

U.S.S. MONITOR

National Marine Sanctuary

Management Plan
January 1982

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management
Washington, D.C.



North Carolina
Department of Cultural Resources
Raleigh, N.C.

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TABLE OF CONTENTS

	Page
SUMMARY.....	1
INTRODUCTION.....	13
National Marine Sanctuary Program Goals.....	13
Site Designation Background.....	14
SANCTUARY RESOURCES AND USES.....	15
Environmental Setting.....	15
Description of Wreck	17
THE PLAN.....	26
Goals and Objectives.....	26
Administration.....	28
Resource Studies Plan.....	31
Protection and Preservation Tasks.....	41
Interpretive Program.....	43
Regulations.....	47
Surveillance and Enforcement.....	47
BIBLIOGRAPHY.....	49
APPENDICES	
A. Rules and Regulations.....	53
B. Research Permits.....	60
C. Policy for Management of MONITOR Collections	62
D. Memorandum of Agreement.....	69
E. Violation Procedure.....	73
F. Sanctuary Designation.....	74
G. Summary of Expeditions.....	75

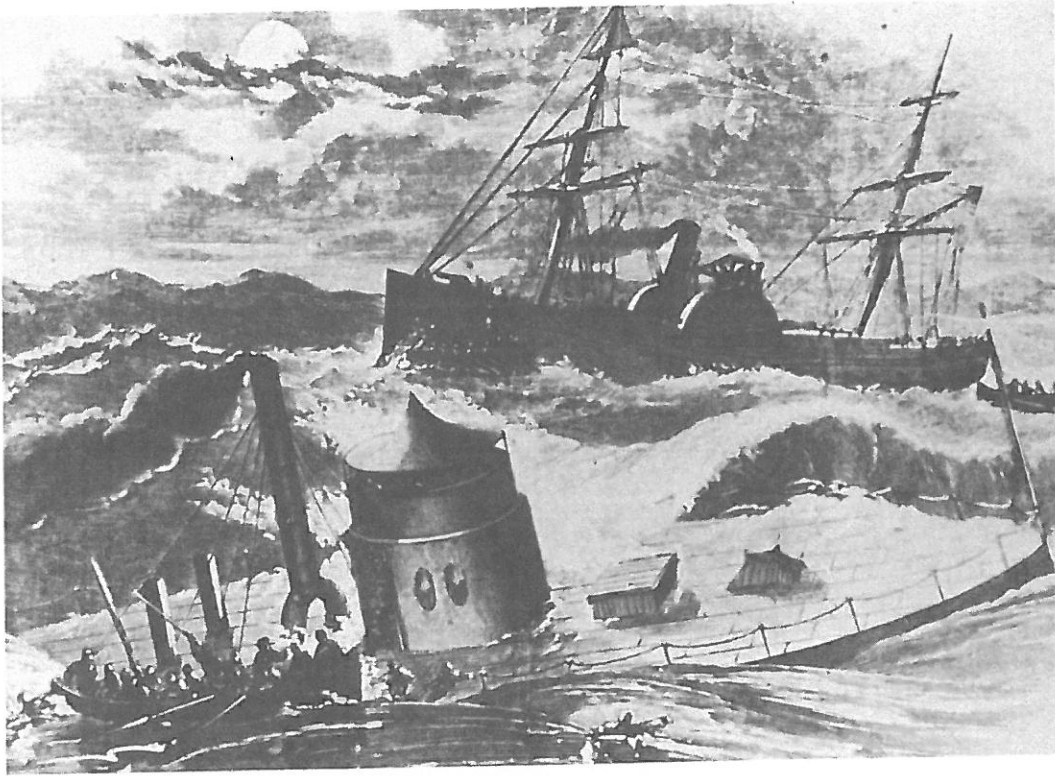
SUMMARY



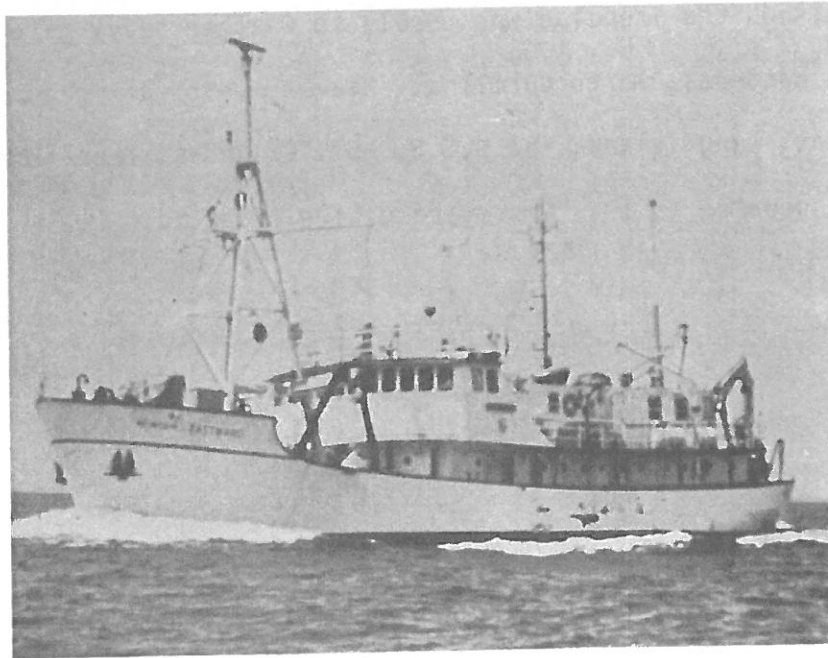
Hampton Roads, March 9, 1862

On March 9, 1862, at Hampton Roads, Virginia, the U.S.S. MONITOR fought what has become the most celebrated battle in American naval history. This historic engagement, the first battle of ironclad warships, was the highlight of a promising

service career cut short when the "Cheesebox-on-a-Raft" was lost at sea on December 31, 1862. While the MONITOR proved to be as "impregnable" to shot and shell as the designer, Swedish-American Engineer John Ericsson, had promised, the ironclad was unable to weather heavy gale-driven seas off Cape Hatteras, North Carolina. Eleven months after being launched at Greenpoint, Long Island, the U.S.S. MONITOR and sixteen members of the crew disappeared in the "Graveyard of the Atlantic."



Boats from the steamer RHODE ISLAND transfer crew members from the sinking MONITOR. Harpers Weekly, January 24, 1863.



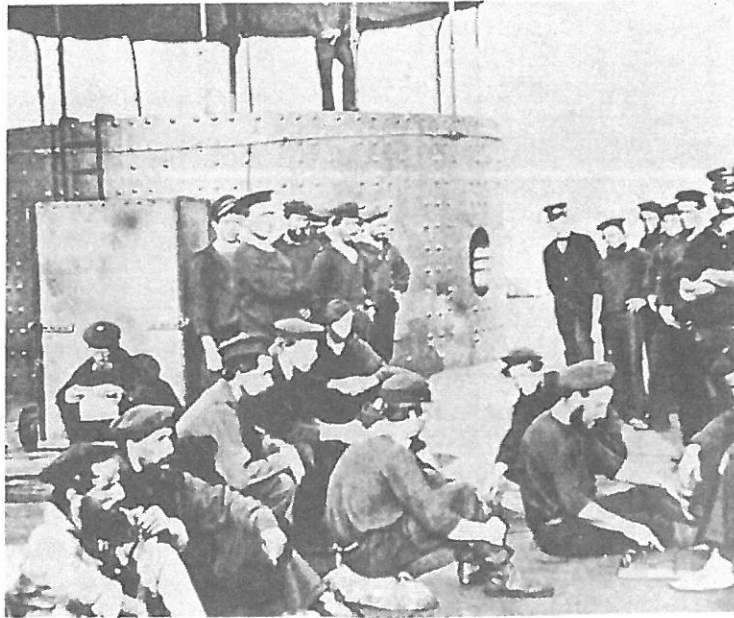
Duke University vessel EASTWARD, designed specifically for marine biological and geological investigation, served as the research platform for the 1973 expedition that located the remains of the MONITOR.

In 1973, an interdisciplinary scientific party employed intensive historical research and sophisticated electronic equipment to locate and subsequently identify the historic warship's remains. Announcement of the discovery stimulated considerable interest in further investigation of the wreck, recovery of artifacts associated with the ship, and possible salvage of the remains of the vessel. To ensure that the MONITOR would be preserved for systematic scientific investigation and development as a resource of national significance, the wreck was designated as the United States first national marine sanctuary by the U.S. Department of Commerce on January 30, 1975.

Today the remains of John Ericsson's "Cheesebox-on-a-Raft" represent a unique legacy from the past. The shipwreck and its contents preserve an irreplaceable historical record and represent a monument to the American naval tradition the MONITOR helped to create.

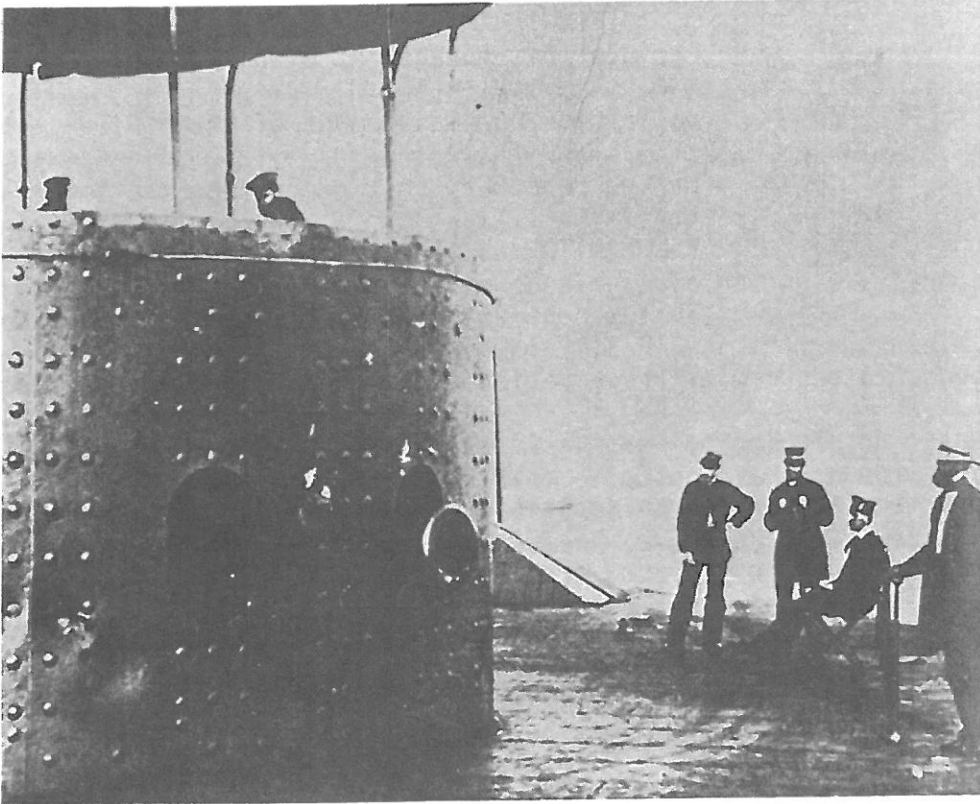


John Ericsson



An indication of the historical data and cultural material protected at the MONITOR Sanctuary is apparent in the few existing photographs of the warship. (Courtesy of National Archives)

Systematic archaeological investigation of the wreckage can provide an opportunity to examine aspects of our past that are not recorded in surviving manuscript sources. Study of the warship can supply valuable information about the design and construction of the vessel that has come to represent the historic mid-nineteenth century transition in naval architecture and warfare. Analysis of material from the MONITOR affords rare insight into the technological development of an industrial society. Artifacts from the ship's stores and personal property of the crew can greatly enhance our understanding of life aboard the United States Navy's first ironclad warship.



Officers examine the turret following the MONITOR's historic engagement at Hampton Roads. Dents in the turret were inflicted by the VIRGINIA during the 4 hour battle (Courtesy of National Archives)



In this management plan, NOAA has set forth a policy for the management of the MONITOR National Marine Sanctuary that recognizes the importance of the MONITOR as an irreplaceable cultural resource.

This management plan represents an effort to provide an integrated program of preservation, research and interpretation for an underwater archaeological site. As such, it is imperative that management-related research activities be designed in accordance with the systematic methodology of the archaeological discipline. An archaeological approach is essential for ensuring the greatest return of information, and the preservation of the wreck and its associated artifacts in a manner that will enhance its national significance. Archaeological research will enable NOAA, the on-site manager, and interested professionals to better evaluate the options for long-term management of the Sanctuary.

This Management Plan introduces research objectives so that parties interested in the MONITOR may plan effectively and contribute both to determining the proper disposition of the wreck and to the basic store of knowledge regarding this unique resource.

To date, the following management options for the MONITOR National Marine Sanctuary have been identified. These options do not necessarily reflect final management decisions. The implementation of any one option will not preclude reevaluation of other options in light of new technological application in conservation, engineering, marine salvage, or environmental determination.

One option is that of noninterference with the wreck site. This would preclude destructive on-site research activities.

Another option is to continue limited on-site investigation and provide controlled public access to the site in a manner that will not compromise the archaeological integrity and historical value of the ship wreck. Through the review system, proposals would be approved to collect data and small artifacts that answer specific historical, archaeological, engineering and conservation questions.

Another option is to conduct partial or selective recovery of the remains of the MONITOR. Through the review system proposals would be approved for systematic recovery, conservation, interpretation and display of the remains of the MONITOR and all associated artifacts.

Another option, complete recovery of the wreck for preservation, interpretation, and display, shall be held open as a management decision until such time that all data that can be reasonably gathered on the wreck and its environment has been accumulated and analyzed.

