CHAPTER 2

A CENTURY OF DEVELOPMENT 1814–1898

ABOVE: Commodore John Rodgers (1772–1838) served on the USS* Constellation *during the Quasi-War with France and commanded the 28-gun frigate* John Adams *during the Barbary Wars. In 1823, after a long naval career, he served as acting secretary of the navy.

On January 16, 1815, Benjamin Crowninshield of Salem, Massachusetts, became the fifth secretary of the navy. His experience in business, seamanship, and politics made him a particularly good choice. When still a lad, his father removed him from school and sent him to sea as a cabin boy to learn navigation. During the war of 1812, Crowninshield observed administrative weaknesses in the navy department, and soon after taking office he corrected the deficiency by asking Congress to create a Board of Navy Commissioners. The first members were commodores John Rodgers, David Porter, and Isaac Hull. Rodgers served as president of the board until 1837, taking only three years off to serve at sea. Asked twice to become secretary of the navy, Rodgers refused to give up his commission and was never appointed.

Had it not been for a resumption of war with the Dey of Algiers, Crowninshield may not have convinced the president and Congress of the importance of a long-range building program to steadily augment the navy's strength. Congress agreed to allocate $1 million a year for six years to build six 74-gun ships-of-war and twelve 44-gun frigates. Although the larger ships were called "74s," they carried anywhere from eighty-six to a hundred and two guns, while the USS *Pennsylvania*, which became the largest sailing ship to ever serve the navy, carried a hundred and twenty guns. When John Quincy Adams visited the *Pennsylvania*, he said she looked "like a city."

> "The importance of a permanent naval establishment appears to be sanctioned by the voice of the people, and…the means of its gradual increase are completely within the reach of our national resources."
> *Secretary of the Navy Benjamin Crowninshield.*

The appropriation also called for three experimental steam batteries, though little was implemented. In 1814 Robert Fulton had created the steam-powered, paddlewheel-propelled *Demologos*, renamed *Fulton* in honor of her creator, but she had no steering mechanism other than her two side-wheels. Although the navy deemed her unsuitable for operations, the new technology interested Rodgers, who in 1834 at the age of sixty-three recommended twenty-five steamships for the future navy.

New Challenges

With the return of peace, America's idled merchant fleet rushed to sea. In the interlude between the War of 1812 and the Civil War (1861-1865), the navy's mission became the protection of an expanding maritime commerce. Yankee merchant vessels carried cotton, flour, tobacco, rice, and lumber around the world in exchange for silks, tea, porcelains, and pepper from East Asia, and sugar, rum, mahogany, coffee, and fruit from the Caribbean and Brazil. To protect the merchantmen, the navy needed to be handy wherever the traders went, but other problems surfaced. Between 1815 and 1822 as many as three thousand American ships were attacked between the passages of the West Indies and off the Mississippi delta.

> Wars often arise from the rivalry in trade, and from the conflicts and interests which belong to it. The presence of an adequate naval force to protect commerce…is one of the best means of preventing those disputes and collisions.
> *Secretary of the Navy Abel P. Upshur.*

Barbary Corsairs

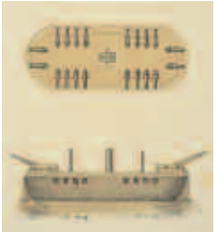
During the War of 1812, the Dey of Algiers preyed on American commerce, enslaved merchant sailors, and in early 1815 expelled the United States consul and declared war because he wanted to be paid more tribute. Despite being at the height of its prestige and popularity in 1815, the navy might well have become victimized by an economically minded Congress had it not been for the dey. On May 20, 1815, the most powerful American squadron ever assembled put to sea under Commodore Stephen Decatur. His pennant flew from the graceful new 44-gun frigate *Guerrière,* which was accompanied by the frigates *Constellation* and *Macedonian*, and seven other warships. Decatur departed from Sandy Hook, New Jersey, and sailed straight to the Mediterranean to settle unfinished business that had been dangling since 1801.

Decatur pressed into the Mediterranean and on June 17, 1815, captured the 46-gun Algerian frigate *Mashouda* and the brig accompanying her. Word spread, and every Algerian corsair on the Mediterranean scattered into neutral ports. Decatur did not bother chasing any more ships. He sailed directly into the harbor at Algiers and at cannon-mouth demanded and received cancellation of all tribute, release of American prisoners without ransom, and the cessation of piracy. Decatur then sailed to Tripoli and Tunis, obtained the same terms, and received compensation for American vessels seized in those waters by the British during the War of 1812. Decatur's swift resolution of the Barbary problem merely proved to a parsimonious Congress that a nation without a navy is a nation without security, thereby reinforcing Crowninshield's program for a sustainable navy with better ships.

ABOVE: During the Barbary Wars, 25-year-old Lieutenant Stephen Decatur led a boarding party that captured two enemy gunboats by subduing the Tripolitans in hand-to-hand combat.

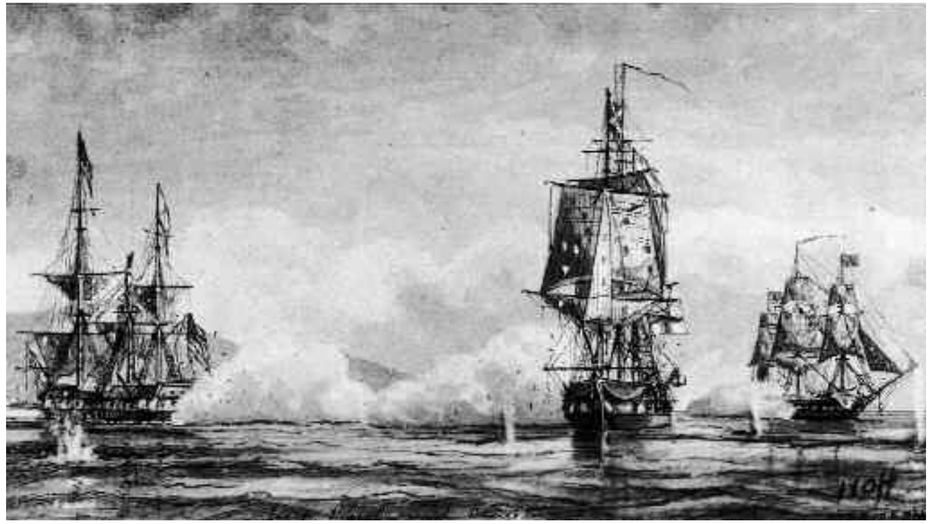
Porter and the Pirates

By 1823, Boston-born Commodore David Porter (1780-1843) stood high among the most accomplished commanders in the navy. He had accumulated a distinguished record during the Quasi War with France (1798-1800); Tripolitan War (1801-1805); and the War of 1812, during which he rounded Cape Horn in the 32-gun frigate *Essex* and destroyed more than $2.5 million in British whaling operations. After serving on the Board of Navy Commissioners, he grew tired of Washington life and on February 23, 1823, accepted command of the pirate-chasing West Indies Squadron. Porter included a 100-ton Hudson River steamboat in his flotilla, the 3-gun paddle-wheeler *Sea Gull*, the first time in combat history that such a vessel had been used. Porter added her to his considerable fleet because



