iron which now forms the keel-plate of the Monitor was drawn through the rolling-mill."

The contract for the Monitor was finally signed on the 4th of October. The extraordinary energy of the contractors when they had once undertaken the work pushed it to completion with unexampled speed. But the time which had been of the greatest value, namely, the six

months from March to September, had been lost, and thus is happened that the new iron-clad was not finished in season to prevent the raid of the Merrimac in Hampton Roads, and the obliteration of the Congress and the Cumberland. In the battle of the 9th of March the presence of the Monitor, which had arrived late the night before, saved the rest of the fleet from a like fate, to say nothing of other disasters whose magnitude can only be conjectured.

It must be remembered that the Navy Department had possessed from the beginning five frigates, sister ships of the Merrimac, any one of which could have been armored more efficiently than she was, in half the time and with half the money, and without waiting for congressional action. Evidently the department little imagined, while it was dallying for six months with the question of iron-clads, that the first twenty-four hours of the Monitor's career would be so big with fate.

In addition to the three vessels selected by the board of 1861, there were built or projected during the war nearly sixty iron-clads, all of which were of the Monitor type except three,-the huge ram Dunderberg, which was sold to the French Government, and afterward called the Rochambeau; the Keokuk, which sank off Charleston, immediately after the battle of April 7th, 1863, and the converted frigate Roanoke. Of the fourteen double-turreted monitors, including the Puritan, the Onondaga, the Kalamazoo class, the Monadnock class, and the Winnebago class, only six were finished in time to take part in the war. The single-turreted monitors which saw the most service were those of the Passaic class, most of which were stationed in the South Atlantic Squadron. Besides these there were the Dictator, the nine vessels of the Canonicus class, and the twenty light-draft monitors. The last were never of any use, the calculations for their displacement having been so faulty that they could not float their guns and coal.

Hitherto we have been speaking of vessels for service on the coast or in the waters adjacent to the coast. The Mississippi flotilla deserves a place by itself. This force, which included all the vessels operating on the Ohio, the Mississippi, the Red River, and their tributaries, comprised altogether over a hundred vessels, of the greatest variety in construction and character,-propellers, side-wheelers, stern-wheelers, rams, iron-clads, "tin-clads," unarmored boats, mortar-vessels. As the first demand for a flotilla came from the army, its early organization was directed by the War Department, although a naval officer was placed in command. The complications resulting from this arrangement, under

which, as Foote said, "every brigadier could interfere with him," were obviated, October 1st, 1862, by the transfer of the force to the Navy Department.

The first step in the creation of the Mississippi flotilla was taken in May, 1861, by Commander John Rodgers, who, acting under the authority of the War Department, purchased at Cincinnati three river-steamboats, the Conestoga, Lexington, and Tyler, and altered them into gun-boats by strengthening their frames, lowering their machinery, and protecting their decks by heavy bulwarks. In August, the War Department made a contract with James B. Eads [see page 338], the famous engineer of the Mississippi jetties, to build in two months seven gun-boats, propelled by a central paddle-wheel, and covered with armor two and a half inches thick, on the forward end of the casemates and on the sides abreast of the engines. These may be said to have been our first iron-clads, light as their plating was, and imperfectly as it covered the vessels. In spite of all their defects, they performed constant service of incalculable importance throughout the war; and there is not one among them all-the Cairo, Carondelet, Cincinnati, Louisville, Mound City, Pittsburg, and St. Louis or De Kalb-which failed to make her name famous in the incessant conflicts of the Mississippi. Two larger vessels purchased by the Government, the Benton and the Esser, of one thousand tons each, and somewhat more heavily armored, together with thirty-eight mortar-boats, complete the list of vessels of the Mississippi flotilla during the period of Foote's command, which extended to the summer of 1862.

During the following years important additions were made to the flotilla. These were of two classes, light-draft boats and iron-clads. The light-drafts were small stern-wheel boats armed with howitzers, which were peculiarly useful for vedette and other light, flying service, but which in addition took their full share of the brunt of battle in the numerous contests that took place in the shoal waters of the Yazoo and the Red River. Drawing less than two feet of water, they could go almost anywhere, and with their howitzer batteries, and their light, bullet-proof plating, they were efficient vessels for clearing the river-banks of field batteries and sharp-shooters. Their armor, less than an inch in thickness, gave them the colloquial name of "tin-clads." Many of them, such as the Forest Rose, Juliet, Marmora, Rattler, Romeo, and Signal, became famous in the annals of the squadron, and the tiny Cricket, under Gorringe, fought in the Red River one of the hottest and most

gallant little battles of the Western campaign.