Because of the complex nature of addressing these options, decisions will be made by NOAA based on the recommendations from the Federal Review Committee, the North Carolina Division of Archives and History and its Technical Advisory Committee and any qualified scientific parties with an interest in the management of the MONITOR Marine Sanctuary (see Appendix D). The interdisciplinary task force will review site-related data and recommend the most viable option(s) in terms of long-range preservation, data return, determination of environmental conditions, funding, existing technology, acceptable methodology in archaeology, engineering and conservation, museology, interpretation, and economics. The Technical Advisory Committee will be responsible for adopting and formulating plans that will detail every stage in developing the desired management options.

The approach employed will depend upon the nature of the research or recovery option selected. The proposals shall be submitted through the existing review process for evaluation and then sent with endorsements to NOAA for approval. NOAA will evaluate the option proposals in light of the potential for future research and their ability to strengthen the preservation and interpretive goals that have been outlined in this document.

This MONITOR Sanctuary Management Plan describes the sanctuary's goals and objectives and the activities to be undertaken to meet these goals.

MANAGEMENT SCHEMATIC

UNITED STATES GOVERNMENT

DEPARTMENT OF COMMERCE

Secretary

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

Administrator

OFFICE OF COASTAL ZONE
MANAGEMENT

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SANCTUARY PROGRAMS OFFICE

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UNITED STATES GOVERNMENT

DEPARTMENT OF THE NAVY

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NAVAL HISTORICAL CENTER

Director

OFFICE OF THE CURATOR

Branch Head

STATE OF NORTH CAROLINA

DEPARTMENT OF CULTURAL RESOURCES

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U.S.S. MONITOR NATIONAL MARINE SANCTUARY
MANAGEMENT PLAN
INTRODUCTION

Title III of the Marine Protection, Research and Sanctuaries Act of 1972 (16 U.S.C. 1431 - 1434, Section 302 a) authorizes the Secretary of Commerce, after consultation with appropriate Federal agencies and the affected State, and following Presidential approval, to designate ocean waters as marine sanctuaries for the purpose of preserving their distinctive conservation, recreational, ecological, cultural, and esthetic values. The Act is administered by the National Oceanic and Atmospheric Administration (NOAA) through the Office of Coastal Zone Management's National Marine Sanctuary Program.

National Marine Sanctuary Program Goals

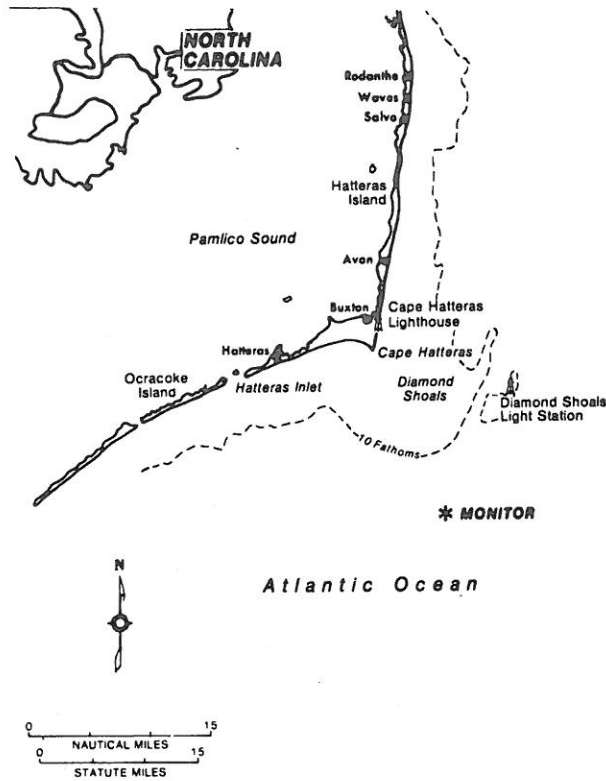
The mission of the National Marine Sanctuary Program is to establish a system of national marine sanctuaries based on the identification, designation, and comprehensive management of special marine areas for the long-term benefit and enjoyment of the public. The overall goals of the National Marine Sanctuary Program are:

1. Enhance resource protection through the implementation of a comprehensive, long-term management plan tailored to the specific resources.
2. Promote and coordinate research to expand scientific knowledge of significant marine resources and improve management decision-making.
3. Enhance public awareness, understanding, and wise use of the marine environment through public interpretive and recreational programs.
4. Provide for maximum compatible public and private use of special marine areas.

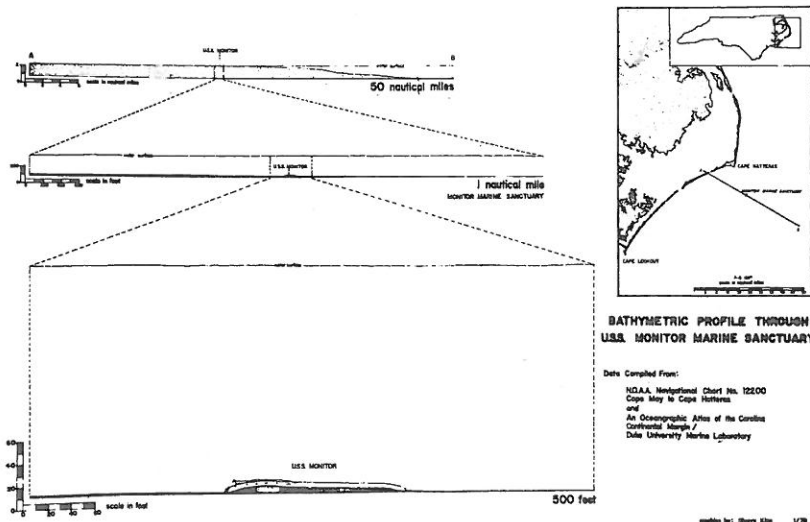
SANCTUARY RESOURCES AND USES

Environmental Setting

The remains of the MONITOR lie on the Continental Shelf 16.1 miles south-southeast of the Cape Hatteras Light. The MONITOR National Marine Sanctuary consists of a vertical column of water in the Atlantic Ocean one nautical mile in diameter extending from the surface to the seabed. The center of the water column is 35° 00' 23" north latitude and 75° 24' 32" west longitude. In the vicinity of the wreckage the ocean bottom is composed of sand, shell hash and clay below the surface. Bathymetric profiles of the area indicate that the bottom surface slopes gently away to the southeast.



(Drawing by Sherry King)



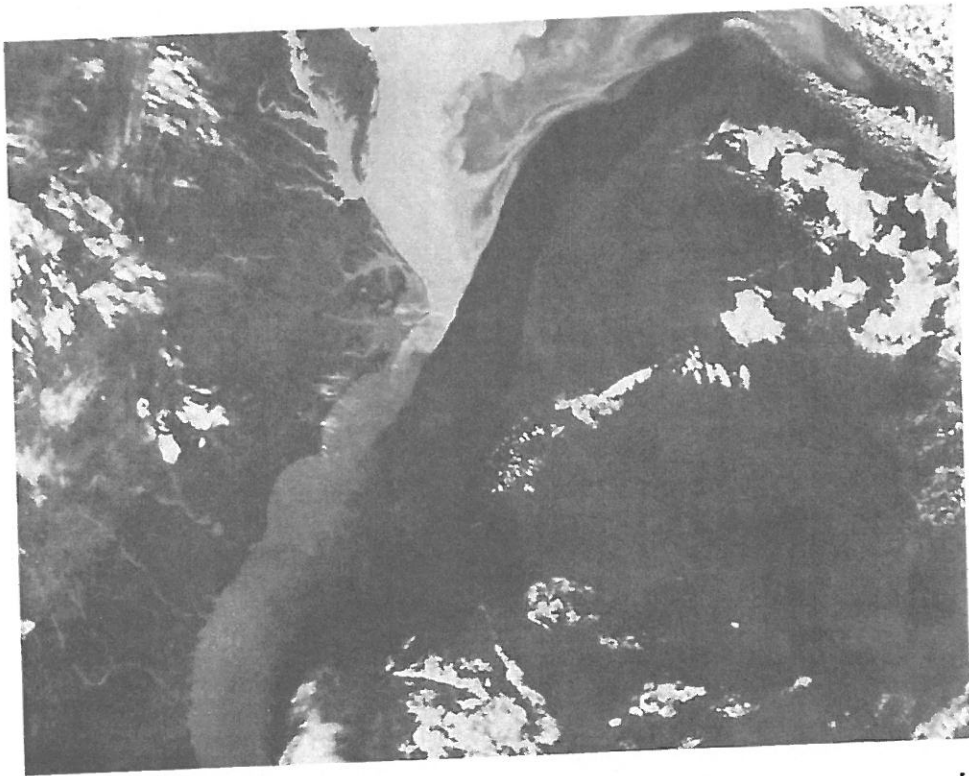
A bathymetric profile illustrates the wreck's relationship to the Continental Shelf and the gentle slope of the sea floor through the sanctuary. (Drawing by Sherry King)

Site Designation Background

In September 1974, the State of North Carolina nominated the site of the MONITOR, which lies in 220 feet of water 16 miles off Cape Hatteras, North Carolina, for marine sanctuary status to protect the wreck from unauthorized activities. The official designation of the Nation's first national marine sanctuary was made by NOAA on January 30, 1975.

Designation of the MONITOR site as a national marine sanctuary recognizes its importance as an irreplaceable cultural resource. A properly managed sanctuary will protect and preserve the MONITOR as a unique part of the national heritage in a way that will enable the MONITOR to be both meaningful and accessible to the public, as well as scientific researchers. Therefore, NOAA's coordination with citizens, scientific organizations, and North Carolina and Federal agencies is important in developing a sanctuary management plan that expresses goals, objectives, and tasks that will enhance the MONITOR's value as a source of historic and scientific information. This management plan for the MONITOR National Marine Sanctuary will be reviewed and updated annually.

Visibility in the 220 foot deep water varies according to turbidity, the presence of microorganisms, and the intensity and angle of sunlight. Records to date indicate that visibility varies from approximately 10 feet to more than 100 feet.



While the MONITOR is thought to be outside the western margin of the Gulf Stream, counter currents and eddies influence environmental conditions at the wreck site.

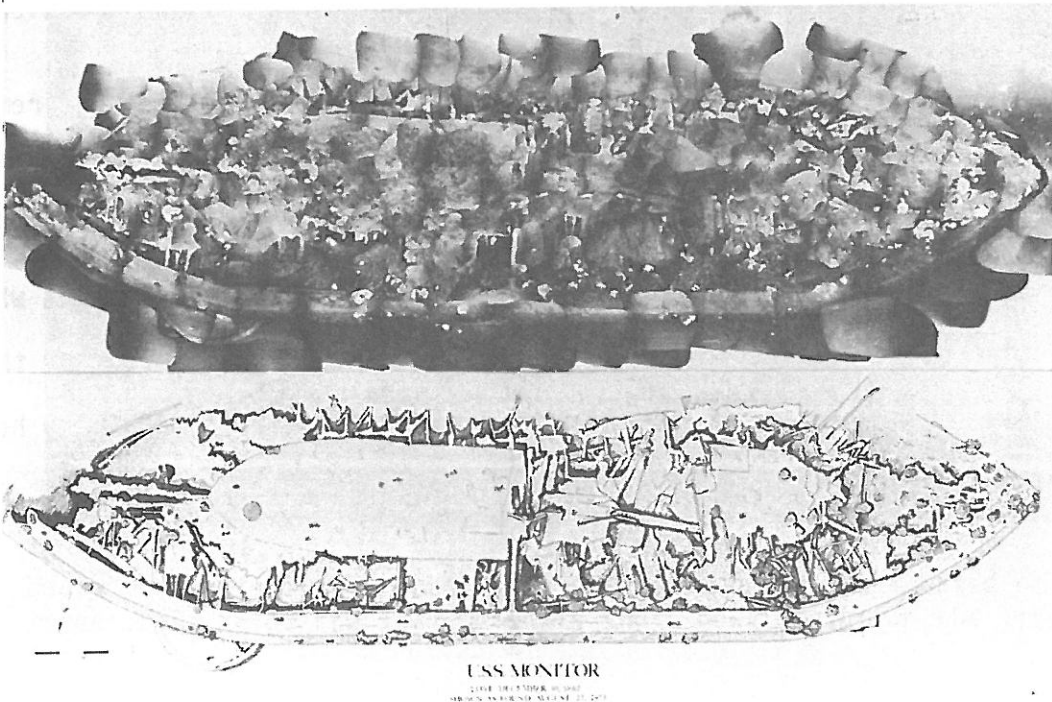
Although the site appears to be outside the western margin of the Gulf Stream, eddies created by that current may directly influence the area. Changes in current direction and velocity occur almost constantly. Within a 24-hour period, direction has been observed to change 360 degrees. Current velocities are known to vary from 0.02 to more than 1.5 knots at the bottom and surface currents appear to be considerably stronger. Both temperature and salinity in the areas seem to be related to these current

patterns. While little specific data is available, temperature projections indicate an annual variation between 11 and 20 degrees Celsius.

Wind patterns in the area of the MONITOR National Marine Sanctuary can be generalized as prevailing from the north to west between November and February; north-northwest and south-southeast between March and June; south-southeast during July and August; and north-northeast during September and October. However, unpredictable variation has been observed and spontaneous storms frequently occur.

