From the Pilot House

Several important events have occurred since the last issue of Cheesbox. As you will see from our lead story, the U.S. Congress demonstrated its concern about the Monitor's deteriorating condition by requesting NOAA to prepare and submit a comprehensive plan for the preservation of the Monitor. Realizing that time is of the essence, Congress asked that the plan be submitted by the end of the fiscal year September 30, 1997. We are on schedule and will meet that deadline. Since the report will address options ranging from taking no action to recovering major hull components, it may be some time before a final decision is made concerning the fate of the Monitor.

In the meantime, we have been busy trying to further document the current state of the Monitor's hull. With the help of numerous governmental, military, and private organizations, we conducted two imaging surveys using a relatively new device, the laser line scanner. This system was used for locating wreckage and human remains from the TWA Flight 800 crash site off Long Island. Although bad weather hampered operations (as usual, it seemed), we obtained new images that are now being processed by computer, much like the images being beamed from Mars to NASA's Jet Propulsion Laboratory.

The next Cheesbox will be a special issue devoted to the comprehensive plan. We will present a synopsis of the plan, along with considerations for decision-making. Deciding how best to preserve the Monitor will not be easy. Any positive efforts to stabilize or recover hull components will be expensive and require the efforts of highly skilled marine engineers. Although the challenges are quite daunting, they are also exciting. We will make every effort to provide all the information necessary for taking the next steps toward preservation. We will also keep the public informed through an expanded World Wide Web site. As always, we welcome your comments and suggestions. Please stay in touch; it's going to be an interesting year.

1997 Special Use Permit

As reported in the previous issue of Cheesbox, in 1996 a three-year special use permit was issued to Captain Arthur Kirchner of Dover, N.J., and Hatteras, NC, for non-research dives on the Monitor. The first round of special use dives for 1997 were scheduled for May 26-31. Once again weather was a factor, preventing the dive boat from leaving the dock for all but one day. On the final day, six divers were able to make one dive on the Monitor. A NOAA observer was on the dive boat to provide information to the divers and to evaluate the special use permit program.

For more information on the special use dives, contact Captain Kirchner in Hatteras at (919) 986-2835.

The Monitor in Crisis

As reported in previous issues, the Monitor's hull is collapsing at a rapid rate. Photographic evidence clearly shows that there has been a marked increase in the rate of deterioration of the Monitor's hull over the past seven years. NOAA has delayed finalizing the management plan for the Monitor National Marine Sanctuary to allow time for further assessment. In 1993, after extensive archival and on-site research, it was determined that a concerted, well-planned effort would be required to preserve the Monitor and planning efforts were initiated.

The increased rate of deterioration of the Monitor represents a management crisis for the National Marine Sanctuary Program. The Monitor is perhaps the most significant ship in American history, made more so by its designation as the nation's first marine sanctuary. The location of the wreck, 16 miles offshore and in 230 feet of water, poses challenges for protection, management, and research. In its 21-year stewardship of the Monitor Sanctuary, NOAA has employed sound management practices and state-of-the-art technology to investigate the wreck. Through NOAA's efforts, public understanding of and interest in the Monitor has been enhanced and the need for continued preservation of this unique resource has been emphasized.

Following a NOAA briefing in 1996 on the Monitor's deteriorating condition, Congress placed a mandate in the 1997 National Marine Sanctuary Program reauthorization bill requiring NOAA to develop a "long-range, comprehensive plan for the management, stabilization, preservation, and recovery of artifacts and materials" from the Monitor. NOAA was also instructed to seek the assistance of other governmental organizations in this effort. The plan is to be completed by September 30, 1997 and submitted to Congress for review. Fortunately, the plan was already in preparation, as no additional funds were allocated for the completion of the plan and associated research.

This comprehensive plan will document NOAA's response to the challenging problem of the Monitor's deterioration. It will describe each major element in detail and address all aspects of management, protection, stabilization, and possible recovery, conservation, and exhibition. Development of the plan involves resources for planning, budgeting, and coordination with governmental and non-governmental agencies with expertise in marine salvage and engineering, conservation, exhibition, and other specialties, many of which must be obtained outside of the Sanctuaries and Reserves Division.