ABOVE: On October 29, 1814, New Yorkers watched as Robert Fulton launched the* Demologos (Fulton I)*, the world's first steam-powered warship. Designed for harbor defense, the gunboat was propelled by a central paddle-wheel and carried thirty-two small cannon.

RIGHT: After destroying British whalers in the South Pacific, Captain David Porter's operations came to an abrupt and bloody end on February 28, 1814, when the frigate USS* Essex *attempted to fight two British warships off Valparaiso, Chile.



BELOW: Although Commodore David Porter served with distinction during the War of 1812, he offended Spain when he took a landing party ashore on Puerto Rico in 1824. Court-martialed for exceeding his authority, Porter bitterly resigned from the navy.

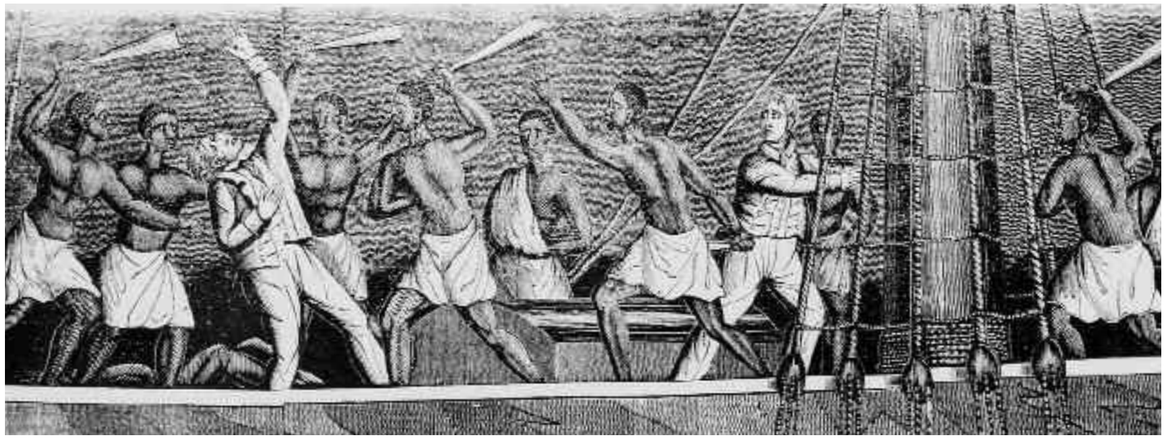
she could pursue pirates through shallows when even the lightest sailing craft lay becalmed.

For two years Porter pursued pirates among the islands and reefs of the Caribbean. His eight small schooners and five 20-oared barges did most of the work while his frigates escorted merchant ships through danger areas. Though Porter successfully suppressed the pirate trade, he proved to be an inept diplomat. In 1825 he created an international dispute by sending a force into Fajardo, Puerto Rico, after the local Spanish authority allegedly insulted one of his pirate-chasing officers. President James Monroe had on December 2, 1823, promulgated his famous doctrine promising to protect the Americas against foreign aggression, and Porter became the first aggressor. Recalled and court-martialed on charges of insubordination for violating Spanish sovereignty, Porter was suspended from active duty for six months. Having a volatile nature, Porter resigned to become commander-in-chief of the newly organized Mexican Navy. Captain Lewis Warrington took over the West India Squadron and by mid-1826 reported the islands cleared of the scourge of piracy.

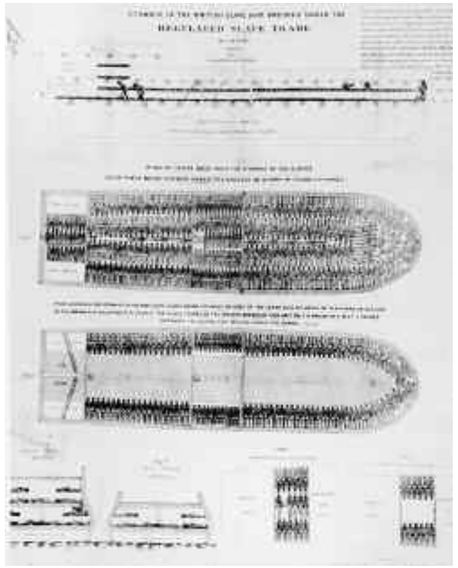
> I had always fancied that the stories of worm-eaten bread…were little more than apocryphal…[but] I have seen a biscuit literally crawl off the mess cloth….
> *Charles Nordhoff,* In Yankee Windjammers.

Curbing the Slave Trade

In 1808 Congress outlawed transatlantic slave trade with Africa and in 1820 made slaving punishable by death. In 1817 the American Colonization Society suggested repatriating slaves by returning them to Africa. Two naval officers, Robert Stockton and Matthew C.



ABOVE: When slaves took over the* Amistad *in 1839 and killed the ship's captain and the cook, the incident made headlines in the United States and intensified the navy's effort to curb the slave trade emanating out of Africa.



LEFT: Slave ships such as the* Brookes *became vessels of horror and death. Men and women filled every empty space. Unless they died en route to America, slaves remained chained together for weeks, with barely enough space to breathe.

ABOVE: Slaves during the middle passage to America on the ship* Gloria *suffered horrible treatment and unspeakable misery. They were abused, beaten, and poorly fed during a voyage that often lasted two months.

RIGHT: The 3,241-ton sailing ship-of-the-line USS* Pennsylvania *went to sea in 1837 and soon became obsolete with the advent of side-wheel steamers. Sailors burned her on April 20, 1861, when the Union Navy abandoned the Norfolk Navy Yard.