Description of wreck

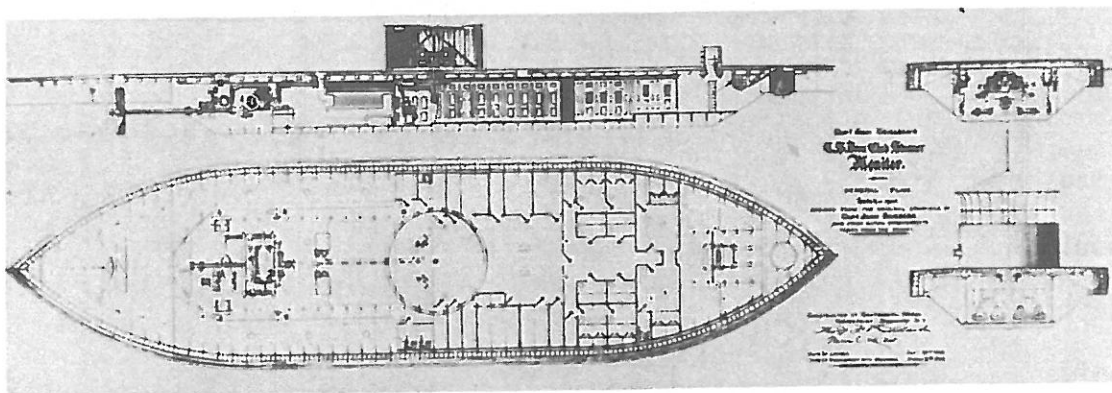
The present condition of the MONITOR can be directly related to both damage that occurred at the time of sinking and deterioration which has resulted from more than a century of immersion in a sea water environment. The inverted hull of the warship rests partially submerged in bottom sediment with the port quarter supported by the displaced 21 1/2-foot outside diameter, 9-foot high and 8-inch thick turret.



Photomosaic of the wreck site made from photographs taken in 1974 by Alcoa Marine Corp. (Photomosaic courtesy of Naval Intelligence Support Center: Sketch by Steve Daniel.)

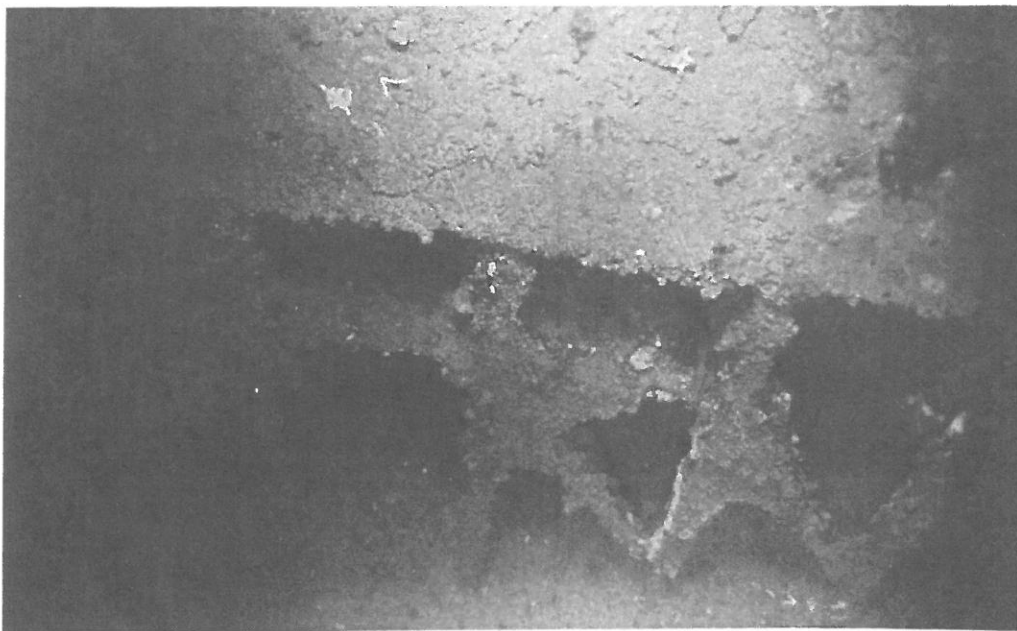
The Hull

Analysis of the wreckage confirms that the condition of the aft portion of the hull differs dramatically from the remains forward of the midships bulkhead. Aft of the bulkhead, the bottom plating survives intact. However, along both of the sloping sides of the displacement

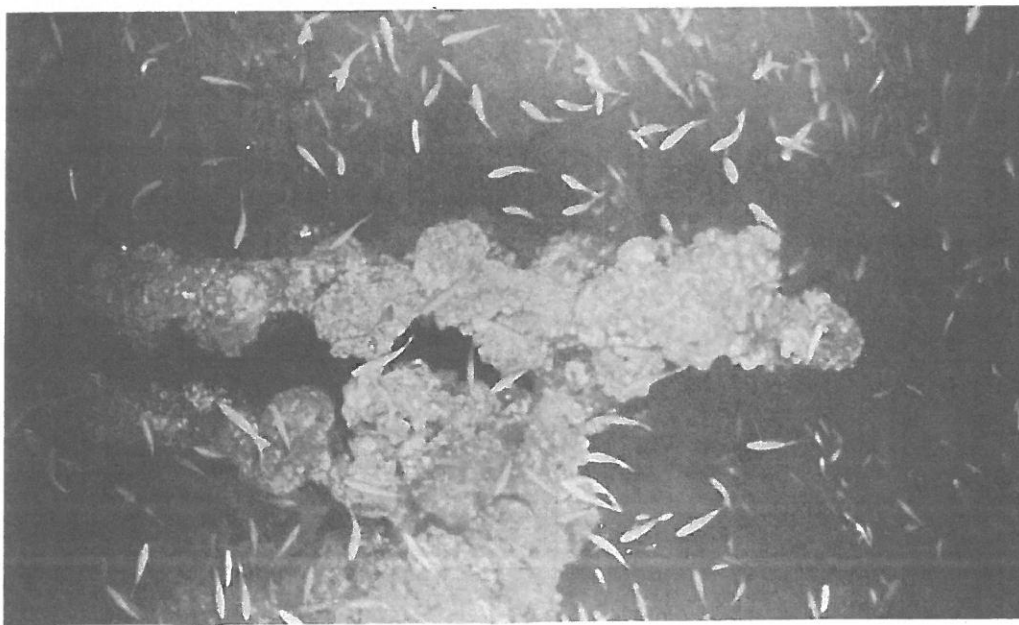


One of several frequently contradictory plans of Ericsson's MONITOR.

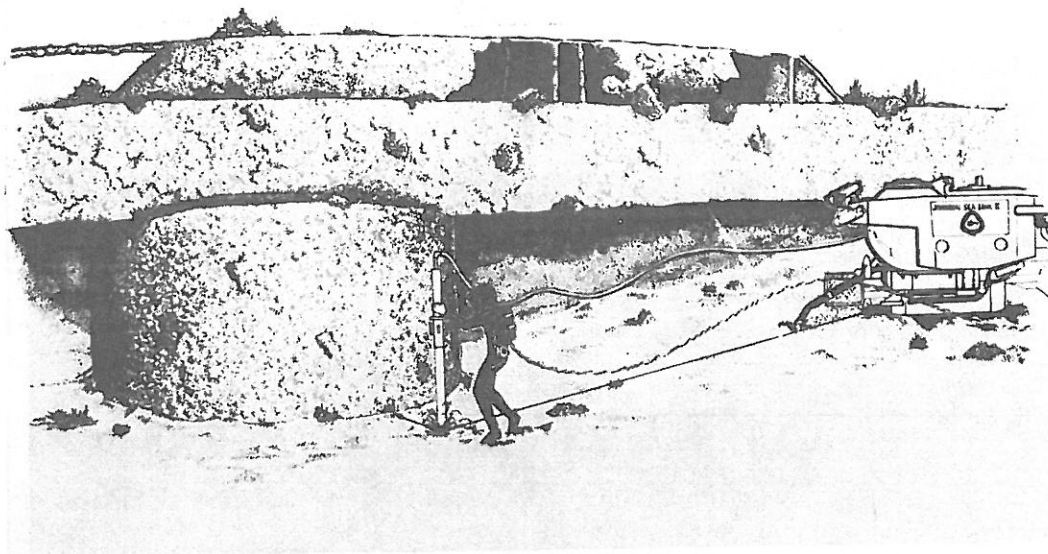
hull, the plating has deteriorated and to a large degree only the remains of the iron frame survive. Above the aft overhang the distinctive skeg and propeller shaft can be traced to the propeller and support yoke. The starboard quarter is buried to a depth of approximately 5 feet while the port quarter is supported more than 7 feet above the bottom by the turret. Inside the hull, steam propulsion and auxiliary machinery has survived intact and in a good state of preservation.



Natural deterioration of the plating exposing the framing of the starboard side of the lower hull.



Heavy marine fouling virtually obscures the propeller located immediately below the skeg which is the highest point on the site.

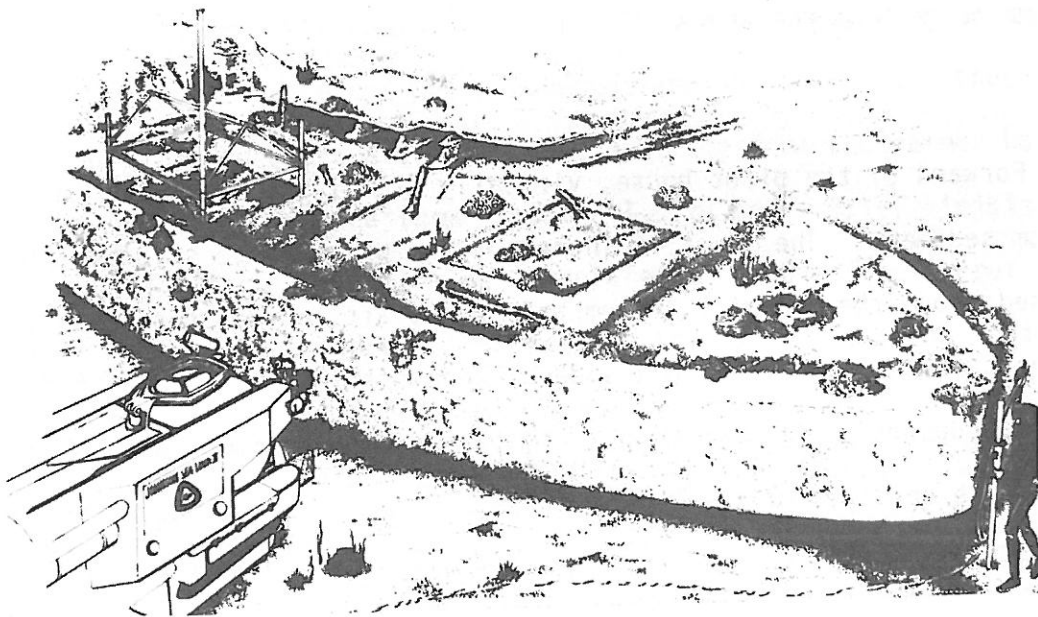


The turret, displaced during sinking, supports the port quarter of the inverted hull. (Drawing by Joan Jannaman)



A spoked wheel on one of two blower engines that were used to create a forced draft for the boilers can be seen from the port side. (Photography by Gordon Watts)

Forward of the midships bulkhead, damage to the lower hull is extensive. Although displaced sections of lower hull plating exist along the starboard side, no intact plating has been identified along the port side. In fact, much of the material in evidence along the port side has been identified as portions of the interior of the ship or equipment and fittings that were stowed below the crew's quarters, ward room, and galley. From the circular anchor well immediately aft of the bow, anchor chain leads over the hull and into the bottom sediment to the south. Aft of the anchor well, the deck beams that support the pilot house are visible. Although most of the armor belt on the starboard side is buried, its stable condition is evident at the bow and along the port side.



Damage to the lower hull forward of the midships bulkhead is extensive. (Drawing by Joan Jannaman)

Although incomplete, the data available indicates that the destruction of the lower hull forward of the midships bulkhead closely resembles that which results from an explosion of considerable force. As the site is located in the traditional shipping lane off the North Carolina coast, it is possible that the damage is the result of the effects of depth charge attacks during World War II. During the war enemy submarines frequently rested on the shallow bottom of the continental shelf during the day, surfacing at night to destroy merchant shipping along the coast. In an effort to prevent this, the Navy and Coast Guard made a practice of dropping depth charges on all sonar targets. Quite possibly one of these targets could have been the MONITOR. An explosion of this type in the area forward of the midships bulkhead would certainly have been capable of collapsing the already weakened hull of the vessel, and may also explain the distribution of hull plates yards from the wreck.

The Deck

Forward of the pilot house, virtually all of the deck is free of the bottom sediment. The lower 12 inches of the pilot house structure is exposed above the sediment. From this point aft to the present position of the turret, the entire port side of the vessel remains free of the bottom, supporting its own weight and that of the sediment accumulated within the confines of the hull. Aft of the engineering space, the deck has suffered extensive damage and considerably less of the deck there supports itself. The armor plating on the deck is separated from the deck planking in several areas, indicating advanced deterioration.

