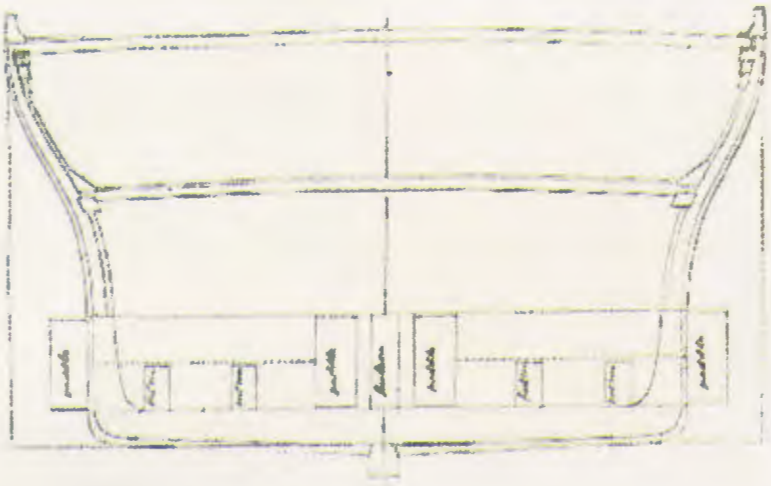
The Daybook

Volume 6 Issue 2 Winter 2000



Lt. Hunter and His Horizontal Wheel

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HAMPTON ROADS NAVAL★MUSEUM
Local History. World Events.

About The Daybook

The Daybook is an authorized publication of the Hampton Roads Naval Museum (HRNM). Its contents do not necessarily reflect the official view of the U.S. Government, the Department of Defense, the U.S. Navy or the U.S. Marine Corps and do not imply endorsement thereof. Book reviews are solely the opinion of the reviewer.

The HRNM is operated and funded by Commander Navy Region Mid-Atlantic. The museum is dedicated to the study of 225 years of naval history in the Hampton Roads region. The museum is open daily from 10 a.m. to 5 p.m. Admission is free. *The Daybook*'s purpose is to educate and inform readers on historical topics and museum related events. It is written by the staff and volunteers of the museum.

Questions or comments can be directed to the Hampton Roads Naval Museum editor. *The Daybook* can be reached at (757) 322-2993, by fax at (757) 445-1867, e-mail at gbcalhoun@cmar.navy.mil, or write *The Daybook*, Hampton Roads Naval Museum, One Waterside Drive, Suite 248, Norfolk, VA 23510-1607. The museum can be found on the World Wide Web at http://www.hrnm.navy.mil

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Features

Cover Photographs: Ever since Robert Fulton perfected maritime steam propulsion in the early 19th century, a worldwide race began among engineers and inventors to improve on his work. One such engineer was American Naval officer and Hampton Roads Lt. William W. Hunter. His designs called for horizontally mounted paddle wheels placed under the ship instead of vertically mounted where they would be exposed to gunfire. Never could have worked you say? Think he was a crazy dreamer? See page 6.

Those who can, do Teach!

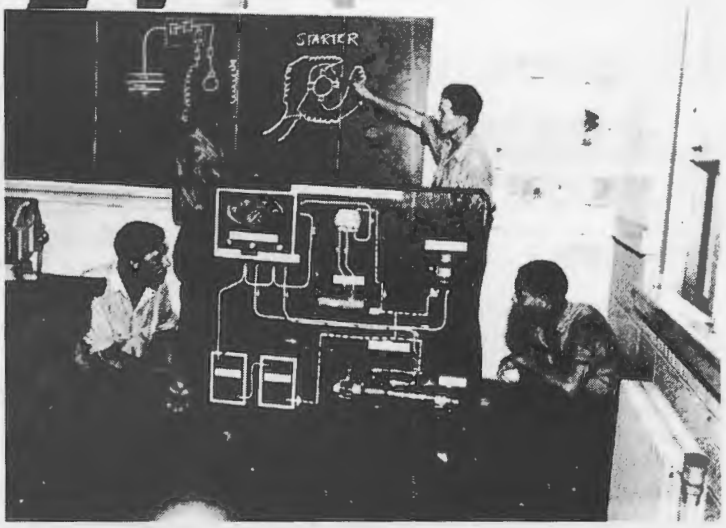
The Director's Column
by Becky Poulliot

Want to set sail aboard an 18th century sailing ship? How about becoming a WWII gun crew member? That's exactly what Norfolk public school 3rd and 6th graders have been doing at the Hampton Roads Naval Museum during Spring field trips. Students use their imaginations in two hands-on programs created by the museum to teach naval history and requisite Social Studies Standards of Learning. What makes the program so well-rounded is that Nauticus offers a complimentary segment on Science on the same day.

The challenge is to engage the students to interact during the program, and hopefully, spark further interest. Regarding the third grade program on the Age of Sail, students learn about life aboard a ship by holy stoning a deck and resting on cots less than two feet wide. Social and economic history blend with geography. Children leave with an understanding of maritime exploration.

With the sixth graders, we were asked to complement the Nauticus program on Black Achievers. Staff and volunteers spent January and February, 2000 in development. We wanted to highlight African-American achievements and achievers in the U.S. Navy since the American Revolution. Sixth graders will not sit still for a lecture, so the presentation had to be engaging. The topic of segregation and its effect within America had to be addressed in a thoughtful, balanced manner together with the institutional breakdown of Jim Crow. All of this was to be addressed in a 20 minute time slot—not too ambitious!

The program has proven to be a great learning experience for both staff and volunteers. We decided to focus in on a period of time as the catalyst for change; in the case of segregation, the period is WWII. This war was the last in America that encouraged two navies—one black, one white. So sixth graders become members of a 5" gun crew, learn to spot enemy aircraft, and in the process learn about heroes (like Dorie Miller here in the photograph), and how history is made through the efforts of ordinary seamen.



We will soon start a program for Norfolk's sixth graders about how African-Americans have served the U.S. Navy. Pictured at left is World War II Navy Cross recipient Dorie Miller. Pictured below are sailors training in electronics at the Hampton Institute (now Hampton University) in 1945. (Naval Historical Center)

If either of these educational efforts interest you, perhaps you should consider signing up with the Hampton Roads Naval Museum. We are looking for volunteers right now to assist in giving tours and in other venues. We need assistance in dispersing our activity book to elementary. aged children in Hampton Roads, public schools, private schools and home learners. The museum's goals for the year 2000 include a campaign to create increased awareness of our institution—who we are, what we are, and where we are. Ideas right now range from bus advertising to temporary banners and directional signage. If any of these items interest you, please give me a call at (757) 322-2990.

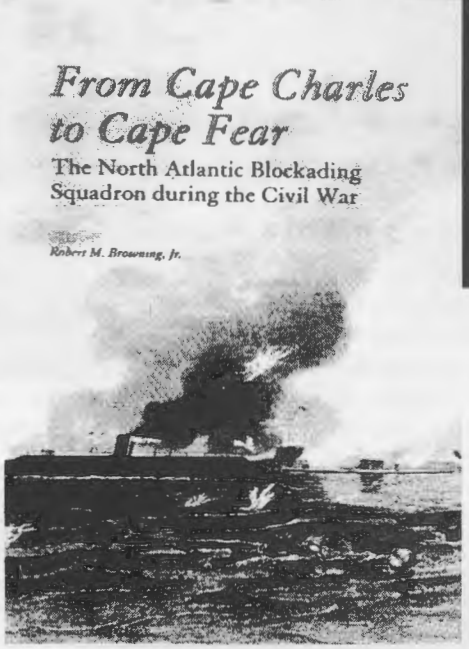
See you at the Museum!

Becky

The Museum Presents Chief Historian for the U.S. Coast Guard Dr. Robert Browning

On March 9, the Hampton Roads Naval Museum will present Coast Guard historian Bob Browning. Dr. Browning will talk about the North Atlantic Blockade Squadron. He has written one of the definitive books on the subject, *From Cape Henry to Cape Fear*, and his talk will highlight some of the items included in the book.

The North Atlantic Blockade Squadron was one of four major squadrons assigned to the task of enforcing Lincoln's blockade proclamation of Southern ports during the American Civil War. Despite having superior numbers, the squadrons had a monumental task of attempting to seal thousands of miles of coastline. Adding to the difficulty was determined and prescient efforts by the Confederate States Navy to run and break the blockade. The North Atlantic squadron patrolled the southern tip of the Delmarva Peninsula to the southern end of North Carolina.