Perry, agreed with the proposal and promoted the idea of creating Liberia. In 1820 the navy department formed the African Squadron for the suppression of the slave trade and to aid in the settlement of Liberia. Two years later the navy withdrew the African Squadron because shallow-draft vessels were needed to combat piracy in the West Indies.

Not for twenty years did the United States make further efforts to suppress the slave trade. In 1843 Commodore Matthew C. Perry returned to the West Coast of Africa after several American merchant ships had been captured and their crews barbarously murdered. He anchored his squadron off the Guinea Coast and sent a force of marines and sailors ashore that destroyed four slaving towns and killed the gigantic native chief, King Crack O. On December 16 Perry brought the Africans to the table and consummated the treaty of Great Berribee, which officially but not entirely ended the slave trade.

The Seminole Wars

When the Second Seminole War erupted in 1835, Secretary of the Navy Mahlon Dickerson had allowed the navy to disintegrate to forty-one ships and six thousand men. Commodore Alexander Dallas, who had been patrolling the Gulf of Mexico to interdict the smuggling of slaves into Texas, found his ocean-going squadron called upon to assist in rooting out Seminoles who inhabited the inland swamps and waterways of Florida and who had refused to be relocated to the Indian Territory of Oklahoma. In 1836 the Creek Indians of Georgia and Alabama joined the opposition, and for ten years the navy became involved in sending small, light-draft steamers up rivers to keep soldiers and marines supplied. Sailors called it the brown water "mosquito fleet." Using flat-bottomed barges and dugouts, Lieutenants J. T. McLaughlin and John Rodgers penetrated hundreds of miles up rivers and

LEFT: On August 25, 1843, Captain John T. Newton's side-wheel frigate* Missouri *became the first steam-powered U.S. naval vessel to cross the Atlantic. The following night, off Gibraltar, a fire broke out in one of her storerooms and destroyed the ship.

into swamps to find and subdue the elusive Indians.

The skirmishes continued until 1845, when the navy put forces ashore in southern Florida. Marines captured Seminole chieftain Osceola and rounded up the rest of his band. By then, the naval force of the United States had withered away to a number of shallow-draft vessels and a few old frigates.

The Mexican War (1846-1847)

President Polk laid the foundation for the Mexican War when on March 1, 1845, he annexed Texas and in July sent General Taylor's army to the Rio Grande River to intimidate the Mexicans. What began on April 23, 1846, as the Mexican War became a struggle between land forces because Mexico had no navy. Commodore David Conner blockaded Mexican ports in the Gulf of Mexico, and Commodore Robert F. Stockton sailed around Cape Horn in the old frigate *Congress* and assimilated Sloat's

ABOVE: Captain Robert F. Stockton, commanding the navy's first screw steamer USS* Princeton*, invited President John Tyler and other dignitaries for a demonstration of "the Peacemaker," a 12-inch gun he designed. But "Peacemaker" blew up and killed eight persons, including the navy secretary.

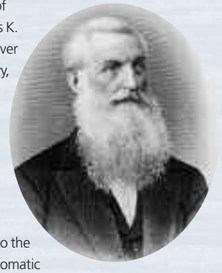
mini-squadron in the Pacific. Landing parties from *Congress* and the 20-gun sloops-of-war *Cyane* and *Portsmouth* captured southern California and Los Angeles against light opposition. Mexican forces in California surrendered on August 14, 1846, and Stockton organized and headed a civil government.

In the Gulf of Mexico, Conner conducted a blockade but did little to help the war effort because of disease among his men and a paucity of steamers to bring in supplies. Bancroft sent the side-wheel steamer *Mississippi,* launched in 1841, into the gulf with a new commander, Commodore Matthew C. Perry. Secretary of the Navy John Young Mason immediately began building and commissioning new steamers, among them the *Powhatan, Susquehanna, San Jacinto*, and *Saranac*. All the ships were side-wheelers except for one, *San Jacinto,* which was powered by a screw propeller. None of the vessels ever participated in the war.

After bombarding the forts protecting Veracruz, Perry put General Winfield Scott's twelve-thousand-man army ashore in a single day, after which the navy mopped-up coastal towns with small amphibious expeditions. Marines joined Scott's attack on Mexico City, which enabled them to add a half-stanza to their spirited anthem—"From the halls of Montezuma to the shores of Tripoli."

INSET BELOW: Historian George Bancroft (1800–1899) founded the United States Naval Academy during his 1845–1846 term as secretary of the navy under President James K. Polk. Bancroft later became ambassador to Great Britain, Prussia, and Germany.

George Bancroft (1800–1899)



On March 11, 1845, George Bancroft of Massachusetts became President James K. Polk's secretary of the navy. Bancroft never admitted knowing much about the navy, but he fully appreciated a good education. At Polk's bidding, Bancroft spent his first year in office involved in the annexation of Texas and preparing for war with Mexico. He posted Commodore David Conner's Home Squadron off Veracruz and sent Commodore John D. Sloat's squadron to the Pacific. On March 31 Mexico broke diplomatic relations, and in April the U.S. administration issued preparatory orders for the navy to transport General Zachary Taylor's army to Texas.

As the United States and Mexico moved toward war, Bancroft made his greatest contribution to the navy and founded the United States Naval Academy. For more than ten years Congress had opposed the idea because they doubted whether academic training was of value to a naval officer. They also believed the United States was immune from wars and simply refused to spend the money.

Bancroft snubbed Congress by not asking for funds. He solved the site problem by obtaining Fort Severn, at Annapolis, Maryland, from the army. He then raised $28,200, enough to transfer eighteen of the navy's twenty-five professors on waiting orders at half pay to teach at the academy. He named Commander Franklin Buchanan superintendent, and in early 1846 fifty-six students reported for instruction, half being midshipmen returning from sea and the other half being new appointees, soon to be called cadets.

Even as the nation approached war with Mexico, Bancroft remained more interested in improving the quality of the navy than increasing its size. President Polk became distressed by Bancroft's parsimonious requests for new construction, guns, and manpower. Bancroft eventually admitted that he opposed going to war with Mexico, so Polk removed him and on July 10, 1846, replaced him with John Young Mason, the previous secretary of the navy. Mason had opposed the establishment of a naval academy, but thereafter supported it.