The second class of new acquisitions, which may be called by comparison the heavily armored vessels, though more pretentious than their older consorts, were hardly, as a whole, more efficient. Three of them, the Tuscumbia, Indianola, and Chillocothe, were side-wheel casemate iron-clads, carrying a somewhat thicker plating than the earlier boats and a much more formidable armament, but owing to poor and hasty workmanship they were occasionally found unequal to the demands that were made upon them. Of a more satisfactory performance were two large steamers, the Lafayette and Choctaw, of one thousand tons each, well-built side-wheelers, which the Government purchased and altered into casemate iron-clads fitted with rams. Still later, three turreted iron-clads of light draft, the Osage, Ozark, and Neosho [see page 342], were added to the squadron. The above, together with a number of captured gun-boats, the foremost of which was the Eastport, and a few wooden steamers of various size and miscellaneous description, made up the force with which Admiral Porter conducted his wonderful series of operations from the autumn of 1862 until his transfer to the North Atlantic Squadron in 1840.

In addition to these vessels, which constituted the regular naval force, special mention must be made of the Ram Fleet, as it was called. This fleet was the really brilliant conception of Colonel Charles Ellet, Jr., a civil engineer who, as has been already said, had called attention, some years before the war, to the renewed importance of the ram as a naval weapon. Having been vested with rank and authority by the War Department, Colonel Ellet, who was no less ready in execution than brilliant in conception, bought nine river-boats, which he strengthened and altered into rams on a plan of his own. They were called the Queen of the West, Monarch, Samson, Lioness, Switzerland, Lancaster, Minao, T. D. Horner, and Dick Fulton. Though they were hastily and imperfectly prepared, yet under the leadership of Ellet and other members of his remarkable family, who shared with him a native military instinct that was little short of genius, and a superb courage that bordered upon recklessness, they performed service that gave them a place apart in the history of the river operations.

In its personnel, the navy was by no mans so well prepared for war as it should have been. Several circumstances combined to weaken the strength of the corps. As there was no system of retirement, and as promotion for many years had been made solely on the basis of

seniority, the upper part of the list was filled with officers who had grown too old for active service, but who nevertheless felt that their position entitled them to important commands at sea, or to high places in council or in administration. For these duties most of them were peculiarly unfitted. At a time when conservatism meant stagnation, the seventy-eight commodores and captains who were the senior officers of the navy, through long adherence to routine had, with few exceptions, become doubly conservative, and owing to the rapid development of their profession, those whose early training belonged to the sail period seemed almost the relies of a bygone age.

The consciousness of ignorance in some men begets modesty, but it seldom has this effect upon the older members of a military hierarchy. Obedience to the orders of a superior is, of course, the essence of military discipline, without which it would not exist, and rank is the primary source of authority. But a system which combines reliance upon rank as the sole source of authority, and reliance upon age as the sole qualification for rank, contains essential elements of weakness. Its tendency is to make the seniors grow less capable and more despotic, while the juniors gradually lose all sense of responsibility and all power of initiative, and when they at last reach a position of command, their faculties have become paralyzed from long disuse. Especially is this the case in a long period of peace, such as following the war of 1812, and lasted, with only a brief intermission, until 1861. During this time the navy was always grasping at the shadow and losing the substance. The commodore of the period was an august personage, who went to sea in a great flag-ship, surrounded by a conventional grandeur which was calculated to inspire a becoming respect and awe. As the years of peace rolled on, this figure became more and more august, more and more conventional. The fatal defects of the system were not noticed until 1861, when the crisis came and the service was unprepared to meet it; and to this cause was largely due the feebleness of naval operations during the first years of the war.