The speaker is the chief historian for the U.S. Coast Guard and he held that position since 1991. He has previously been the curator for the battleship *Texas* in La Porte, TX and the editor of *The Southern Historian*. He is a graduate of North Carolina University, earned his masters from East Carolina University, and received his Ph.D. from the University of Alabama.

The talk will take place at Club Pier 26 at Naval Station Norfolk on March 9 at noon. A lunch will accompany the talk. Reservations are required. To make reservations or for more information, call 322-2992.

HRNM Co-Sponsoring a Traveling Reproduction of CSS *H.L. Hunley*

The Hampton Roads Naval Museum, Hampton Roads Naval Historical Foundation, and Nauticus: The National Maritime Center are co-sponsoring a traveling reproduction of the Confederate submersible CSS *H.L. Hunley*. This travelling exhibit will be at Nauticus from May 9 through May 31, 2000. The reproduction is being used by the Friends of the Hunley group to raise money for the conservation and study of the original vessel.

The original CSS *H.L. Hunley* was a submersible torpedo boat that operated out of Charleston, S.C. during the American Civil War. Designed by the boat's namesake, she and several other Confederate boats were built as an innovated way to break the U.S. Navy's blockade of Southern ports.

Powered by hand, the boat sank twice during trials. However, a third crew was assembled. *Hunley* successfully attacked and sank the steam sloop USS *Housatonic* in 1864 using a "spar torpedo" for a weapon. This was the first successful attack by a submersible on a surface ship in world history. The crew and the boat, however, mysteriously sank on the way back to port after her mission was complete.

100 Years of Silent Service

A New Exhibit Commemorating the Centennial

The Secretary of the Navy has announced 2000 to be the hundredth anniversary of the Submarine Force. To mark this occasion, the museum is teaming up with Submarine Force Atlantic to open a new exhibit on the history of the U.S. Submarine Force. With assistance from Newport News Shipbuilding and submarine veterans from all different eras, this exhibit is just a small look at one of the Navy's vital branches. The exhibit opens **March 6** and will run through September.

Over the last 100 years, the U.S. Navy's Submarine Force has grown from an untried experiment to an advanced fighting force with a global reach. It has proven to be an effective tool in preserving world peace and in defeating the country's enemies.

The concept of a submersible ship has a rich tradition in the United States. During the American Revolution, an American patriot designed a small, hand-cranked submersible to attack British ships in New York Harbor. American engineer Robert Fulton, pioneer of steam-powered warships, designed submarines for Napoleon in the early 1800's. During the American Civil War, the Confederate States Navy constructed several hand-cranked "infernal machines" in an attempt to break the Union blockade of Southern ports.

Today, American submarines are some of the most advance pieces of equipment in operation. With nuclear power plants, sleek aerodynamic hulls, weapons capable of hitting targets hundreds of miles away, and ultra quiet machinery, the modern submarine truly is a miracle of modern science.

This exhibit shows just a few items tracing the technological evolution of the submarine. Some of items that will be on display include battle flags from World War II submarines, photographs and illustrations tracing the history of the Submarine Force, items from the ill fated Norfolk-based boat USS *Scorpion* (SSN-589), and models of the modern technological wonders the Navy possesses today. Among the models on display is one of the *Virginia*-class submarines. This is the newest boat currently under development by Newport News and Electric Boat. Newport News Shipbuilding has loaned the museum the model for the duration of the exhibit.

See http://www.norfolk.navy.mil/sublant for more information about the centennial celebration.

Pictured here is the Norfolk-based USS **Scorpion** *(SSN-589) which was lost on May 27, 1968 off the coast of the Azores Islands. The exhibit will have several item memorializing this boat. (Naval Historical Center)*

Coming in May…

The Battle of the Atlantic

The Hampton Roads Naval Museum is renovating its World War II gallery. This brand-new permanent exhibit will present one of the most important campaigns of World War II in a whole new way.

To Feature:

- **Interactive Displays**
- **Maps and Photographs of the Campaign**
- **Artifacts from the War Zone**

Call 757-322-2987 or visit http://www.hrnm.navy.mil for more information about this exciting exhibit.

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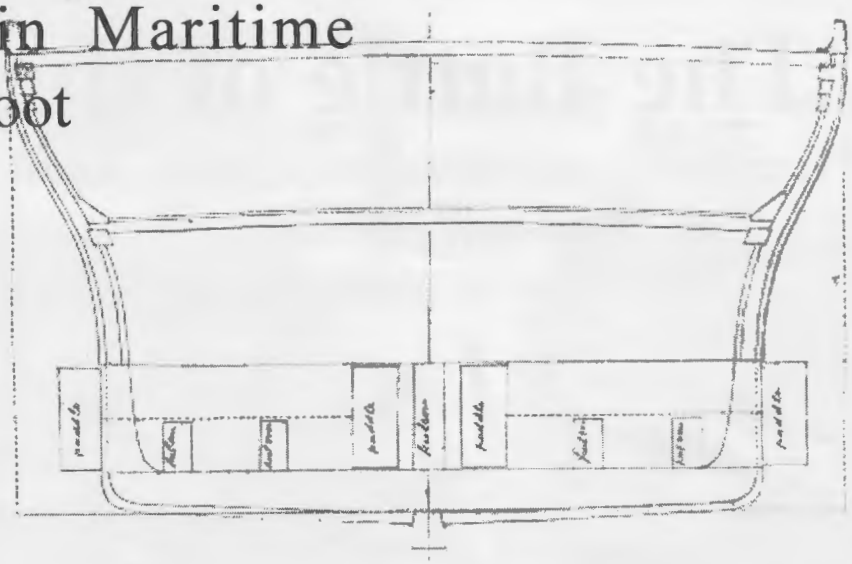
The *Germ* Experiment

A Radical Idea in Maritime Propulsion Takes Root in Hampton Roads

by Joe Mosier



William W. Hunter's sketch of the horitzonally mounted paddle wheels for the steam sloop Union. *The concept had its advantages in combat and for its effectiveness in rough seas. However, it had efficiency problems. Nonetheless, Hunter pushed his project forward. (National Archives)*

There is a reoccurring moment in the development of naval technology when competing advances battle for acceptance and support. For example, at the time when naval aviation became generally recognized as necessary, proponents of seaplanes, lighter-than-aircraft and carrier-born aviation fought each other for scarce dollars. In the infancy of the technology, there was no clear right choice among the alternatives. A similar moment, with strong Hampton Roads connections, occurred in the late 1830's and early 1840's.

Since its inception, steam power for ships had meant paddlewheels on either the stern or side of the vessel. This placement had shown problems. For naval vessels, paddlewheels were exposed to enemy gunfire. Also, the size of the wheels meant a large portion of the area for mounting one's own guns was blocked by machinery. Experience on the newly opened canals showed that side- and stern-wheelers created surface waves that destroyed canal banks. Lieutenant William W. Hunter, then stationed in Norfolk, and fellow inventor and partner Benjamin Harris had worked on correcting these flaws for years prior to being granted a patent for their solution in 1840. Hunter and Harris devised a gearing system that allowed the paddlewheel to be mounted horizontally under water, rather than vertically alongside the ship. The paddlewheel was enclosed in a casing with only that portion of the blades exposed which was needed to propel the vessel. This left the above-water portion of hull clear to mount guns as usual, while simultaneously protecting the propulsion system from gunfire. The arrangement also promised cut down on the size of the wake of steamboats used in canals. It was a simple but adequate solution to a number of known problems with paddlewheel steamships.

Following the death of Harris in late 1840, Hunter sought financial backing to turn his idea into reality.