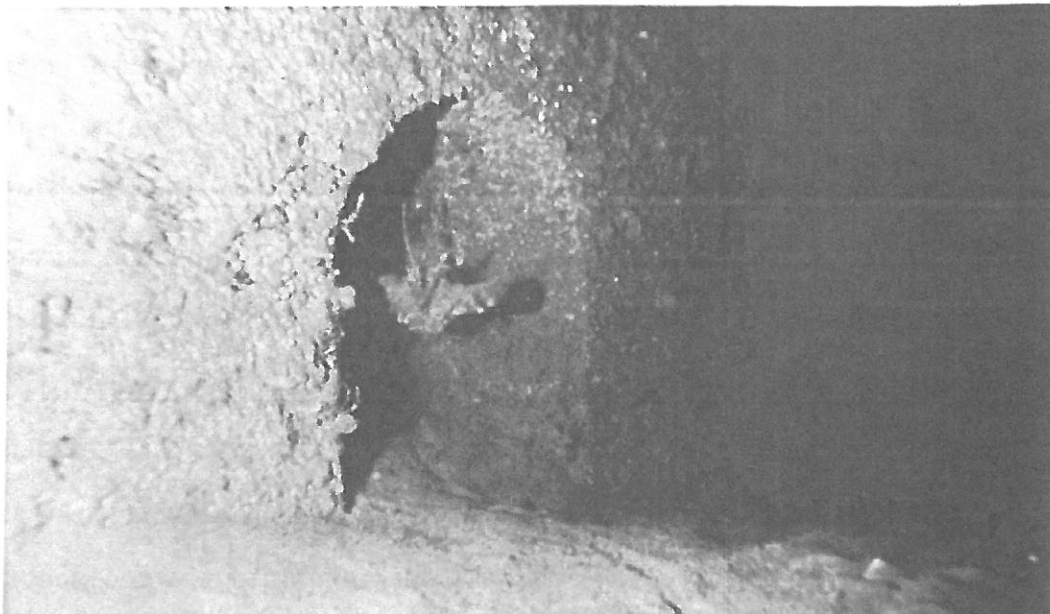
At both the wardroom and midships locations where the deck of the MONITOR is ruptured, material associated with the ship is washing out of

the wreck and onto the sediment below. The amount of material redistributed in this manner appeared to be augmented by pressure created by the current flowing over the wreck.

In the vicinity of the turret, deck plates have been dislodged by destruction associated with the stern of the vessel. Behind the turret the deck has, in fact, completely separated and armor plates hang suspended by deteriorated fittings. Forward of the turret, deck armor plates are generally in their original position and disturbance is slight. Below the position of the port boiler uptake hatch, a portion of the smokepipe breaching is protruding from the deck and into the sediment.

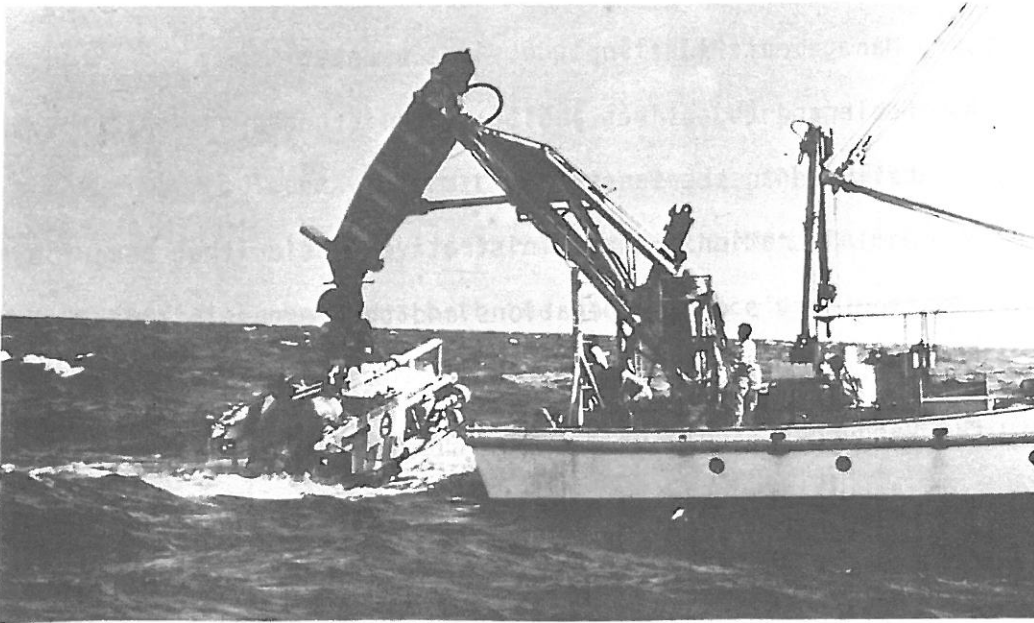
The Turret

Structurally the remains of the turret are in excellent condition. The gun ports are blocked by heavy wrought iron port stoppers that protected the ordnance and gun crew from hostile fire. Wood bucklers that covered the gun ports while underway are not present, although bolts that held them in place are intact and protrude from the rammer holes in the port stoppers. Aside from basketball-size dents still visible through the heavy fouling, little damage is apparent. Probing the turret floor with a 3-foot compressed gas probe during the 1979 expedition indicated that the wood floor of the structure has deteriorated but remains intact under a layer of sediment and coral. Examination of the structure produced no indication of access hatches in the base. A depression in the center of the turret floor indicated that the shaft upon which the turret rotated had dislodged as the turret and hull separated.

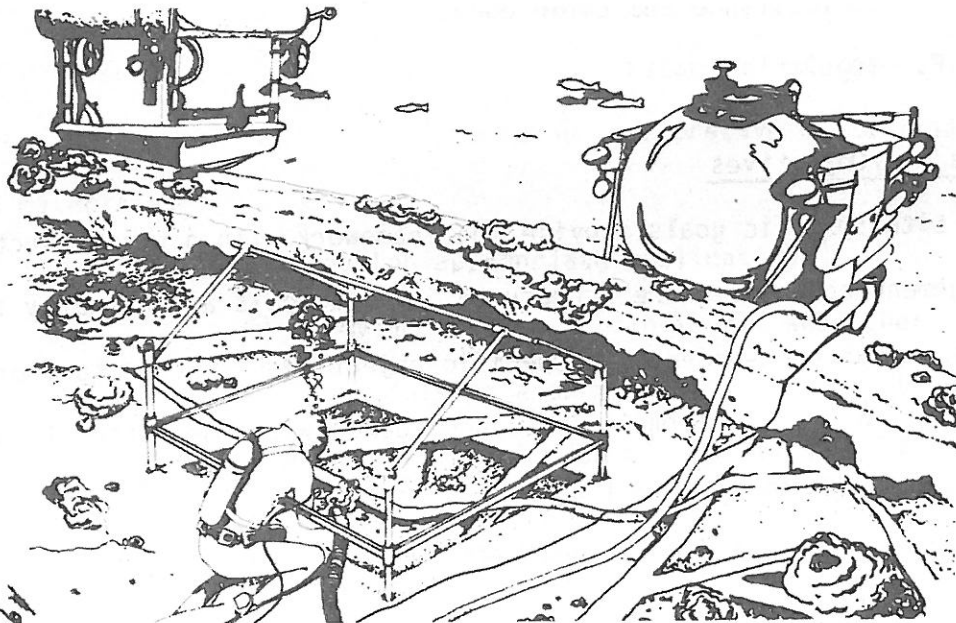


Gun ports, blocked by iron port stoppers, are visible above the sand bottom. (Photograph by Gordon Watts)

For a more detailed description of the MONITOR site, please refer to "Investigating the Remains of the U.S.S. MONITOR: A Final Report on 1979 Site Testing in the MONITOR Marine Sanctuary". The 1979 expedition was jointly sponsored by NOAA, the State of North Carolina, and Harbor Branch Foundation of Fort Pierce, Florida. The report was prepared by North Carolina's Underwater Archaeology Branch and is available upon request from NOAA's Sanctuary Programs Office in Washington, D. C.



R/V SEA DIVER was used to launch the submersible, JOHNSON SEA LINK, for research at the MONITOR site.



Sketch of 1979 site testing in the MONITOR Marine Sanctuary.
(Drawing by Joan Jannaman)

THE PLAN

Sanctuary Management Plans include six elements:

- A. Goals and Objectives - Site-specific goals and objectives tailored to the Sanctuary.
- B. Administration - An administrative section that describes the sanctuary's daily operations and the responsibilities of NOAA and the site manager.
- C. Resources Studies - A comprehensive resource studies plan that identifies data gaps, focuses on management related research, and assigns priorities.
- D. Interpretation - An interpretive plan designed to communicate the significance of the resources being protected.
- E. Surveillance and Enforcement
- F. Regulations

Goals and Objectives

Site-specific goals provide the framework within which sanctuary management activities are structured. These goals are normally long-term and somewhat open-ended with specific objectives tailored to short-term sanctuary needs and formulated in accordance with the National Marine Sanctuary Program's overall goals.

The U.S.S. MONITOR National Marine Sanctuary goals and objectives are:

Goal 1 - To protect and preserve the MONITOR and all of its associated records, documents and archaeological collection.

Objective - Design and implement a management plan with an effective administrative system to insure long-term protection of the site.

Goal 2 - To ensure the systematic scientific recovery and dissemination of historical and cultural information preserved at the MONITOR site; and to preserve and develop the physical remains of the MONITOR in a manner which appropriately enhances both the significance and interpretive potential of the warship remains.

Objective - Develop a resource studies plan for the MONITOR which establishes methods for:

- 1) Assimilating data.
- 2) Defining research alternatives.
- 3) Identifying future alternative management options for the site.

Goal 3 - To enhance public awareness and understanding of the MONITOR as a historic and cultural resource by providing interpretive educational services and materials.

- Objective -
- 1) Develop appropriate publications.
 - 2) Provide written, audiovisual, and other materials as appropriate to communicate the historical and cultural message of the MONITOR.
 - 3) Explore new communication approaches to bringing the MONITOR closer to the general public.

In reality, these three site-specific goals greatly overlap each other. Effective preservation can only be carried out through comprehensive

administration of the MONITOR site (see Protection and Preservation Section) and through proper conservation and curation of artifacts removed from the wreck. Care for MONITOR artifacts will be provided by NOAA, the North Carolina Division of Archives and History (DAH) and the Curator for the U.S. Navy (Appendix C: Policy for Management of MONITOR Collections).

Administration

NOAA and the State of North Carolina (N.C.) cooperatively manage the site of the U.S.S. MONITOR through an agreement which designates the N.C. Department of Cultural Resources, Division of Archives and History as on-site manager.

Under this Cooperative Agreement the State provides the following:

- A sanctuary coordinator position at the N.C. Underwater Archaeology Branch, Kure Beach, N.C.;
- On-site implementation of the management plan;
- An annual review, with the MONITOR Federal Review Committee and the State of North Carolina Technical Advisory Committee (TAC) of current research proposals and recommendations for refinement of the proposal review system;
- A review of and recommendations to NOAA for action on permit applications;
- A record of sanctuary research and status of ongoing projects;
- Coordination with the U.S. Coast Guard regarding surveillance and enforcement;
- Submission of periodic administrative reports to NOAA;

- Annual review of the MONITOR Sanctuary Management Plan with NOAA;
- Assistance in selection of qualified technical reviewers for research proposals and maintains communication among reviewers.

NOAA's Sanctuary Programs Office (SPO) is responsible for management of all of the National Marine Sanctuaries. SPO responsibilities for the MONITOR National Marine Sanctuary include:

- Development of sanctuary goals and objectives and the overall management plan;
- Supervision of on-site implementation of the management plan;
- Issuance of all Sanctuary permits;
- Funding of management plan implementation;
- Development and implementation of a policy for administering and managing the collection of artifacts from the MONITOR Sanctuary (Appendix C: Policy for Management of MONITOR Collections);
- Annual review and revision of the sanctuary management plan to include new research data that affect management decisions.

In addition, NOAA and the Department of the Navy signed a Memorandum of Understanding (MOU) to the effect that the Curator for the Navy will provide curatorial services for the artifacts recovered from the MONITOR National Marine Sanctuary.

Under this MOU the Curator for the U.S. Navy:

- Provides curatorial services required for the proper management and control of the artifacts recovered from the MONITOR Sanctuary (Appendix C: Policy for Management of MONITOR Collections).
- Develops and maintains a continuous register of the MONITOR collections.

- Manages loans, exhibitions and storage of the MONITOR artifacts.
- Assists NOAA in the review of applications requesting loan of MONITOR artifacts.

As a vital part of all management activities, interagency cooperation will play a major role in this plan. NOAA will ensure coordination and cooperation among all agencies involved in MONITOR Sanctuary management activities, especially administration and enforcement.

NOAA will maintain an ad hoc Federal Committee consisting of representatives from the U.S. Coast Guard; Department of the Interior; U.S. Navy; the Smithsonian Institution; National Trust for Historical Preservation; and the Advisory Council for Historic Preservation for advice and technical assistance concerning:

- Design and implementation of MONITOR research projects;
- Review of research permits; and,
- Setting priorities for management goals, objectives and tasks.

Resources Studies Plan

The wreckage and associated artifacts that the remains of the MONITOR preserve represent historical and cultural data as well as a rare collection of physical evidence from a dramatic period in American history. The psychological impact of the MONITOR's successful engagement with the VIRGINIA swept the warship from relative obscurity to a position of international attention. The MONITOR's celebrated "victory" at Hampton Roads assured the naval vessel a reputation achieved by no other ship of the United States Navy. The past century has by no means diluted this interest and attention. Properly investigated, preserved, and displayed, the MONITOR can become an unparalleled national resource offering scientific, historical, educational and recreational opportunities for American people. NOAA, together with the North Carolina sanctuary on-site manager, contributes toward public understanding of the contemporary research conducted at the sanctuary through publication and dissemination of research findings.

NOAA generally will not provide financial support for research expeditions in the MONITOR Sanctuary. However, availability of funds permitting, NOAA will consider proposals for limited assistance towards some research-related activities, such as financing analysis of data or cost of publications.

