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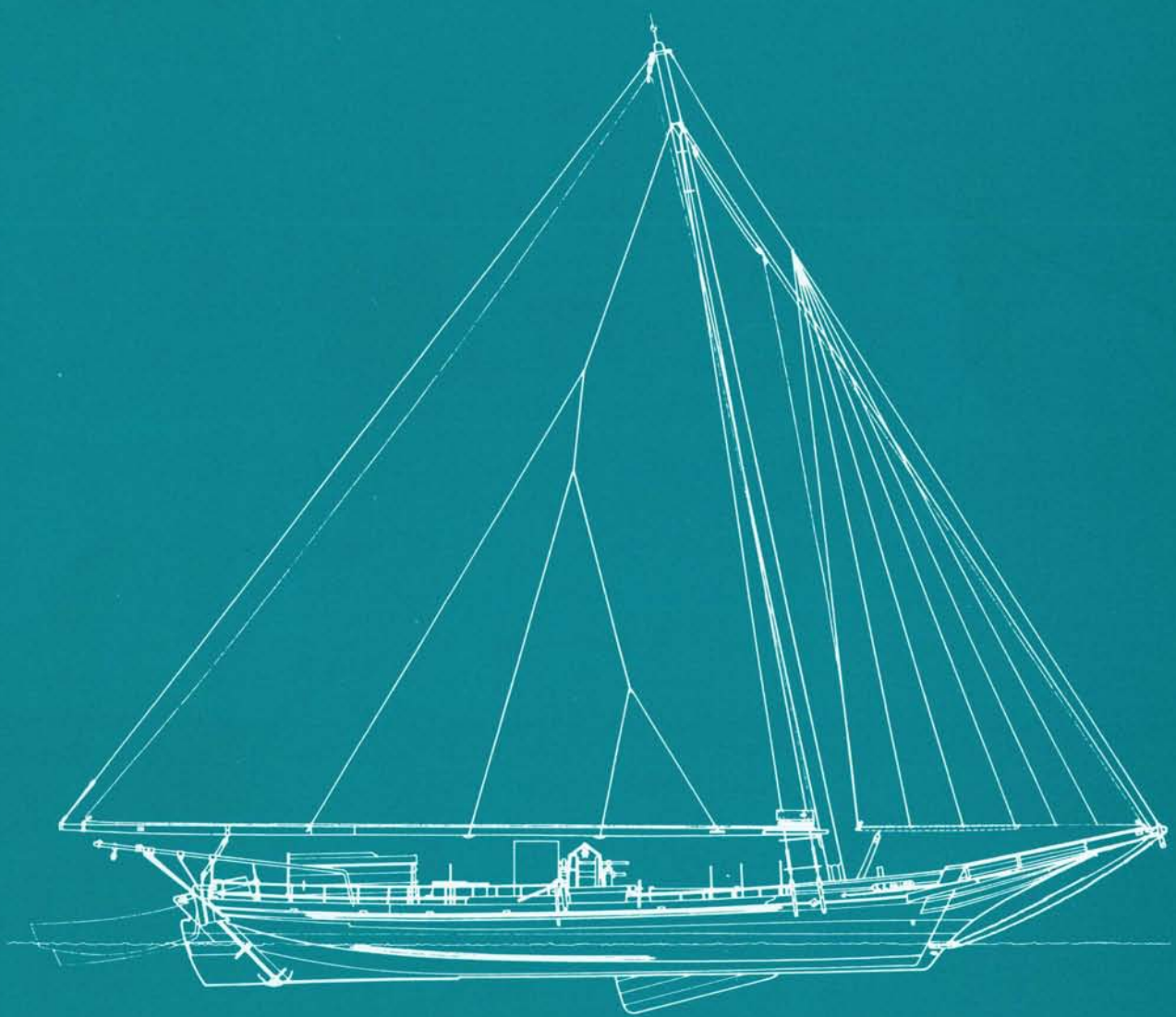
National Maritime Initiative

The Secretary of the Interior's

Standards for Historic Vessel Preservation Projects

with Guidelines for Applying the Standards



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Cover Illustration: E. C. Collier, a two sail bateau (skipjack) under restoration at the Chesapeake Bay Maritime Museum, St. Michaels, Maryland, was recorded by the Historic American Engineering Record in 1989.

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U.S. Department of the Interior, Office of the Secretary
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Introduction to the Standards and Guidelines

This document is intended to answer a longstanding need for uniform standards that may be applied to preservation projects involving historic vessels. Together with the accompanying Guidelines, the Standards provide a framework for responsible preservation practice that recognizes the unique problems of historic preservation in a maritime context.

The Standards set forth herein were inspired by and follow the format of the *Secretary of the Interior's Standards for Historic Preservation Projects*. Guidelines for Applying the Standards have been prepared with the advice and participation of professionals representing a broad range of experience and expertise in maritime preservation, and with heavy reliance on guidelines published in conjunction with the *Secretary's Standards*.

This document is not a manual for maritime preservation. Rather, its purpose is to clearly define ideal maritime preservation practice (through the Standards) and to illuminate that ideal and suggest ways of achieving it (through the Guidelines).

Note on Coast Guard Certification

Depending on their use, some historic vessels may require a certificate of inspection from the Coast Guard. Certificates of Inspection are required for vessels that carry freight or passengers for hire, or are "attraction" vessels. Coast Guard marine inspectors should become involved in the rehabilitation of a historic vessel to be certified, witnessing repairs and alterations. Any question about Coast Guard requirements may be directed to the U.S. Coast Guard Marine Safety Office in the zone where the vessel will be operated. Locations of these offices may be obtained from local telephone directories or by calling the Merchant Vessel Inspection and Documentation Division (G-MVI) of U.S. Coast Guard Headquarters at (202) 267-1942.

Part I: DEFINITIONS AND STANDARDS

Definition of Historic Vessel

A nautical vessel, generally excepting reconstructions and reproductions, is considered historic if it is eligible for listing in the National Register of Historic Places at a local, regional, national, or international level of significance. To be eligible for the National Register of Historic Places, a vessel must be significant in American history, architecture, archeology, engineering, or culture, and possess integrity of location, setting, materials, workmanship, feelings, and association. To be considered significant, the vessel must meet one or more of the four National Register criteria:

A. be associated with events that have made a significant contribution to the broad patterns of our history; or

B. be associated with the lives of persons significant in our past; or

C. embody characteristics that are distinctive of a type, period, or method of construction; or that represent the work of a master; or that possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded, or may be likely to yield, information important in prehistory or history.

For additional guidance, please consult National Register Bulletin #20, "Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places," available by writing the National Register of Historic Places, National Park Service, P.O. Box 37127, Washington, DC 20013-7127.

Definitions for Treatments of Historic Vessels

The following definitions are provided for treatments that are appropriate in historic vessel preservation projects:

Acquisition: the act or process of acquiring ownership of, or responsibility for, a vessel.

Protection: the act or process of applying measures designed to affect the physical condition of a vessel by defending or guarding it from deterioration, loss, or attack, or to cover or shield the vessel from danger or injury. Such treatment is generally of a temporary nature and anticipates further historic preservation treatment.

Stabilization: the act or process of applying measures designed to arrest, retard, or prevent deterioration of a vessel, and to assure its structural integrity. This may include rendering the vessel weather resistant and watertight. The essential form of the vessel shall be maintained during this process.

Preservation: the act or process of applying measures to sustain the existing form, integrity, and material of a vessel. It may include initial stabilization work, where necessary, as well as ongoing maintenance.

Rehabilitation: the act or process of returning a vessel to a state of utility through repair or alterations that make possible an efficient contemporary use while preserving those features of the vessel that are significant to its historical, naval architectural, technological, and cultural values.

Restoration: the act or process of accurately recovering the form and details of a vessel as it appeared at a particular time by removal of later work, or by replacement of missing or substantially deteriorated earlier work.

Other Key Definitions

Conversion: (1) the act or process of altering or rebuilding an existing vessel to effect a representation of or a resemblance to another vessel or type or class of vessel; (2) a vessel that is the product of such a process.

Historic Fabric: material remains of a historic vessel or object, whether original materials or materials incorporated in a subsequent historically significant period.

Integrity: the authenticity of a vessel's historic identity, as evidenced by the survival of characteristics such as plan, hull form, rigging, use of materials and/or craftsmanship, which existed during the vessel's historic period.

Reconstruction: (1) the act or process of creating by new construction the accurate form and detail of a particular vessel as it appeared at a specific period of time; (2) a vessel, or part thereof, that is the product of such a process.

Reproduction: (1) the construction or fabrication of an approximate copy of an object; (2) an object that is the result of such a process.

[When applied to a vessel, the term, "reproduction" or "replica," denotes: (1) the act or process of recreating by new construction the general form and appearance of a particular vessel or type of vessel; or (2) a vessel that is the product of such a process.]

General Standards for Treatment of Historic Vessels

1. A historic vessel shall be put to a use, either continuing or new, that requires minimal change to its historic qualities and appearance.

2. The defining characteristics of a vessel shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a vessel shall be avoided.

3. Each vessel shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other vessels, shall not be undertaken.

4. Most vessels change over time; those changes that have acquired historical significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a vessel shall be preserved.

6. All vessels shall be subject to a program of preventive maintenance. Deteriorated historic features and their materials shall be repaired rather than replaced. Where the severity of deterioration requires removal of a distinctive feature, the replacement shall match in design, color, texture, and other visual qualities; and, where possible, material. Replacement of missing features shall be substantiated by historical, physical, or pictorial evidence.

7. Every reasonable effort shall be made to protect and preserve physical evidence of features previously removed, replaced, altered, or otherwise affected in the course of a vessel's history.

8. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of vessels, if appropriate, shall be undertaken using the gentlest means possible.

Specific Standards for Treatment of Historic Vessels

The following specific standards for each treatment are to be used in conjunction with the general standards and, in each case, begin with number 9. For example, in evaluating acquisition projects, include the eight general standards plus the two specific standards listed under Standards for Acquisition.

Standards for Acquisition

9. Careful consideration shall be given to the type and extent of ownership rights that are required to assure the preservation of the historic vessel. The preservation objectives shall determine the exact rights of ownership to be acquired.

10. Clear title to a vessel shall be acquired when absolute ownership is required to ensure its preservation.

Standards for Protection

9. Protection shall safeguard the physical condition of a vessel from further deterioration or damage caused by weather or other natural, animal, or human intrusions.

10. If any historic material or features are removed, they shall be properly recorded and, if possible, stored for future study or reuse.

Standards for Stabilization

9. Stabilization shall reestablish the structural integrity of a vessel through the reinforcement of structural members or by arresting material deterioration leading to structural failure. Stabilization shall also reestablish weather-resistant conditions for a vessel exposed to weather, and watertight integrity for a vessel afloat.

Standards for Preservation

9. Preservation shall maintain the existing form, integrity, and materials of a vessel. Substantial restoration of missing features generally is not included in a preservation undertaking.

10. Preservation shall include techniques of arresting or retarding the deterioration of a vessel through a program of ongoing maintenance.

Standards for Rehabilitation

9. Alterations or additions to a historic vessel shall be undertaken only when such alterations or additions will not have a serious impact on the historic fabric of the vessel, and only when the alterations or additions are compatible with the size, scale, color, material, and character of the vessel.

10. Wherever possible, alterations to vessels shall be done in such a manner that if such alterations were to be removed in the future, the essential form and integrity of the vessel would be unimpaired.