In addition to the other elements of weakness, the junior grades at this time were short of officers, owing to the recent establishment of the Naval Academy and the limitation of the power of appointment; and at the very moment when stress was put upon the service, it lost through resignation a large number of its members, many of them men of high professional reputation. To fill these gaps, the course at the Academy was for the moment curtailed, and the upper classes were ordered into

active service. On the 1st of August, 1861, the total number of officers of all grades and corps holding regular appointments in the navy was 1457. This number was inadequate to supply the demands of the newly expanded fleet, and it became necessary to employ volunteer officers, 7500 of whom were enrolled in the navy during the war. These came chiefly from the merchant marine. Many of them were brave and capable, but their want of naval (as distinguished from merely nautical) training delayed their development. A still larger increase took place in the force of enlisted men. The normal strength of the corps of seamen was 7600, which rose during the war to 51,500, although the utmost difficulty was found in obtaining recruits, and it became necessary toward the end of the war to offer enormous bounties. The same want of training was apparent in the blue-jackets as in the volunteer officers, and while the army was able to rely from the beginning upon a trained militia, the navy was compelled to create its militia after the war had begun. Although the organization of a trained naval reserve presents no serious difficulties, and although it is evident that such a reserve is of prime importance in any considerable war, no steps had ever been taken to form it.

This was, however, only one of the many points in which the workings of the department were defective. There seems to have been a total want of information at the central office of administration in reference to the existing demands of naval war, and the measures necessary to put the machine into efficient operation. Everything in relation to the plan of a campaign, to the vulnerability of points on the coast,-and it must be remembered that this was our own coast, whose capacity for resisting attack should have been better known to the Navy Department than any other,-to the increase of the force of officers and men, to the expansion of the fleet, to the acquisition of the most modern instruments of warfare,-in short, all problems relating to the conduct of hostilities, the only purpose for which a navy really exists, had to be worked our and solved after the war had begun. Indeed, it would seem that the one subject with which the direction of naval affairs had never concerned itself was the subject of making war.

These circumstances placed the Secretary, at the opening of his administration, in a situation of peculiar difficulty. Although Mr. Welles had at one time been connected with the Navy Department, having been the civil chief of the Bureau of Provisions and Clothing from 1864 to 1849, he was in no sense a naval expert, and he was obliged to rely upon

others for expert advice and assistance in his office. There was no one, however, at his office to give such advice and assistance, except the five chiefs of bureau, who were concerned only with the business of supplying materials, and who had really nothing to do with the general direction of the fleet,-meaning thereby the working force of ships, officers, and men actually employed in naval operations. To meet this difficulty, the Secretary wisely called Captain Gustavus V. Fox to the post of chief professional adviser. Captain Fox had formerly been an officer of the navy, and had borne a high reputation for professional skill. His connection with manufacturing enterprises during the few years preceding the war had emancipated him from the slavery of routine and had given him a knowledge of affairs which naval officers in general could not easily acquire. He had shown great intelligence and zeal in the second relief-expedition to Fort Sumter, where he acted in a semi-private capacity, and Mr. Welles decided to take him into the department. The duties for which he was wanted, and which he ultimately performed with such success, were those which are commonly assigned to an officer known as the chief of staff, namely, the disposition and direction of the fleet, and the conduct of naval operations. It is hardly necessary to add that without his previous experience as a naval officer he could not have performed these duties for a day. A temporary place was made for him on May 9th, 1861, as chief clerk. When Congress met in July, it created the office of Assistant Secretary, to which Fox was appointed on August 1st, and which he retained until after the close of the war. He was succeeded in the chief clerkship by William Faxon.

The South entered upon the war without any naval preparation, and with very limited resources by which its deficiencies could be promptly supplied. Indeed, it would hardly be possible to imagine a great maritime country more destitute of the means for carrying on a naval war than the Confederate States in 1861. No naval vessels, properly speaking, came into their possession, except the Fulton, an old side-wheeler built in 1837, and at this time laid up at Pensacola, and the sunken and half-destroyed hulks at Norfolk, of which only one, the Merrimac, could be made available for service. The seizures of other United States vessels included six revenue-cutters, the Duane at Norfolk, the William Aiken at Charleston, the Lewis Cass at Mobile, the Robert McClelland and the Washington at New Orleans, and the Henry Dodge at Galveston; ## three coast-survey vessels, the schooners Petrel and

Twilight, and the steam-tender Firefly; and six or eight light-house tenders. As all of these were small, and most of them were sailing vessels, they were of little value.