Research is essential to the acquisition of data that contribute directly to resolving management, interpretation, protection, and preservation problems in the MONITOR Sanctuary. Therefore, the research goal of this management plan outlines research objectives and tasks that serve as a guide to the systematic development of research projects that

yield data of the highest priority. Persons interested in developing alternative proposals can receive technical assistance from NOAA and the North Carolina site manager. At the present time NOAA will encourage and give highest priority to research proposals that contribute to responsible option assessment and yield the following types of information:

- Historical data through archival records and on-site investigation to enable development of comprehensive depiction of the MONITOR as the vessel existed on December 31, 1862.
- Archaeological data that contributes towards the development of an adequate model of the nature and disposition of the wreck and its associated artifacts through application of systematic principles of underwater archaeology.
- Environmental-oceanographic data that contribute towards a better understanding of the effects the environment has on the preservation of the wreck in situ and on any on-site activities.
- Engineering studies to determine missing design and construction information for the vessel, methods for deployment of equipment and personnel on deepwater archaeological sites, and development of predictive models on the effects of alternative recovery methods for the wreck or its selected features.
- Conservation data to identify preservation problems with the wreck in situ and development of predictive models on the problems encountered with recovery, stabilization and display of the wreck and its associated artifacts.

- Public benefit through research and educational activities including publications, films, photographs, public lectures and museum exhibits. Public educational efforts should provide the means to communicate the sanctuary's rules and regulations; present to the public the history and nature of scientific research activities on the MONITOR; and make available research data on the MONITOR to the scientific community at large.

All future activities in the MONITOR Sanctuary involving potential recovery of material from the site will include provisions for cleaning, conservation, and storage of the material, including adequate staff, facilities, equipment, supplies, and budget. In addition, due to the historical importance of the vessel and its value as a unique cultural resource, every effort will be made to provide public access to any recovered material in the form of exhibits.

Management of the MONITOR Sanctuary involves a continuous process of refining management decisions as research provides new baseline data that contribute toward accomplishing the sanctuary objectives. Consequently, a primary consideration of all agencies and parties interested in the MONITOR should be to investigate and understand the the environment, condition and structure of the wreck and make their analyses available to the public and scientific community.

This MONITOR Sanctuary Management plan serves to assist experts in their respective fields in planning research, and once accumulation and analysis of sufficient information on the MONITOR has been accomplished, will enable NOAA to evaluate more fully future research and/or recovery options. From this process a decision relating to the MONITOR's proper

disposition will emerge that assures preservation of the values protected by the Sanctuary.

The current Resources Studies Plan lists those priority projects underway or planned for FY 82; and identifies those already suggested for the future, provided that funds are available and adequate interest is demonstrated by the public and the research community. Many of these studies are interrelated and could be conducted simultaneously. The current Resource Studies list does not preclude the introduction of additional studies.

List of Resource Studies

1. Determination of the rate of deterioration of the remains of the MONITOR.
2. Analysis of water conditions and sea state.
3. Study of currents, visibility, erosion, depositional patterns, and the nature of the water column in the MONITOR Sanctuary.
4. Surface and sub-surface sediment studies.
5. Compile a catalog of existing plans and drawings of the MONITOR. Completion of a comprehensive set of engineering drawings from the above catalog, and determination of the necessary information that exists only at the site.
6. On-site engineering and structural data collection.
7. Archival study and location of the ship's contents.
8. An engineering structural assessment of the MONITOR.
9. On-site collection of ships structure data.
10. Produce a photographic index of 1977 NOAA - HARBOR BRANCH FOUNDATION explorations of the MONITOR site.
11. Conduct a photogrammetric analysis of existing stereo photography.
12. Establish an on-site provenience system.
13. Continued site definition.
14. On-site test excavations.
15. Location, documentation and recovery of the anchor.
16. Investigation of the interior of the turret.
17. Develop a conservation plan, including procedures, and facilities necessary for conservation, curation and display of material recovered from the wreck.

Resource Studies

1. Study Title: Determination of the rate of deterioration of the remains of the MONITOR.

Information Needs: To determine the current rate of natural deterioration of the wreck to assist in the evaluation of management options.

2. Study Title: Analysis of water conditions and sea state.

Information Needs: A survey of the existing weather and environmental records pertaining to the Hatteras area and the development of a comprehensive model of the annual weather conditions will be an invaluable aid to on-site research.

3. Study Title: Study of currents, visibility, erosion, depositional patterns, and the nature of the water column in the MONITOR Sanctuary.

Information Needs: An environmental definition of the MONITOR site is necessary for two reasons. First, to determine the effect of the environment on the wreck, and second, to assist in the planning and conduct of on-site research. The deployment and maintenance of current meter arrays, the collection of water column analysis data (e.g., Salinity, Temperature, Depth [STD], oxygen content, suspended particulate matter) and the collation of this data will assist in determining the conditions encountered during on-site archaeological research.

4. Study Title: Surface and sub-surface sediment studies.

Information Needs: Analysis of the character of the sediments will assist in determining methods and techniques for use in large-scale excavation at the site.

5. Study Title: Compile a catalog of existing plans and drawings of the MONITOR (completed 1981).

Information Needs: Completion of a comprehensive set of engineering drawings from the above catalog, and determination of the necessary information that exists only at the site. (Completion date: January 30, 1982. Contracted to: Ernest W. Peterkin, Camp Springs, Maryland.)

Today the remains of John Ericsson's "Cheesebox-on-a-Raft" represents a unique legacy from the past. The shipwreck and its contents preserve an irreplaceable historical record and represent a monument to the American naval tradition the MONITOR helped to create. There is no accurate set of plans of the MONITOR as it existed on December 31, 1862. Through studies of contemporary drawings and on-site research it will be possible to develop a comprehensive depiction of the MONITOR. The drawings that are produced by these studies will be invaluable for future historical, archaeological and engineering assessments of the wreck.

Under previous contracts, an inventory of historical source engineering drawings of the MONITOR has been compiled. A collection of archival quality reproductions of the most valuable of these is currently underway. Data from this collection will be utilized to permit the compilation of a series of comprehensive engineering plans designed to illustrate the MONITOR as the vessel existed in 1862. Such plans will be essential for the development of archaeological and historical research proposals at the worksite, production of models of the vessel for engineering assessment and educational displays and programs. The resulting plans will be published along with an inventory of the source materials identified during previous research.

6. Study Title: On site collection of ships structure data.

Information needs: To verify and/or establish the location and nature of internal and external features that cannot be documented through historical or archival research.

7. Study Title: Archival study and location of the ship's contents.

Information Needs: To accurately assess the archaeological record preserved at the site it will be necessary to determine the nature, extent and location of the ship's stores fittings, equipment, ordnance and personal effects aboard the MONITOR at the time of its sinking.

8. Study Title: An engineering structural assessment of the MONITOR
(Completion date: December, 1981. Contracted to:
Dr. Bruce Muga, 4110 King Charles Road, Durham,
North Carolina.)

Information Needs: Before plans for the recovery of the MONITOR can be considered, it will be necessary to identify and define specific on-site engineering data that must be collected and analyzed to determine feasible, suitable and acceptable recovery options. These data will be utilized to determine the techniques for the recovery of the MONITOR or portions of the vessel structure. Engineering studies and on-site data collection will be designed to assess the nature and extent of structural damage to the hull.

9. Study Title: On-Site engineering and structural data collection.

Information Needs: To perform the necessary in situ measurements to answer the questions generated by the above engineering assessment.

10. Study Title: Produce a photographic index of 1977 NOAA - HARBOR
BRANCH FOUNDATION explorations of the MONITOR site.
(Completed: 1981. Contracted to: Edward M. Miller,
Annapolis, Maryland.)

Information Needs: To provide researchers with a catalog of existing photographs that can be used for historical research, and the planning and operation of future research at the site.

11. Study Title: Conduct a photogrammetric analysis of existing stereo photography .

Information Needs: To generate horizontal and vertical profiles and produce a photomosaic of the wreck site.

12. Study Title: Establish an on-site provenience system.

Information Needs: To tie additional research to a master grid, the placement of a series of datum casings, initiated during the 1979 expedition to the site, should be completed.

13. Study Title: Continued site definition.

Information Needs: To produce an acoustic, magnetic, bathymetric, seismic and videographic record of the site that will define bottom and sub-bottom conditions, and to locate and identify material associated with the wreck but existing outside the confines of the hull remains.

14. Study Title: On-site test excavations.

Information Needs: To evaluate the nature and extent of the archaeological record, test excavations both inside and outside the confines of the hull could generate historical, engineering and environmental data that would expand knowledge of the wreck site and its environment.

15. Study Title: Location, documentation and recovery of the anchor.

Information Needs: Recovery of the anchor will provide archaeologists with insight into the methods and techniques necessary to locate, document, recover and conserve large objects associated with the MONITOR site, information on the condition of other similar material at the site and a study of sedimentation in the MONITOR Sanctuary since December 31, 1862.

16. Study Title: Investigation of the interior of the turret.

Information Needs: To accurately establish the contents and conditions of the turret for the development and assessment of turret recovery operations.

17. Study Title: Develop a conservation plan, including procedures, and facilities necessary for conservation, curation and display of material recovered from the wreck, for each of the following options.

- a) Continued limited collection of small artifacts.
- b) Partial or selected recovery of portions of the wreck.
- c) Complete recovery of the wreck.

Information Needs: To insure that all material recovered from the site will undergo proper conservation and to provide a facility for continued conservation and display of the artifacts.

Protection and Preservation Tasks

1. Study Title: Feasibility study for transmission of a live television picture from the MONITOR Sanctuary to surveillance, research and visitor centers on shore. (Completion date: December 1981. Contracted to: Southwest Research Institute, San Antonio, Texas.)

Information Needs: Establish feasibility of on site-surveillance and recording of scientific and monitoring observations and explore possibilities to bring the MONITOR to the public via PBC, Cable T.V., etc.

List of Interpretive Program

A. Publications

1. Newsletter
2. "Information for Potential Researchers"
3. Copies of conference papers
4. Expedition reports, operations manuals, and analytical and technical reports

B. Materials oriented toward teaching institutions

1. MONITOR Workbook for middle or secondary school levels
2. "Diver's Orientation and Introduction of the MONITOR"
3. History of the MONITOR

C. Multimedia material oriented toward reaching general public through film, videotapes, lectures, artifact loans (already existing)

1. Feasibility study for TV broadcast
2. Traveling MONITOR exhibit
3. Engineering model of wreck in situ
4. Scientific documentary film

Interpretive Programs

The interpretive programs for the U.S.S. MONITOR include the following elements:

A. Publications

1. NOAA, DAH, and other interested parties will compile and distribute a MONITOR quarterly newsletter describing the current status of research activities in the sanctuary and selected episodes from the MONITOR's history.
2. DAH and NOAA will develop and distribute a pamphlet, on request, entitled "Information for Potential Researchers" describing the MONITOR Sanctuary rules and regulations and research permit procedures.
3. NOAA and DAH will develop and/or make available reprints or copies from professional conference papers regarding the MONITOR and/or underwater archaeology.
4. NOAA and DAH will develop and/or make available MONITOR expedition reports, operations manuals and analytical and technical reports.

B. Material oriented toward teaching institutions

1. Study Title: To develop a MONITOR workbook for use at the middle and secondary school levels.

Information Needs: To facilitate our country's youth in developing an appreciation of the role the MONITOR played in shaping the American naval tradition we know today. The student workbook will be devoted to the MONITOR and will be generally

consistent with the objectives of the national curricula regarding study of the Civil War Period. The workbook will be readily adaptable to either the middle or secondary school levels.

2. Study Title: To develop a concise curriculum guide entitled "Divers Orientation and Introduction of the MONITOR".

Information Needs: To develop a program to introduce and instruct divers prior to their research at the MONITOR Sanctuary regarding safety procedures, the physical arrangements of the wreck, and detailed descriptions of locations of doors, hatches, ladders, and the probable locations of the 1500 classes of MONITOR artifacts.

3. Study Title: To write, compile and edit a comprehensive text on the history of the MONITOR.

Information Needs: To provide to the public an authoritative work on the MONITOR. Authorities in the naval historical field will be requested to assist NOAA in the compilation of bibliographical and textual information for the work. The book will be an anthology of the stages of the MONITOR's life, from her conception by John Ericsson to her management as a National Marine Sanctuary by NOAA in the 1980's. Specific needs will be:

- Location of suitable text authors.
- Compilation of bibliographical and textual data.
- Determination of suitable publication format.

C. Multi-media material oriented toward reaching the general public to make known the history of the MONITOR and the information generated from recent scientific research.

-NOAA has available on request a 28 minute, color/sound, 16mm movie "Down to the MONITOR" describing through illustration the famous battle, and through recent filming the discovery of MONITOR artifacts.

-NOAA and DAH will arrange on request to make available videotapes with sound of the entire 1979 MONITOR expedition jointly sponsored by NOAA, DAH, and Harbor Branch Foundation of Florida.

-NOAA and DAH provide lectures on the MONITOR sanctuary on request at professional conferences, academic seminars, and other public and scientific programs.

-NOAA and the Curator of the U.S. Navy will make arrangements on written request to make available for temporary loan artifacts for display from the MONITOR collection.

1. Study Title: Feasibility study for transmission of a live television picture from the MONITOR Sanctuary to surveillance, research and visitor centers on shore.

Information Needs: Establish feasibility of on-site surveillance and recording of scientific and monitoring observation

and explore possibilities to bring the MONITOR to the public via PBC, Cable T.V., etc.

2. Study Title: Develop a traveling MONITOR museum exhibit.

Information Needs: Since the MONITOR is remote and its recovered artifacts few, a traveling museum exhibit would bring the MONITOR to the American people and explain its importance as an irreplaceable cultural resource.

3. Study Title: Construct a large scale engineering model of the MONITOR wreck in situ with emphasis on structure displacement and bottom topography.

Information Needs: To accurately represent the present arrangement of the MONITOR's remains and to assist investigators in the planning and performance of safe and efficient on-site research activities.

4. Study Title: Produce a professional scientific documentary film of the MONITOR wreck.

Information Needs: To provide the public with an authoritative, entertaining medium with which to communicate the MONITOR's historical and cultural value. Persons knowledgeable in the MONITOR, such as those who have contributed to the text (see Study Title B.3) will be requested to assist NOAA's Public Affairs Office in producing an accurate documentary film.