Monitor Sanctuary staff have established partnerships with other agencies and individuals to complete the plan, which will address several management and research options for the immediate future. The plan will include the following:

Historical/Archaeological Research

Over the past several months, NOAA staff members have compiled a detailed survey of available historical sources in the Monitor Collection and other repositories. The survey includes records, reports, and correspondence of the Monitor's designer, builders, and engineers. Highly detailed specifications for the Monitor's turret, turret contents, and engine assembly have been prepared to facilitate assessments of the feasibility of recovery and requirements for detailed conservation plans.

From this information, significant historical/archaeological questions that might be continued on page 2
be answered through additional on-site investigations have been identified. This portion of the report is nearly complete.

**Engineering Recovery Plan**

Engineering plans developed during the 1970s recommended actions and method options that are no longer current. The new plan will define the rapidly deteriorating condition of the wreck and assess options for conserving the valuable information in light of the current condition of the wreck and current marine engineering technology. All options for complete or partial recovery are being thoroughly identified and assessed. A recommended option will be identified and a methodology and budget for carrying out the option will be developed.

**Site Stabilization Plan**

While proposals for site stabilization have been developed, the present time, the premises upon which they were based are no longer valid. The feasibility and appropriateness of site stabilization will be reassessed based on best available data, current technology and the rapid deterioration of the Monitor. All options for mechanical and/or chemical stabilization of the Monitor's hull will be identified and assessed. A recommended option will be identified if applicable and a methodology and budget for carrying out the option will be developed.

**Archaeological Recovery Plan**

A study of the contents of the Monitor is being developed in order to assess the potential for artifacts in each area of the vessel. In as much detail as possible, this plan addresses size, type, and material of artifacts or groups of artifacts expected to exist in each area of the ship. The contents study builds upon work begun by Ernest W. McMillan in the mid-1980s. The information will provide data necessary for the recovery plan and will also facilitate development of an appropriate conservation plan.

**Conservation Plan**

Since the technology to conserve all or portions of the Monitor is critical to determining future recovery efforts, this study must address available conservation options for processing large iron objects from the marine environment. It is not always understood that it is the difficulty and expense of conservation that limits recovery efforts. Since the conservation process is lengthy and will generate a high level of public interest, the study will address the potential for creating an exhibit for the conservation or the yield. Several previous conservation studies served as the basis for this plan but the new study will be the most comprehensive to date.

**Exhibit Plan**

The primary purposes for raising artifacts and components of the Monitor's hull would be public exhibition and long-term preservation. Therefore, this study will assess the exhibit potential for portions of the hull and the contents of the Monitor. It will also address items such as requirements for specialized environments and maintenance for materials that may be recovered. A cursory exhibit concept, prepared in 1988 is serving as a starting point and an updated study is underway.

**Geographic Information System (GIS) Research/Management Database**

The study includes a digitized plan of the wreck of the Monitor developed from the 1974 photoscan, which is the only existing overall image of the site. Efforts were made to ensure that the image is dimensionally correct, based on the original builder's plans of the Monitor. NOAA and the contractor have developed a system of site data that can be used as control points in improving the accuracy of the digitized baseline plan. Key points on the wreck will be designated as site datum points, and careful measurements will be made between the points by divers. This study will also include development of a spatial database of artifacts recovered from the Monitor and all relevant data. The inventory can be updated for inclusion of artifacts recovered in the future.

**Environmental Impact Statement** (Section 106 Approval)

While an Environmental Impact Statement (EIS) will not be necessary for the preliminary plan that will be submitted to Congress in September 1997, it will be required before any major site recovery effort. The plan must be reviewed by the State Historic Preservation Officer for the state of North Carolina and the (Federal) Advisory Council on Historic Preservation in order to obtain the necessary approvals for the preferred recovery and/or stabilization options through the Section 106 process.

**Enforcement Plan**

Illegal activity in the Monitor National Marine Sanctuary appears to have increased over the past few years, including traveling and long-line fishing as well as sport fishing. Therefore, this study will assess current NOAA/Coast Guard surveillance and enforcement efforts and seek new ways to protect the Sanctuary.