Several coasting or river steamers belonging to private owners, which were lying in Southern waters when the war broke out, were taken or purchased by the Confederate Government.

##The James C. Dobbin was also seized at Savannah, but was soon afterward released.-J. R. S.

The most important were the Jamestown and the Yorktown (afterward the Patrick Henry) at Richmond; the Selden at Norfolk; the Beaufort, Raleigh, Winslow, and Ellis, screw-tugs plying on the Chesapeake and Albemarle Canal; the side-wheel passenger boats Seabird and Curlew, in the North Carolina Sounds; the Nashville at Charleston, and the Everglade at Savannah.

The Star of the West, whose name had been on everybody's lips after the attack made upon her in January, 1861, while she was attempting to relieve Fort Sumter, had subsequently sailed on transport service to Indianola, Texas, where she was seized in April by a party of Texas volunteers. In the Confederate navy she became the St. Philip. She was stationed at New Orleans as a receiving-ship when Farragut passed the forts, and fled with other vessels up the Mississippi River, taking refuge finally in the Yazoo. In March, 1863, when the ships of the Yazoo Pass expedition descended the windings of the Tallahatchie to attack Fort Pemberton, they found the river barricaded by the hull of a sunken vessel, which was no other than the once-famous Star of the West.

The purchases and seizures made at New Orleans enabled the Confederate Government to equip at that point its only considerable fleet. The vessels fitted out successively by Commodores Rousseau and Hollins included the Habana, afterward the Sumter, in which Semmes made his first commerce-destroying cruise; the Enoch Train, which was altered into a ram and called the Manassas; the Florida and Pamlico, employed on Lake Pontchartrain; the Marques de la Habama (Mr. Rae), the Webb, Yankee (Jackson), Gros-tete (Maurepas), Lizzie Simmons (Pontchartrain), Ivy, General Polk, and a few others of smaller size. The State of Louisiana and the citizens of New Orleans also made purchases of vessels on their own account. Thus the Governor Moore and the General Quitman, which took part in the action at the forts, were State

vessels; and the Enoch Train was originally purchased by private subscription. There were also a large number of flat-boats or coal-barges, destined for use as fire-ships, upon which Commodore George N. Hollins placed great reliance.

Another measure of defense adopted by the Confederate Government deserves mention here, although the navy was in no way connected with it. On the 14th of January, 1862, Secretary Benjamin, of the War Department, telegraphed orders to General Lovell, who was in command at New Orleans, in impress certain river steamboats, fourteen in number, for the public service. On the 15th the vessels designated were seized. They were intended to form a flotilla or rams for the defense of the Mississippi, in accordance with a plan suggested by two steamboat captains, Montgomery and Townsend, who had secured the adoption of their project at Richmond through the influence of political friends in Congress. In the words of Secretary Benjamin, they were "backed by the whole Missouri delegation." The scheme had its origin partly in jealousy or distrust of the navy, and the direction of the "River Defense Fleet," as it was called, was therefore intrusted to the army. The projectors of the enterprise had taken care, however, to limit the authority of the army officers over the fleet, and the War Department wrote that when it sailed it would be "subject to the orders of General Beauregard, as regards the service required of it, but of course without any interference in its organization." The original cost of the vessels was $563,000, and the cost of equipping and fitting them out was $800,000.

The River Defense Flotilla hardly accomplished results that justified this heavy outlay. Its organization, as might have been expected, was seriously defective. In January, Lovell was apprehensive that "fourteen Mississippi River captains and pilots will never agree about anything after they once get under way." These fears were afterward realized. April 15th, Lovell wrote:

"The river pilots (Montgomery and Townsend), who are the head of the fleet, are men of limited ideas, no system, and no administrative capacity whatever. I very much fear, too, that their pon will prove much less than has been anticipated,-in short, unless some competent person of education, system, and brains is put over each division of this fleet, it will, in my judgment, prove an utter failure. No code of laws or penalties has been established, and it is difficult to decide how deserters from the fleet are to be tried and punished. There is little or no discipline or

subordination-too much 'steamboat' and too little of the 'man-of-war' to be very effective."