Regulations

After Sanctuary designation in January 1975, to ensure public awareness of Federal Laws protecting the MONITOR, NOAA published rules and regulations in the Federal Register (Appendix A). These regulations allow transit of surface vessels through the MONITOR Sanctuary, but prohibit activities such as anchoring, salvage and recovery, diving, dredging, detonation of explosives, drilling or coring, cable laying, trawling, and discharging waste materials. Diving that is consistent with the MONITOR Sanctuary goals may be permissible. However, such activity requires a written permit from NOAA for the purpose of protecting the wreck, assurance of optimum safety procedures, and maintaining a record of the sanctuary's public use. NOAA reserves the rights both to have a representative present during any activity within the sanctuary and to receive a copy of any photographs and/or videotapes that are taken by the permitted researcher (See Appendix B, Research Permits).

Surveillance and Enforcement

NOAA seeks to ensure adequate surveillance and enforcement activities for each designated sanctuary. Such activities are designed on a site-specific basis. In Federal waters, the U.S. Coast Guard (USCG) is the primary enforcement agency and, depending upon the need at any given site, the USCG will enforce sanctuary regulations as a part of their routine surveillance activities.

Surveillance and enforcement of regulations for the U.S.S. MONITOR National Marine Sanctuary are carried out by the USCH in cooperation with NOAA and the onsite manager (North Carolina Division of Archives and

History). The Coast Guard will report to NOAA any sightings of vessels at the site which appear to be there for purposes not permitted by sanctuary regulations.

Specifically the responsibilities for surveillance and enforcement are as follows:

A. USCG:

- Conducts visual surface and aerial surveillance of the MONITOR National Marine Sanctuary during routine patrols.
- Investigates possible violations of the sanctuary rules and regulations (see Appendix E, Violation Procedure).
- Reports to NOAA suspected or actual violations of the Sanctuary rules and regulations.

B. NOAA, On-site Manager, and Commander, of the Fifth Coast Guard District, Portsmouth, Virginia.

- Periodically review effectiveness of sanctuary surveillance and enforcement system.

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APPENDICES

APPENDIX A: RULES AND REGULATIONS

MONDAY MAY 19, 1975
WASHINGTON, D.C.

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Part 1

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

MONITOR MARINE SANCTUARY
Final Regulations

Chapter IX--NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE
PART 924---MONITOR MARINE SANCTUARY

FINAL REGULATIONS

On January 30, 1975, the Secretary of Commerce designated as a marine sanctuary an area of the Atlantic Ocean around and above the submerged wreckage of the Civil War ironclad MONITOR pursuant to the authority of Section 302 (a) of the Marine Protection Research and Sanctuaries Act of 1972 (86 Stat 1052, 1061, hereafter the Act). The sanctuary area (hereafter the Sanctuary) is about 16.10 miles south-southeast of Cape Hatteras (North Carolina) Light.

Section 302(f) of the Act directs the Secretary to issue necessary and reasonable regulations to control any activities permitted within a designated marine sanctuary. This section also provides that no permit, license, or other authorization issued pursuant to any other authority shall be valid unless the Secretary shall certify that the permitted activity is consistent with the purposes of Title III of the Act ("Marine Sanctuaries"); and that it can be carried out within the regulations promulgated under section Section 302(f).

The authority of the Secretary to administer the provisions of the Act has been delegated to the Administrator, National Oceanic and Atmospheric Administration, U.S. Department of Commerce (hereafter the Administrator, 39 FR 10255, March 19, 1974).

On February 5, 1975, the Administrator published in the Federal Register interim regulations applicable to the MONITOR Marine Sanctuary (40 FR 5347), and invited comments on these regulations until March 7, 1975. Comments which have been received have suggested six changes in the regulations as follows:

1. That Section 924.2, the description of the Sanctuary, be somewhat shortened and revised to read:

The Sanctuary consists of a vertical water column in the Atlantic Ocean one mile in diameter extending from the surface to the seabed, the center of which is at 35°00'23" north latitude and 73°24'32" west longitude.

2. That Section 924.3, which prohibits "bottom anchoring" in the Sanctuary, be revised to read:

Anchoring in any manner, stopping, remaining, or drifting without power at any time:

3. That Section 924.3(i), which prohibits the "discharging of waste material" into the waters of the Sanctuary, be revised to read:

Discharging waste material into the water in violation of any Federal statute or regulation.

It was stated that this change was felt to be desirable because of the breadth of the original language, and the difficulty of enforcing a prohibition which could be constructed to extend to routine operational discharges from vessels—such as bilge, sanitary and galley wastes—which discharges would have no adverse impact on the MONITOR.

4. That Section 924.4, which lists penalties for the commission of prohibited acts within the Sanctuary, be revised to read:

Section 303 of the Act authorizes the assessment of a civil penalty of not more than \$50,000.00 against any citizen of the United States for each violation of any regulation issued pursuant to Title III of the Act, and further authorizes proceedings in rem against any vessel used in violation of the penalty described above, See also 15 CFR 922 (published at 39 FR 23254 23257, June 27, 1974), for details applicable to any instance of a violation of these regulations.

Essentially this change substitutes "the penalty described above" for "Any such regulations" at the end of the first sentence of the interim regulations: and rephrases the second and third sentences without substantially changing their meaning.

5. That so much of the last part of Section 924.5 as provides that "except that, no permit is required for the conduct of any activity immediately necessary in connection with an air or marine casualty" be revised to read:

"except that, no permit is required for the conduct of any activity necessary for the protection of life, property or the environment."

The suggested change would appear to add an environmental casualty, such as oil spill, to the air and/or marine casualties already contemplated by the regulation.

6. That Section 924.7, having to do with certification procedures, be revised so as to require any Federal agency which, as of the effective date of the regulations, has authorized any prohibited activity in the Sanctuary, be required to notify the Administrator of that fact in writing. The change was from "activity," as stated in the interim regulations, to "prohibited activity". It was stated that the Secretary's concern should be with any prohibited activity, not with an activity not prohibited.

Except as noted below, and for the reasons there set out, the Administrator has decided to accept these suggested changes, and they have been incorporated into the final regulations. With regard to the suggested changes in Section 924.4 (paragraph 4. above) it is felt that the substitution of "penalty" for "regulations" somewhat misstates the thought involved since the violation in question is of the regulations, not of the penalty. Otherwise, the suggested changes do not alter the meaning of the interim language. Therefore Section 924.4 will be retained in its present form. With regard to the suggested change in Section 924.5 (paragraph 5, above), it is felt that there must be an immediate and urgent need for the activity if it is to be conducted without a permit. Therefore the words "immediately and urgently" will be added before "necessary". At the same time, it is felt that a permit should be required for any activity to be conducted in a sanctuary pertaining to an air or marine casualty already passed, in regard to which there is no need for immediate entry into the sanctuary, such as in relation to salvage or recovery operations. Therefore Section 924.5 (a) (2) has been appropriately modified. Finally the Administrator felt it desirable to provide for the extension of the various time limits prescribed in Section 924.3 for good cause shown. This has been done by the addition of a new paragraph (e).

There having been no other comments, and the Administrator being of the view that no additional changes in the regulations are necessary at this time, there are published herewith final regulations pertaining to the MONITOR Marine Sanctuary to become effective May 19, 1975.

15 CFR Part 924 is revised as follows:

Sec.	
924.1	Authority.
924.2	Description of the Sanctuary.
924.3	Activities Prohibited Within the Sanctuary.
924.4	Penalties for Commission of Prohibited Acts.
924.5	Permitted Activities.
924.6	Permit Procedures and Criteria.
924.7	Certification Procedures.
924.8	Appeals of Administrative Action.

AUTHORITY: Secs. 302(f), 302(g), 303 Marine Protection Research and Sanctuaries Act of 1972.

924.1 Authority.

The Sanctuary has been designated by the Secretary of Commerce pursuant to the authority of Section 302 (a) of the Act. The following regulations are issued pursuant to the authorities of Sections 302 (f), 302 (g) and 303 of the Act.

924.2 Description of the Sanctuary

The Sanctuary consists of a vertical water column in the Atlantic Ocean one mile in diameter extending from the surface to the seabed, the center of which is at 35°00'23" north latitude and 75°24'32" west longitude.

924.3 Activities prohibited within the Sanctuary.

Except as may be permitted by the Administrator, no person subject to the jurisdiction of the United States shall conduct, nor cause to be conducted, any of the following activities in the Sanctuary:

- (a) anchoring in any manner, stopping, remaining, or drifting without power at any time;
- (b) any type of subsurface salvage or recovery operation;
- (c) any type of diving whether by an individual or by a submersible;
- (d) lowering below the surface of the water any grappling, suction, conveyor, dredging or wrecking device;
- (e) detonation below the surface of the water of any explosive or explosive mechanism;
- (f) seabed drilling or coring;
- (g) lowering, laying, positioning or raising any type of seabed cable or cablelaying device;
- (h) trawling; or
- (i) discharging waste material into the water in violation of any Federal statute or regulation.

924.4 Penalties for commission of prohibited acts.

Section 303 of the Act authorizes the assessment of a civil penalty of not more than \$50,000 for each violation of any regulation issued pursuant to Title III of the Act, and further authorizes a proceeding in rem against any vessel used in violation of any such

regulation. Details are set out in Subpart (D) of Part 922 of this Chapter (39 FR 23254, 23257, June 27, 1974). Subpart (D) is applicable to any instance of a violation of these regulations.

924.5 Permitted Activities.

Any person or entity may conduct in the Sanctuary any activity listed in 924.3 of this Part if: (a) such activity is either (1) for the purpose of research related to the MONITOR, or (2) pertains to salvage or recovery operations in connection with an air or marine casualty; and (b) such person or entity is in possession of a valid permit issued by the Administrator authorizing the conduct of such activity; except that no permit is required for the conduct of any activity immediately and urgently necessary for the protection of life, property or the environment.

924.6 Permit Procedures and Criteria.

(a) Any person or entity who wishes to conduct in the Sanctuary an activity for which a permit is authorized by Section 924.5 (hereafter a permitted activity) may apply in writing to the Administrator for a permit to conduct such activity citing this section as the basis for the application. Such application should be made to the Administrator, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Washington, D.C. 20230. Upon receipt of such application the Administrator shall request and such person or entity shall supply to the Administrator such information and in such form as the Administrator may require to enable him to act upon the application.

(b) In considering whether to grant a permit for the conduct of a permitted activity for the purpose of research related to the MONITOR, the Secretary shall evaluate such matters as (1) the general professional and financial responsibility of the applicant; (2) the appropriateness of the research method(s) envisioned to the purpose(s) of the research; (3) the extent to which the conduct of any permitted activity may diminish the value of the MONITOR as a source of historic, cultural, aesthetic and/or maritime information; (4) the end value of the research envisioned; and (5) such other matters as the Administrator deems appropriate.

(c) In considering whether to grant a permit for the conduct of a permitted activity in the Sanctuary in relation to an air or marine casualty, the Administrator shall consider such matters as (1) the fitness of the applicant to do the work envisioned; (2) the necessity of conducting such activity; (3) the appropriateness of any activity envisioned to the purpose of the entry into the Sanctuary; (4) the extent to which the conduct of any such activity may diminish the value of the MONITOR as a source of historic, cultural, aesthetic and/or maritime information; and (5) such other matters as the Administrator deems appropriate.

(d) In considering any application submitted pursuant to this Section the Administrator may seek and consider the views of any person or entity, within or outside of the Federal Government, as he deems appropriate: except that he shall seek and consider the views of the Advisory Council on Historic Preservation.

(e) The Administrator may, in his discretion grant a permit which has been applied for pursuant to this Section, in whole or in part, and subject to such condition(s) as he deems appropriate except that the Administrator shall attach to any permit granted for research related to the MONITOR the condition that any information and/or artifact(s) obtained in the research shall be made available to the public. The Administrator may observe any activity permitted by this Section and/or may require the submission of one or more reports of the status or progress of such activity.

(f) A permit granted pursuant to this Section is nontransferable.

(g) The Administrator may amend, suspend or revoke a permit granted pursuant to this Section in whole or in part, temporarily or indefinitely if, in his view the permit holder (hereafter the Holder) has acted in violation of the terms of the permit; or the Administrator may do so for other good cause shown. Any such action shall be in writing to the Holder, and shall set forth the reason(s) for the action taken. Any Holder in relation to whom such action has been taken may appeal the action as provided in 924.8 of this Part.

924.7 Certification Procedures.

Any Federal agency which, as of the effective date of these regulations, already has permitted, licensed or otherwise authorized any prohibited activity in the Sanctuary shall notify the Administrator of this fact in writing. The writing shall include a reasonably detailed description of such activity, the person(s) involved, the beginning and ending dates of such permission the reason(s) and purpose(s) for same and a description of the total area affected. The Administrator shall then decide whether the continuation of the permitted activity, in whole or in part, or subject to such condition(s) as he may deem appropriate is consistent with the purposes of Title III of the Act and can be carried out within these regulations. He shall inform the Federal agency of his decision in these regards and the reason(s) therefore, in writing. The decision of the Secretary made pursuant to this Section shall be final action for the purpose of the Administrative Procedure Act.

924.8 Appeals of Administrative Action.

(a) In any instance in which the Administrator, as regards a permit authorized by, or issued pursuant to, this Part: (1) denies a permit (2) issues a permit embodying less authority than was requested: (3) conditions a permit in a manner unacceptable to the applicant: or (4) amends, suspends, or revokes a permit for a reason other than the violation of regulations issued under this Part, the applicant or the permit holder,

as the case may be (hereafter the Appellant), may appeal the Administrator's action to the Secretary. In order to be considered by the Secretary, such appeal shall be in writing, shall state the action(s) appealed and the reason(s) therefore; and shall be submitted within 30 days of the action(s) by the Administrator to which the appeal is directed. The Appellant may request a hearing on the appeal.