ABOVE: The brig USS* Somers *had been used to train midshipmen until Secretary of the Navy George Bancroft secured the U.S. Army post at Fort Severn in Annapolis, Maryland, and in October 1845 opened the school as the United States Naval Academy.

From the Mexican War the navy learned something about the difficulties of maintaining a lengthy blockade in enemy waters. Little did sailors realize that in fourteen years they would be at sea again, patrolling 3,500 miles of their own coastline in a section of the south called the Confederate States of America.

> You Have gained yourself a lasting name, and have won it without shedding a drop of blood or inflicting misery on a human being. What naval commander ever won such laurels at such a rate?
> *Washington Irving to Matthew C. Perry in* A History of the United States Navy, by Edgar S. Maclay.

A Decade of Exploration

Although Matthew Perry's opening of Japan may have been the diplomatic highlight of the 1850s, the navy launched a series of expeditions to explore the world. Lieutenant Matthew F. Maury, superintendent of the U.S. Naval Observatory, had begun tracking the winds and currents of the oceans and established routes that became the world's commercial highways of the seas. In 1851 he sent Lieutenant William L. Herndon over the Andes of South America to explore the basin and navigability of the Amazon, which opened commercial opportunities with Brazil.

In May 1850 the navy sent the first of two "Grinnell" expeditions into the polar waters of Greenland in search of British Captain Sir John Franklin, who had disappeared in 1847 while searching for the Northwest Passage. Though both missions failed to find Franklin, Dr. Elisha Kent Kane made discoveries in what became the Lincoln Sea that opened the way for future Arctic expeditions.

ABOVE: On March 8, 1847, after the Mexican government refused to surrender, General Winfield Scott disembarked 8,600 soldiers from Commodore Perry's Home Squadron, and with naval gunfire support, captured the city of Veracruz.

ABOVE: On June 15, 1847, Commodore Matthew C. Perry leads the second expedition of 1,173 bluejackets in 47 boats up the Tabasco River before putting the men ashore at Seven Palms and capturing the city of Tabasco the following day.

In January 1854, Lieutenant Isaac G. Strain led an expedition across the Isthmus of Panama and reconnoitered the route that eventually became the Panama Canal.

In July 1958 the steam frigate *Niagara*, commanded by Captain William L. Hudson, cooperated with the HMS *Agamemnon* to lay the first telegraphic cable across the Atlantic Ocean. The cable soon failed, but the work had begun and in 1866 succeeded, putting the United States in telegraphic communication with

Matthew C. Perry (1794–1858)

Born in Rocky Brook, Rhode Island, Perry joined the navy as a midshipman in 1807 and served in the Barbary Wars of 1815-16. Promoted to master commandant in 1826, he commanded the New York Navy Yard, where he championed the adoption of steam propulsion. He helped Secretary of the Navy Bancroft establish the United States Naval Academy, and was perhaps best remembered for assisting General Winfield Scott during the Mexican War, but Perry's greatest contribution was yet to come.

In 1852 Perry commanded the East India Squadron based at Hong Kong, where Secretary of the Navy James C. Dobbin had sent him to open trade with Japan. On July 8, 1853, Perry sailed into Edo (Tokyo) Bay and sent an emissary ashore with a letter from President Millard Fillmore to the emperor. Perry promised to return the following year for an answer.

On February 13, 1854, Perry reentered Edo Bay with a larger force and resumed negotiations with the Japanese. Between entertaining and exchanging gifts, talks continued, and on March 31 Perry signed the Treaty of Kanagawa, giving the United States access to Japanese ports for wood, water, supplies, and refuge. Perry used no intimidation during the discussions: the presence of the steamers *Mississippi* and *Susquehanna*, on which Japanese officials were feasted, were enough. Perry opened Japan to foreign trade, capping a brilliant success beyond the reaches of the most polished diplomats.

LEFT: On March 8, 1854, Commodore Matthew C. Perry returned to Yokohama harbor with a squadron of eight ships to meet with Japanese commissioners. Applying masterful diplomacy, Perry opened the island to commerce by signing the Treaty of Kanagawa.

LEFT: After Perry entered Yokohama harbor, nothing impressed the Japanese more than the big guns on the side-wheel steamer* Mississippi *and the great deck where people could sit and listen to American music played by the ship's band.

RIGHT: On May 30, 1853, the U.S. Navy approved a second polar expedition privately financed by Henry Grinnell and led by Elisha Kent Kane to search for the missing British explorer Sir John Franklin. The unsuccessful expedition's steamer* Advance *became trapped in ice until the summer of 1855.

Europe. However, America's Civil War caused an eight-year interregnum in cable-laying efforts.

Secession

On November 6, 1860, Abraham Lincoln's election as the sixteenth president of the United States set the stage for the secession of South Carolina on December 20. By February 1, 1861, six more states of the Deep South had followed. When Lincoln took office on March 4, the Confederate States had already been formed with Jefferson Davis as president and Stephen R. Mallory as secretary of the navy. As the former U.S. Senator from Florida, Mallory had been the powerful chairman of the Naval Affairs Committee. He knew considerably more about the weak condition of the U.S. Navy than did Gideon Welles, who entered Lincoln's cabinet on March 5 as the Union's secretary of the navy.

> I believe this government cannot endure, permanently half slave and half free….It will become all one thing, or all the other.
> *Abraham Lincoln's campaign speech for the Senate, June 16, 1858.*

The weakness of the navy and naval administration became manifest on the first official day of the Civil War. On April 12, 1861, Confederate batteries in Charleston's harbor opened on Fort Sumter. A naval relief expedition consisting of the steamship *Baltic*, the USS *Pawnee*, and the revenue cutter *Harriet Lane,* all under the command of Gustavus Vasa Fox, arrived late because of miscommunication over another expedition bound for Pensacola, Florida. Major Robert Anderson surrendered the fort on April 13, and two days later President Lincoln called for 75,000 ninety-day volunteers. (There were only sixteen thousand men in the regular army, and most of them were stationed in the West.) On April 19, two days after Virginia seceded and joined the Confederacy, Lincoln declared a blockade of southern ports, even though the navy lacked the ships for such an enterprise. The idea for a blockade actually came from enfeebled General Winfield Scott, whose Anaconda Plan called for the strangulation of the Confederacy by cutting the South off from the resources of the outside world.