Standards for Restoration

9. Restoration work shall be based upon verifiable historical, pictorial, or physical evidence, rather than upon conjecture.

10. Restoration decisions shall be made only after careful consideration has been given to the availability of substantiated historical information about the form and configuration of the vessel at the time to be represented by the restoration; the historical, cultural, and technological significance of the vessel in the period selected; and the degree to which the vessel's historic fabric will be affected by restoration to a particular period.

The Process of Historic Vessel Preservation

Preservation of historic vessels is more than "ship saving," more than rescuing a vessel from the knacker's torch or from an ignominious scuttling as part of a breakwater. Responsible historic vessel preservation is a thoroughly planned and documented, systematic, four-phase process guided by the Standards set forth in this document.

Phase I of this process has these elements: development of a realistic plan for preservation, use, and long term maintenance of the vessel; acquisition of the vessel; protection from damage or loss; and documentation (recording in detail the physical form, structure, configuration, and condition of the vessel as it exists at the time of acquisition, and collection of all available information about the vessel's history, original construction, use, associations, etc.).

Phase II consists of implementation of stabilization measures: arresting, insofar as possible, decay and deterioration; reinforcing the vessel's structure if necessary; sheltering the vessel from weather; establishing watertight integrity; etc. During this phase, a detailed comprehensive work plan for achieving the treatment goal, based on condition surveys, etc., will be completed.

Phase III is the implementation of the selected treatment goal: restoration, rehabilitation, or preservation.

Phase IV is preservation maintenance: routine, cyclic, and emergency work performed to mitigate deterioration of the preserved vessel.

A brief discussion of the elements of historic vessel preservation follows:

Project Planning

Every sound historic vessel preservation project should begin with a plan; a well-thought-out, detailed, **written** plan for preservation treatment that addresses and takes into account the following:

- the historical significance of the vessel, and degree of historic integrity it possesses
- the availability of information that might be required for preservation treatment, such as original construction, changes made during the life of the vessel, etc.
- the physical condition of the vessel, as determined by a competent surveyor
- the environment in which the vessel is to be preserved, and the projected effect of that environment on the vessel
- the intended use of the vessel, and the projected effect of that use on the historic integrity of the vessel
- the work required to implement the proposed treatment, and the sequence in which the work will be performed
- the availability of suitable materials, equipment, and technology to successfully carry out the project
- the availability of competent personnel with the requisite skills and expertise to perform the work

- the availability of a suitable site for carrying out the proposed treatment
- the cost of the proposed treatment, and the source and availability of funding to complete the work.

Development of such a plan is time-consuming and, inevitably, expensive. But it is a vital element in any responsible preservation project.

Acquisition

Acquisition of a vessel for preservation will normally be an element in a previously developed project plan. In some cases, however, the vessel might be acquired with the intent to preserve it before a detailed plan for preservation treatment can be developed. (For example, a vessel of particular historic significance might be discovered to be threatened by demolition, etc. If a "stay of execution" cannot be arranged, immediate acquisition of the vessel might be seen as the only way to save it from destruction).

In any event, **preservationists should regard acquisition of a historic vessel as a firm commitment to responsible stewardship and good preservation practice** as prescribed by the Standards.

Protection

Once a vessel is acquired for preservation--even while the process of acquisition is going on--the preservationist should safeguard the vessel from damage or loss. Safe and secure mooring arrangements; installation of pumps, alarms, and fire protection; protection from vandalism and theft, etc.--these and any other measures to protect the vessel, before and during preservation treatment, should be implemented.

Documentation

Documentation is the most easily overlooked aspect of a historic vessel preservation project, yet it is arguably the most important.

Timely, complete documentation is vital for three reasons. First, there is always a possibility of partial or total loss of the vessel through fire, collision, mismanagement, neglect, vandalism, etc. If loss should occur, the information collected in the documentation process may be the only surviving record of what once existed.

Second, even if the vessel is successfully preserved, it will never be exactly the same as when built, or when acquired for preservation. Thorough documentation of changes made to the vessel will help to create a better understanding of the vessel as it is in the present and as it evolves in the future.

Finally, documentation of work performed during preservation treatment, including maintenance, material renewals, etc., is useful in the planning and carrying out of later work.

Documentation should begin with the earliest stages of project planning, and should continue throughout the process. All available information about the vessel's history, construction, and significance should be researched and recorded, and records should be kept of all preservation and maintenance work performed. Before **any** preservation treatment is undertaken, however, the vessel should be regarded as primary physical evidence to be recorded in detail. Duplicate copies of the collected body of records, suitably organized, should be carefully protected and stored in separate locations.

It may be determined, after thorough examination of the vessel, that preservation or rehabilitation is impractical or unachievable. In such cases, the vessel should be documented as thoroughly as possible before disposition. For further guidance on documenting historic vessels, consult *Standards and Guidelines for Documenting Historic Vessels*, prepared by the Historic American Building Survey/Historic American Engineering Record (HABS/HAER), 1988. Single copies of this publication are available by writing HABS/HAER, National Park Service, P.O. Box 37127, Washington, DC 20013-7127.

Stabilization

In every vessel, the process of decay begins even before construction is complete. Wood rots. Steel, bronze, and aluminum oxidize and corrode. Deterioration is continuous, exacerbated by exposure, the rigors of use, and the harsh marine environment. By the time preservation is considered, much or all of a historic vessel's fabric is likely to have been affected--sometimes severely--by deterioration.

After the physical form, configuration, and condition of a historic vessel at the time of acquisition have been thoroughly documented, measures should be undertaken to stabilize the vessel. Measures include steps to arrest rot and corrosion, to stop leaks, to reinforce or repair structural members, to ventilate and dry out interior spaces, etc.--in short, to halt the deterioration process to the greatest possible degree. This work should be undertaken before the ultimate preservation treatment planned for the vessel is begun.

Stabilization, accompanied and followed by comprehensive maintenance, "buys time" for completion of the preservation process. Too often, stabilization measures at the beginning of a preservation project are either inadequate or non-existent. This almost inevitably results in expensive and time-consuming preservation work having to be redone later. It could even result in loss of the vessel.

Preservation, Restoration, and Rehabilitation

Only after a solid preservation plan has been developed, based on sound knowledge of the vessel's condition, extensive research, thorough consideration and assessment of available technical, material, and economic resources, etc.; only after the vessel has been extensively documented as acquired; and only after stabilization measures have been implemented--only then should work begin on the preservation treatment selected for the vessel.

Whether the chosen treatment is preservation of the vessel as acquired, rehabilitation for a new use, or restoration, good historic preservation practice demands that the preservationist adhere to one basic precept in all work undertaken: to retain and preserve to the greatest extent possible the historic form and fabric of the vessel.

Preservation is the ultimate treatment in any historic vessel preservation project, and it is the most straightforward in theory and in practice.

Restoration should be undertaken only if there is sufficient detailed historical information about the vessel on which to base the restoration work. Selection of the time or period in a vessel's career to be represented by the restoration should be done only after careful consideration of the effects of the restoration on historic fabric from other, possibly more significant, periods in the life of the vessel.

Rehabilitation, because it normally requires more extensive changes to historic fabric and departures from historic methods of construction than other treatments, should be

undertaken only after preservation and restoration have been considered as alternatives. Whenever possible, historic fabric should be retained; changes or additions required by the rehabilitation should be reversible, and should be made with the least possible disruption of historic form or fabric.

A vessel might be preserved exactly as found or acquired, or it might be preserved as it has evolved through restoration or rehabilitation.

Preservation Maintenance

Preservation is an unending process. After the treatment goal selected for a vessel is achieved, every effort must be made to maintain the vessel in its preserved state. This involves regular, thorough inspections of the vessel; "housekeeping" measures such as cleaning; routine maintenance such as tightening, adjusting, lubricating, paint touchup, etc.; cyclic maintenance such as refinishing, material renewal and repair, etc; and ongoing stabilization and emergency work as required. All preservation maintenance work should be performed in accordance with the Standards.

Interpretation

Interpretation is not an essential element in a historic vessel preservation project, but it is highly desirable. Scholars and experts may learn a great deal from studying an uninterpreted preserved vessel, but the general public's understanding and appreciation of a vessel will largely be determined by the degree and effectiveness of the interpretation provided.

There is no particular method or style of interpretation that is universally superior for conveying information about a preserved vessel. Good design and concise, clearly delivered information, readily accessible and uniform in approach, are the key elements here, as in any interpretation program.

The historic significance of the vessel; its cultural, economic, architectural, and technological context; the people who designed, built, owned, and operated the vessel; the cargoes it carried or the service in which it was engaged; even the preservation process itself--any or all of these themes are appropriate subjects for interpretation of a historic vessel.

The one absolutely essential requirement for interpretation of any preserved vessel is identification of what is original or historic, and what is not. New, non-original, or non-historic materials and features, as well as departures from historic form or configuration, must be clearly identified. Additions or replacements that are based on incomplete information or conjecture must be identified as such, and features installed or employed for reasons of security, access, safety, lighting, interpretation, etc., should be clearly differentiated from those elements, whether original or otherwise, that are appropriate to the historic character of the vessel.

Approach to Treatment--Preserving Integrity

Overall, integrity is characterized by location, design, setting, materials, workmanship, feeling, and association. Optimum integrity is preserved by retention of as much original fabric as possible. Approaches to preservation treatment will, in every case, be determined by the conditions under which a vessel is to be preserved. A vessel that is out of water, in a protected environment such as a building, can be treated in virtually the same manner as any museum artifact. Given adequate structural support, protection, and environmental control, such a vessel, once stabilized, can be preserved

indefinitely. Renewal or replacement of historic fabric might be required only if restoration or rehabilitation is undertaken.

Vessels that are preserved afloat, or vessels that are out of water but exposed to the elements, call for a different approach. Under these conditions the basic goal of preservation--maintaining intact a vessel's historic form, integrity, and material--must be tempered by the **ABSOLUTE REQUIREMENT** that the vessel be kept structurally sound, weather resistant, and (in the case of a vessel afloat) watertight. To do less is to jeopardize not only the preservation effort, but the vessel itself.

Under such conditions, then, preservation in perpetuity of all the historic fabric incorporated in a vessel is patently impossible. Historic fabric will, of necessity, be replaced in the course of maintaining a sound, weather-resistant, watertight structure. The integrity of materials of a vessel, however, can be retained if historic fabric is replaced by new material of the same size, composition, texture, color, and appearance as that which is replaced and if the methods of replacement are historically appropriate to the vessel. For other considerations on maintaining the integrity of a historic vessel, please see National Register Bulletin #20, pp. 8-9.

Regarding Reconstructions, Reproductions, and Conversions

These Standards and Guidelines do not address construction or management of reconstructions or reproductions of historic vessels, nor do they apply to conversions that are intended to represent historic vessels. Regardless of their quality or use, and notwithstanding the degree to which they might serve the purposes of historic preservation, reconstructions, reproductions, and conversions do not meet the criteria of the definition of a historic vessel.

There are, nevertheless, numerous sound justifications for the existence of reconstructions and reproductions. Building them affords an opportunity for study and practice of historic construction methods. Traditional seafaring skills can be learned and historic practices divined from their use as training and demonstration vessels. Through effective interpretation, reconstructions and reproductions can provide for the public tactile and visual illumination of social, economic, and technological aspects of maritime history. (This is particularly valuable in cases where the original historic vessel, or an example of a historic vessel type, no longer exists or, for conservation reasons, cannot be made available for the public experience.) Finally, reconstructions and reproductions can be effective, tangible symbols through which public awareness of a particular historic event, or a maritime heritage in general, can be crystallized.