(b) Upon receipt of an appeal authorized by this Section, the Secretary may request, and if he does, the Appellant shall provide such additional information and in such form as the Secretary may request in order to enable him to act upon the appeal. If the Appellant has not requested a hearing the Secretary shall decide the appeal upon (1) the basis of the criteria set out in Section 924.6(b) or Section 924.6(c) of this part, as appropriate (2) information relative to the application on file in NOAA (3) information provided by the Appellant, and (4) such other considerations as he deems appropriate. He shall notify the Appellant of his decision, and the reason(s) therefore in writing within 30 days of the date of his receipt of the appeal.

(c) If the Appellant has requested a hearing the Secretary shall grant an informal hearing before a Hearing Officer designated for that purpose by the Secretary after first giving notice of the time, place, and subject matter of the hearing in the FEDERAL REGISTER. Such hearing shall be held no later than 30 days following the Secretary's receipt of the appeal. The Appellant and any interested person may appear personally or by counsel at the hearing, present evidence, cross-examine witnesses, offer argument and file a brief. Within 30 days of the last day of the hearing, the Hearing Officer shall recommend in writing a decision to the Secretary based upon the considerations outlined in paragraph (b) of this Section and based upon the record made at the hearing.

(d) The Secretary may adopt the Hearing Officer's recommended decision in whole or in part, or may reject or modify it. In any event the Secretary shall notify the Appellant of his decision and the reason(s) therefore, in writing within 15 days of his receipt of the recommended decision of the Hearing Officer. The Secretary's action, whether without or after a hearing as the case may be, shall constitute final action for the purposes of the Administrative Procedure Act.

(e) Any time limit prescribed in this Section may be extended by the Secretary for good cause, either upon the Secretary's own motion and upon written notification to an Appellant stating the reason(s) therefore, or upon the written request of an Appellant to the Secretary stating the reason(s) therefore, except that no time limit may be extended more than 30 days.

R. L. CARNAHAN.
Acting Assistant Administrator
for Administration
FR Doc. 75-13009 Filed 5-16-75;8:45am

APPENDIX B: RESEARCH PERMITS

Scientific and archeological research is encouraged in the MONITOR Marine Sanctuary. Written application for research permits should be submitted to:

Assistant Administrator
Office of Coastal Zone Management
3300 Whitehaven Street, NW
Washington, D.C . 20235

(202) 634-4236

The permits are issued in accordance with Title III of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1051; 16 USC 1431-1434) and regulations under 15 CFR Parts 922, 924.

Research proposals should be organized to include a table of contents, abstract, bibliography, the background (what events led to this proposal), research design and description, a description of planned data management techniques, and qualifications of research personnel. The proposal also must include a description of the expected impact of the proposed research on site, the time required for the research (including duration of in-the-field time), and expected date of submission of the draft and final reports. If the research includes the recovery of artifacts, a detailed plan must be submitted which includes analysis, conservation, funding commitments, and a statement of where field and lab records will be curated.

NOAA has established a system by which proposals for research within the MONITOR Marine Sanctuary can be reviewed and evaluated by members of the scientific community and appropriate Federal agencies before NOAA decides to issue a permit. A Memorandum of Agreement assigns to the State

of North Carolina the responsibility for administering the review process for research proposals as well as for assisting interested scientists in the development of research proposals.

For specific details on the review procedure, refer to the MOA in Appendix D. Anyone needing assistance in preparing research proposals can contact the North Carolina Division of Archives and History. Initial inquiries should be made at least twelve weeks before the January 1 deadline. Address inquiries to:

MONITOR Research Review Coordinator
State of North Carolina
Department of Cultural Resources
Division of Archives and History
109 East Jones Street
Raleigh, North Carolina 27611

(919) 733-7305 or (919) 458-9042

APPENDIX C: POLICY FOR MANAGEMENT OF MONITOR COLLECTIONS

INTRODUCTION

NOAA has responsibility for managing and preserving recovered collections generated from the research at the MONITOR Marine Sanctuary. NOAA's other responsibility is to make collections available for research and exhibits.

In executing these responsibilities, NOAA has developed a system for collections management with the Curator for the Navy. A joint NOAA/Navy Memorandum of Understanding (MOU) designates the Department of the Navy to provide the curatorial services required for the proper management and control of artifacts recovered from the MONITOR Marine Sanctuary. Included in these requirements is a continuous register of the MONITOR collections and catalogue descriptions, photographs of all artifacts, and compilation of conservation information. The management of exhibitions and storage of artifacts are also the responsibility of the Curator for the Navy. With NOAA, the Navy will review applications for the loan of artifacts and will, with NOAA's concurrence, arrange for the loan of objects for exhibition.

The artifacts registration procedure will be the responsibility of the Curator for the Navy. After items recovered from the MONITOR have been duly identified, measured, weighed (if deemed necessary), photographed and properly preserved under NOAA's supervision, the artifacts and all associated documentation will be transferred to the Curator for the Navy. On receipt of materials and related data in good condition, the Curator

will assume responsibility for these properties. The Curator will enter the information into the Navy's computerized registration system and will assign an accession number to each item which will henceforth serve as a control number. The record on each individual artifact will fully identify that object and include its present location and conditions as of the last report.

OUTLINE OF MANAGEMENT PROCEDURE:

1. Research permit requirements assure that planning for collections management is introduced in the proposal phase and is fully developed in the research design with funding commitments. Parties interested in seeking a permit for research involving the retrieval of artifacts must provide in the initial proposal a description of a plan for conservation which minimizes deterioration and insures preservation of the artifacts collected. Analysis should include at a minimum: photography and cataloging of the artifacts, and a statement of curatorial responsibilities for the original field and lab records. A description of the preservation process to be applied to recovered objects must also be provided. The proposal is then examined by the Federal Review Committee, the on-site manager, and their Advisory Task Force. If approved, NOAA will issue the research permit.

After the above requirements are met to NOAA's satisfaction, the objects and pertinent records are to be transferred to the Curator for the Navy. If the principal investigator can provide appropriate environmentally controlled, secure, and accessible facilities, he/she may retain,

with NOAA's approval, the collections on a temporary loan and the transfer of properties to the Curator for the Navy will proceed on paper only. A formal loan agreement would then be executed.

2. Eligibility for registration. The principal investigator (the "permittee" for research) will be responsible for the cost of transferring recovered objects to the Curator for the Navy after the following conditions of acceptance for registration have been met:

- a. Proper conservation treatment is completed and records describing the techniques, chemical processes, and specific long-term maintenance problems (such as the degradation potential of protective coatings) are provided,
- b. The artifacts are cataloged and photographed,
- c. Copies of pertinent documents supporting the identification of the objects that will be useful in carrying out the curatorial function are provided, e.g., research proposal, operations manual, field and analytical records, and published works and manuscript sources, among others, and
- d. Preferably, recovered artifacts are to be delivered to the Curator for the Navy by the permittee at the Washington Navy Yard, in Washington, D.C. Items small enough to be forwarded through the Postal Service by registered mail shall be addressed as follows:

Curator for the Navy
Naval Historical Center
Washington Navy Yard
Washington, D.C. 20374

Large crated items are to be shipped as follows:

Receiving Officer
Supply and Fiscal Department
Building 176
Washington Navy Yard
Washington, D.C. 20374

The Curator for the Navy can be reached at Area Code (202) 433-2220/2318.

3. Registration. The Curator for the Navy will be responsible for maintaining registration records for MONITOR artifacts recovered from the Marine Sanctuary. In so doing, the Curator will:

a. Preserve the integrity of the archeologist's collecting strategies and analytical procedures within the registration process.

b. Develop a cross index system to relate to the permittee's initial field or lab assessing process of all properties recovered from the MONITOR during research.

c. At present the Curator's computerized accessioning system is serviced by a Navy computer organization. Late in 1981, an in-house capability is expected which will allow input and recall of data from the Curator's own office space. This added facility will render the present system all the more responsive to inquiries on the MONITOR objects.

4. Storage and Exhibition. The Curator for the Navy will be responsible to NOAA for maintaining the MONITOR collection by providing stable environmental control for artifacts in Navy custody and assuring NOAA that such artifacts are secure while in storage. The Curator will submit an annual report to NOAA covering all items in the collection,

those in storage, on exhibit, on loan and those added to the collection during the current calendar year. This report will, in turn, require the Curator to inspect personally all objects in the collection annually. The Curator will require, on the anniversary date of the loan, written reports with accompanying photographs of all objects from the borrowers at sites where Curator visitation is not feasible.

Exhibitions will be encouraged. However, their design, construction, and associated costs will be the responsibility of the requesting organization. Neither NOAA nor the Curator for the Navy is staffed or funded to provide such services. Prior to their execution proposed exhibit designs and plans are to be submitted by eligible organizations for review by both NOAA and the Curator for the Navy. On receipt of approval, organizations can proceed with their plans as submitted or modified.

5. Loans. Institutions interested in the loan of artifacts should make a written request to NOAA. NOAA, with the assistance of the Navy, will review the applications and, with NOAA's approval, the Navy will arrange for the loan transaction.

As part of the requirement for obtaining MONITOR artifacts for exhibition, each requesting organization will have to provide NOAA with certain data. For this reason, a form has been developed that poses questions concerning provisions for environmental controls, security, insurance, personnel and funding. This form will be sent to eligible requestors on receipt of their initial inquiry.

MONITOR artifacts can be loaned to educational institutions of higher learning, research organizations, museums, Federal and State agencies and incorporated municipalities that meet the following minimal criteria:

a. Facilities to house artifacts must include environmental control; security; insurance; and when the loan is for exhibit purposes, the facilities must also have museum trained personnel and handicapped accommodations. On application, a Facility Report form will be sent to each organization interested in obtaining MONITOR artifacts:

b. Funding must be available for transporting the materials from the present location to the desired site and return and for preparing a suitable exhibit.

c. A loan agreement must be executed for materials that will be placed with eligible organizations for a maximum of two years. Accompanying the loan agreement will be a report on the condition of the objects as they leave the custody of the Curator for the Navy. At the end of one year, the borrower will submit an updated report on the present condition of the objects; the Curator will prepare a report on the objects' condition at the time of their return.

6. Deaccessioning. If deaccessioning becomes necessary, the decision to do so will be evaluated by the Curator for the Navy, the onsite manager, and the Technical Advisory Committee who then pass on their

recommendations to NOAA for final decision. "Deaccession" is the permanent transfer of custody for an object to another institution or disposal by means of destruction, in which case, the object may not under any circumstance become part of a personal curation.

7. Availability of collection. All collections and records made under the provisions of a NOAA permit must be available for research and public education without charge and upon reasonable notice.

APPENDIX D: MEMORANDUM OF AGREEMENT

MEMORANDUM AGREEMENT: A 1981 ADDENDUM BY THE NORTH CAROLINA DIVISION OF ARCHIVES AND HISTORY TO THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

I. BACKGROUND

The Monitor Marine Sanctuary was created pursuant to Title III of the Marine Protection, Research and Sanctuaries Act of 1972, Public Law 92-532, on January 30, 1975. Since that time, the State Historic Preservation Officer (SHPO) of the North Carolina Division of Archives and History has assisted the National Oceanic and Atmospheric Administration (NOAA) with the planning and implementation of specific management-related research activities and in assisting investigators in the preparation of proposals to conduct research in the Sanctuary. The SHPO has been responsible for conducting an annual review of all proposed research projects and coordinating the activities of the Federal and Technical Review Committees. All assistance rendered by the SHPO has to date been through an annually renewable Memorandum of Agreement.

II. PROPOSAL

Because the Monitor-related activities and responsibilities of the Division of Archives and History have greatly increased since the creation of the Sanctuary, the SHPO proposes to expand the current MEMORANDUM OF AGREEMENT to reflect the growth and diversity of those responsibilities. (Contact NOAA's National Marine Sanctuary Program for copies of the original 1975 Memorandum of Agreement.)

The SHPO and other personnel of the Division of Archives and History will continue to assist in all phases of management-related research activities, to coordinate the review of research proposals, coordinate and participate in meetings as necessary, supervise contractual projects, and conduct other activities that are required to facilitate the effective management of the MONITOR Marine Sanctuary.

III. TASKS

1. The SHPO will plan and undertake specific management related research activities as mutually agreed upon with NOAA which will include (1) improving the system for cataloging, storing and retrieving data, (2) providing technical assistance in engineering, marine archeology and conservation, (3) providing technical support in monitoring permitted research in the sanctuary, and (4) preserving the artifacts from the 1979 expedition.

2. The SHPO will assist investigators in the preparation of each proposal for research in the Sanctuary, collect and coordinate all completed proposals, and conduct an annual review of all such proposals received prior to January:

- a. By January 10, the SHPO will mail a copy of each proposal received to every member of the Federal Review Committee, and to any technical experts the SHPO selects.
- b. Each reviewer will be given thirty days to review all proposals and submit a recommendation for each proposal accepting it, conditionally accepting it or rejecting it. The SHPO will ensure that all recommendations are received no later than February 15 (and will avoid further use of any technical expert who fails to respond in a timely manner).
- c. By March 1, the SHPO will forward a recommended decision on each proposal to NOAA accepting it, rejecting it, or accepting it with conditions. Such decision shall be supported by appropriate documentation, including copies of all comments and recommendations. Where comments and recommendations are received by February 15 from individuals, agencies, or sources other than those specifically solicited in accordance with paragraph (a), the SHPO shall consider these in making a recommended decision and include them in the documentation. Such comments received after February 15 will be forwarded directly to NOAA.