ABOVE: Fort Sumter stands near the entrance to Charleston, South Carolina's harbor, and in April 1961 the American flag flying over the ramparts represented the last symbol of the federal government in the newly formed Confederacy.

On April 20 the situation became worse when bumbling sixty-eight-year-old Captain Charles S. McCauley, charged with defending the Norfolk (Gosport) Navy Yard, abandoned it to Virginia militia, leaving nine vessels that Welles dearly needed in the yard, plus the remains of the screw frigate *Merrimac*, which the Confederates later raised and converted into an ironclad menace. McCauley also failed to destroy more than a thousand pieces of ordnance, which soon found employment in the forts and ships of the Confederacy.

After the seizure of Norfolk, Captain George S. Blake, superintendent of the Naval Academy, became so concerned that Maryland would secede that he packed up his faculty and midshipmen, put them on the frigate *Constitution*, and moved the school to Newport, Rhode Island, for the duration of the war.

ABOVE: Confederate Secretary of the Navy Stephen R. Mallory had the daunting task of creating the South's naval strategy. Having few resources, he opted to build a fleet of ironclads and high seas commerce raiders.

TOP: Ship's officers and crew gather on the deck of the 10-gun side-wheel steamer USS* Mendota*. The former blockade-runner was purchased by the navy from New York contractors and put into service on February 1, 1864, shortly before this picture was taken.

ABOVE: During exercises on the USS* Brooklyn*, an officer (left) watches a gun crew composed of marines and sailors go through the convolutions of manning the ship's 11-inch pivot gun.

Gideon Welles (1802–1878)

Born in Glastonbury, Connecticut, Gideon Welles spent most of his life as a journalist and editor of the *Hartford Times.* He eventually turned to politics, and made three unsuccessful attempts to achieve elective office as a Democrat. In 1836 President Andrew Jackson rewarded Welles's fidelity by naming him postmaster of Hartford. During the Mexican War, President Polk put Welles in charge of the Naval Bureau of Provisions and Clothing. When in 1861 Lincoln named him secretary of the navy, Welles's knowledge of naval matters remained limited.

Welles's predecessor, Isaac Toucey, came from the South. Though in 1857 he had pressed for funds to build seven steam sloops to suppress the slave trade and money to install 9-inch and 11-inch smoothbore guns designed by Commander John A. B. Dahlgren on all fighting ships, Toucey slowed everything down after Lincoln's nomination. When Welles took office, he had only ninety ships, of which forty-eight were laid up or rotting in navy yards. Thirty others were spread around the world on foreign duty. Many of the ships were still driven by sail rather than steam. One half of the navy's officer corps, more than three hundred and fifty officers from captain to midshipman, joined the Confederacy, and half of the clerical staff in the navy department remained sympathetic to the South.

In 1861, Welles confronted an enormous task of building a navy and blockading three thousand five hundred miles of southern coast. He surmounted many of his other problems by engaging, though with reluctance at first, Gustavus Vasa Fox as assistant secretary of the navy. Fox understood ships, men, and the navy. They shared the work, Welles attending to administrative matters, Fox to operational matters. The division of responsibilities worked, and by the end of the Civil War the United States owned the strongest navy on earth.

> [The blockade] shut the Confederacy out from the world, deprived it of supplies, weakened its military and naval strength, and compelled exhaustion…. *J. Thomas Scharf,* History of the Confederate States Navy.

Welles purchased or leased any ship that would float and armed it with old guns to perform blockade duty. For many months the feeble Union blockade functioned ineffectively, but by the end of 1861 Welles had increased his fleet to 260 ships with hundreds more on the way. Confederate blockade runners, mostly fast steamers operating out of England and manned by British sailors, slipped through the sparsely manned blockading squadrons, delivering tons of arms and ammunition to the South.

Blockade Running Attempts

Year	Ratio of Success
1861	9 of 10
1862	7 of 8
1863	3 of 4
1864	2 of 3
1865	1 of 3

The situation evolved into diametrically opposite strategies for Confederate Secretary of the Navy Mallory and Welles, his Union counterpart. Welles had to build a huge navy to blockade the South and strangle it like a coiled anaconda into submission. Mallory wanted a small navy capable of driving away the Union blockaders with a few extremely powerful ships and a separate seagoing squadron of armed steamers to prey on the American merchant fleet. Both strategies made sense, but could either be implemented?

The Evolution of Ironclads

Mallory faced a greater problem than Welles because he had to find a way to break the flimsy Union blockade before it became stronger, but the South had no shipyards, few factories or trained workmen, and no funds. Aware of the U.S. Navy's traditional resistance to building ironclads, Mallory believed the only way to keep southern ports open was to launch an ironclad program before the North changed its mind. The opportunity came unexpectedly when Virginians captured the Norfolk Navy Yard and raised the partly burned hulk of the USS *Merrimac*.

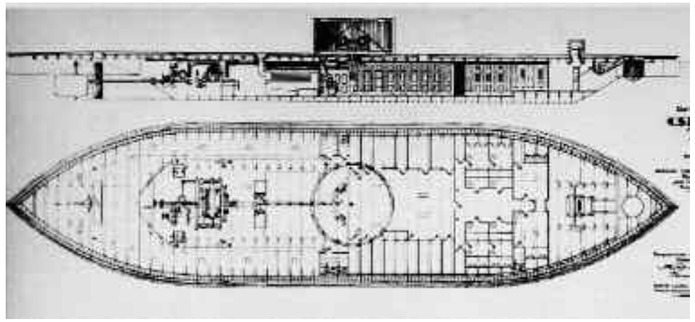
ABOVE: Launched February 14, 1862, the screw-steamer USS* Galena *(actually an ironclad) once competed for navy contracts with the USS* Monitor*. She carried eight 9-inch Dahlgren smoothbores, two of which can be seen protruding from her ports.

In June 1861 Mallory took his ironclad plan to the Confederate Congress, promising that if he were permitted to build ironclads the Union's frigates, sloops, and gunboats would become useless. He hired former Union naval constructors to overhaul the machinery on the *Merrimac*, build an ironclad casemate on her deck, fit her out with ten heavy guns, and fix an iron prow to her bow for ramming. Manufacturing the iron for *Merrimac* consumed almost all the capacity of Richmond's Tredegar Iron Works for two months.