Leaving aside considerations of use (sail training/sea experience, exhibition, etc.), reconstructions and reproductions should be judged on the degree to which they capture the essence of the historic vessels they represent. In every detail, builders and managers of such vessels should strive for exactness in duplication of the form, color, texture, and appearance of the original. Interpretation should clearly indicate which features are based on conjecture, which are non-historically based concessions to modern use, and which employ modern methods or materials in their construction. Above all, interpretation should make clear that a reconstruction or reproduction is not a historic vessel, but a copy or representation of one.

Conversion of a non-historic vessel to represent a particular historic vessel or an example of a historic vessel type should be avoided, unless alteration or rebuilding recreates in detail the form, color, texture, and appearance of the vessel represented. Conversion of one historic vessel to represent another historic vessel, even if of the same class or type, is not an acceptable treatment.

Part II: GUIDELINES FOR APPLYING THE STANDARDS

The following guidelines are designed to facilitate the interpretation and application of the Standards for Historic Vessels Preservation Projects and to assist individual vessel owners in formulating plans for management of historic vessels in a manner consistent with the intent of the standards. While the guidelines do not address every problem that could be encountered in every preservation project, they may be applied to vessels of all construction types, periods, and materials.

In Part II, guidelines are given for each of the treatments defined in Part I of the Standards document. Preservation approaches, materials, and methods consistent with the intent of standards are prefaced with *Recommended* on the following pages. Not all recommendations listed under a treatment will apply to each project proposal. In addition, a project may consist of more than one treatment. Preservation approaches, materials, and methods which may adversely affect a vessel's architectural, historical, or archeological qualities, and are therefore not consistent with the Standards, are prefaced with *Not Recommended.*

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GUIDELINES FOR ACQUISITION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Developing, whenever possible, plans for the preservation, maintenance, and compatible use of the vessel prior to purchase of the vessel.	Proceeding without a well-developed plan for management and use of the vessel and/or a firm commitment to the best possible preservation practice.
Determining through the services of a competent professional marine surveyor experienced with the type of vessel under consideration, the existing condition of the vessel, the extent of work required to implement the proposed treatment plan, the feasibility of the project, and the projected cost.	Proceeding without adequate information and resources to reasonably ensure success of the project.
Ensuring that adequate funds are available, or can be obtained, to achieve the proposed treatment objective and to maintain the vessel thereafter.	
Ensuring the availability of competent staff with the requisite skills to manage and carry out the project.	
Obtaining, in cases where adequate funds for purchase are not on hand, legal option to purchase title to the vessel for a period sufficient to secure required funding and/or to develop a preservation plan.	
Obtaining, when necessary, permission or agreement from the owner to protect and stabilize the vessel during the option period.	
In the event that sufficient funds for acquisition and treatment cannot be obtained, or that preservation is determined to be impracticable, obtaining permission to thoroughly document the vessel.	

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GUIDELINES FOR PROTECTION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Making a thorough assessment of the hazards to which the vessel may be subjected before and during treatment (e.g.: storms, vandalism, theft and pilferage, damage by other vessels, going adrift, leaking hull or decks, etc.).	
Providing adequate secure mooring in a location that affords as much protection as possible from surge, storms, grounding, passing vessels, etc.	
Installing bilge alarms and pumps and providing for emergency power to operate them.	
Keeping an adequate watch over the vessel so that leaks, fires, and other potentially catastrophic conditions are detected in a timely manner.	
Fabricating secure, temporary covers for hatches, ports, and other accessible hull openings.	Damaging or altering distinctive features or historic fabric in installation of temporary protective measures.
	Failing to make adequate provisions for ventilation in securing openings.
Fabricating covers over the vessel to prevent incursion of rainwater through leaking decks, cabin tops, etc.	
Providing for air circulation below decks through use of fans, blowers, windsails, etc.	
Removing and safely storing, after careful documentation, pilferable items such as lamps, fittings, furniture, ship's documents, etc.	
Installing temporary security and fire protection systems in such a manner that no damage is caused to the historic fabric.	

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GUIDELINES FOR DOCUMENTATION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Thoroughly researching and recording the history of the vessel, including information on its designer, builder, owners, its significance in the context of maritime technology, the service or trades in which it was employed, cargoes, masters and crews, modifications, association with significant events and individuals or groups, etc.	Failure to incorporate thorough bibliographical references to sources.
Searching out and preserving written and graphic representations of or references to the vessel, such as photographs, paintings and drawings, letters, newspaper accounts, logbooks, crew accounts, official histories, etc. Collecting and preserving information and materials on sister ships or similar vessels of the same period.	
Conducting and recording oral history interviews with former masters, crew members, shipyard workers, and others associated with the vessel.	Failure to make written transcriptions of audio recordings to guard against loss or degradation of recordings themselves.
Collecting and preserving builders' contracts, specifications, plans, models, bills of materials, etc., for the vessel and/or for similar vessels built by the same yard or comparable builders. Collecting similar information on subsequent modifications to the vessel.	Failure to properly store and conserve original records to guard against misplacement, theft, damage, or deterioration.
Researching and recording information on original methods and materials used in the vessel's construction, rigging, and outfitting.	
Thoroughly recording the form and condition of the vessel on archivally stable materials at the time of acquisition for preservation treatment. Information collected should include:	Failing to document areas of the vessel that are affected when any work, **including emergency repair**, is performed. Failure to preserve to make all new records (measured drawings, photographs, and written data) on archivally stable, acid-free materials.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
- detailed measurements of the existing vessel, including construction drawings, hull lines, indication of hogging and other deformations.	- Failure to base drawings on accurate measurements. Failure to preserve field sketches, notes, and dimensions on which measured drawings were based for future verification of the finished drawings.
- extensive description of materials methods, and details of construction.	
- measured drawings and photographs of distinctive and character-defining features.	- Failure to preserve field notes on which measured drawings were based. Failure to date, label, and catalog all photographs.
- notations of physical evidence of changes made over time, such as removal/addition of bulkheads, equipment, etc.	
- notation and sampling of original, subsequent, and existing paint colors and other finishes.	- Failure to preserve samples of finishes themselves as part of their documentation.
- notation and description of existing original or historic fabric.	
- notation and description of methods of fastening, etc.	
- notation and description of furnishings, fittings, machinery and equipment, etc., with indication of their location, placement, and function.	- Failure to provide "exploded" or assembly drawings and/or photographs of features where such information is key to construction or operation of a feature in preparation for its preservation, maintenance, replacement, or interpretation.
- notation of miscellaneous items discovered on board the vessel during treatment.	
Thoroughly recording all work performed on the vessel in the course of treatment, with notations of method and materials used in the work, original fabric affected by the work, and the reasoning or justification for the work.	Failure to properly catalog and file such records for future study and reference. Failure to protect records against misplacement, theft, damage, or deterioration.
Keeping records of regular maintenance and cleaning of the vessel.	
Thoroughly recording damage to the vessel from external causes, as well as changes over time in the form or condition of the vessel, such as hogging, etc.	

GUIDELINES FOR STABILIZATION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Identifying, retaining, and preserving to the greatest extent possible original or historic fabric, as well as material, elements, and features that are important in defining the historic character of the vessel.	Irreversibly altering the essential form of the vessel during the stabilization process.
Thoroughly documenting the existing conditions of any affected part of the vessel, including location, size, composition, method and pattern of fastenings, etc., of the affected elements, before performing work of any kind, **including emergency repairs.**	Failing to document affected areas or elements before performing stabilization work or emergency repairs, so that knowledge of conditions existing before commencement of work is lost.
Retaining and protecting, whenever possible, original material and finishes that may be affected when reestablishing structural stability or arresting deterioration.	Failing to provide proper protection of features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.
Carefully documenting material or features displaced, removed, obscured, or otherwise affected during stabilization treatment, even if the material is not of historic significance.	
Treating areas or pockets of active rot or pest infestation in wood with appropriate chemical fungicides, insecticides, preservatives, etc.	Failing to assign a high priority to treatment of rot or pest infestation, thus ensuring further contamination. Applying fungicides or other chemical treatments that are hazardous to humans or the natural environment after application.
Removing rot- or pest-infected wood when adjacent areas are threatened with contamination, if stabilization measures such as chemical treatment, ventilation and drying, etc., cannot be effected with a reasonable time.	Failing to remove wood beyond the area of infestation when removal is required, thus permitting continued spread of contamination. Failing to thoroughly document removal of any material or features, including the reason for removal, composition, size, finish, method of fastening, and location of the material removed.

GUIDELINES FOR STABILIZATION

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Treating new wood with chemical preservatives before incorporation into the vessel, preferably by pressure treatment (after shaping, drilling, and fitting). Using fungicidal bedding compounds where appropriate in reinstallation of new wood or reinstallation of old wood.	Treating one material with chemical products that could have an adverse reaction with other materials in proximity.
Clearly and unobtrusively marking by branding, metal stamping, affixing welded tabs, or other permanent means, the date of installation on any new or replacement material that is incorporated into the vessel.	Failing to thoroughly document repairs or replacement of material, with the reasons for action taken.
Removing loose scale or corrosion from metal surfaces; sealing and coating with appropriate protective coating.	Leaving metal surfaces unscaled or untreated, especially between or behind structural members.
	Failing to ensure that all surfaces, whether wood or metal, receive proper preparation before application of coatings. This may include scaling, grit blasting, degreasing, deacidifying, etching, drying, priming, etc.
Treating severely corroded metals with chemical metal stabilization or consolidation products.	Treating one material with chemical products that could have an adverse reaction with other material in proximity.
Applying appropriate paint or other coating systems to metals or alloys after cleaning. When repainting, using colors that are historically appropriate.	Failing to reapply protective coating systems to metals or alloys that require them after cleaning, so that accelerated corrosion occurs.
Removing loose, unsound coatings from painted or varnished wood surfaces; coating with appropriate finishes.	Removing coatings that are sound and intact, unless removal is required for good adhesion of new coatings.
Retaining, protecting, and preserving original or historic finishes whenever possible.	Failing to collect, document, and preserve samples when removal of the original finish is necessary.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Discovering original paint colors and finishes; repainting or refinishing with colors based on the original.	Refinishing with colors that cannot be documented through research and investigation to be appropriate to the vessel and period.
	Painting historically unpainted or varnished wooden surfaces; varnishing or leaving unfinished surfaces that were historically painted.
	Applying a high-gloss, yacht-like finish to work boats, etc., unless specifically appropriate.
Using "traditional" paints and protective coatings that match the original as closely as possible in composition, appearance, and other properties.	
Using modern, long-lasting, low-maintenance protective coatings where substantially improved protection and reduced maintenance will add to the life of the vessel, so long as the new finish is reversible and matches the original in color, texture, and appearance.	Applying "new technology" products or methods on the recommendation of salesmen, shipyard personnel, etc., without first investigating the long term effects.
	Sealing, or applying impermeable coatings to, wood structural members that have high moisture content, thus promoting rot and preventing drying.