Myer Myers, third son of early Norfolk merchant Moses Myers, proved to have the money Hunter sought. Fortunately for historians, much of the correspondence between the two men is held by the Chrysler Museum of Art. On December 22, 1840, Myers signed a contract with Hunter and the heirs of Benjamin Harris. In return for $3200, to be used to build a small steamer capable of showing the efficacy of horizontal wheels, Myers would receive one-third of any returns from the U.S. patent. Under Hunter's direction, construction began quickly at the Gosport Navy Yard. The result, launched in early Spring 1841, was the *Germ*. Although Hunter and Myers retained ownership, the steam boat was taken into Federal service. She was what today would be referred to as a technology demonstrator. *Germ* was small, "believed to be the smallest steam vessel ever sent to sea." There is some debate about her dimensions. *Germ*'s length was reported as 50 (or 60) feet, her beam at the waterline as 9 (or 12) feet and her draft as 2 feet (or 28 inches). Whichever set is true, she was, as Philadelphia's *United States Gazette* described her, "not much larger than the launch of one of our vessels of war." A six horse-power steam engine "like those used in locomotives" provided power.

Her name, in those pre-Pasteur days, meant "seed," and Hunter planned to sow that seed with a series of demonstrations along the Atlantic Coast. Beginning in March 1841, a number of trips around Norfolk harbor were followed by two excursions through the Dismal Swamp Canal. In June, Secretary of the Navy George Badger ordered Hunter to bring *Germ* to Washington. The tiny vessel arrived on June 18 after a trip lasting 32 hours. She had made an average speed of nine miles per hour. As *The Madisonian* reported; "This is but a germ, it is believed, of what she can do." After two days of demonstrations, *Germ* returned to Hampton Roads. The return trip took just 30 hours. Secretary Badger discharged the vessel from the service of the government, but assured Hunter that "the only reason for the order...was that as the *Germ* had already been used under a sufficient variety of circumstances for testing, so far as that vessel would admit, the value of your plan, I did not feel at liberty to retain her...for a purpose that had already been accomplished."

With *Germ* back under their control, Hunter and Myers began serious efforts to make a profit from the technology. Myers used his network of European trading partners to acquire patents on "Hunter's submerged propellers" in

Germ experiment continued on page 7

Germ experiment continued from page 6

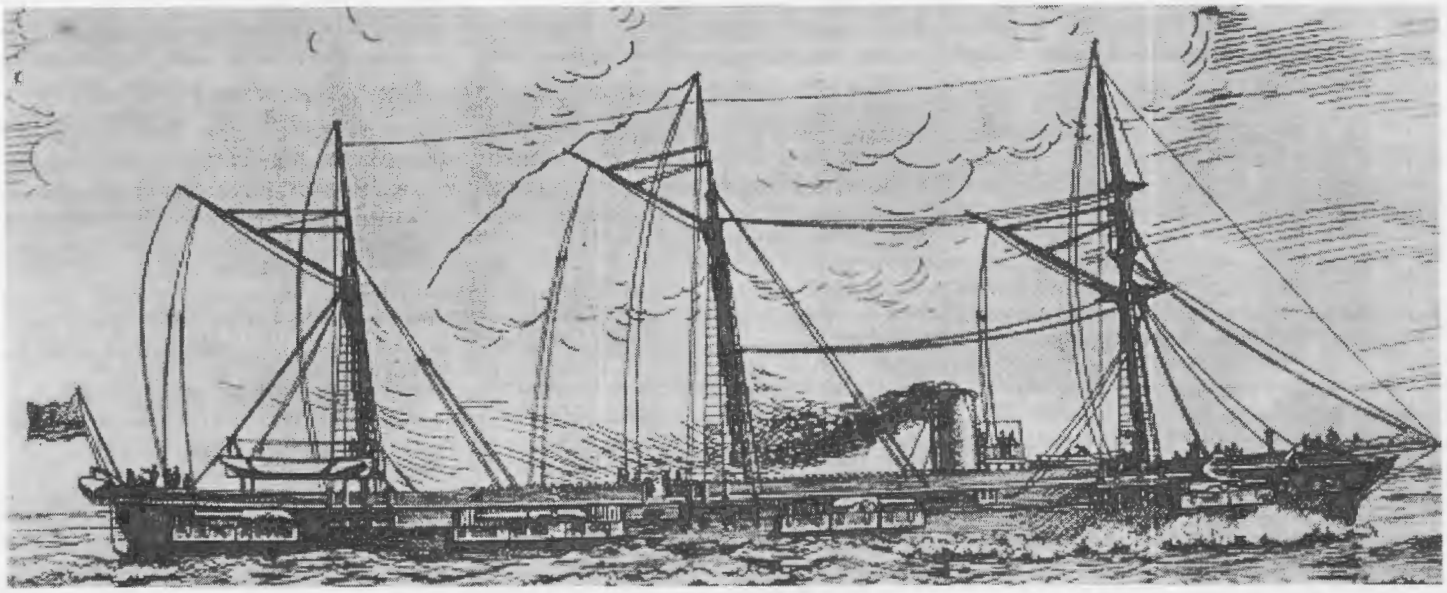
France and England. Overseas, however, Myers did "not think [Harris'] widow's name should be used as she is not entitled to any interest, contributing not a cent. She has no means to aid in furtherance of the object there." Hunter decided it was time to stress the variety of uses for which the system could be employed. On July 3, *Germ* was used to tow a warship from Gosport to the anchorage off Hospital Point. The vessel made another trip through the Dismal Swamp Canal to Elizabeth City and back. In late July, Hunter sent *Germ* north. In July, she arrived in Philadelphia where Hunter demonstrated her capabilities to the directors of the Delaware and Chesapeake Canal. Commodore Charles Stewart also took an excursion aboard her as did members of the Franklin Institute, "the scientifics" as Hunter called them. The real focus of the trip, however, was New York. The stop at Philadelphia, Hunter wrote Myers, had been made so that "impressions made here will strengthen our interests in New York."

The New York visit proved to be a public relations success. *Bennett's Herald* wrote on August 7, 1841: "The working of the *Germ* in our harbor yesterday was admirable. Crowds flocked to the Battery, to see her, and all were delighted with her graceful and noiseless movement through the waters. She came close to the Battery wall, Capt. Hosken and ourselves jumped on board; she went round and round the *North Carolina*, like a snake, swift and still, and the officers on board were puzzled to make her out. At last their band struck up "Hail Columbia," and cheered her. The *Germ* then returned to the Battery, landed her two passengers, with Lieut. Hunter, and proceeded to the Navy Yard." More important than newspaper editors, however, were the passengers Hunter had taken out earlier that day: Commodore Vanderbilt and the other directors of the Erie Canal. They were sufficiently impressed to offer Hunter and Myers $10 per ton for the patent rights to construct canal boats with submerged propellers of Hunter's design. Other offers came in: for vessels to run out Boston, for a vessel to work between New York and Albany. The Boston and Albany ships, both at 250 tons, would bring in $2500 each in patent rights. As Hunter wrote "Our affair is determined to yield an immense profit, almost incalculable."

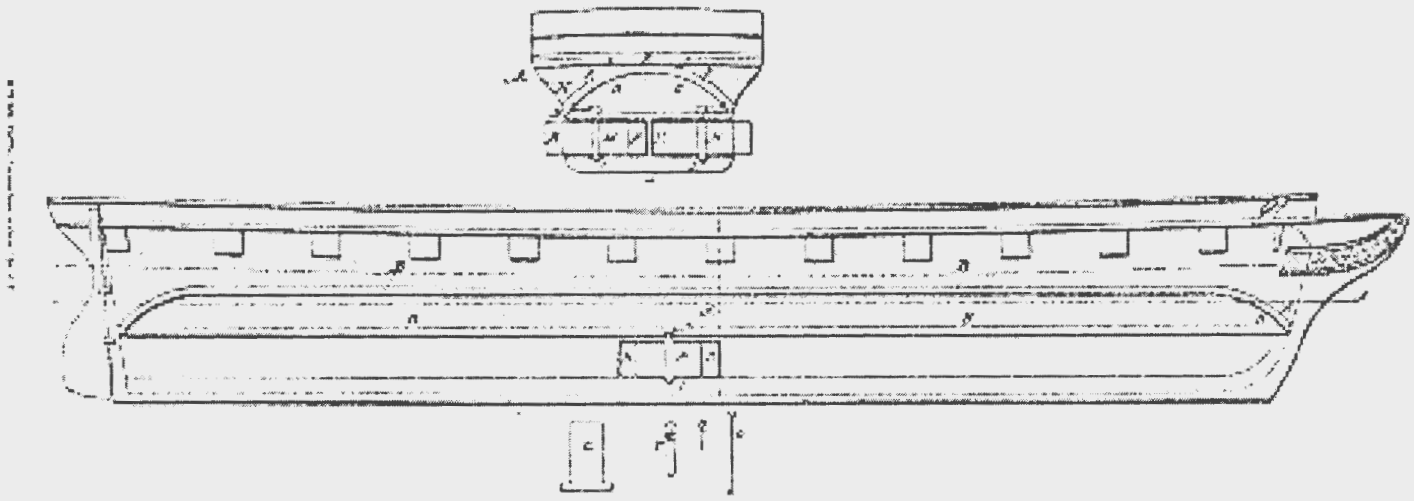
Hunter's work was not quickly forgotten. Harper's Weekly *sketched this portrait of the naval engineer, and later Confederate flag officer, in 1893, some 50 years after Gosport built* Germ.