When the River Defense Fleet was ready, eight of the vessels, commanded by Captain J. E. Montgomery, were sent up the river to meet the Union fleet, then on its way down, under Flag-Officer Davis. After a gallant but ineffectual brush near Fort Pillow, Montgomery's flotilla had a pitched battle at Memphis, on the 6th of June, with the Union force, now strengthened by the addition of Colonel Ellet's ram-fleet, and was literally wiped out of existence-four of the vessels being captured and three destroyed. The Van Dorn alone escaped, and fleeing to the Yazoo River was soon afterward burnt. The six vessels of the River Defense Fleet, which had been retained by General Lovell at New Orleans, were sent down to assist in the defense of the forts, but the only part they took in the battle was to get out of the way as quickly as possible. All of them were captured or destroyed.

In addition to the vessels purchased and altered, the Confederate authorities built several new ones at New Orleans. Of these there were three wooden boats, the Livingston, Bienville, and Carondelet, and two iron-clads, the Louisiana and the Mississippi. The Bienville and Carondelet were substantially built side-wheelers of light draft, built on the lakes, and were only finished in March and April, 1862. They were unable to fill up their crews, and hence took no part in the action at the forts. @ The Livingston, which had been attacked some time before to the flotilla in the upper Mississippi, made its way to the Yazoo River, and was burnt there with the Polk and Van Dorn. The two new iron-clads, however, were intended to be by far the most important factors in the defense of New Orleans. If they had been finished in time, this intention would doubtless have been realized. The Louisiana, built by contract with E. C. Murray, was not begun until the middle of October, and her machinery was transferred from the steamer Ingomar, which the contractors had brought for the purpose. She was 264 feet long, and from 400 to 500 tons of railroad iron were used in plating her with armor. The ship was in several ways badly designed, and on the 20th of April, when she was sent from New Orleans down the river to the forts, her engines would not work. During the battle she could only serve as a stationary floating battery, and she was blown up by Captain J. K. Mitchell on the day of the surrender of the forts. The other iron-clad, the Mississippi, a still larger and more heavily armored vessel, was

constructed by the Messrs. Tift upon a very novel and peculiar design. To obviate the want of ship-builders and designers, she was built

@ Report of Joint Confederate Committee on the affairs of the Navy Department, p. 28.

like a house, in straight lines and with pointed ends. Though there was apparently no lack of steamers to tow the unfinished vessel up the river, she was burnt just before the Federal fleet reached the city.

The total failure of the Confederate fleet on the Mississippi was largely due to bad management and to the want of a proper organization. Authority was divided between the State Government and the Confederate Government, and still further between the army, the navy, and the steamboat captains. The War and Navy Departments at Richmond did not work together. There were some differences of opinion between General Lovell, in command at New Orleans, and General Duncan, in command of the exterior defenses. Four naval officers, Rousseau, Hollins, Mitchell, and Whittle, were successively in command of the "Naval Station," a command of vague and indeterminate limits, and there were plenty of sources of disagreement between them and their colleagues of the army. They were perplexed and worried by confusing orders, and by the presence of independent agents in their own field of operations. They had no authority over the work of building the iron-clads, although constantly urged to hurry their completion. The organization of the River Defense Fleet, under Montgomery, was a direct and intentional blow at their authority, and left without the aid of reserves whose disposition they could direct. The naval operations suffered from the lack of funds, so much so that on the 26th of February Governor Moore telegraphed to Richmond. "The Navy Department here owes nearly a million. Its credit is stopped." This condition of affairs was all the more remarkable, since the strategic position of New Orleans and the river was of vital importance to the Confederacy, and the post required above all things unity of command,- indeed, one might well say a dictatorship. Had one man of force and discretion been in full command and provided with sufficient funds, the defense would at least not have presented a spectacle of complete collapse.

The construction and equipment of vessels for the Confederate Government at other points were executed with great difficulty, owing

to the want of iron and the absence of properly equipped workshops. In 1861 the only foundry or rolling-mill of any size in the Confederacy was the Tredegar Iron Works, at Richmond, and here the principal work in ordnance and armor was done. By dint of great efforts, foundries and rolling-mills were established at Selma. Atlanta, and Macon; smelting-works and a rope-walk at Petersburg; a powder-mill at Columbia, and an ordnance-foundry and chemical works at Charlotte. These works supplied what was needed in the way or ordnance and equipment, but they could not build vessels. The spring of 1862 saw the loss of Norfolk, Pensacola, and New Orleans, and after this date the Confederacy had no well-appointed ship-yard. Nevertheless, numerous contracts were entered into with business firms all over the country, and the construction of small vessels went on actively during the war. On March 15th, 1861, the Provisional Congress had authorize the construction or purchase of 10 steam gun-boats, of from 750 to 1000 tons. By the latter part of 1862 the Navy Department had purchased and altered 44 vessels, and had build and completed 24, while 32 others were in process of construction.