GUIDELINES FOR STABILIZATION

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Ensuring that a vessel out of water, whether permanently or temporarily, is adequately supported, including overhanging sections at bow and stern. Ensuring that the weight of masts, machinery, heavy deck equipment, etc., is transmitted to support blocks and/or shores, especially if deck beams, frames, keel, or other major structural members are weak.	
Removing to protected storage masts, armament, winches, windlasses, capstans, etc., if necessary to effect structural repairs or if their condition constitutes a hazard to the vessel's structure or to personnel.	Failing to thoroughly document the position, method of attachment or fastening, etc., of any elements or material displaced in reestablishing structural stability.
Reinforcing decayed and weakened structural members, especially where there are visible signs of deflection or failure.	Leaving untreated known structural problems that will cause continuing deterioration and shorten the life of the vessel.
Retaining existing hull, deck and deckhouse openings, such as doors, hatches, scuttles, windows, ports, port lights, etc.	Installing new openings, closures, or associated hardware that are incompatible with the vessel's historic appearance or that obscure, damage, or destroy character-defining features.

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Performing a survey to determine whether a vessel afloat is in immediate danger of hull failure or collapse due to wastage, rot, worm damage, structural deterioration, etc. Arranging for drydocking or haul-out and performing emergency repairs, if required.	Failing to ensure that the vessel will not be damaged by hauling out or drydocking.
Repairing or, if necessary, replacing severely weakened, deteriorated, or missing structural members or hull material (planking, caulking, sheathing, hull plates, etc.) with new material of the same composition, size, scale, and methods of fastening and construction as the original (e.g., riveted iron plates should, if at all possible, be replaced with iron plates of the same size and shape, riveted in place; white oak planking should be replaced by white oak planks of the same dimensions, fastened in the same manner as the originals, with seams appropriately caulked, etc.).	
Using state-of-the-art, long-lasting, low maintenance coatings on underwater portions of a vessel's hull, provided that application of such coatings does not involve destruction of historic fabric and does not require a departure from historic methods of bottom construction.	Coating underwater portions of hull with gunnite, fiberglass, or other non-historic products that are non-reversible, that would interfere with historic methods of maintenance, or that could accelerate deterioration of bottom material.
Renewing or installing hull zincs.	Installing too many or too few zincs.
Determining the electrolytic potential of a floating vessel's hull; testing for stray electrical current in surrounding water. Designing an active or passive cathodic system to compensate.	Failing to monitor an impressed current cathodic protection system, or allowing untrained staff to monitor or adjust system.

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that decks, hull topsides, deckhouses, etc., are weathertight. Rigging temporary canopies, covers, etc., over vessel to prevent incursion of rainwater, if repairs cannot be effected immediately.	Damaging or altering distinctive features or historic fabric in installation of temporary protective measures.
Repairing or, if necessary, replacing deteriorated or missing deckhouse tops and sides, deck planks, deck plates, etc., with new material of the same composition, size, scale, and method of fastening as the original.	Replacing or covering over (except as a temporary protective measure) planked decks with plywood sheeting. Fiberglassing over a deck that was not originally so covered.
Recaulking and/or paying seams in wooden decks as required, using historically appropriate materials and methods.	Caulking or paying seams with historically inappropriate materials that do not have the same appearance as the original, or that are irreversible or non-removable.
Replacing deteriorated historically appropriate coverings on decks and deckhouse tops (painted canvas, concrete, linoleum, tar, etc.) with new material that matches the old in composition, size, shape, color, and texture after reestablishing the structural stability of the deck or deckhouse top.	
Relieving hogging, sagging, and shear forces caused by improper distribution of ballast, fuel, water, etc., after consultation with a naval architect.	
Eliminating the causes of standing water on decks, deckhouse tops, etc. Cleaning, repairing, or replacing, if required, deck drains, scuppers, etc.	
Adjusting the trim of a floating vessel by repositioning, removal, or addition of ballast, water, fuel, anchor chain, etc., in order to render existing deck drains and scuppers effective. Ensuring that the stability of the vessel is maintained in the operation, and that undue hull stresses that might cause hogging, sagging, etc. are not introduced.	

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Installing new drains or scuppers in topside areas that hold standing water, if decay or damage would result from lack of drainage. Designing new drains that are historically appropriate in appearance and construction, and that require minimal displacement of historic fabric.	Failing to thoroughly document addition of non-historic features, with justification for the addition, details of construction, etc.
Cleaning, repairing or replacing, if necessary, mouldings, waterways, margins, covering boards, rail caps, etc.; filling cracks, checks, open joints or seams with appropriate fillers; painting or finishing, if appropriate, with coatings of the same color, texture, and appearance as the original.	Deferring, or discounting as "minor," repairs that could prevent fresh water intrusion into structural members.
Reestablishing the soundness and weathertight integrity of hull and deck openings such as hatches, doors, port lights, etc., through repair or replacement. Installing temporary covers if repair or replacement cannot be immediately accomplished. Retaining all hardware affected; duplicating the material, design, and hardware of the original openings and closures where replacement is necessary.	
Ensuring that loose, corroded, damaged or missing through-deck fittings or fastenings are not allowing water to seep below decks or into the vessel structure; sealing such openings, and/or repairing or replacing fittings or fastenings with historically appropriate material.	
Replacing loose or missing deck plugs in wooden decks. Properly bedding new plugs in appropriate waterproof compounds.	

GUIDELINES FOR STABILIZATION

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining the basic plan of a vessel's interior, including the relationship and size of spaces.	
Removing debris and dirt from all interior spaces, including bilges, frame bays, lockers, etc.	
Providing ventilation to interior spaces through active or passive means, paying particular attention to forepeak, afterpeak, lockers, under-counter areas, and other spaces normally closed off from air circulation.	Breaching or removing sections of deck, hull, ceiling, or interior panelling in order to create circulation between frame bays, etc., without first determining, in consultation with a naval architect experienced in such matters, that the effect of such an action on the vessel's hull girder strength will be acceptable.
Installing dehumidifiers in closed spaces where excessive relative humidity promotes decay or corrosion.	Allowing dehumidifiers to drain into areas where fresh water accumulation could promote rot or decay.
	Permitting air to become excessively dry, thus promoting over-drying of wood structure.
Providing low heat in interior spaces to accelerate drying and to prevent freezing, condensation, etc.	Failing to monitor operation of heating, ventilating, and dehumidifying equipment for detection of fire hazards or malfunctions, etc.
Removing loose paint, scale, and corrosion from wood and metal surfaces, using the least abrasive method effective for the task.	Failing to take paint samples of original or historic finishes removed in the stabilization process.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Removing standing water from all interior spaces as it accumulates.	Permitting water to accumulate in any interior space; failing to track down and repair leaks.
Ensuring that limber holes, scuppers, drains, etc., are free of debris.	
Ensuring that ballast material is dry, appropriately coated (if metallic), and installed in such a manner that air circulation and/or access to the inside of the hull is possible.	
Repairing or replacing missing or severely deteriorated elements, when required for structural stability, with new material that matches the original in composition, size, appearance, and method of fastening.	
Exercising special care to avoid breaching hull material below the waterline of a floating vessel while scraping, chipping, or grit blasting.	

GUIDELINES FOR STABILIZATION

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc.

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Thoroughly examining masts, spars, and rigging to determine their structural soundness.	
Thoroughly documenting the position, method of attachment, rigging detail, etc. of all elements displaced during the stabilization process. Providing secure, protected storage for such material.	
Relieving strain on severely weakened or deteriorated masts or standing rigging by unstepping them, and/or by sending down yards, upper masts, etc., pending repair or replacement of unsound elements.	
Eliminating hazards by sending down gear aloft such as blocks, lights, antennas, etc. if their attachments or supporting structures are insecure.	
Reinforcing decayed or weakened masts, spars, and related structures or fittings, especially when there are visible signs of deflection or failure.	Failing to restrict access to areas where insecure or unsound rigging poses a safety hazard.
Supplementing existing standing rigging, if severely deteriorated, with temporary stays rigged to secure points.	
Ensuring that boats are adequately supported to prevent damage or change in shape.	
Applying temporary measures to preserve the shape of boats, such as securing sprung planks, reinforcing broken frames, etc.	
Treating the causes of rot and corrosion to arrest deterioration of boats.	
Cleaning and removing loose paint, corrosion, etc., from masts, spars, decks, equipment, machinery, etc. Sealing or coating with appropriate protective finishes.	Failing to recoat ferrous metal surfaces with protective finishes after cleaning.
Lubricating moving parts and metal bearing surfaces.	

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that water is not permitted to enter masts, spars, or the vessel structure through cracks, checks, open joints, wasted iron or steel, inadequately bedded or loose fittings, etc.	
Filling open joints and end-grain checks, especially at mastheads; filling horizontal checks on upper surfaces of wooden spars with appropriate fillers.	
Installing stopwaters in vertical checks on wooden masts, etc., above the point of deck penetration.	
Applying new paint or other protective coatings to masts, spars, machinery, armament, and gear aloft after thorough cleaning and removal of scale, corrosion, loose paint, etc. Matching the historic coatings as closely as possible in color, texture, and appearance.	
Applying penetrating wire preservative to sound standing wire rigging. Replacing worming, parcelling, and service as necessary. Protecting with historically appropriate coatings. Cleaning and lubricating rigging screws, turnbuckles, etc.; applying appropriate protective coatings.	
Renewing seizings, service, etc., as required on sound organic (i.e., hemp, etc.) standing rigging. Tarring, or coating with appropriate protective coatings. Replacing unsound rigging with new material that matches the old as closely as possible in composition, size, color, texture, etc.	Replacing hemp rigging with wire or vice versa when there is no historical basis for the change.
Overhauling running rigging. Replacing deteriorated rope, wire, etc., with new material that matches the old as closely as possible in composition, size, color, texture, and appearance. Cleaning and lubricating blocks, sheaves, etc. Repairing or replacing, if necessary, with materials that are historically appropriate.	Replacing lanyards and deadeyes with turnbuckles, or vice versa, when there is no historical basis for the change. Permanently substituting wire clamps or swage fittings for seizings or splices, etc. Failing to thoroughly inspect and repair or replace as required running rigging and associated blocks, sheaves, etc., that are required for management or operation of the vessel.

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Removing severely deteriorated boats to covered protected storage if possible.	Failing to provide adequate support and/or stiffening for boats that are to be moved.
Providing exposed boats with weatherproof covers that permit air circulation.	
Ensuring that decks, cabin tops, etc., of enclosed boats are weathertight, if uncovered.	
Making provisions for drainage and ventilation of boat interiors.	
Ensuring that water is not permitted to enter gun tubes or sensitive mechanisms. Providing covers for elements such as breech mechanisms, gun muzzles, etc.	
Ensuring that gaskets and seals on control boxes, mechanism covers, etc., are in good condition; replacing, if necessary.	
Providing weatherproof covers, if appropriate, for protection of deck equipment, armament, or exposed machinery such as capstans, windlasses, binnacles, etc.	