Hunter felt yet more money could be made in Great Lakes navigation. "The Lakes offer a vast field & I leave here on Monday to reap it," he wrote Myers on August 14. *Germ* proceeded up the Hudson to Troy and the Erie Canal. The *Albany Argus* confirmed the usefulness of Hunter's design for canal travel. "The *Troy Whig* says that the *Germ* passed through the canal at the rate of about five miles per hour, and the wave she created was no greater than that produced by an ordinary canal packet." Hunter traveled through the canal to Oswego and then across Lake Ontario to

Germ experiment continued on page 8



U.S. Government officals expressed enough interest in the experiments involving Germ *that they authorized a larger test with the steam sloop* Union. *She displaced 900-tons and carried four 68-pdr cannons amid ship. After tests on the Chesapeake Bay, the Navy broke her up in 1848. (Naval Historical Center)*



This is a drawing of Hunter's submission to the U.S. Patent Office. The office granted his horizontal wheel design a patent in 1840. The Navy authorized the steam frigate USS Allegheny *along these lines and was built in Pittsburg. She demonstrated remarkable riverine abilities and she successfully navigated the entire length of the Ohio and Mississippi Rivers en route to Norfolk on her maden voyage. (U.S. Patent Office)*

Germ experiment continued from page 7

Kingston. After returning to Norfolk, she became the first steam vessel to have gone from North Carolina to the Great Lakes via the Erie Canal and back.

The Navy had been sufficiently impressed with Hunter's work to authorize construction of a larger vessel, *Union* of 900 tons. Work began at Gosport shortly after his return. This left Myer Myers with question of what to do with *Germ*. In the summer of 1842, Myers decided to employ the vessel as a packet in the North Carolina Sounds. For a while, it appeared he would be able to obtain a subsidy to run mail between Windsor and Edenton. The project fell through because of his unfortunate choice for *Germ*'s master. Myers wrote a friend in Elizabeth City on November 14, 1842, "Captain [Edmund] Chaytor was recommended to me as a capable, correct & sober man. Was ever a person more imposed upon? 'Tis much to be regretted some friend of mine seeing his drunken habits in North Carolina had not favored me with a hint. Such an act of friendship would have served the owners of the *Germ* money and an infinity of trouble. As yet I have had no settlement with him. In fact, I have not seen him for three weeks. Nothing can be got from him. I am not bound for his debts & fear the assistance of money from yourself and others tended to encourage the grog shops in their designs upon him." Myers dispatched another captain to bring *Germ* back to Norfolk warning him "to stop as little as possible at the towns as it is probable that Chaytor has contracted debts at each....If it is necessary to stop for wood, I presume it can be had at the villages."

Once *Germ* returned to Norfolk, there is no firm record of how she was employed. That did not mean, however, that Hunter slowed his efforts to turn a profit on her. In August 1842, he approached the Secretary of the Navy Abel P. Upshur with a plan to have the Navy buy the vessel to continue experiments with larger engines. Upshur, a college classmate and close friend of Myers' older brother Samuel, was in favor of doing so. Regretfully he told Hunter that "Congress had so hampered him as to render it impossible for him to do as he desires." Next in 1843, Hunter unsuccessfully approached the Coast Survey Board in an effort to get them to suggest *Germ*'s purchase to Congress. In October of that year, he tried a different rationale. He approached the new Navy Secretary David Henshaw with the idea that *Germ* should be bought to be used as a test bed for the radical concept of developing a steam-powered cannon. Henshaw again pled Congress-induced poverty. In March of 1844, Hunter succeeded in getting a bill introduced in both houses of Congress for the expenditure of $13,000 to purchase *Germ* and her equipment. The bill failed.

"I was also shaken to learn from you that Porter and Farragut, whom I had written to take charge of the Germ, *had permitted her to be sunk."* -Hunter to Myers commenting on the unforunate episode that occured under the watch of the future admirals David Dixon Porter and David Farragut, 1845

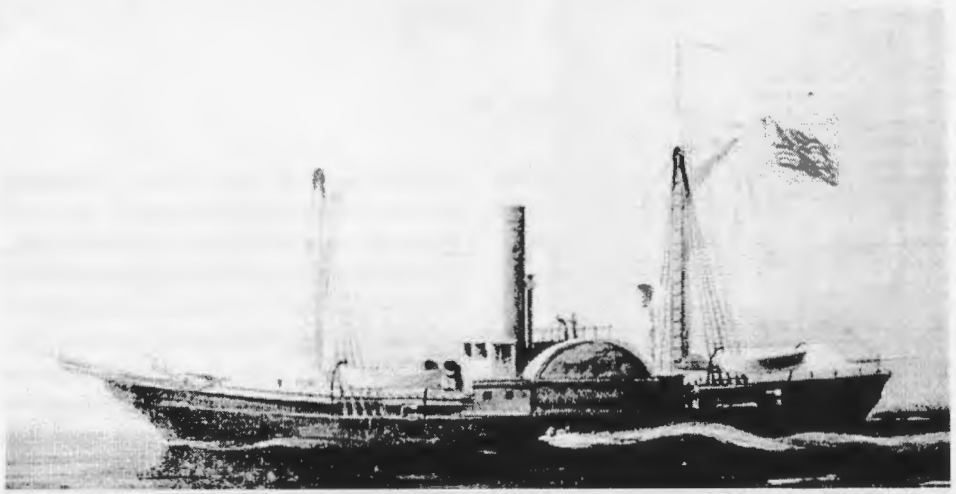
Germ *experiment continued on page 9*

The Curse of the Water Witch

William Hunter's role as an inventor somewhat overshadows a very intriguing career in the U.S. Navy. President James Monroe appointed him a midshipman in 1822 as a favor to Hunter's father, who was a well-known doctor in Philadelphia. The young officer spent the early part of his career with David Porter's West Indies Squadron chasing down pirates. Pirates captured him but he promptly escaped from his imprisonment. Shortly after he returned home, the ironfisted Commodore John Rodgers served as Hunter's mentor and took him to the Mediterranean on board the ship-of-the line *North Carolina*.

For the next 20 years, Hunter served in the West Indies Squadron and with ships exploring the Pacific Ocean. He took enough time off while in Hampton Roads to marry Jane Virginia Saunders of Norfolk on November 30, 1831. He then spent a large portion of his shore duty in this area and in New Orleans. Spending so much time in the South must have made a deep impression upon him, as he was one of the first Naval officers to resign his commission, despite his Northern roots, at the time of Ft. Sumter.

The Confederate Government gave him a captain's commission and put him to work in such diverse places as New Orleans, the coast of Texas, and the Rappahanock River here in Virginia. Promoted to flag officer in 1864, Richmond transferred him to Savannah and ordered him to take charge of all naval forces there. While in Savannah, Hunter's men successfully seized the gunboat/mail packet paddle wheel steamer USS *Water Witch*. The capture is one of the great exploits of the Confederate States Navy as it was done with deadly efficiency. However, of the all the ships Hunter's men had to capture, *Water Witch* was one vessel Hunter probably regretted seeing.



Shown here is the mail packet/gunboat USS Water Witch. *Hunter's men captured the vessel in a flawlessly executed raid in 1864. Unfortunately for Hunter, this vessel was nothing short of cursed and had brought him bad luck in the early stages of his wheel design. The new vessel, which had components from the first* Water Witch, *brought Hunter even more misfortune. Gen. Sherman's army was on the last stage of its "March to the Sea" and showed up in Savannah a few days after her capture. (Naval Historical Center)*

While curses and other witchcraft do not make good history, they do make good sea stories. An earlier version of *Water Witch* may have brought a small hex upon the Confederate flag officer. The Washington Navy Yard built the orginal *Water Witch* in 1844. The Navy intended to use her as a water tender for ships stationed in Hampton Roads. Specifically, her mission was to obtain fresh water from the Dismal Swamp and bring it up to the Gosport Navy Yard. This would have been a perfect vessel for Hunter's wheel because it required the vessel to make turns in tight corners. She was fitted out with Hunter's wheel and delivered to Hampton Roads.