Most of these vessels were small craft, only suitable for detached local employment in rivers and harbors. Of the more formidable ships the Tennessee and Arkansas were built at Memphis in the winter of 1861-62. They were covered with railroad iron. The Arkansas was completed and taken to the Yazoo River in April, 1862. After a short and brilliant career under Lieutenant Isaac N. Brown, she finally fell a victim in August to the defects of her engines. The Tennessee, being still on the stocks at Memphis when Davis's fleet descended the river, was burnt where she lay. At Mobile, the second Tennessee a much more powerful vessel, but with engines transferred, like those of the Louisiana, from a river steamboat, was captured in her first and only engagement, when she attacked single-handed the whole Federal squadron. At Savannah, the Atlanta, a converted blockade-runner with a casemate covered with four inches of armor, was disabled and defeated by four shots from the monitor Wechawken. At Charleston, four casemate iron-clads were build, the Palmetto State and Chicora in 1862, the Charleston in 1863, and the Columbia; the last, however, was still unfinished at the close of the war, and was captured by Admiral Dahlgren at the evacuation of the city. The other three were blown up at the same time. In the sounds of North Carolina two iron-clads were projected, one to be built on the Neuse River, the other on the Roanoke. The first was destroyed before

completion, but the second, the Albermarle, which the Union forces, through most culpable negligence, suffered to remain undisturbed until she was fully armed and equipped, captured the town of Plymouth, and fought a drawn battle with the squadron of double-enders in the sound. After a career of six months, she was destroyed by the expedition under Lieutenant Cushing.

The last, and in some ways the most useful naval force of the Confederates, was the James River Squadron. After the destruction of the Merrimac in May, 1862, and the abortive attempt of the Union vessels to pass up the James River, a fleet was gradually constructed and fitted out for the defense of Richmond. There were still in the river the Patrick Henry, which was soon after assigned to the use of the Confederate Naval Academy, and the Beaufort and Raleigh, which had come to Hampton Roads from the North Carolina Sounds after the battles of Roanoke Island and Elizabeth City. All three had taken part in the first day's engagement off Newport News, when the Merrimac (Virginia) had destroyed the Congress and the Cumberland, after which they withdrew to the James River. To these were added the gun-boats Nansemond, Hampton, and Drury. But by far the most important division of the squadron consisted of the three iron-clads Richmond, the second Virginia, and Fredericksburg. Of these the Fredericksburg was the weakest and the Virginia the strongest. In fact, the Virginia was one of the strongest vessels that the Confederates got afloat at any point, having six inches of armor on the sides of her casemate and eight inches on the ends. This fleet was an important element in the military situation in Virginia in 1864-65, though never brought into decisive action. At the evacuation of Richmond it was burned, and with its destruction the coast navy of the Confederates came to an end.

In order to make war on the commerce of the United States, the Confederacy early resorted to privateering, which was then, as it is now, a legitimate practice with all States not parties to the Declaration of Paris. In accordance with the President's proclamation of April 17th, and the Act of Congress of May 6th, letters of marque were issue by the Confederate Government to owners of private vessels, authorizing them to cruise against the United States. Under the authority, more than twenty privateers were fitted out and made cruises during the summer and autumn of 1861, taking sixty or more prizes. The exact number either of privateers or of prizes will probably never be known. Charleston, New Orleans, and Hatteras Inlet were the principal centers

of privateering operations. Three of the privateers were captured,-the Savannah by the brig Perry, the Petrel by the frigate St. Lawrence, and the Beauregard by the bark W. G. Anderson. The cessation of privateering after the first year was brought about by the blockade, which took away the profits of the sale of prizes, and such of the privateers as were not taken into the Government service were converted into blockade-runners.