GUIDELINES FOR STABILIZATION

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Cleaning and removing loose paint, corrosion, etc., from engines, auxiliaries, compressors, pumps, etc. Priming and/or painting with appropriate paints.	
Coating historically unpainted machinery surfaces with gun grease, oil or other appropriate products to prevent corrosion.	
Lubricating moving parts and bearing surfaces of operable machinery.	
Flushing liquid cooling systems; recharging with coolant or draining, as applicable.	Allowing salt water or corrosive coolants to remain in the cooling systems of machinery that is not operated. Failing to drain pipes and cooling systems, or to add anti-freeze, when equipment is subject to freezing temperatures.
Rotating machinery, if possible; making provision for lubrication and rotation on a regular basis, by hand or mechanical means.	Rotating machinery without ensuring that moving parts are lubricated.
Covering machinery to protect it from dirt, dust, water, etc., after cleaning and recoating.	
Flushing boilers with fresh water; draining thoroughly if not used.	
Cleaning and scaling boilers, uptakes, exhaust stacks, and related surfaces with rust-inhibitant; coating, if appropriate, to prevent corrosion.	
Ensuring that asbestos insulation on boilers, piping, etc., is contained.	Permitting asbestos dust to dissipate through cracks or breaks in covering. Failing to take appropriate safety precautions while working around asbestos.
Isolating, if possible, all plumbing, piping, and valves that will remain in use for management or operation of the vessel. Ensuring that valves are operable and properly packed, and that pressurized pipes and related joints and fittings are sound and free of leaks.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems
(continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Flushing and draining all piping and related fixtures not required for management or operation of the vessel.	
Stripping water from fuel and oil tanks.	
Flushing and draining water and fuel tanks if not required for use. Cleaning, scaling, and coating inside and out if possible.	Failing to ensure that tanks are gas-free and oxygen-safe before they are entered by personnel and/or before heat-producing work such as welding, cutting, etc., is performed in their vicinity.
Ensuring that all tanks are adequately vented.	
Isolating electrical circuits not required for management or use of the vessel. Eliminating ground losses, shorts, etc., from active circuits.	Failing to thoroughly document electrical systems before any changes are made; failing to clearly document changes.
Drying out, if required, and cleaning corrosion from electric motors, electrical panels, switch boards, etc. Applying appropriate moisture- and corrosion-inhibiting products to motor and generator commutators, armatures, electrical contacts, etc.	
Lubricating bearings, etc., of motors and generators. Rotating, if possible.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Installing permanent or temporary covers over stacks, escape pipes, etc., to prevent water entry into machinery or boilers.	
Recognizing the hazard of siphoning action present in piping that connects directly or indirectly to through-hull fittings below the waterline.	
Ensuring that through-hull fittings and fastenings are sound and operable if required for use.	
Blanking off through-hull fittings not required for operation or maintenance of the vessel.	
Packing or heating sea chests and below-waterline through-hull fittings in sub-freezing weather, especially on vessels in fresh water.	Failing to recognize the danger of freezing (and consequent failure) of below-waterline fittings as a result of sub-freezing temperatures within the vessel, even though exterior water temperature might be above the freezing point.
Installing an isolating transformer between shore power line and a floating vessel's electrical system.	
Installing ground fault interrupters on circuits likely to be used for pumps, power tools, hand-held lighting, or machinery in damp or wet areas of the vessel.	

GUIDELINES FOR STABILIZATION

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Complying with health and safety codes in such a manner that character-defining spaces, features, and finishes are preserved.	
Working with local code officials to investigate alternative life safety measures or variances available under some codes so that alterations or non-historic additions to the vessel can be avoided.	
Designing and constructing boarding ramps, ladders, stairs, gangplanks, etc., that do not require alteration, displacement, or removal of historic fabric or character-defining features of the vessel. Access over rails or bulwarks, or through existing gangways or ports, etc., is recommended.	
Utilizing, wherever feasible, existing stairs, companion ladders, etc., for access within the vessel.	
Constructing or adding railings, barriers, etc., when required for safety or security, that do not detract from or diminish the historic character of the vessel.	
Utilizing, when possible, existing mechanical system elements such as wiring, electrical fixtures, plumbing and ducting in providing light, heat, ventilation, etc.	
Installing on floating vessels operable pumps of sufficient capacity and accessibility to deal with substantial flooding on short notice. Providing generators to ensure backup power for pumps and emergency lighting in case of power outages.	
Installing bilge alarms, security alarms, and fire detection equipment; ensuring that alarms are monitored at all times, and that emergency backup power is provided.	

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Installing or activating a fire suppression system (a charged dry-chemical or inert gas system may be preferable to sprinklers).	
Designing and installing new lighting, electrical, mechanical, security, and fire suppression systems and devices in such a manner that character-defining spaces and features are preserved, and historic fabric and finishes are not damaged, displaced, or unnecessarily obscured.	
Developing comprehensive emergency plans that address in detail actions to be taken in case of fire, flooding, storms, etc. Conducting regular emergency drills for the purpose of training and testing the effectiveness of such plans. Coordinating plans with local fire, police, and rescue agencies; Coast Guard; etc.	
Removing from the vessel all flammables not required for operation or maintenance of the vessel; storing flammables that must remain on board in appropriate fireproof containers.	

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GUIDELINES FOR PRESERVATION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Identifying, retaining, and preserving to the greatest extent possible original or historic fabric, as well as material, elements, features, and form that are important in defining the historic character of the vessel.	
Thoroughly documenting the existing conditions of any affected part of the vessel, including location, size, composition, method and pattern of fastenings, etc., of the affected elements, before performing work of any kind, **including emergency repairs.**	Failing to document affected areas or elements before performing preservation work or emergency repairs, so that knowledge of conditions existing before commencement of work is lost.
Retaining and protecting, whenever possible, original or historic material that may be affected when reestablishing structural stability or arresting deterioration.	Failing to provide proper protection for historic features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.
Whenever possible, repairing rather than replacing historic elements, using materials and methods historically appropriate to the vessel. When deteriorated elements **must** be replaced, ensuring that the replacement matches the original as closely as possible in composition, size, form, and method of fastening.	Departing from original methods of construction or configuration of material in making repairs or replacements, especially where changes will be visible.
Carefully documenting material or features displaced, removed, or otherwise affected during treatment, even if the material is not of historic significance.	Failing to document or preserve material samples for possible future use in manufacturing replacements.
Clearly and unobtrusively marking, by branding, stamping, affixing welded tabs, or other permanent means, the date of installation on any new or replacement material that is incorporated into the vessel.	Failing to thoroughly document repairs or replacement of material, with reasons for the action taken.
Using the least abrasive and caustic cleaning agents possible when cleaning historic elements or finishes.	Failing to exercise care when cleaning, so that delicate historic elements or features are damaged.
Stabilizing or removing corrosion on metal surfaces, using the least abrasive effective method.	Leaving corrosion on metal surfaces untreated, especially between or behind structural members.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Treating severely corroded metals with chemical metal stabilization or consolidation products.	Treating one material with chemical products that could have an adverse reaction with other materials in proximity.
Applying appropriate paint or other coating systems to metals or alloys after stabilization or cleaning.	Failing to reapply protective coating systems to metals or alloys that require them after stabilization or cleaning, so that accelerated corrosion occurs.
	Failing to ensure that all surfaces, whether wood or metal, receive proper preparation before application of coatings. This may include scaling, grit blasting, degreasing, deacidifying, etching, drying, priming, etc.
Treating areas or pockets of active rot or pest infestation in wood with appropriate chemical fungicides, insecticides, preservatives, etc.	Failing to assign a high priority to treatment of rot or pest infestation, thus ensuring further contamination.
	Applying fungicides or other chemical treatments that are hazardous to humans or the natural environment after application.
Removing rot- or pest-infected wood when adjacent areas are threatened with contamination, if stabilization measures such as chemical treatment, ventilation and drying, etc., cannot be effected within a reasonable time, or if structural stability is threatened.	Failing to remove wood beyond the area of infestation when removal is required, thus permitting spread of contamination.
	Failing to thoroughly document removal of any material or features, including the reason for removal, and the composition, size, finish, method of fastening, and location of the material removed.
Treating new wood with chemical preservatives (after shaping, drilling, and fitting) before incorporation into the vessel. Using fungicidal bedding compounds where appropriate.	Treating one material with chemical treatments that could have an adverse reaction with other materials in proximity.
Preserving existing finishes whenever possible. When refinishing is required, using new coatings that match the old as closely as possible in color, texture, and appearance.	Failing to collect, document, and preserve samples when removal of the original finish is necessary.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Discovering original paint colors and finishes; repainting or refinishing with colors based on the original.	Refinishing with colors that cannot be documented through research and investigation to be appropriate to the vessel and period.
	Painting historically unpainted or varnished surfaces; varnishing or leaving unfinished surfaces that were historically painted.
	Applying a high-gloss, yacht-like finish to work boats, etc., unless specifically appropriate.
	Sealing, or applying impermeable coatings to, wood structural members that have high moisture content, thus promoting rot and preventing drying.
Using "traditional" paints and protective coatings that match the original as closely as possible in composition, appearance, and other properties.	
Using modern, long-lasting, low-maintenance protective coatings where substantially improved protection and reduced maintenance will add to the life of the vessel, so long as the new finish is reversible and matches the original in color, texture, and appearance.	Applying "new technology" products or methods on the recommendation of salesmen, shipyard personnel, etc., without first investigating the long-term effects.
Lubricating moving parts and bearing surfaces of machinery, equipment, armament, rigging gear, etc.	
Developing, and adhering to, schedules for regular and cyclic maintenance, including drydocking or haul-out of vessels afloat.	
Establishing a schedule of regular inspections of all parts of the vessel in order to monitor condition, identify problems, etc.	
Establishing a schedule for regular cleaning.	

GUIDELINES FOR PRESERVATION

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Ensuring that a vessel out of the water, whether permanently or temporarily, is adequately supported, including overhanging sections at bow and stern. Ensuring that the weight of masts, machinery, heavy deck equipment, etc., is transmitted to support blocks and/or shores, especially if deck beams, frames, keel, or other major structural members are weak.	
Reinforcing decayed and weakened structural members, especially where there are visible signs of deflection or failure.	Leaving untreated known structural problems that will cause continuing deterioration and shorten the life of the vessel.
Retaining existing hull, deck and deckhouse openings, such as doors, hatches, scuttles, windows, ports, port lights, etc.	Installing new openings, closures, or hardware that are incompatible with the vessel's historic appearance or that obscure, damage, or destroy character-defining features.
Keeping all topside areas free of dirt and grime, especially in areas where accumulated dirt will hold moisture, thus contributing to decay.	

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Arranging for thorough examination of the vessel by a qualified marine surveyor on a periodic basis, in order to determine the condition of the vessel and to plan for major maintenance and repairs.	
Repairing or, if necessary, replacing severely weakened, deteriorated, or missing structural members or hull material (planking, caulking, sheathing, hull plates, etc.) with new material of the same composition, size, scale, and methods of fastening and construction as the original (e.g., riveted iron plates should, if at all possible, be replaced with iron plates of the same size and shape, riveted in place; white oak planking should be replaced by white oak planks of the same dimensions, fastened in the same manner as the originals, with seams appropriately caulked, etc.).	
Using state-of-the-art, long-lasting, low maintenance coatings on underwater portions of a vessel's hull, provided that such coatings are reversible, and that their application does not require destruction of historic fabric or departure from historic methods of bottom construction.	Coating underwater portions of hull with gunnite, fiberglass, or other non-historic products that are non-reversible, that would interfere with historic methods of maintenance, or that could accelerate deterioration of bottom material.
Renewing or installing hull zincs.	Installing too many or too few zincs.
Determining the electrolytic potential of a floating vessel's hull; testing for stray electrical current in surrounding water. Designing an active or passive cathodic system to compensate.	Failing to monitor an impressed current cathodic protection system, or allowing untrained staff to monitor or adjust system.
Ensuring that decks, hull topsides, deckhouses, etc., are weathertight.	
Employing traditional methods of keeping unpainted wooden decks tight, such as regular brine washdowns, applications of oil, etc.	Failing to recognize the possible negative effects of brine washdowns, especially in iron or steel vessels.
	Painting or otherwise covering decks that were historically unfinished.