Unfortunately, when the Navy attempted to take *Water Witch* through the Dismal Swamp Canal lock for the first time, they discovered that John Porter, future co-designer of CSS *Virginia*, and his wokers in Washington had built the ship incorrectly. Her draft was too deep and her beam was too wide for the vessel to fit through the lock. The Navy attempted to use the vessel as a harbor tug, a mission she was not built for. This failure did much to damage Hunter's chances for long term success.

The Navy transferred the vessel to Philadelphia to be refitted with a different propulsion system, a "Loper" propeller, and commissioned *Water Witch* for a second time. This one rejected her engineer plant as well. In disgust, she was given the tried and true side-wheel paddles. After serving in the Mexican War, and in dry-docks due to constant breakdowns, the Navy took its frustrations out on the vessel by using her for gunnery practice. The spirit of the vessel did not die so easily. The machinery from the second *Water Witch* was used to build a third. She served well in the American Civil War as a gunboat and a mail dispatch vessel on various blockade stations.

However, the witch brought more bad luck to Hunter. Shortly after Hunter's men seized the Union vessel, Gen. Sherman's army marched into Savannah forcing Hunter to burn all of his vessels. Among the ships lost were two brand new ironclads, CSS *Georgia* and *Savannah*.

Germ *experiment continued from page 8*

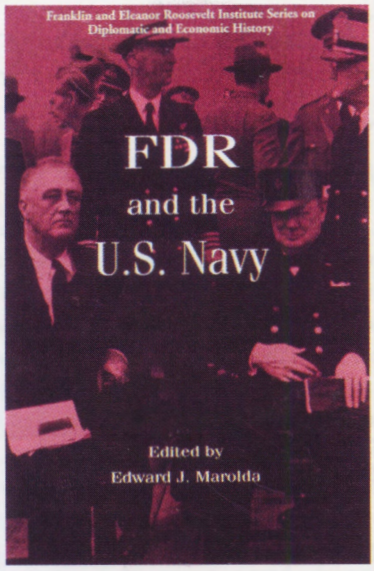
In 1845, Hunter was in New Orleans. There, he tried to interest friends in purchasing *Germ* as a school ship to train steamshipmen. In the meanwhile *Germ*'s idleness led to a deteriorating material condition. Hunter had asked fellow officers at the Gosport Navy Yard to use sailors from the receiving ship *Pennsylvania* to maintain *Germ*. Their efforts were disappointing. On February 1, 1845, he wrote Myers "I was also shaken to learn from you that Porter and Farragut whom I had written to take charge of the *Germ* had permitted her to be sunk." In all probability, the vessel's

Germ *experiment continued on page 14*

Book Reviews

FDR and the U.S. Navy

Edited by Edward J. Marolda
Reviewed by William H. Wagner, jr.



No doubt when one reads the history of a particular era – especially an era which one has lived through - it is almost impossible to maintain a completely impartial attitude. Having this small but wonderful book, which is made up of essays written by well known historians and biographers of Roosevelt, tossed in my direction was like being tossed a bag of Christmas candy on Christmas Day. Franklin Delano Roosevelt was one of the definitive icons of the twentieth century. *FDR and the U.S. Navy* is a treasure, filled with nuggets of information about his relationships with the Navy in its many and varied facets. Just how did FDR get to be Assistant Secretary of the Navy. One essayist commented that "for one reason, and that was his name. He had no special qualifications for the position other than an interest in maritime affairs and yachting."

Edward J. Marolda, editor. *FDR and the U.S. Navy.* New York: St. Martin's Press, 1998. 176 pages. ISBN 0-31221-157-0 $49. 95.

One of the most fascinating of the entries of the collection is "No Talent for Subordination: FDR and Josephus Daniels" by Kenneth S. Davis. His appointment to the post of Assistant Secretary was FDR's formal introduction to the U.S. Navy. Just the last paragraph of the entry is enough to whet one's appetite to read the whole entry, "As for Daniels, I think we all have reason to be grateful for the loving kindness and forbearance with which he dealt with a young man whom many others saw as brash, overly self-confident, and overly ambitious, but in whom he saw qualities destined to determine great and beneficent events in the history of the United States."

Daniels had a very deep and lasting influence on the Navy and on FDR and it was fortunate for FDR that he served under him. The import of this tour with Daniels is continued in the next entry, "Josephus Daniels, Franklin Roosevelt, and the Reinvention of the Naval Enlisted Man" by Ronald H. Spector. Many of the educational opportunities for enlisted men where introduced by Daniels and Roosevelt by "combining the democratizing, rationalizing, and technocratic aspects of the Progressive Era, laid the foundation for the competence-based, technology oriented, specialized, and meritocratic navy of the twentieth century. Less happily, they also laid the foundation for the pervasive Big Brotherism of the modern military exemplified by the compulsory ethics courses, surprise drug testing, and 'don't ask, don't tell.'"

FDR's experience in the political field broadened when Governor James Cox, the Democratic candidate for the presidency in 1920, chose him as his running mate. After his run for the vice-presidency, he enjoyed national standing. Spector's essay comments that "a comparison of the FDR of 1913 with the FDR of 1921 does not suggest that he had acquired the inner resources- the strength of character, the moral courage – that are necessary to lead a great nation in moments of desperate crisis. To gain insight into FDR's acquisition of the inner resources that served him well in later years, historians must turn to his harrowing experience during the years between 1921 and 1933."

It is fascinating to read about Roosevelt's handling of the "Navy Brass" after his election to the presidency in 1932, and the events leading up to the opening of hostilities in 1941 with the Japanese attack on Pearl Harbor.

Michael A Barnhart in "Making It Easy for Him":-The Imperial Japanese Navy and Franklin D. Roosevelt to Pearl Harbor says that , "It is hard to avoid the conclusion that the Imperial Japanese Navy was one of Franklin Roosevelt's best friends right up to the 'date which will live in infamy.' The surprise attack on Pearl Harbor gave Roosevelt the easy task of getting an almost unanimous declaration of war from Congress and aroused the ire and tremendous backing of the American people."

Space does not allow for a more detailed review of *FDR and the U.S. Navy* to comment fully on Roosevelt and naval strategy, particularly his importance to the evolution of the U. S. Fleet. Thomas C. Hone's essay "The Evolution of the U. S. Fleet, 1933-1941: How the President Mattered" does cover this topic very well. Hone states, "Scholars have described in detail Roosevelt's interest in the Navy, his actions to shape the nature of the fleet, and his use of his formal powers to place certain admirals in the Navy's top positions."

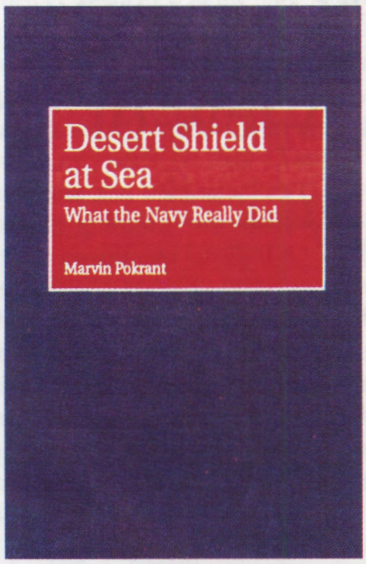
Based on their work, it seems that Roosevelt was frequently guilty of dabbling in his hobby, the navy, but his grand instinct. . .was correct, as was the overall course he charted for the Navy.'

FDR and The U.S. Navy is not a large book, but is a most fascinating glimpse of a great man who handled a great crisis in a great and grand manner. The flyleaf of the volume states, "The essays argue that one of Franklin Roosevelt's greatest achievements was his direction as commander in chief of the U. S. Navy and the other American armed forces during World War II. When the very survival of the nation was at stake, it is both a powerful tribute and an important historical work on FDR.