- d. Where review indicates that a modified proposal would be given additional consideration, the SHPO will contact the applicant and outline the changes determined desirable. The SHPO shall inform NOAA of the changes suggested and the time within which he/she anticipates being able to make a decision on a modified proposal.

3. In cases where previously approved proposals require alteration or where new proposals are received which demonstrate that scheduling immediate review will permit investigators to take advantage of a significant opportunity, the SHPO may initiate the review process at any time during the calendar year. In such cases, the reviewers will normally be given the 30 days to review the proposals and the SHPO an additional 15 days to prepare a recommendation. Where good cause exists, the SHPO will endeavor to coordinate review in a period of time shorter than this total 45-day period.

4. Where it is clearly evident that a proposed research project represents no threat to the archeological or historical integrity of the site, the SHPO may, following consultation with at least two recognized authorities with experience in the disciplines involving the proposed work, prepare a written report of this finding and recommend that a permit be granted. Where it is determined that there is potential for adverse impact, the proposal will be routed through the normal review process channels.

5. Each application for a research permit in the Sanctuary will be evaluated in terms of how the proposed research relates to the sanctuary's preservation, research and education goals. The significance of the research must be examined in terms of the project's contribution to these goals. Each proposal will be considered in light of the potential impact of the proposed work on the archeological and historical integrity of the MONITOR site. Reviewers will also be asked to evaluate each proposal in terms of their ability to achieve the established objectives of the proposal. Proposal methodology and techniques will be evaluated to determine if data collection and evaluation systems insure the greatest return of information. Equipment used in the research will be evaluated to determine if it is the most appropriate available to accomplish the tasks involved and the plan for conservation of any artifacts collected will be evaluated to determine if it is sufficient to minimize deterioration and to insure preservation of the artifacts.

6. Governmental agencies or other groups indicating an interest in reviewing proposals will receive copies of all proposals by submitting a written request to NOAA.

7. When a decision to grant a permit has been reached, SHPO will notify the Advisory Council on Historic Preservation of the pending action and will submit proper documentation to the Council for their review and comment according to the requirements of Section 106, National Historic Preservation Act of 1966. Commander, Fifth Coast Guard District will be notified of any permits issued for activity in the Sanctuary.

IV. NOAA INVOLVEMENT

As part of the joint nature of this effort, NOAA will continue to provide technical assistance and guidance in matters related to the management of the Sanctuary which require the participation of the SHPO and the Division of Archives and History.

APPENDIX E: VIOLATION PROCEDURE

Violators are subject to civil penalties of up to \$50,000 under Public Law 92-532. They will be notified of the alleged violation at the scene by the issuance of a Coast Guard Enforcement Action Report (EAR) CG-520, Offense Investigation Report (OIR): CG-5202; and Offense Investigation Report Supplement (OIR-SUP): CG-5202-A. Evidentiary materials found in the possession of the violator (i.e., artifacts, concretions, etc.) will be seized by Coast Guard personnel and statements taken. No further action against the violator will normally be taken at this time. Copies of the Enforcement Action or the Offense Investigation Report are distributed as the format indicates. Statements of evidentiary materials are transferred with the copy of the Report of Boarding to the NOAA Office of General Council which evaluates all relevant information for sufficiency of evidence and severity of the offense. If appropriate, the NOAA Office of General Counsel draws a notice of violation specifying the precise violation involved and the proposed penalty and sends it to the violator for appropriate action.

If the need arises, U.S. vessels and their operators are subject to seizure by the Coast Guard under the combining authority of 14 USC 89 and 16 USC 1433 (c). If a contempt of court is involved (Sec 16 USC 1433 (d)), the operator would be subject to arrest by the Coast Guard for disobedience of the restraining order. Violations of foreign vessels will be reported to the Department of State.

APPENDIX F: SANCTUARY DESIGNATION

WHEREAS Title III of the Marine Protection, Research and Sanctuaries Act of 1972, Public Law 92-532, authorized the Secretary of Commerce, with approval of the President of the United States, to designate Marine Sanctuaries; and,

WHEREAS the wreckage of the U.S.S. MONITOR has recently been identified; and,

WHEREAS it is the consensus of concerned organizations and individuals that the wreckage should be protected for its historic, cultural, and technological values; and,

WHEREAS the vessel has been placed on the National Register of Historic Places.

I, THEREFORE, designate the site of the U.S.S. MONITOR to be

THE MONITOR MARINE SANCTUARY

the area of which is to encompass a vertical section of the water column from the surface to the seabed and extending horizontally one mile in diameter from a center point located at 35°00'23" North Latitude and 75°24'32" West Longitude; and hereby affirm that the regulations promulgated according to the aforementioned authority will provide the necessary protection of law to preserve the esthetic values of this Historic Place.

January 30, 1975

Signature
Frederick B. Dent
Secretary of Commerce

APPENDIX G: SUMMARY OF EXPEDITIONS TO THE MONITOR SITE FOLLOWING
ITS INITIAL LOCATION AND IDENTIFICATION

ALCOA SEAPROBE: April 1-7, 1974

Sponsoring Agencies: United States Navy, National Geographic.

Participants: United States Navy, National Geographic, Duke University, North Carolina Division of Archives and History, Massachusetts Insititute of Technology.

Purpose: To obtain a complete photographic and television tape record of the wreck, and to collect specific samples of the remains for laboratory analysis.

Description of Work: Although foul weather prevented recovery of the desired samples, SEAPROBE's dynamic positioning and precision photographic systems made it possible to collect more than 1400 high quality photographs of the entire wreck. Several additional hours of television tape records were also made during the photographing process.

Conclusions: Analysis of this data has confirmed the identification of the wreck as that of the MONITOR, and has provided much previously unavailable data about the forward portion of the wreck. Photographs and television tapes of the bow area clearly show the distinct overlapping armor platform forward of the lower hull and the unique circular anchor well. Selected photographs from the collection were used by the Naval Intelligence Support Center to prepare a complete photomosaic of the wreck.

R/V EASTWARD: May, 1974

Sponsoring Agencies: Duke University, University of Delaware.

Participants: Duke University, University of Delaware.

Purpose: To recover bottom samples from the MONITOR Site.

Description of Work: While returning from a geophysical survey of the Delaware coast, the EASTWARD was allotted 4 hours to work at the MONITOR site. Twenty-five minutes were spent dragging a dredge through the sand in the vicinity of the wreck. Samples recovered include a decklight cover 10 inches in diameter as well as several small ferrous concretions.

Conclusions: While the extent of volumetric corrosion and accumulation of calcareous deposits on the deck light cover, identified as being a type used on the MONITOR, was determined during cleaning, no systematic analysis of the remaining artifacts has been reported.

CGC CHILULA: August 12- 16, 1974

Sponsoring Agencies: United States Coast Guard.

Participants: United States Coast Guard, Massachusetts Institute of Technology, National Oceanic and Atmospheric Administration, North Carolina Division of Archives and History, United States Navy.

Purpose: To determine whether existing portable underwater search equipment provided by the Coast Guard Research and Development Center could be successfully used by Coast Guard ships and boats to locate an underwater target. To utilize an underwater camera/strobe system from Massachusetts Institute of Technology and the SNOOPY television/propulsion system from the United States Navy to inspect the wreck of the MONITOR. To recover the camera system lost at the MONITOR site during the August, 1973 expedition and recover further samples from the site.

Description of Work: Due to Federal restrictions prohibiting bottom disturbing activities at the site and the heavy sea state encountered, no recovery or remote camera work was conducted at the site. However, sidescan sonar contact was made with the wreck.

Conclusion: Although no information concerning the MONITOR was gathered during this expedition, the experience proved useful in developing the various search and photographic systems.

R/V BEVERIDGE: August 19-22 and 26-28, 1974

Sponsoring Agencies: Duke University.

Participants: Duke University, Massachusetts Institute of Technology.

Purpose: To observe the wreck of the MONITOR with underwater television, retrieve the camera system lost during the August, 1973 expedition, and take horizontal photographs with a new underwater camera/strobe system.

Description of Work: The wreck was located using side scan sonar but due to Federal restrictions no recovery operations were conducted. However, observations were made of the wreck using the underwater television system. For a variety of logistical reasons the underwater camera/strobe system was not used.

Conclusions: Due to the limited amount of data gained on this expedition no conclusions have been published.

R/V EASTWARD: June 9-10 and June 16, 1976

Sponsoring Agencies: National Science Foundation Grant to the Co-operative Oceanographic Program of Duke University Marine Laboratory.

Participants: MONITOR Research and Recovery Foundation, University of Delaware.

Purpose: To obtain data concerning the magnetic field and subbottom acoustic reflectors in the MONITOR Marine Sanctuary, in conjunction with a geophysical survey of the Delaware continental shelf.

Description of Work: A total of eight crossings of the wreck were made using a Varian proton precession magnetometer during the two periods of research. Acoustic reflection measurements of the wreck site were made utilizing an Edo-western sub-bottom profiler with a hull mounted 3.5 kHz transducer.

Conclusions: From the magnetic data collected, researchers were able to isolate certain magnetic characteristics of the MONITOR and their effect on the regional magnetic field. It was also concluded that no fragments of ferrous metal larger than 3m on a side exist further than 100m from the wreck. The acoustic data indicated the general direction of slope of the subbottom reflectors in the area, and the MONITOR's relative position to these reflectors.

R/V CAPE HENLOPEN: APRIL 4-8, 1977

Sponsoring Agencies: Exxon Education Foundation, University of Delaware.

Participants: MONITOR Research and Recovery Foundation, National Oceanic and Atmospheric Administration, University of Delaware.

Purpose: To obtain measurements of the near bottom currents, to take coring samples of the sediments beneath the MONITOR wreck, and to conduct horizontal television observations of the wreck.

Description of work: A Braincon current meter was installed just outside of the monitor Marine Sanctuary to measure the near bottom currents during the period of the expedition. An 18 foot core, was taken southeast of the remains of the MONITOR using a standard 6m Ewing type piston core. Finally, a television camera was lowered to the site enabling a horizontal view of the forward section of the wreck.

Conclusions: From this work the researchers were able to make a number of observations concerning the strength and direction of the near bottom currents in the MONITOR Marine Sanctuary, the type and condition of the sediments beneath the wreck and what effect these factors will have in future work and recovery operations at the site. In addition, the television cameras provided further information on the structure and condition of the wreck.

R/V JOHNSON and R/V SEA DIVER: July 17-August 2, 1977

Sponsoring Agencies: Harbor Branch Foundation, National Oceanic and Atmospheric Administration.

Participants: Harbor Branch Foundation, National Oceanic and Atmospheric Administration, North Carolina Division of Archives and History, United States Navy.

Purpose: To conduct a photogrammetric survey of the MONITOR and the controlled recovery of material from the MONITOR site.

Description of Work: Preliminary work was carried out using side scan sonar on the wreck and then searching the surrounding area with this sonar one half mile in all directions to detect any protrusions from the bottom. No such protrusions were found. A remote controlled vehicle, CORD, equipped with a television camera, was sent to the wreck of the MONITOR and closed circuit television pictures were transmitted to the surface vessels. Visibility was quite good, in excess of 100 feet, and the CORD system allowed complete scanning of the wreck from bow to stern. The photogrammetric survey was conducted using two submersibles, JOHNSON-SEA-LINK I, and JOHNSON-SEA-LINK II, and divers who were transported to and from the site in the submersibles. A total of three passes were made over the wreck for the horizontal and oblique stereo photography. Two of these passes were made with black and white film and one with color film. The final operation involved the recovery of an iron hull plate which had been disturbed when a camera system had fouled the wreck during the August, 1973 expedition. The location of this plate had been well documented during previous expeditions as well as during the photogrammetric survey of the wreck. The camera system which fouled the plate and was subsequently lost was also recovered at this time. In addition a brass signal lantern that had been discovered lying 40 feet north of the turret on the sea floor was recovered to prevent its loss or destruction at the site.

Conclusion:

The detailed investigation of the closed circuit television and photogrammetric data coupled with the analysis of the hull plate and brass lantern will greatly add to what is already known concerning the extent and structural integrity of the remains of the MONITOR. From this information it will be possible to more reasonably assess the direction of future work at the site, particularly in planning for any further recovery and preservation of material from the site. This expedition also allowed the first on-site inspection of the wreck by divers and the crews of the submersibles. Their observations have provided insight into the structure and condition of the MONITOR's armor belt, turret, deck, and machinery that was not possible before with the use of remote camera systems.

R/V JOHNSON: August 1-26, 1979

Sponsoring Agencies: National Oceanic and Atmospheric Administration, North Carolina Division of Archives and History, Harbor Branch Foundation, Inc.

Participants: National Oceanic and Atmospheric Administration, North Carolina Division of Archives and History, Harbor Branch Foundation, Inc.

Purpose: To establish permanent reference points adjacent to the wreck, test the structural components of the MONITOR, conduct a test excavation in the forward portion of the wreck within the hull, and undertake a general reconnaissance of the site by diver observations and hand-held photography.

Description of Work: Three underwater archaeologists, supported by a team of 20 technicians, divers, and crew members, conducted 49 dives; during 36 of which the divers left the submersible, JOHNSON-SEA-LINK I, for a working dive. Breathing a gas mixture of 12 percent oxygen and 88 percent helium, the divers spent, per dive, approximately 60 minutes on the bottom and about four and one-half hours in decompression upon return to the support vessel R/V JOHNSON. From the excavations, the divers recovered 106 objects of historic and scientific significance representing a broad range of materials including brass, iron, leather, glass, and ceramics. The artifacts have undergone conservation and analysis and will be part of a future exhibit on the MONITOR.

Conclusions: Data generated by the research project afforded valuable insight into the archaeological and engineering problems presented by this and other deepwater archaeological sites. This information has significantly broadened the knowledge upon which sanctuary management decisions will be made.