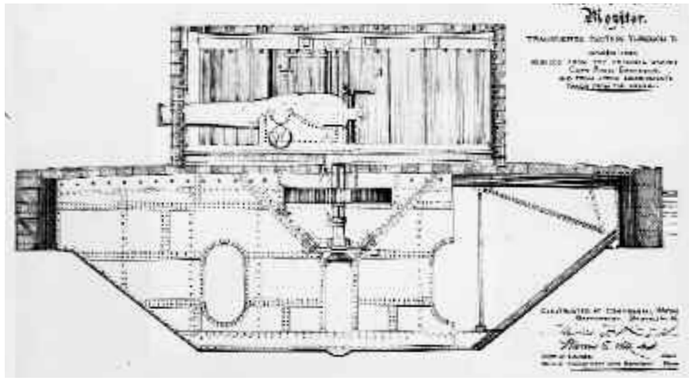
ABOVE: Lieutenant John Lorimer Worden will always be remembered for commanding the USS* Monitor *during her momentous battle with the CSS* Virginia *on March 9, 1862. Though partially blinded during the fight, Worden rose in rank to rear admiral.

Welles soon learned of Mallory's project and in September 1861 began investigating ironclads for the Union navy. Though not particularly impressed by the proposals he received, he issued contracts for two experimental ironclads. Cornelius Bushnell of Connecticut received a contract to build the *Galena*, and Swedish inventor John Ericsson, an eccentric engineer with wild ideas about shipbuilding, received a contract for the *Monitor*.

The CSS *Virginia*, formerly the *Merrimac*, and the *Monitor* reached the final stages of completion in



ABOVE: The design of marine engineer John Ericsson's USS* Monitor*, with her revolving turret, air make-up system, and unique propeller drive, introduced technological concepts that immediately rendered obsolete every other warship in the world.



ABOVE: The traverse section of the USS* Monitor *shows the gearing amidships that rotated the turret, in which there were actually two 11-inch Dahlgren guns opposite each other. As one gun rotated into firing position, the crew reloaded the other.

RIGHT: Rear Admiral David Dixon Porter reclines against one of the 20-pounder Dahlgrens on the deck of the USS* Malvern*, his flagship while commanding the Union North Atlantic Blockading Squadron off the Cape Fear River.

> Take the little thing home and worship it, as it would not be idolatry, because it was in the image of nothing in the heaven above or on earth beneath or in the waters under the earth.
> *Captain Charles Henry Davis's reaction to seeing Ericsson's wooden model of the* Monitor.

February 1862. Structurally, they had nothing in common. The bulky 275-foot *Virginia* looked like the roof of a barn drifting on the water, and the oblong 172-foot *Monitor* looked like a "cheese box on a raft." The *Virginia*'s battery consisted of two 7-inch rifles on pivots, and two 6-inch rifles and six 9-inch Dahlgrens in broadside. The *Monitor* carried only two 11-inch Dahlgrens in a revolving turret that resembled a pillbox. For the first time in naval history, neither fighting ship carried a sail.

War on the Rivers

With the exception of eight Confederate commerce raiders on the high seas, the naval battles of the Civil War were fought mainly on inland waterways. The Mississippi River and its southern watershed became the most important link unifying the western states of the Confederacy (Texas, Arkansas, and most of Louisiana) with the other eight southern states. The Confederates were as aware of the dangers of losing control of the Mississippi as was the Union of the importance of controlling the river.

Duel Between the First Ironclads

On March 8, 1862, Captain Franklin Buchanan steamed down the Elizabeth River and headed the *Virginia* into Hampton Roads. Directly across the James River, near Newport, Virginia, lay two sailing ships of the Union blockading squadron. After ramming and sinking the 32-gun sloop *Cumberland*, Buchanan turned on the 52-gun frigate *Congress* and destroyed her with incendiary shells. When the 43-gun steamer USS *Minnesota* attempted to join the battle, though no match for the *Virginia*, she ran aground. Because Buchanan had suffered a wound, executive officer Lieutenant Catesby ap R. Jones withdrew, intending to finish off *Minnesota* and the rest of the Union squadron in the morning.

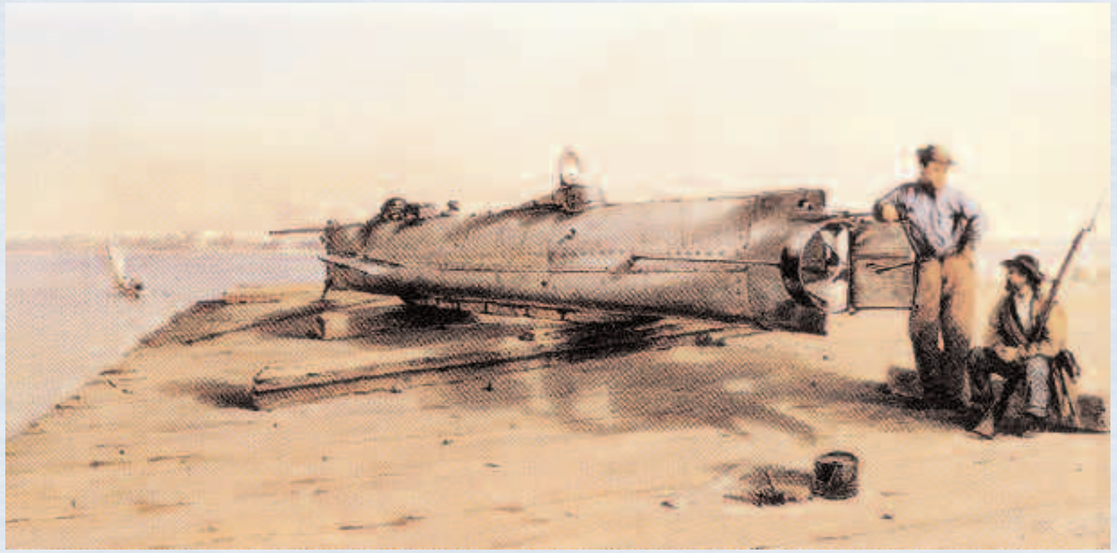
During the evening the *Monitor* slipped into Hampton Roads, and her commander, Lieutenant John L. Worden, moored her beside the grounded *Minnesota*. When the *Virginia* reappeared on the morning of March 9, Worden's *Monitor* met her before Jones could get in range of the *Minnesota*. For four hours the two ironclads fought each other "mercilessly, but ineffectively," neither ship doing serious damage to the other. Early in the afternoon the *Virginia* withdrew to Sewell's Point, leaving *Monitor* in possession of Hampton Roads and *Virginia* in possession of the river approaches to Norfolk. On that day, every wooden warship in the world became obsolete.