Mr. Wagner is a former pharmacist's mate chief petty officer, a retired Episcopal rector, and a veteran of Pearl Harbor.

Desert Shield at Sea: What the Navy Really Did

by Marvin Pokrant
Reviewed by Alex Macensky



As we approach the ten year anniversary of the Gulf War, a second wave of books on the subject is starting to roll in. Beyond the flood of biographies and Monday morning quarterback books of the early nineties, it could be reasonably expected that more objective and considered works on Desert Shield and Storm would be forthcoming. Marvin Pokrant's *Desert Shield at Sea: What the Navy Really Did* aims at dissecting and justifying the decisions of the Navy high command during Operation Desert Shield. Considering the wealth of insider staff knowledge displayed in the work, *Desert Shield at Sea* certainly has a new slant to offer to the subject. It is very apparent from the first pages, however, that this book is also an effort to vindicate all the Navy's decisions in Desert Shield. The results are mixed.

Marvin Pokrant. *Desert Shield at Sea: What the Navy Really Did.* Wesport, CT: Greenwood Publishing Group, 1999. ISBN 0-31331-023-8. $59. 95.

Dr. Pokrant's book moves chronologically through the events of initial invasion, the US and UN blockade and buildup, and the plans for offensive actions in the Gulf. Through each step of Desert Shield, he airs grievances and offers explanations and excuses for the Navy command. This is not unexpected. The foreword after all is by Admiral Henry Mauz, who was commanding officer of Seventh Fleet during Desert Shield. The endnotes for every chapter rely heavily on the recollections of Mauz, his staff, and contemporaries. What strikes the reviewer as odd is the number of issues Dr. Pokrant and some of his contributors feel need addressing and clarifying.

The book describes problems in staff relations between the Navy's command decisions on the spot and every other service. Their are conflicts with the Air Force over matters like Tomahawk Missiles and 'package' bombing. Criticisms and explanations are plentiful on the matter of relations with General Schwartzkopf's command in Riyhad. Issues over the Marine deployment are addressed. It even seems that a defense is offered for Admiral Mauz's decisions on the deployment of his task forces. These defenses are well researched and often rather compelling. But the question is beged, whose criticisms is the author defending against?

As far as this reviewer is aware, the broad public does not harbor any misgivings about the Navy's role in Desert Shield or the Gulf War at large. Even among Gulf War enthusiasts, there is not a roiling debate about the Navy being culpable for it's performance in the Gulf War. Perhaps the author felt that the Navy did not the credit it was due in other works on the subject. It is hard to say. One gets the impression that some of the points raised by Dr. Pokrant are for a handfulof people, and not for the average reader.

This spirited defense against phantom attackers wears on the reader after a while. There is an awful lot of insightful and interesting information about how the Navy prepared for and conducted the embargo on Iraq. But the constant bullet point justifications for every action on every other page became tedious after about the tenth time. If you are very interested in Navy's actions during Desert Shield with an emphasis on command staff decision making, then this is an excellent book. However, for the casual Gulf War enthusiast, Dr. Pokrant may lose you at some points. Because of the excellent accounts of various embargo actions, I regret having to give a very qualified recommendation for this work. It would be unfair to the reader however to subject them to someone else's finger pointing war without fair warning.

If Looks Could Kill: A View of a Ship's Architecture

With the current talk around town about the battleship *Wisconsin*, it begs the question: why are we so interested in this ship and other battleships like it? The answer simply put is that it is an awesome sight to behold. People who work or teach layout design and publishing will tell you that faces draw a reader's eye to an article. There is another item that draws reader's attention, a picture of a gun. Whether you like them, hate them, whether you are a life

The Museum Sage

member of the National Rifle Association, or are a bleeding heart liberal, it does not matter. Display a gun and you will get people's attention. Battleships happen to have some of the biggest guns ever manufactured.

A ship's outward appearance has drawn much attention over the years. The first of the five senses that usually forms an opinion about a ship are the eyes. In their own special way, ships are works of art. "That ship has fine lines" is a common expression among maritime buffs.

In stark contrast to a battleship's appearance, modern-day political humorist P.J. O'Rourke noted that the *Ticonderoga*-class cruiser USS *Mobile Bay* (CG-53) was "...not very impressive to see. It has a tall, boxed-in, blank-sided superstructure that give it a floating-car-barn look. And the only immediately discernible weapons, the two dinky five-incher gun turrets, would not make for dramatic Liberty Bond poster art." Never mind that *Mobile Bay* potentially has more destructive power with her 120-plus Tomahawk cruise missiles.

The Sage in the past has given you his list of "best" and "worst" names and other such silly awards. Now it's time to look at some of the best and worst looking ships. To be sure, Naval architects are obviously not out to win beauty pageants. Their job is to create a machine for the fleet that will accomplish an assigned mission in the most efficient manner. Nonetheless, in their quest to make the most efficient maritime war machine possible, American naval architects have produced some rather odd-looking and beautiful vessels.

The oddest and ugliest looking vessels throughout the history of the U.S. Navy are usually the ones that serve as test beds for new technologies. These ships have the unfortunate duty of testing out new ideas and inventions and often look like they were pieced together by Dr. Frankenstein himself. *Monitor* is an example of this. "Tin can on a shingle" is the most common nickname thrown at *Monitor*, although there are less complimentary ones out there as well. *Monitor* not only was revolutionary in the fact that she was an iron warship but revolutionary in design, which took many people by surprise.

A more recent example is the 1950's guided-missile cruiser USS *Long Beach* (CGN-8). With a long, narrow hull and a big fat tower for a bridge, *Long Beach* was not a ship of beauty. Part of the reason for her lack of pulchritude was due to the multiple desgin changes by wishy-washy naval architects. Norman Pollier notes in his design history of American cruisers that the Navy changed the *Long Beach*'s design no less than 15 times over the course of a few years. This was largely due to the fact that 1950's architects had many new technologies at their disposal including nuclear-propulsion, guided missiles, and new electronics.

Being that *Long Beach* was the first missile cruiser designed from the keel-up, and not a gun cruiser conversion, the nuclear-powered vessel served a valuable role as a test platform not only for new technologies, but for new doctrines in naval warfare. For example, for a time *Long Beach* was to have the ability to shoot Polaris ballistic missiles similar to the ones used by boomers. The gun cruiser conversions were not much better in terms of looks. USS *Albany* (CLG-10, ex-CA-123), for example was a nice looking World War II gun cruiser until the Navy decided to put missiles on her.

There are some nice looking warships. Students of the Age of Sail would say every sailing ship is beautiful. Maybe so, but to grossly paraphrase George Orwell, some are more beautiful than others. In The Sage's opinion, when it comes to sailing warships, the smaller the vessel, the better it looks. The fast schooners, such as *Shark* and *Alligator*, built to catch slave traders and pirates are among the better looking ones. This is one

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The Sage's two ugly ships of the U.S. Navy, USS Long Beach *(CGN-8) at left and USS* Albany *(CLG-10) above. (HRNM photos)*

The Sage continued from page 12

case where the architect's need to build a fast ship directly translated into a sleek hull design. Compare these to the ship-of-the-lines like *Pennsylvania*, and the schooners win the beauty prize hands down.

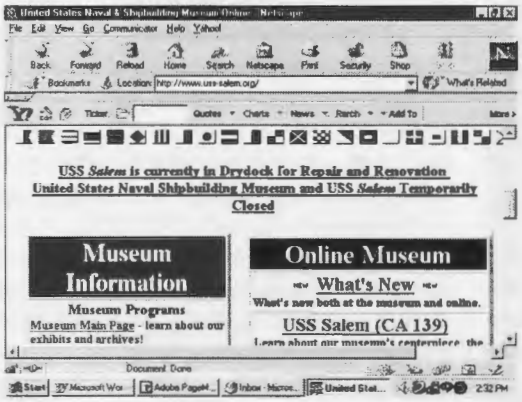
As the Navy moved to steel hull ships, some within the department must have taken an interest in the ship's appearance. All ships, with the exception of torpedo boats, from roughly the 1880's to World War I had hulls painted the better looking white during peace time. Looks had to be the primary reason for the use of white. It could not have been used to keep sunlight from heating up the ship, because the interior of these ships were already excessively hot from the boilers and very poor ventilation. The white painted hulls made Teddy Roosevelt go nuts with excitement when he saw the 16 battleships in Hampton Roads in 1907. The newspapers took notice too as they dropped the official name of the squadron, which was the U.S. Battle Fleet, and used a more romantic name, "The Great White Fleet."