**Plan Summary**

In 1994, in response to the threat to the Monitor, NOAA's Sanitaries and Reserves Division (SRD) commenced a broad range of activities including several major expeditions to the Sanctuary, cooperative efforts with the U.S. Navy and others, and development of a long-range plan addressing the Monitor's disintegration.

The comprehensive plan will reflect new data from the Sanctuary as well as recent deep-water technological advances. The resulting plan will be critical to determining the fate of the Monitor. In addition, it will aid NOAA in managing, protecting and assessing shipwrecks in our other active and proposed sanctuaries, particularly at the proposed Thunder Bay National Marine Sanctuary. From a broader perspective, the plan will also benefit submerged cultural resources managers throughout the world. The plan's management strategy and content will be relevant to other deep-water sites, including the Titanic, the War of 1812 brigs in Lake Ontario, shipwrecks in the Mediterranean and many others. The entire preservation community should benefit from NOAA's approach to preserving the Monitor.

**Stephanie Thornton Named Chief of NOAA's Sanitaries and Reserves Division**

On October 1, 1996, Stephanie R. Thornton became the new chief of NOAA's Sanctuaries and Reserves Division (SRD). Thornton possesses a unique and well-rounded breadth of experience that integrates marine science, business management and resource conservation. She has over thirty years applied experience in the marine environment with special expertise in fisheries, including eighteen years of professional experience. In addition, eleven of those years includes management and administrative responsibilities. Her academic background includes a B.S. in Fisheries Biology, with an emphasis in Marine Ecology, from Humboldt State University, and an MBA from Golden Gate University.

Ms. Thornton's career has been built upon a series of positions that allowed her to develop broad perspectives for marine field. She began as a fisheries biologist with the California Department of Fish and Game and later worked for the National Marine Fisheries Service. Both jobs were part of research team studying Pacific salmon and allcoche tuna migration, respectively. She then worked for the management of the Humboldt Fisherman's Marketing Association, a 350-member trade association representing salmon, crab, and shellfish fishermen, and was directly involved in marine resource management through her participation in the development of the San Francisco Bay Management Plan for the Pacific Fishery Management Council and her work with California Department of Fish and Game and the California State Legislature. During this time, she was appointed by former Governor Jerry Brown as a California Commissioner to the Pacific States Marine Fisheries Commissioner (PSMFC). She served four years as Commissioner to this five-state interate.

These cumulative work experiences led up to the opportunity to create and administer the Coastal Resources Center (CRC), a nonprofit organization whose mission was to preserve, maintain, and enhance marine fish and their ecosystems in coastal California. When CRC was still in the conceptual stage, Ms. Thornton was hired to develop the organization into a fully operating entity. Throughout the CRC's existence, she created and implement 15 over applied marine conservation projects, as well as comprehensive public education efforts. She served as CRC's Executive Director for eight years, eventually elected to the board.

In addition to Ms. Thornton's academic training and broad based work experience, her professional association, and personal contacts have strengthened her leadership capabilities. She served three years as President of the American Fisheries Society, Humboldt Chapter and was founder and President of the California Women's Fisheries Network, Northern California Chapter. She is currently a member of the National Research Council's Marine Board where she is representative to the Marine Area Governance Committee.

In announcing her appointment, Commerce Undersecretary for Oceans and Atmosphere D. James Baker cited Thornton's experience in the marine field.

"Ms. Thornton's diverse marine experience, with special expertise in fisheries, makes her an ideal candidate to lead the marine sanctuary and estuarine reserve programs," Baker said. "I hope our many sanctuary and reserves friends around the country share our excitement in finding a candidate of Ms. Thornton's caliber."

Ms. Thornton said, "From my experiences as a commercial fisherman, fishery biologist and conservationist, I have a special appreciation for the importance of preserving our oceans and the vital and irreplaceable coastal habitats." Thornton continued, "National marine sanctuaries and estuarine research reserves represent the best examples of citizens working with their government to secure a future that includes healthy coasts and oceans. I am proud to have the opportunity to bring my experience to this important cause, and look forward to building on the many successes these programs have had over the past 25 years."