ABOVE: Lieutenant Catesby ap R. Jones assumed command of the CSS* Virginia *after Captain Franklin Buchanan suffered a wound on March 8. Jones tried every way imaginable to defeat the USS* Monitor *and, finding his efforts useless, retired from the battle.

ABOVE: Union ships in Hampton Roads were poorly prepared when the CSS* Virginia *exited the Elizabeth River. After destroying the USS* Cumberland *and the USS* Congress*, the* Virginia *returned to Sewell's Point, unaware that the USS* Monitor *was on the way.

In August 1861, Welles put Flag Officer Andrew Hull Foote in command of naval forces on the upper Mississippi. During the winter of 1862, Foote very ably assisted General Ulysses S. Grant in the capture of Fort Henry on the Tennessee River and Fort Donelson on the Cumberland River. Foote had the advantage on the upper Mississippi, thanks to the efforts of James B. Eads of St. Louis, who in sixty-five days built seven shallow-draft ironclad gunboats for service on western waters. Designed with hump-backed silhouettes by constructor Samuel M. Pook, the gunboats became known as "Pook's Turtles." During the spring of 1862, Foote used two of Eads's gunboats, *Carondelet* and *Pittsburgh*, to run the batteries at Island No. 10 and open the upper Mississippi to Fort Pillow, Tennessee.

On the lower Mississippi, Flag Officer David G. Farragut, commanding a seventeen-ship squadron of wooden ocean-going ships, began working his deep draft vessels over the bar at the mouth of the Mississippi. With Farragut came a squadron of wooden mortar schooners led by Commander David Dixon Porter. On April 18 Porter's mortars opened on Forts Jackson and St. Philip, two massive structures capable of pouring a crossfire into any ships attempting to steam upriver to New Orleans, the South's most wealthy and populous city. At 2:00 A.M. on April 24, Farragut accomplished the seemingly impossible. He led his squadron through a gauntlet of fire from the forts, destroyed a weak force of Confederate gunboats, continued up the river to New Orleans, and on April 25 took possession of the city. The campaign led to the destruction of three Con-

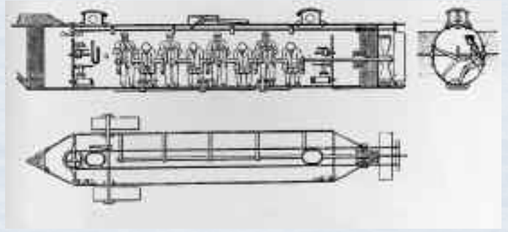


The Confederate Submarine *Hunley*

Conceived in New Orleans by Horace L. Hunley, but built in Mobile as a privateer, a submarine was moved to Charleston by its inventor at the invitation of Confederate General Pierre G. T. Beauregard, who sought a weapon capable of dismantling the Union blockade and reopening Charleston to foreign trade. Hunley had reconfigured the boat by reshaping and tapering a large boiler, on which he rigged conning towers, diving planes, ballast tanks, a keel, and a bow-mounted spar capable of carrying a 90-pound torpedo. For propulsion, seven crewmen cranked the propeller by hand. After two ironclads built in Charleston failed to break the Union blockade, Hunley's submarine became the city's last hope of reopening the harbor.

The boat sank three times in all, twice during testing at Charleston. During the first sinking, on August 29, 1863, the skipper, Lt. John A. Payne, and two other men escaped while five others drowned. All were volunteers. *Hunley* was recovered, but during further trials on October 15, 1863, this time with her inventor as skipper, she sank again, and all aboard drowned.

On the night of February 17, 1864, the ocean became dead calm and all the tidal variables seemed right for a live attack. The *Hunley*, running on the surface, partially submerged after sighting the sloop USS *Housatonic* dead ahead. Detecting the submarine off the beam of the Union ship, *Housatonic* slipped her cable and began backing at the same time that *Hunley* changed course. The motion swung *Housatonic* into the submarine. *Hunley's* torpedo exploded between *Housatonic's* main and mizzenmasts, and the sloop sank minutes later. *Hunley* became caught in the *Housatonic's* descent. Years later it was located lying on the bottom near her victim.



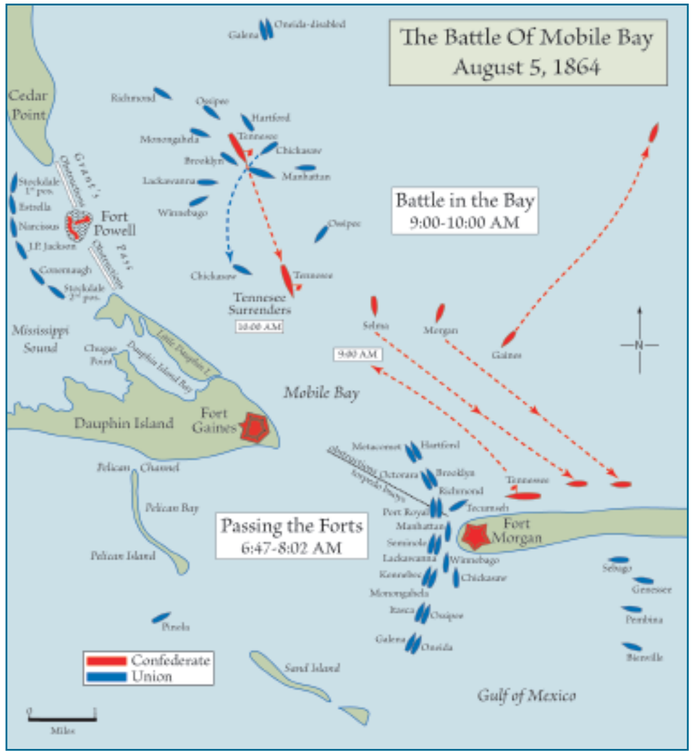
ABOVE: The* Hunley *was powered by seven men (not eight as depicted in this early drawing) turning a crank. She sank twice during trials but on each occasion was recovered and returned to service. Finally, she sank after her attack on the USS* Housatonic *in February 1864.

federate ironclads, the *Manassas* and the powerful *Mississippi* and *Louisiana*. Farragut's occupation of New Orleans shut the Mississippi off from the Gulf of Mexico and began the process of squeezing the life from the Confederacy.