Hull, Decks, Structural Members, Deck Houses and Superstructure,
Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Repairing or, if necessary, replacing deteriorated or missing deckhouse tops and sides, deck planks, deck plates, etc., with new material of the same composition, size, scale, and method of fastening as the original.	Replacing or covering over (except as a temporary protective measure) planked decks with plywood sheeting. Fiberglassing over a deck that was not originally so covered.
Recaulking and/or paying seams in wooden decks as required, using historically appropriate materials and methods.	Caulking or paying seams with historically inappropriate materials that do not have the same appearance as the original, or that are irreversible or non-removable.
Replacing deteriorated historically appropriate coverings on decks and deckhouse tops (painted canvas, concrete, linoleum, tar, etc.) with new material that matches the old in composition, size, shape, color, and texture after reestablishing the structural stability of the deck or deckhouse top.	
Rigging temporary or seasonal canopies, covers, etc., over vessel to prevent incursion of rainwater, if decks cannot be made watertight.	Damaging or altering distinctive features or historic fabric in installation of temporary protective measures.
Relieving hogging, sagging, and shear forces caused by improper distribution of ballast, fuel, water, etc., after consultation with a naval architect.	
Eliminating the causes of standing water on decks, deckhouse tops, etc. Cleaning, repairing, or replacing, if required, deck drains, scuppers, etc.	
Adjusting the trim of a floating vessel by re-positioning, removal, or addition of ballast, water, fuel, anchor chain, etc., in order to render existing deck drains and scuppers effective. Ensuring that the stability of the vessel is maintained in the operation, and that undue hull stresses that might cause hogging, sagging, etc., are not introduced.	Installing ballast that cannot be removed, or that renders the inside of the hull inaccessible (e.g., concrete poured between floors).

Hull, Decks, Structural Members, Deck Houses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Installing new drains or scuppers in topside areas that hold standing water, if decay or damage would result from lack of drainage. Designing new drains that are historically appropriate in appearance and construction, and that require minimal displacement of historic fabric.	Failing to thoroughly document addition of non-historic features, with justification for the addition, details of construction, etc.
Regularly inspecting, and repairing or replacing when necessary, mouldings, waterways, margins, covering boards, rail caps, etc.; filling cracks, checks, open joints or seams with appropriate fillers; painting or finishing, if appropriate, with coatings of the same color, texture, and appearance as the original.	Deferring, or discounting as "minor," repairs that could prevent fresh water intrusion into structural members.
Maintaining the soundness and weathertight integrity of hull and deck openings. Duplicating the material, design, and hardware of the original openings and closures where replacement is necessary.	

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining the basic plan of a vessel's interior, including the relationship and size of spaces.	
Maintaining all interior spaces, including bilges, frame bays, lockers, etc., free of dirt and debris. Using the least abrasive and caustic cleaning agents possible when cleaning historic elements or finishes.	
Protecting and maintaining interior surfaces and finishes through appropriate treatments such as cleaning, rust removal, and reapplication of protective coating systems.	Failing to maintain interior surface coatings on a cyclical basis so that loss or deterioration of interior features and hardware results.
	Radically changing the type of surface finishes or their color, such as painting a previously varnished wood feature.
Protecting interior features and finishes against arson and vandalism before project work begins by erecting protective fencing and other barriers, installing fire alarm systems that are keyed to local protection agencies, etc.	Permitting unauthorized entry into historic ships so that interior features and finishes are damaged by exposure to weather or through vandalism.
	Stripping interiors of features such as woodwork, doors, hardware, light fixtures, mechanical equipment, or of decorative materials.
Providing ventilation to interior spaces through active or passive means, paying particular attention to forepeak, afterpeak, lockers, undercounter areas, frame bays, and other spaces normally closed off from air circulation.	Breaching or removing sections of deck, hull, ceiling, or interior panelling in order to create circulation between frame bays, etc., without first determining, in consultation with a naval architect experienced in such matters, that the effect of such an action on the vessel's hull strength will be acceptable.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Installing dehumidifiers in spaces where excessive relative humidity promotes decay or corrosion.	Allowing dehumidifiers to drain into areas where fresh water accumulation could promote rot or decay.
	Permitting air to become excessively dry, thus promoting over-drying of wood structure.
Providing low heat in interior spaces to retard moisture and to prevent freezing, condensation, etc.	Failing to monitor operation of heating or ventilating equipment for detection of malfunctions, fire hazard, etc.
Coating hard-to-reach areas of the inside of iron and steel hulls with penetrating coatings, such as "Eureka Fluid," that work their way under frames, etc., to prevent rust.	
Retaining existing material, hardware, and architectural features such as joinery, paneling, cornices, mouldings, insulation, doors and doorways, stairs and ladders, deck coverings, furniture, upholstery, and lighting and plumbing fixtures.	Removing existing material, hardware, or architectural features except where essential for safety or efficiency.
Treating, as they appear, the causes of leaks that permit water to enter the vessel interior or structure. Ensuring that water is not permitted to stand in interior spaces.	Permitting water to accumulate in any interior space; failing to track down and repair leaks.
Ensuring that limber holes, scuppers, drains, sumps, etc., are free of debris.	
Ensuring that ballast material is dry, appropriately coated (if metallic), and installed in such a manner that air circulation and/or access to the inside of the hull is possible.	
Exercising special care to avoid breaching hull material below the waterline of a floating vessel while scraping, chipping, or grit blasting.	

GUIDELINES FOR PRESERVATION

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc.

- APPLICABLE TO ALL VESSELS -

Recommended

Retaining and preserving existing masts, spars, rigging, equipment, armament, etc., to the greatest extent possible.

Retaining the existing form and configuration of a vessel's rig, arrangement of deck equipment and machinery, armament, etc.

Removing rotten, decayed, or wasted portions of masts, spars, or other elements when structural stability is affected or when adjacent areas are threatened with contamination.

Effecting repairs in such a manner that existing material is preserved to the greatest extent possible, and that the completed repair resembles the surrounding area in texture, finish, etc.

Ensuring that boats are adequately supported to prevent drainage or change in shape.

Not Recommended

Failing to thoroughly document repairs or replacement of material, with the reasons for action taken.

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that water is not permitted to enter masts, spars, or the vessel structure through checks, open joints, wasted iron or steel, inadequately bedded fittings, etc.	
Filling open joints and end-grain checks, especially at mastheads, and filling horizontal checks on upper surfaces of wooden spars, with appropriate fillers.	
Installing stopwaters in vertical checks on wood masts, etc., above the point of deck penetration.	
Maintaining sound coatings on masts, spars, deck equipment, machinery, armament, and gear aloft. When refinishing, matching the historic coatings as closely as possible in color, texture, and appearance.	Painting spars that were historically varnished or slushed, or vice versa.
Regularly and thoroughly inspecting all elements of a vessel's tophamper to ensure against safety hazards and undetected deterioration. Paying special attention to ladders, footropes, tops and platforms, etc., and to slings, yokes, rings and eyes, and other load-bearing elements, with their associated fittings. Repairing or replacing when necessary with materials that match the original as closely as possible in composition, size, appearance, method of fastening, etc.	
Replacing unsound standing rigging with new material that matches the old as closely as possible in composition, size, color, texture, etc.	Replacing hemp rigging with wire (or vice versa) when there is no historical basis for the change; replacing lanyards and deadeyes with turnbuckles (or vice versa) without historical justification.
Cleaning, and applying penetrating wire preservative to, sound standing wire rigging.	
Cleaning and lubricating rigging screws, turnbuckles, etc.; applying historically appropriate protective coatings.	

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Replacing worming, parcelling, service, siezings, etc., when required, employing historically appropriate methods and materials.	
Applying and maintaining historically appropriate protective coatings on standing rigging.	
Overhauling running rigging regularly. Replacing deteriorated rope, wire, etc., with new material that matches the old as closely as possible in composition, size, color, texture, and appearance. Cleaning and lubricating blocks, sheaves, etc. Repairing or replacing, if necessary, with new materials that match the old as closely as possible.	
Maintaining sound coatings on boats that are exposed to the weather. Providing ventilated, weatherproof covers for open boats stored right-side-up. Filling cracks, checks, open seams, etc., on exposed boats, thus preventing incursion of water into the boat's structure.	
Ensuring that boat interiors are adequately ventilated and kept dry. Opening hatches and doors, and removing boat covers in fair weather, whenever possible. Installing drains at the lowest point of boats stored upright. Keeping drains clear.	
Ensuring that water is not permitted to enter gun tubes or sensitive mechanisms of armament or machinery. Providing weatherproof covers for elements such as breech mechanisms, gun muzzles, control boxes, etc.	
Ensuring that deck equipment, armament, deck-mounted machinery, and associated mounts or bases are bedded or secured in such a manner as to prevent incursion of moisture between mount and deck, or into the vessel structure.	

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that mast coats, collars, electrical cable packing, and similar covers or seals on through-deck openings are intact. Replacing, when necessary, with new material that matches the old as closely as possible.	
Providing weatherproof covers, if appropriate, for protection of deck equipment, armament, or exposed machinery.	

GUIDELINES FOR PRESERVATION

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining and preserving existing machinery, tankage, electrical equipment, mechanical systems, etc., to the greatest extent possible.	
Repairing, rather than replacing, deteriorated material or elements whenever possible. When replacement is necessary, using new material that matches the old as closely possible in composition, texture, appearance, and method of construction or fastening.	Failing to thoroughly document repairs or replacement of material, with the reasons for actions taken.
Cleaning dirt, loose paint, corrosion, etc., from machinery, tankage, piping, electrical equipment, etc., using the least caustic/abrasive effective means.	Failing to recoat historically painted ferrous elements after removal of paint or treatment of corrosion.
Coating historically unpainted machinery surfaces with gun grease, oil, or other appropriate products to prevent corrosion.	Painting historically unpainted surfaces, or leaving bright surfaces that were historically painted.
Disassembling and thoroughly cleaning interiors and moving parts of machinery. Coating with appropriate preservatives before reassembly if machinery is to remain static; otherwise, lubricating parts with clean lubricant.	Failing to establish a schedule for renewal of internal preservative coatings on static machinery.
Ensuring that operable (not necessarily "operating") machinery is not permitted to deteriorate through lack of maintenance or protection from moisture, dirt, etc.	Rotating machinery without ensuring that moving parts are lubricated.
Establishing and adhering to a regular schedule of inspection, lubrication, and rotation of operable machinery, unless the machinery is internally preserved and statically maintained.	
Flushing liquid cooling systems. Thoroughly draining if machinery is not to be operated; otherwise, recharging with appropriate coolant.	Allowing salt water or corrosive coolants to remain in the cooling systems of machinery that is not operated. Failing to drain pipes and cooling systems, or to add anti-freeze, when equipment is subject to freezing temperatures.