**Monitor Bibliography**

Nearing Completion

A new Monitor bibliography is in the final stages of compilation. It will include articles, books, government documents, and other groups of published materials. Many of the citations are on the preliminary list. The bibliography will be ready for editing and layout by the end of this summer, and will be printed before the end of the year. This bibliography builds on other compilations, particularly one compiled by Gordon Watts and James Pleasant and published in 1978 by the U.S. National Archives and History. The bibliography is being compiled by Benjamin Trask, Librarian at The Mariners' Museum research library. Copies will be sent to research libraries throughout the country and will be available from the office upon request.

We hope that this bibliography will be the first of a series that will include volumes on manuscript collections containing Monitor material, images of the Monitor, and artifacts/memorabilia associated with the Monitor.
The tragedy of the Civil War era, with so much at stake, captured the attention of poets and writers such as Walt Whitman, Sidney Lanier, Ambrose Bierce, and Harriet Beecher Stowe. Uncle Tom’s Cabin stands as one of the most influential novels of all time. Whitman and Akim served as nurses in Union hospitals. Lanier and Samuel L. Clemens (Mark Twain) entered in the Confederate army. Conversely, one of the heroes of American authors, Nathaniel Hawthorne, decided to take a less active role in the conflict.  

Hawthorne did not adopt the abolitionist rhetoric prevalent in the North among someintellectuals, and he did not accept the assumption that slavery had to be eliminated in order to save the Union. When North marched into battle, however, he supported the federal government’s efforts. At the outbreak of the war, in May 1861, he was an established author who had recently served six years as the United States consul at Lisbon. He had taken his seat in Congress and had held bureaucratic positions at the customs houses at Boston and Salem, Massachusetts. His anti-slavery position was reflected in much of his writing and was expressed in his belief that the nation was no longer able to maintain the Union. He was later to become a key leader in the abolitionist movement.  

Hawthorne accepted an offer to provide his impressions of the Virginia theater in an article for a New York newspaper. After he and other Bay States representatives met President Abraham Lincoln, they agreed to report their observations to the government. While in Philadelphia, he wrote to his family in Pittsfield on March 16, 1861, “I am infested by people who want to exalt me as a hero.” The word of the choice of “hero” was amended given the author’s high forehead, full mustache, bald head, and slightly bulky shirt.  

Following tours of Alexandria, the Manassas battlefield, and other nearby sites, Hawthorne arrived on March 28 to meet with Frank Monroe. Shortly before their arrival, the exploits of the intrepid USS Monitor and CSS Virginia had created a sensation in much of North America and western Europe. On March 8, the Virginia steamed from the Elizabeth River into Hampton Roads heading for Union ships. The USS Cumberl and USS Congress quickly fell victim to the Confederates. In the next day’s Monitor and Virginia battle for four hours with no conclusive results. Nevertheless, with observers from the British and French navies on hand, there was a feeling among much of the general public that the age of the majestic, wooden-mast war of the past was over. Like many other commentators, Hawthorne overshot the mark when he proclaimed the immediate demise of traditional naval vessels. Also, Hawthorne was quick to pronounce the end of the domination of the British fleets, but the former U.S. consul in Lisbon still referred to Britain’s “prideful tradition as the standard by which all other naval forces were to be measured.” Finally, literary scholar Leo B. Levy has given Hawthorne’s account of the war an apportioned Seward’s: “Let poets break upon the theme, and make them- selves sensible how much at the moment the future is contained in their composition, credit for inspiring Homer Melville’s relevant offerings in Battle-Pieces And Aspects of War. By examining Hawthorne’s observations on the activity in Hampton Roads, we may understand how he influenced Melville.”