"Damn the Torpedoes"

Torpedoes came in many shapes and sizes, but most of them, commonly referred to as Confederate "infernal machines," were actually mines that either exploded on contact or were cabled to galvanic batteries on shore and detonated by an operator. In the entrance channel to Mobile Bay, Alabama, and a few feet below the surface of the water, Confederates had anchored several rows of contact mines between Fort Morgan on the eastern side of the channel and Fort Gaines on the western side. Only a small width of the channel directly under the heavy guns of Fort Morgan remained free of mines and obstructions. Roving inside Mobile Bay was the CSS *Tennessee*, the strongest Confederate ironclad ever built, and a small flotilla of gunboats. Admiral Franklin Buchanan, who had commanded the CSS *Virginia* at Hampton Roads, now commanded the Mobile Bay squadron. These were the obstacles Rear Admiral David Farragut faced when on August 5, 1864, he determined to fight his way into Mobile Bay.

Farragut admired his stately wooden steam-powered sloops and despised the ugly monitors, which was one of the reasons he made the 26-gun USS *Hartford* his flagship. Altogether he had fourteen wooden ships and four monitors when he gave the orders to advance into Mobile Bay. He placed the monitors on the right to engage Fort Morgan, hoping it would draw fire away from his wooden ships. The monitor *Tecumseh*, however, veered to port to engage the CSS *Tennessee*, cut across the path of the wooden ships, struck a mine, and went down in minutes. The sinking stultified the captain of the leading ship, the USS *Brooklyn*, and threatened to pile up the column of wooden ships steaming into the bay on the left.



Farragut, in his favored position in the tops from where he could see over the smoke of battle, noticed that the column was both easing into the minefield and halting under the guns of Fort Morgan. He shouted down to the helm, "Damn the torpedoes. Full speed ahead!" The *Hartford* veered to the left and plowed through the minefield, the others following. Men below listened to inactive mines damaged by water ominously scraping against the hulls of their ships.

Once inside the bay, the mighty CSS *Tennessee* put up a valiant fight against Farragut's fleet. After a two-hour battle, during which Farragut's heavy sloops

ABOVE: The Battle of Mobile Bay was fought with mostly wooden sloops-of-war, but the outcome was decided by ironclads. To win in Mobile Bay, Admiral Farragut needed three monitors to defeat the powerful CSS* Tennessee. *His wooden ships were useless.

RIGHT: During the passage of Fort Morgan at the mouth of Mobile Bay, Rear Admiral David G. Farragut (top right) ascended into the tops to get a better view as the USS Hartford steamed through a minefield planted in the channel.

ABOVE: During the Battle of Mobile Bay, the USS Richmond fires a broadside at the CSS Tennessee. The projectiles from Richmond's 11-inch Dahlgren smooth-bores merely fractured into pieces when striking the casemate of the Confederate ironclad.

repeatedly rammed the Confederate ironclad while the monitors pummeled her with 11-inch and 15-inch shells, the *Tennessee* finally lost her steering mechanism. Buchanan had been wounded during the fighting and the *Tennessee* could no longer make way, so she was forced to surrender, but she was the toughest Confederate ship ever built during the Civil War and stood off Farragut's entire squadron until immobilized but only slightly damaged.

No officer in the Union navy participated in more important battles or earned more laurels for exceptional victories than David Farragut. After the war, Congress recognized Farragut by making him the nation's first full admiral.

The Fall of Fort Fisher

In the aftermath of Mobile Bay, Welles attempted to give Farragut command of the North Atlantic Blockading Squadron because he wanted Fort Fisher captured and the port of Wilmington, North Carolina, shut down as a sanctuary for blockade-runners. Farragut declined because of poor health, so Welles called Rear Admiral David Porter from the Mississippi and gave the task to him.

Porter made two attempts to force the surrender of Fort Fisher, which guarded the main entrance to the Cape Fear River. The first assault failed because Major General Benjamin Butler disembarked only part of his force and then abandoned it. The second attempt, under a different army commander, included a landing party of marines, sailors, and infantry. Without monitors firing 11- and 15-pound shells near shore, the giant earthen fortress might never have been penetrated. The attack on Fort Fisher was the last amphibious operation of the war. It was never as well coordinated as Farragut's assault on the defenses of New Orleans or Mobile Bay, but it did the job. Five years later, after the death of the heroic Farragut, Porter became the navy's second full admiral.

> The anaconda had, at last, wound its fatal folds around us.
> *Rear Admiral Raphael Semmes, CSN, on the surrender of Fort Fisher,* Official Records of the Navy.

LEFT: On January 13, 1865, a joint expedition composed of sixty warships under Admiral David Porter and 8,500 infantry under General Alfred H. Terry (center), succeed in the second attempt to capture Fort Fisher, located at the mouth of the Cape Fear River.

The Postwar Navy

In September 1861, when the navy department authorized the construction of the *Monitor* and the *Galena*, Welles added the experimental *New Ironsides* almost as an afterthought. Unlike the *Monitor* design, the *New Ironsides* began to resemble the shape of the battleships and cruisers soon to come. The navy still maintained the silly idea that iron ships should carry sails, and the 230-foot, dual-engine, 3,486-ton heavily armed behemoth carried a full stand of bark-rigged sails.

On September 18, 1865, the 250-foot, double-turreted, 3,815-ton *Miantonomoh* went into commission with four 15-inch guns. Welles sent the ship to Great Britain in an effort to settle claims caused by Confederate commerce raiders against the American carrying trade. A correspondent for the London *Times* newspaper took a close look at the ship and wrote, "There was not one [British warship] that the foreigner could not have sent to the bottom in five minutes, had his errand not been peaceful…not one of these big ships…could have avenged the loss of its companion, or saved itself from sharing its fate. In fact, the wolf was in the fold, and the whole flock was at its mercy."

The moment marked the beginning of the end of the world's sailing navies. Although Congress quickly suspended appropriations for modernizing the U.S. fleet, and ships once again returned to navy yards to rot, Japan and the nations of Europe took notice while the U.S. Navy lapsed from being the strongest in the world to among the weakest. But not for long.