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Flushing boilers with fresh water. Draining thoroughly if not used.	
Cleaning and scaling boilers, uptakes, exhaust stacks, and related surfaces. Coating with rust inhibitant. Painting, if appropriate, to prevent corrosion.	
Ensuring that asbestos insulation on boilers, piping, bulkheads, etc., is contained.	Permitting asbestos dust to dissipate through cracks or breaks in covering, etc.
	Failing to take appropriate safety precautions while working with asbestos.
Isolating, if possible, any plumbing, piping, and valves that are to remain in use for management or operation of the vessel. Ensuring that valves are operable and properly packed, and that pressurized pipes and related joints and fittings are sound and free of leaks.	Failing to document modifications to the plumbing system, or to retain and safely store fittings removed.
Flushing and draining all piping, pumps, and related fixtures not required for management or operation of the vessel. Opening unused piping to the air to prevent condensation and associated deterioration.	
Flushing and draining water, fuel, and oil tanks if not required for use. Cleaning, scaling, and coating inside and out if possible.	Failing to ensure that tanks are gas-free and oxygen-safe before they are entered by personnel and/or before heat-generating work such as welding, cutting, etc., is performed in their vicinity.
Stripping water from fuel and oil tanks that remain in use.	
Completely filling tanks or boilers that are required for use, in order to prevent condensation and retard deterioration of interior surfaces.	
Ensuring that all tanks are adequately vented. Removing or opening inspection ports of unused tankage in order to promote air circulation.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Isolating electrical circuits not required for maintenance or use of the vessel. Eliminating ground losses, shorts, etc., from active circuits.	Failing to thoroughly document electrical systems before any changes are made; failing to thoroughly document changes or additions.
Drying out, if required, and cleaning corrosion from electric motors, generators, electrical panels, switch boards, etc. Applying appropriate moisture- and corrosion-inhibiting products to motor and generator commutators, armatures, electrical contacts, etc.	
Lubricating bearings, etc., of motors and generators. Rotating on a regular basis, if possible.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Thoroughly cleaning ducts, air passages, blowers, fan housings, etc., to remove corrosion and/or accumulated dirt. Recoating, if required.	
Installing permanent or temporary covers over stacks, escape pipes, etc., to prevent water entry into machinery or boilers.	
Ensuring that through-hull fittings and fastenings are sound and operable if required for use.	
Blanking off below-waterline through-hull fittings not required for operation or maintenance of the vessel.	
Packing or heating sea chests and below-waterline through-hull fittings in sub-freezing weather, especially on vessels in fresh water.	Failing to recognize the danger of freezing (and consequent failure) of below-waterline fittings as a result of sub-freezing temperatures within the vessel, even though exterior water temperature might be above the freezing point.
Installing an isolating transformer between a floating vessel's shore power line and shipboard electrical system.	
Installing ground fault interrupters in circuits likely to be used for tools, handheld lighting, pumps, or machinery in damp or wet areas of the vessel.	
Ensuring that ventilators, air intake grilles, etc., are provided with adequate covers or hoods to prevent entry of rainwater, etc.	

GUIDELINES FOR PRESERVATION

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Complying with health and safety codes in such a manner that character-defining spaces, features, and finishes are preserved.	
Working with local code officials to investigate alternative life safety measures or variances available under some codes so that alterations or non-historic additions to the vessel can be avoided.	
Designing and constructing boarding ramps, ladders, stairs, gangplanks, etc., that do not require alteration, displacement, or removal of historic fabric or character-defining features of the vessel. Access over rails or bulwarks, or through existing gangways or ports, etc., is recommended.	
Utilizing wherever feasible, existing stairs, companion ladders, etc., for access within the vessel.	
Constructing or adding railings, barriers, etc., when required for safety or security, that do not detract from or diminish the historic character of the vessel.	
Utilizing, when possible, existing mechanical system elements such as wiring, electrical fixtures, plumbing and ducting in providing light, heat, ventilation, etc.	
Installing on floating vessels operable pumps of sufficient capacity and accessibility to deal with substantial flooding on short notice. Providing generators to ensure backup power for pumps and emergency lighting in case of power outages.	
Installing bilge alarms, security alarms, and fire detection equipment; ensuring that alarms are monitored at all times, and that emergency backup power is provided.	

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Installing or activating a fire suppression system (a charged dry-chemical or inert gas system may be preferable to sprinklers).	
Designing and installing new lighting, electrical, mechanical, security, and fire suppression systems and devices in such a manner that character-defining spaces and features are preserved, and historic fabric and finishes are not damaged, displaced, or unnecessarily obscured.	
Developing comprehensive emergency plans that address in detail actions to be taken in case of fire, flooding, storms, etc. Conducting regular emergency drills for the purpose of training and testing the effectiveness of such plans. Coordinating plans with local fire, police, and rescue agencies; Coast Guard; etc.	
Removing from the vessel all flammables not required for operation or maintenance of the vessel; storing flammables that must remain on board in appropriate fireproof containers.	

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GUIDELINES FOR REHABILITATION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Identifying, retaining, and preserving to the greatest extent possible original or historic fabric, as well as material, elements, features, and form that are important in defining the historic character of the vessel.	Removing or radically changing features that are important in defining the overall historic character of the vessel, thus diminishing its historic identity.
	Replacing or rebuilding elements or features that can be repaired, thus diminishing historic integrity.
Thoroughly documenting the existing conditions of the vessel or any affected part of the vessel, including location, size, composition, method and pattern of fastenings, etc., of the affected elements, before performing work of any kind, **including emergency repairs.**	Failing to document affected areas or elements before performing preservation work or emergency repairs, so that knowledge of conditions existing before commencement of work is not lost.
Thoroughly assessing the potential impact of rehabilitation work on materials and features that are essential in defining the historic character of the vessel. Proceeding with the work only if those materials and features can be preserved and protected in the process.	
When rehabilitation work involves restoration (recovering the form, substance, and details of the vessel or its parts as they appeared at a particular time), applying the Guidelines for Restoration.	
Making alterations for which there is no historical basis only when the alterations are absolutely necessary in order to provide for an efficient contemporary use.	Failing to thoroughly investigate possible alternatives to alteration that would permit retention and preservation of historic fabric.
Carefully documenting material or features displaced, removed, or otherwise affected during treatment, even if the material is not of historic significance.	
Clearly and unobtrusively marking, by branding, stamping, affixing welded tabs, or other permanent means, the date of installation on any new material that is incorporated into the vessel.	

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Whenever possible, repairing rather than replacing historic elements, using materials and methods historically appropriate to the vessel. When deteriorated elements **must** be replaced, ensuring that the replacement matches the original as closely as possible in composition, size, form, and method of fastening.	Departing from original methods of construction or configuration or composition of material in making repairs or replacements, except when absolutely necessary for reasons of safety, or when required by regulation.
Designing and constructing new replacements for essential elements that are missing. These should be (1) replicas based on historical, pictorial, and physical documentation; or (2) new designs that are compatible with the historic character of the vessel.	Creating a false historical appearance because the replacement is based on faulty or insufficient evidence or documentation.
When safety considerations; compliance with fire, building, or health codes; Coast Guard regulations, etc., require replacement of original or historic materials or finishes with new material not historically appropriate to the vessel, making the replacement in such a manner that the finished work resembles the original as closely as possible in form, finish, detail, and appearance.	Failing to thoroughly document replacements that are not made in-kind, with the reasons for the substitution, etc.
Retaining, preserving, and providing protected storage for historically significant elements that must be removed to effect the rehabilitation.	Failing to document the position on the vessel, method of attachment and assembly, etc., of elements removed.
Incorporating new construction or installing new elements necessary for effective contemporary use of the vessel in such a manner that original or historic material, elements, and features are obscured, displaced, or altered to the least possible degree.	
Using the least abrasive and caustic cleaning agents possible when cleaning historic elements or finishes.	Failing to exercise care when cleaning, so that delicate historic elements or features are damaged.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Stabilizing or removing corrosion on metal surfaces; sealing and coating with appropriate protective coatings.	Leaving corrosion on metal surfaces untreated, especially between or behind structural members.
	Failing to reapply protective coating systems to metals or alloys that require them after stabilization or cleaning, so that accelerated corrosion occurs; failing to properly prepare surfaces before recoating.
When removing loose paint, scale, or corrosion from wood or metal surfaces, using the least abrasive method effective for the task.	Removing coatings that are sound and intact, unless removal is required for good adhesion of new coatings.
Treating areas or pockets of active rot or pest infestation in wood with appropriate chemical fungicides, insecticides, preservatives, etc.	Failing to assign a high priority to treatment of rot or pest infestation, thus ensuring further contamination.
	Applying fungicides or other chemical treatments that are hazardous to humans or the natural environment after application.
Removing rot- or pest-infected wood when adjacent areas are threatened with contamination if stabilization measures such as chemical treatment, ventilation, drying, etc., cannot be effected within a reasonable time, or if structural stability is threatened.	Failing to remove wood beyond the area of infestation when removal is required, thus permitting spread of contamination. Failing to thoroughly document removal of any material or features.
Treating new wood with chemical preservatives (after shaping, drilling, and fitting) before incorporation into the vessel. Using fungicidal bedding compounds where appropriate.	Treating one material with chemical treatments that could have an adverse reaction with other materials in proximity.
Retaining, protecting, and preserving original or historic finishes whenever possible.	Failing to collect, document, and preserve samples when removal of the original finish is necessary.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Discovering original paint colors and finishes; repainting or refinishing with colors based on the original.	Refinishing with colors that cannot be documented through research and investigation to be appropriate to the vessel and period.
	Painting historically unpainted or varnished wooden surfaces; varnishing or leaving unfinished surfaces that were historically painted.
	Applying a high-gloss, yacht-like finish to work boats, etc., unless specifically appropriate.
Using "traditional" paints and protective coatings that match the original as closely as possible in composition, appearance, and other properties.	
Using modern, long-lasting, low-maintenance protective coatings or fire-retardant paints where required by regulation or health and safety codes, or where substantially improved protection and reduced maintenance will add to the life of the vessel, so long as the new finish is reversible and matches the original in color, texture, and appearance.	Applying "new technology" products or methods on the recommendation of salesmen, shipyard personnel, etc., without first investigating the long term effects.

GUIDELINES FOR REHABILITATION

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Ensuring that a vessel out of the water, whether permanently or temporarily, is adequately supported, including overhanging sections at bow and stern. Ensuring that the weight of masts, machinery, heavy deck equipment, etc., is transmitted to support blocks and/or shores, especially if deck beams, frames, keel or other major structural members are weak.	
Retaining and preserving the vessel's historic outline or profile, including hull shape, arrangement of deckhouses or superstructure, etc.	Giving the vessel an appearance it never had.
Repairing or, if necessary, replacing severely weakened, deteriorated, or missing structural members or hull material (planking, caulking, sheathing, hull plates, etc.) with new material of the same composition, size, scale, and methods of fastening and construction as the original (e.g., riveted iron plates should, if possible, be replaced with iron plates of the same size and shape, riveted in place; white oak planking should be replaced by white oak planks of the same dimensions, fastened in the same manner as the originals, etc.).	Leaving untreated known structural problems that will cause continued deterioration and shorten the life of the vessel. Removing, covering, or radically changing features of structural systems that are important in defining the overall historic character of the vessel.
Repairing or, if necessary, replacing deteriorated or missing deckhouse tops and sides, deck planks, deck plates, etc., with new material of the same composition, size, scale, and method of fastening as the original.	Replacing or covering over (except as a temporary protective measure) planked decks with plywood sheeting. Fiberglassing over a deck that was not originally so covered.
Recaulking and/or paying seams in wooden decks as required, using historically appropriate materials and methods.	Caulking or paying seams with historically inappropriate materials that do not have the same appearance as the original, or that are irreversible or non-removable.
Replacing deteriorated historically appropriate coverings on decks and deckhouse tops (painted canvas, concrete, linoleum, tar, etc.) with new material that matches the old in composition, size, shape, color, and texture after reestablishing the structural stability of the deck or deckhouse top.	Painting or otherwise covering decks that were historically unfinished. Applying deck coverings such as fiberglass, rubber, or vinyl compounds, etc., unless specifically appropriate to the vessel.