Nathaniel Hawthorne’s Visit to the USS Monitor in the Spring of 1862
Benn Trosk, Librarian, The Mariners’ Museum

The waters around Fortress Monroe were thronged with a gallant array of ships that formed the Monitor—Old Glory, as it was called in the Union’s official publications—with several national flag fly two French frigates, and, in another direction, an English ship, under that banner which will itself, like a red potter, the water there is亭. In pursuit of our official duty, which had no ascertainable limits, we were on board the flag- ship, and were shown over every part of her, and down into her engine room, to see her gallant crew, her powerful armament, her mighty engines, and her fumaces, where the ins and outs are always kept in order as well as midnight at as noon, that it would require only five minutes to put the vessel under full steam. This vigilance has been felt necessary ever since the Merrimack made that terrible dash from Norfolk, followed as she was, by the Monitor, and provided with all but the very latest improvements in naval armament, the Minnesota belongs to a class of vessels that will be built no more, nor ever fight another battle—being as much a thing of the past as any of the ships of Queen Elizabeth’s time, which grappled with the gallions of the Spanish Armada. One of the most interesting things was the early flag officer was pacing to and fro, with a self-conscious dignity with which a touch of the grue or tremulant perhaps con- tributed a little additional stiffness. He seemed to be a gallant gentleman, but of the old, slow, and pompous school of naval worthies, who have grown up amid rules and regulations, which were adopted full-blown from the British navy into ours, and are somewhat too con- cumbent for the present state of the art. This order of nautical heroes will probably go down, along with the ships in which they fought, unless new models can be found for the early deck being the cramped lookout of the Monitor, or even in the twenty-feet diameter of her cheese-box. All the pomp and splendor of naval warfare are gone by. Henceforth there must come up a race of engineers and professional black- ened cannoners, who will hammer away at their enemies under the direction of a pair of sharp-eyed and black- ened iron men—who do solemnly pledge us Science laying upon our noble possibilities—will become a reality. For their honor’s sake, their possession cannot break through the crust of iron and our own armament to give the effect of a gliding terror. At no great distance from the Minnesota lay the strange-looking craft I am about to write of. It was a little boat which, by its near likeness to the water that the waves broke over, under, the under the breadth and depth of shallow waters, almost imperceptible dents, with no corresponding rise in the shallow water, with a bit of the outboard of the Monitor, it was seen that the breakwater of the Monitor that we must be careful to protect. A storm of cannon-shot damages them no more than a hundred darts of this clenched and damned. The sweep of the darts was more than I could count, it was a machine, it is a story, it is a story, it is a story, it is a story, it is a story.
Editor’s Corner

There has been a change in the editorial staff. Octavia Cobbins, who had served as the Director of Education for The Mariners’ Museum for more than a decade, married Greg Starbeck in December 1996. She and Greg relocated to Savannah, Georgia, to begin married life. In addition to duties related to Cheesebox, Octavia assisted in developing Monitor education programs and projects. Her thorough and creative approach to education was sorely missed by our staff. I would like to publicly thank Octavia for all of her support and efforts on behalf of the Monitor Sanctuary over the past seven years. We wish Octavia and Greg all the best in their future endeavors.

Jerry Kinney of the Museum’s Buildings and Grounds Division is currently handling Octavia’s Monitor-related responsibilities. He has been with the Museum for one and one-half years and possesses the two most important qualities for working with the Monitor: patience and a sense of humor. Jerry is currently serving as the Museum Liaison for the NOAA/Mariners’ grants.

The Mariners’ Museum is developing a Naval Power gallery that will include an expanded permanent Monitor exhibit. Design development is in the final stages. We will include an article on the new gallery in a future issue of Cheesebox.

As you will read elsewhere in this issue, we will soon have an additional source of information for Monitor researchers: a new Monitor bibliography. It will be available in late 1996. Benjamin Tark, Librarian at The Mariners’ Museum, who is compiling the bibliography, also authored an article in this issue on a visit to the Monitor by Nathaniel Hawthorne. Our thanks to Ben for all his hard work on our behalf.

Many of our printed items are still available and an up-to-date publications list can be obtained from our office. There is a separate list for teachers that includes traveling exhibits and other items for classroom use. If you want to do something Monitor-related to your classroom, please let me know.