After privateering came to an end, the Confederate Government depended almost wholly upon Europe for sea-going cruisers. These were not privateers, however, but commissioned ships-of-war of the Confederacy. Captain James D. Bulloch resided in England as the Confederate naval agent, and his skill and enterprise resulted in the acquisition of the Florida, Alabama, Georgia and Shenandoah, all of which made successful commerce-destroying cruises. Attempts to secure other vessels, including the Alexandra, the Pampero, the iron-clad contracted for by Captain North on the Clyde, and the two armored rams built by the Messrs. Laird, failed through the intervention of the British Government. Of the six vessels built in France, including four corvettes and two iron-clads, only one of the latter, Stonewall, passed into the hands of the Confederates, and this was acquired so late in the war as to be of no value.

In its personnel, the Confederate navy was more fortunate than in its vessels. The Secretary was Stephen R. Mallory, who had been for several years before the war the chairman of the Naval Committee in the Senate,-a position much better calculated to give its holder a knowledge of the demands of a modern navy than that which Mr. Welles had filled from 1846 to 1849. He entered upon his task with vigor and intelligence, and he was ably seconded by the officers around him, many of whom had been men of conspicuous ability in the old navy. In the branches of ordnance and torpedoes he relied largely upon two men, Commander John M. Brooke and Lieutenant Hunter Davidson. To Brooke were due the banded guns which proved of such signal use during the war, while Davidson did much to develop the torpedo service, which probably contributed more to the defense of the Confederacy than all the vessels of its navy. In 1862, some impatience was shown by the press and the public of the South at the continued succession of naval disasters, and a Congressional committee made an exhaustive investigation of the department. Nothing of importance was disclosed except the condition of affairs at New Orleans in 1861-62,

already referred to, for which the Navy Department was partly responsible, but which was largely owing to the poverty of Confederate resources.

It was especially in his quick perception of the demands of modern naval war, and his prompt and bold action to meet these demands, that Secretary Mallory showed his ability and decision of character. No doubt this was in great part due to good advisers, but it is not every man who has the wisdom to perceive what good advice is, and the courage to act upon it, where his action involves heavy responsibilities. Mr. Mallory's emphatic recommendations in reference to iron-clads contrast favorably with the halting suggestions of Mr. Welles on the same subject. In a letter of May 8th, 1861, to Mr. Conrad, the chairman of the Naval Committee, Mallory presents with precision and force the history of the development of armored vessels, stating accurately the essential facts, which certainly were either not know or not appreciated at Washington. He closes his letter with these remarkable words:

"I regard the possession of an iron-armored ship as a matter of the first necessity. Such a vessel at his time could traverse the entire coast of the United States, prevent all blockade, and encounter, with a fair prospect of success, their entire navy.

If, to cope with them upon the sea, we follow their example, and build wooden ships, we shall have to construct several at one time, for one or two ships would fall an easy prey to her comparatively numerous steam-frigates. But inequality of numbers may be compensated by invulnerability, and thus not only does economy, but naval success, dictate the wisdom and expediency of fighting with iron against wood without regard to first cost.

"Naval engagements between wooden frigates as they are now built and armed will prove to be the forlorn hopes of the sea-simply contests in which the question, not of victory, but who shall go to the bottom first is to be solved.

"Should the committee deem it expedient to begin at once the construction of such a ship, not a moment should be lost."

The result was that early in July the Merrimac had been raised and docked, the details of the plan of reconstruction had been completed, and the work had been begun without waiting for an appropriation. This early start enabled her to destroy the Congress and the

Cumberland unopposed.

The number of officers who left the United States navy, either by resignation or dismissal, to join the Southern causes, was 322, of whom 243 were line-officers. In the beginning they were attacked to the separate State organizations, but during the spring of 1861 they were gradually enrolled in the navy of the Confederate States. In 1863 a naval academy was established under the command of Captain W. H. Parker, on board the Patrick Henry in the James River, which turned out excellent junior officers. The personnel of the Confederate navy was distinguished by enterprise, originality, and resource, and to it were due some of the most gallant episodes of the war.

In seamen the South was deficient, not having a seafaring population. The number of enlisted men in the navy at any given time was probably less than four thousand, but as it took the offensive only in detached enterprises, no very extensive force was required. The four principal commerce-destroyers were chiefly manned by foreign sailors. Source: "Battles and Leaders of the Civil War" Article by James Russelll Soley, Professor, U.S.N.