Of the Age of Steel ships, one is the "cruiser" USS *Vesuvius*, a vessel the Sage loves to talk about. Her hull readily stands out among other turn of the century steel ships. Officially designated a "dynamite cruiser" one is not sure whether to classify it as a warship or as a railroad tycoon's yacht that just happens to have three 15-inch guns wielded to the hull. Speaking of tycoons, some of the better looking commissioned warships came from rich, patriotic Americans. Granted these ships were not purpose built as warships. They were luxury yachts, but they all served very well in wartime "Commodore" Cornelius Vanderbilt graciously donated his sidewheel paddle steamer to the U.S. Navy, who called the ship USS *Vanderbilt*, at the beginning of the Civil War. During the Spanish-American War, the Navy snatched up several yachts to serve as gunboats. USS *Gloucester* was the most famous, which was once investment banker J.P. Morgan's yacht *Corsair* and served with high honors during the Battle of Santiago.

Outward appearance is not the designer's goal, at least it probably should not be. This does not mean that architects have not tried. Artists conceptions of the Navy's destroyer for the 21st century and the now defunct "arsenal ship" project have drawn a large amount of "ooohs" and "ahhhs" simply based on their looks. Beauty does make a great selling point.

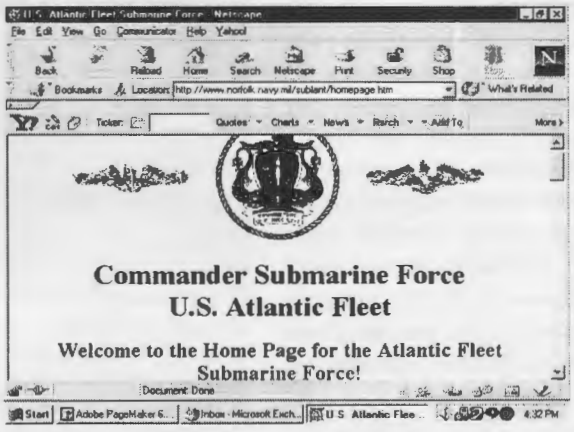
On the more beautiful side of the Navy is the gunboat USS Gloucester. *This fine looking vessel formerly belonged to Wall Street investment banker J.P. Morgan and served with great honor at the Battle of Santiago in 1898. (Naval Historical Center)*

Useful Web Sites



www.USS-Salem.org-This is the site for the display ship USS *Salem* (CA-139) and the United States Naval and Shipbuilding Museum at Quincy, MA. *Salem* is the only remaining heavy cruiser on public display. The site informs the user about the museum, its mission, and its holdings. The site also has information sources and links on the history of shipbuilding in the United States. A limited, but ever expanding, online version of the Naval Historical Center's *Dictionary of Fighting American Ships* series is an added benefit of the site.

Norfolk.navy.mil/sublant-As this is the 100th anniversary of the Submarine Force, it is only appropriate to highlight the Commander Submarine Force Atlantic (COMSUBLANT)'s web site. This site highlights the people and equipment that operate and manage the Navy's Atlantic boats. It gives a brief history of the command, its past commanders, and boats lost at sea. It also provides up to date information on new developments. The site will move to www.sublant.navy.mil on April 1.



Despite claims that ships equipped with Hunter's wheels could "run circles" around Princeton, *which was equipped with a John Ericsson-designed screw, the Navy dropped the project. They instead constructed ships using the Swedish-American inventor's ideas. (HRNM photo)*

Germ *experiment continued from page 9*

watertight cofferdam around her paddles had leaked. One assumes this was not a true reflection of the abilities of two officers who were destined to become the U.S. Navy's first admirals. The ship was raised, and Hunter recommended Myers maintain her by his wharf to keep a closer eye on her. In 1848, Myer Myers closed the vessel's account with Hunter after receiving a last payment of $163.39 for *Germ*'s expenses. The final end of the tiny vessel is not known.

The end of *Germ* did not mean the end of Hunter's technology. On August 5, 1845, Myers had written to the London lawyers who handled the English patent application:

"Our Government built on our plan the War Steamer *Union* at [900] tons. She was found to move with all her armament etc. on board upwards of 10 knots per hour. All the other advantages of the submerged horizontal paddles were so obvious that our Government immediately ordered 5 iron steamers built with our propellers for Revenue Cutters each [400] tons. Three of them have been launched [*Bibb, McLane* and *Spencer*], two are not yet completed [*Dallas* was finished in 1846, the other not finished]. The Government has also in the course of construction with our propellers a naval iron steamer of 1100 tons [*Allegheny*] that will be launched in about 6 months [actually completed in 1847 with $10,320 going to Hunter personally for his patent rights]. The boilers of the Steamer *Union* after a little service were found ineffective & that vessel performed but little service & was laid up. They contemplate giving her soon a new boiler, etc.

All the Revenue Cutters were modeled upon the same plan & it was found very defective, those vessels not having sufficient beam. There was another miscalculation & all these vessels being alike not one has been able to establish our propellers. The 1100 ton ship that will be launched in about 6 months is all right & she is relied on to establish the propellers and get them permanently adopted in our Navy. This vessel it is contemplated will be exhibited in England & other parts of Europe under the command of one of the patenters - a naval officer [Hunter]. If this vessel proves as we confidently believe she will, proves our propellers to be far superior to all others & they become permanently adopted, she will greatly enhance the value of our patent."

Even the giants of the U.S. Navy had their bad days. Germ *sank in Hampton Roads while under the watch of one Lt. David Dixon Porter, shown here as a commander in 1861, and his half-brother Lt. David Farragut.(Naval Historical Center)*

The reality was even less sanguine than Myers' description. Before the experiment ended, the Government had taken possession of, at one time or another, nine vessels equipped with the Hunter wheel. Three went to the Navy, three went to the Revenue Service, two to the Coast Survey, and one to the Topographical Engineer Corps in the Great Lakes.

However, none of the government vessels constructed with Hunter's submerged propellers was successful with the exception of a small prefabricated survey vessel built for the Army Corps of Engineers and assembled in Buffalo. *Colonel Abert* [later renamed *Surveyor* in 1849] conducted her work until 1875 when she was sold out to become a St. Clair River ferry. By 1849, all others had been converted to side-wheels or screw propellers or were out of service.

Even *Margaret Kimble*, a 100 ton iron freighter and passenger steamer built in 1844 for Myer Myers was switched to paddlewheels in 1846. The reason for this failure is found in the problem of mechanical efficiency. Too much power was lost in the slip of the paddle (the difference between the theoretical distance moved by the paddle and actual movement of the ship) In reality, Hunter's horizontal wheels were moving not only the ship but also the water contained in the paddle casings. According to early steam historian Donald Canney, for Hunter's design, the slip figured to be 50 - 70%. By comparison, Ericson's screw propeller used on *Princeton* was only 23 - 46%. This resulted in higher comparative fuel consumption. *Allegheny*'s consumption of coal was seven times that of the side-wheeler frigate *Mississippi*. Another factor was the effect of the unusual hull shape required by Hunter's wheels on sailing properties. Despite all this research on steam propulsion, sail were still considered to be the primary form of propulsion.

The Navy eventually built most of its ships using Swedish-American inventor John Ericsson's propeller. This invention propably had a bigger impact on naval history than Ericsson's more famous ironclad project.

Why then did the Navy seemingly waste so many scarce resources on an idea that seems ludicrous in retrospect? The answer

Germ experiment continued on page 15

Germ experiment continued from page 14

lies in the nature of technology at the cusp of change. In the absence of a clear right choice, many alternatives will be tried until one proves dominant. The Navy in the late 1830's and early 1840's was unhappy with the conventional answer to steam propulsion, side-wheelers. Such ships were vulnerable to enemy shot and had exceedingly bad sailing characteristics when not under power. It was not obvious that the screw propeller would become dominant Indeed, when *Union* first went to sea, it was felt by many observers that she could run circles around the screw propeller-driven *Princeton.* From New York in August 1841, Hunter had written Myers "Everyone here says we beat Ericson's propeller." Nor were Hunter's and Ericson's designs the only alternatives put forward. Canney's fine work, *The Old Steam Navy*, lists at least six other variations on steam propulsion that were considered by the Navy in this era. Just as for seaplanes and lighter-than-aircraft ninety years later, partisans for each alternative voiced their support until external circumstances clearly identified the "right" choice.