Congratulations to Ty Bartley of Charleston, West Virginia, whose project on the Monitor won first place in his school’s science fair and an honorable mention at the Kewahs County fair. There are at least 30 pieces of information on the Monitor every year and really enjoy hearing how students use the information and how their projects are received.

Way to go, Ty!

And, finally, another sincere thanks to Emi Petekin and her family for donating Ernest W. Petekin’s extensive collection of Monitor papers to the Monitor Collection. We have relied extensively on Peter’s papers for much of the research data we have compiled as part of the comprehensive plan. His years of research on the Monitor resulted in an invaluable collection of material that we rely on daily.

Propeller Recovery Efforts

Efforts to recover the propeller during 1995 were not successful due primarily to exceptionally adverse weather conditions. An unexpectedly heavy work schedule, including the search for wreckage from TWA flight 800 which crashed off the coast of New York, prevented the Navy from returning to complete the task during 1996. As a result, plans for the 1996 search for the Monitor did not take place. In late 1996, the Navy merged to form a composite image of the Monitor’s hull. Had bottom conditions been more favorable, there would be little doubt that excellent color images of the Monitor would have been obtained.

1996 Laser Line Scan Site Mapping Imaging Survey

During October 1996, a unique imaging survey was conducted at the Monitor National Marine Sanctuary using a new type of laser line scanner. This prototype laser device, under development for the U.S. Navy, is being evaluated to see how well it can operate underwater with the capability to generate a photographically-quality image of submerged objects or vessel hulls. One of our primary objectives of the survey was to use the state-of-the-art synchronous laser line scanner to generate high-resolution color images of the Monitor’s hull and its surrounding debris field. The mission was made possible by the cooperation and participation of NOAA’s Office of Laser and Raytheon Electronic Systems and Harbor Branch Oceanographic Institute. Two photographs of the Monitor-Image were taken to document this pioneering survey. The Research Vessel Edward Link supported diving operations from the Submersible Classic II, which was outfitted with the laser system.

Survey goals were to image the debris field for approximately 30 meters around the hull; locate and recover a recording current meter that is positioned south of the wreck; image the sloop in a larger periscope frame around the hull; and conduct daily surveys, recording the site on videotape.

The survey was hampered throughout by heavy seas, strong winds, swirl currents, and, worst of all, poor visibility, since the survey was conducted in an area that has experienced these difficulties, more than two gigabytes of laser imaging data were obtained on two subsequent dives. Despite this, we feel that the laser line scanner performed well and that significant portions of the Monitor’s hull are captured in one or more of the image files (approximately 70 percent of the hull was imaged). The images are distorted because high currents at the site affected the height and track of the submarine and poor visibility limited the color rendition and resolution of the images. The files are currently being reviewed and, at some later date, it is expected that very excellent color images of the Monitor would have been obtained.

Private Researchers to Continue Photodocumentation of the Monitor During 1997

Two research permits have been issued for research at the Monitor National Marine Sanctuary during July 1997. The first will be the 1997 Farh Monitor Expedition, Rod Farb, principal investigator. The Farb team will continue video documentation of the wreck. High-definition video will be recorded with a scale near the hull and within the camera’s view; later the best video frames will be digitized for use in preparing photographic images and for making measurements. The second expedition will be The Cambrian Foundation, Terrence Tyvall, principal investigator. This group plans to construct and install underwater cameras to develop a high-resolution photographic record of specific portions of the hull. Both expeditions, plagued by bad weather in recent years, are attempting to assist NOAA in documenting the current condition of the Monitor.

For Your Reading Enjoyment

The June 1997 issue of the Civil War Times Illustrated included a series of articles on the Monitor and the Monitor National Marine Sanctuary. There is a detailed discussion of the crisis at the Monitor Sanctuary, a tour of the Monitor exhibit at The Mariners’ Museum, and an article on the development of the revolving gun turret. In November of this year, Walter and Company of New York City will release Monitor by James Telesio deKay. It is a detailed History of the Monitor and John Ericsson. The staff of the Monitor Sanctuary and The Mariners’ Museum have found it to be a very pleasant and informative reading experience.