Museum Joins Historic Naval Ship Association

by Capt. Channing Zucker (Ret.)

Editor's note: In preparation for the battleship USS Wisconsin *(BB-64), the Hampton Roads Naval Museum recently joined the Historic Naval Ship Association. Channing Zucker is the executive director of the association and the following article tells a little bit about the organization.*

As the size of the U.S. Navy shrinks and naval bases across the country are closed, the fleet of historic naval ships that serve as floating museums is becoming more important to the future of the Navy. Consisting of four aircraft carriers, five battleships, six cruisers, 11 destroyers, 30 submarines, Coast Guard cutters, Army and Merchant Marine vessels, and an armada of other combatants from the United States, Australia, Canada, England, France, Greece, and The Netherlands; the HNSA fleet could be ranked as the world's third largest navy.

The Historic Naval Ships Association promotes the preservation and exhibition of some of the most celebrated ships in history. The largely American fleet of historic ships includes the 1797 frigate USS *Constitution* and the nuclear powered submarine USS *Nautilus*. The ships are as effective as educational assets today as they were in years gone by as combatants going in harm's way on the world's oceans. For those who visit them today the ships are living testimony to many of history's most stirring actions. When they go ashore, visitors take with them a deep appreciation for the sacrifices made by the men and women who built these ships, and the sailors who fought them on the world's oceans to preserve freedom.

Founded in 1966, the Association is a non-profit organization incorporated to educate and inform those who are interested in the rich naval heritage of seafaring nations.

Homeported from Halifax to Houston and from Bordeaux to Brisbane, the fleet is visited by more than nine million people each year. Visitors can walk the oak decks of a fully rigged ship-of-the-line and crawl through the cramped compartments of a submarine. To help them learn from these great wooden and steel vessels, innovative interpretation programs have been developed. On some ships, such as *Constitution*, period uniforms are worn. On many, historic reenactments are performed.

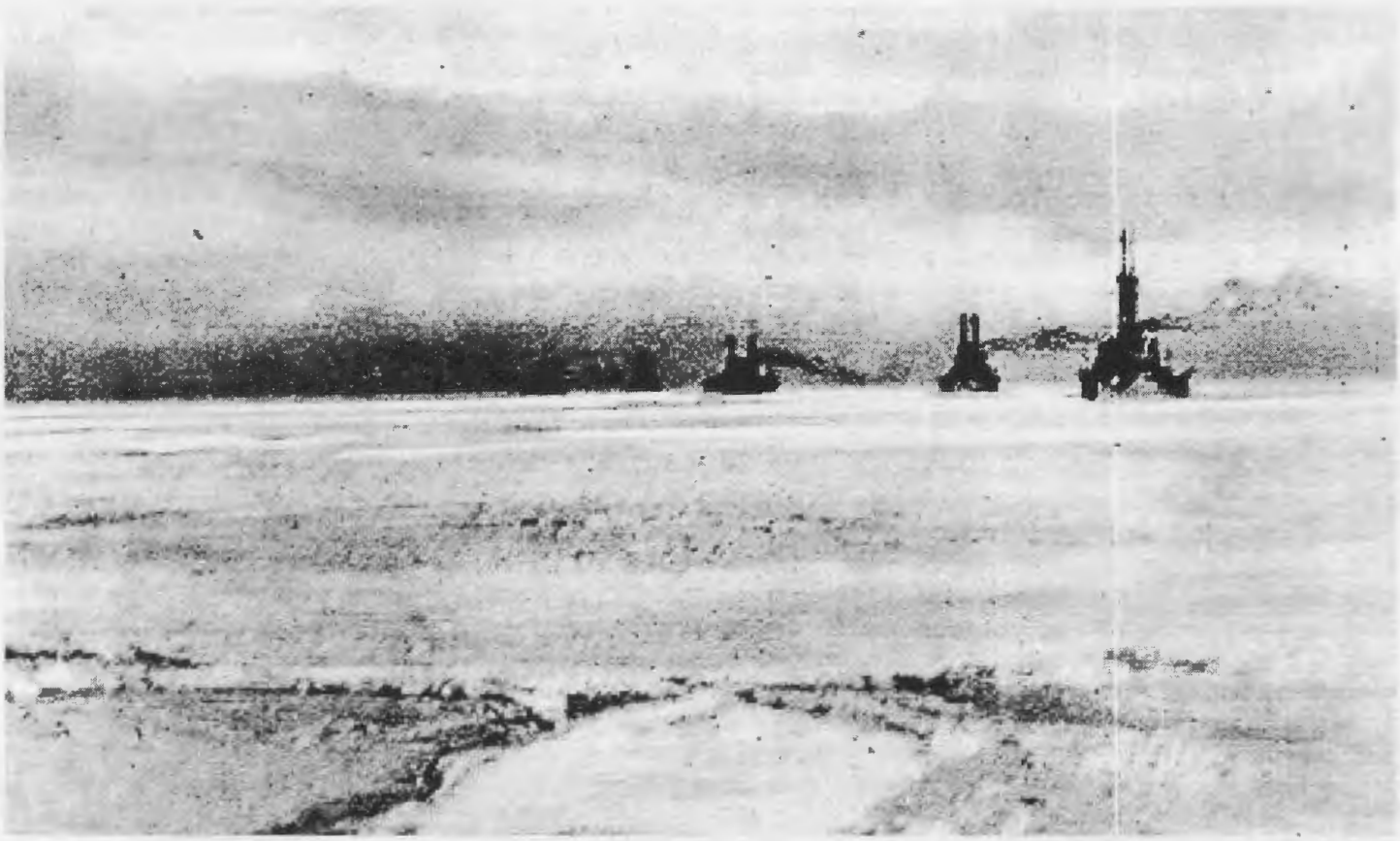
USS *Massachusetts* was the first to offer overnight camping on board the ship, combined with educational tours, lectures and films. Youth group encampment programs are now in place at a dozen vessels in the historic fleet. HMCS *Haida* in Toronto is a leader in coeducational citizenship training programs for Sea Cadets. The restored brig *Niagara*, homeported at Erie, Pennsylvania, is maintained in operational order, fostering the preservation of skills necessary to get her underway. The carrier *Intrepid* at New York City uses large-screen motion pictures with remarkable effect. The merchant marine cargo vessel SS *Jeremiah O'Brien* steamed from San Francisco to Normandy for the 50th anniversary commemoration ceremonies in 1994.

The Association provides a forum for its members to exchange ship museum management information and technical expertise. Annual conferences are each hosted by a member museum. The 2000 meeting will be take place in Halifax, Nova Scotia in September with the corvette HMCS *Sackville* managing the arrangements. The delegates discuss matters such as educational programs, preservation methods, conservation techniques, insurance, exhibiting, fund raising, and marketing their sites and programs.

Membership in the Association is open to individuals and organizations that support its goals. For further information and a membership application, one should contact the Association's secretariat at the U.S. Naval Academy Museum, 118 Maryland Avenue, Annapolis, MD 21402-5034. Membership benefits include a subscription to the *ANCHOR WATCH* newsletter, a copy of the *Historic Naval Ships* visitors' guide, free or reduced admission to more than 70 ships in the Association, and invitations to the annual conferences.

For further information, contact executive director Channing M. Zucker at (757) 499-6919.

You think it was cold this January?



The mighty Atlantic Fleet-stuck in the York River, 1918. The river froze over solid during one of the worst winters on record. What was worse was that it happened to be in the middle of World War I. Ironically, in 1917 local lobbyists used the region's historically temperate climate as a reason to locate the Navy's new naval station in Hampton Roads.

In Our Next Issue....

☞ *Robert E. Lee's Navy Cousin: Rear Adm. Samuel P. Lee, USN*

☞ *Battle of the Atlantic Exhibit Renovations*

☞ *Book Reviews:* Crossed Currents-Navy Women in a Century of Change *by Jean Ebbert & Marie-Beth Hall and* Call Sign Revlon *by Sally Spears*