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining existing hull, deck and deckhouse openings such as doors, hatches, scuttles, windows, ports, port lights, etc. When alteration is required for contemporary use, making the alterations in such a manner that the openings retain an appearance historically appropriate to the vessel.	Altering existing hull, deck, and deckhouse openings so that they are incompatible with the vessel's historic appearance. Installing picture windows, etc., in the hull; replacing port lights or traditional marine windows with aluminum sliding windows, etc.
Duplicating the material, design, and hardware of historically appropriate openings if new openings or closures are used.	Installing new openings, closures, or hardware that are incompatible with the vessel's historic appearance or that obscure, damage, or destroy character-defining features.
Using original doors, windows, port lights, and other closures, with their associated hardware, when they can be repaired and used in place.	Discarding original closures or hardware when they can be repaired and used.
Wherever possible, using existing hull and deck openings for access to and egress from the vessel.	
Avoiding, if possible, breaching of the hull to provide access and egress. When safety, handicapped access, or regulations governing the contemporary use **require** cutting entryways through the hull, planning the work in such a way that there is the least possible loss of historic or character-defining material and that the vessel's structural integrity is preserved.	Discarding or destroying elements or portions of the vessel that could be reincorporated in a future restoration. Such elements (e.g., hull plating and frames cut away for access ports) should be documented, stored, and preserved.
Designing new deckhouses or structures, when required for contemporary use, that are compatible with the size, scale, material, and color of the vessel.	Adding new elements that overwhelm the existing historic deck structures, or that substantially change the outline of the vessel, or that are inappropriate to the vessel in design, material, etc.

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Using state-of-the-art, long-lasting, low-maintenance coatings on underwater portions of the vessel's hull, provided that such coatings are reversible and that their application does not require destruction of historic fabric or departure from historic methods of bottom construction.	Coating underwater portions of the hull with gunnite, fiberglass, or other non-historic products that are non-reversible, that would interfere with historic methods of maintenance, or that could accelerate deterioration of bottom material.
Renewing or installing hull zincs.	Installing too many or too few zincs.
Determining the electrolytic potential of a floating vessel's hull; testing for stray electrical current in surrounding water. Designing an active or passive cathodic system to compensate.	Failing to monitor an active cathodic protection system, or allowing untrained staff to monitor or adjust system.
Ensuring that decks, hull topsides, deckhouses, etc., are weathertight.	
Rigging temporary or seasonal canopies, covers, etc., over vessel to prevent incursion of rainwater, if decks cannot be made watertight.	Damaging or altering distinctive features or historic fabric in installation of temporary protective measures.
Renewing or repairing caulking, welds, riveted joints, seals, gaskets, collars, mast coats, etc., that allow rainwater to enter the vessel's interior or structural members.	
Ensuring that cracks, checks, open joints and seams in mouldings, waterways, margins, covering boards, rail caps, etc., are filled with appropriate fillers and properly coated to prevent water entry.	Deferring, or discounting as "minor," repairs that could prevent fresh water intrusion into structural members.
Eliminating the causes of standing water on decks, deckhouse tops, etc. Cleaning, repairing, or replacing, if required, deck drains, scuppers, etc.	
Minimizing hogging, sagging, and shear forces by careful distribution of ballast, fuel, water, machinery and equipment, etc., under consultation with a naval architect.	Failing to consider the effect on the hull of weight newly added or redistributed as a result of the rehabilitation.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining the basic plan of a vessel's interior, including the relationship and size of spaces. Identifying and preserving interior spaces that are important in defining the overall historic character of the vessel.	Failing to thoroughly document the interior arrangements of the vessel before restoration or alteration, including finishes, joinery, fittings, hardware, etc.
Retaining and protecting, whenever possible, original or historic features such as furniture, fixtures, panelling, mouldings, hardware, etc., that may be affected in the rehabilitation process.	Removing principal bulkheads and partitions to create a new appearance.
Protecting and maintaining interior surfaces and finishes through appropriate treatments such as cleaning, rust removal, and reapplication of protective coating systems.	Failing to maintain interior surface coatings on a cyclical basis so that loss or deterioration of interior features and hardware results.
	Radically changing the type of surface finishes or their color, such as painting a previously varnished wood feature.
Protecting interior features and finishes against arson and vandalism before work begins by erecting protective fencing and other barriers, installing fire alarm systems that are keyed to local protection agencies, etc.	Permitting unauthorized entry into historic ships so that woodwork, doors, hardware, light fixtures, mechanical equipment, or decorative materials can be damaged or stolen.
	Stripping interiors of features such as woodwork, doors, hardware, light fixtures, mechanical equipment, or of decorative materials.
Installing new partitions, etc., when required for contemporary use, in such a manner that the new construction is removable, and that it causes the least possible damage or obstruction of character-defining features.	
Wherever possible, locating service functions such as mechanical equipment, offices, bathrooms, etc., in spaces originally used for those purposes; otherwise, placing these in non-character-defining spaces of the vessel.	
Retaining existing historically appropriate doors and doorways, stairs, ladders, etc., for access within the vessel.	Removing historically appropriate material, hardware, or architectural features except where essential for safety or efficiency.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Enclosing character-defining interior stairways, when required by code, in such a manner that their historic character is retained.	
Locating new stairways or elevators required by code in areas where they will least damage or obscure character-defining spaces, features, or finishes.	
Installing protective coverings in areas of heavy pedestrian traffic to protect historic features such as panelling, historic finishes, and the character defining details.	Failing to take new use patterns into consideration so that interior features are damaged.
Replacing missing or unrepairable features such as hardware, lamps or light fixtures, furnishings, fabrics, mouldings, panelling, etc., only after thorough research. Basing designs for new material on actual knowledge obtained from the remaining physical evidence of the feature, or on photographs, drawings, measurements, reliable accounts, etc., specific to the vessel under rehabilitation or similar vessels of the same period.	Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts or portions of the interior feature or finish, or that is physically or chemically incompatible. Removing a character-defining feature or finish that is unrepairable and not replacing it; or replacing it with a new feature or finish that does not convey the same visual appearance.
Removing debris and dirt from all interior spaces, including bilges, frame bays, etc.	
Retaining and documenting miscellaneous objects discovered on board during rehabilitation treatment, especially items such as moulding fragments, turnings, hardware, fasteners, etc., that may be useful in replicating features that are missing.	
Making provision for adequate ventilation of interior spaces in the restored vessel in such a manner that historic fabric and the historic character of spaces are preserved to the greatest extent possible and structural integrity is not compromised.	Breaching, or removing sections of, deck, hull, ceiling, or interior panelling in order to create circulation between frame bays, etc., without first determining that the effect on the vessel's hull strength will be acceptable.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Installing watertight bulkheads, machinery enclosures, etc., in such a manner that historic fabric and features are affected to the least possible degree.	
Ensuring that limber holes, scuppers, drains, sumps, pump wells and screens, etc., are free of debris.	
Installing new drains, scuppers, limber holes, etc., if necessary to provide drainage and prevent standing water in below-deck areas. Designing drains that are historically appropriate in appearance and construction, and that require minimal displacement of historic fabric.	Failing to thoroughly document addition of non-historic features, including justification for the addition, details of construction, etc.
Ensuring that dry ballast is clean, appropriately coated, and installed in such a manner that air circulation and physical access to the inside of the hull are provided.	Failing to distribute ballast, fuel, water, anchor chain, etc., in such a manner that hogging and sagging forces are minimized.

GUIDELINES FOR REHABILITATION

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc.

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining and preserving existing masts, spars, rigging, equipment, armament, etc., to the greatest extent possible.	Failing to thoroughly document repairs or replacement of material, with the reasons for action taken.
Retaining the existing form and configuration of a vessel's rig, arrangement of deck equipment and machinery, armament, etc.	Creating a false historic appearance by changing or adding to the rig, equipment, armament, etc. Replacing historic elements with, or introducing, elements that are historically inappropriate to the vessel.
Removing rotten, decayed, or wasted portions of masts, spars, or other elements when structural stability is affected or when adjacent areas are threatened with contamination. Effecting repairs in such a manner that existing material is preserved to the greatest extent possible, and that the completed repair matches the surrounding area in texture, finish, etc.	
Replacing missing, inappropriate, or unsound masts, spars, and associated elements with new material that is historically appropriate in composition, size, shape, method of fastening, and finish, to the vessel.	Except when specifically appropriate to the vessel, replacing wooden masts or spars with steel, or vice versa.
Thoroughly inspecting all elements of a vessel's tophamper to identify safety hazards and undetected deterioration. Paying special attention to ladders, footropes, tops and platforms, etc., and to slings, yokes, rings and eyes, and other load-bearing elements, with their associated fittings. Repairing or replacing when necessary with materials that match the original as closely as possible in composition, size, appearance, method of fastening, etc.	
Applying sound historically appropriate coatings to masts, spars, blocks, and associated structures and fittings after proper cleaning and preparation. When refinishing, matching the historic coatings as closely as possible in color, texture, and appearance.	Painting spars that were historically left bright or slushed, or vice versa. Failing to ensure that ironwork, blocks, etc., are properly sealed and coated.

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Replacing unsound or missing standing and running rigging with new material that matches the original in composition, size, color, texture, etc.	Replacing hemp rigging with wire (or vice versa) when there is no historical basis for the change; replacing lanyards and deadeyes with turnbuckles, or vice versa, without historical justification.
Applying penetrating wire rope preservative to wire rigging.	
Renewing worming, parcelling, service, seizings, etc., where required, using historically appropriate materials and methods.	
Applying historically appropriate protective coatings to standing rigging.	
Retaining, and restoring if required, boats that are historically appropriate to the vessel.	
When missing boats are essential to establishing the historic character or use of vessel, replacing with (1) boats of the same type, style, size, age, and appearance as the original; (2) accurate copies, based on the originals; or (3) copies that have the general form and appearance of the original.	Fitting a vessel with boats that are not historically appropriate in type, size, material, finish, or method of construction.
Repairing or replacing davits, chocks, skids, and other shipboard elements associated with support and handling of boats. Ensuring that replacement elements are historically appropriate to the vessel in material, method of construction, scale, finish and placement.	
Retaining existing deck equipment (capstans, windlasses, winches, deck pumps, etc.)that are historically appropriate to the vessel. Repairing, if necessary.	
When missing deck equipment or armament is essential to establishing the historic character or use of vessel, replacing with (1) elements of the same type, style, size, age, and appearance as the original; (2) accurate copies, based on the originals; or (3) copies that have the general form and appearance of the original.	Retaining deck equipment that is not appropriate to the vessel.

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT & VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that water is not permitted to enter masts, spars, or the vessel structure through cracks, checks, open joints, wasted iron or steel, inadequately bedded or loose fittings, etc.	
Filling open joints and end-grain checks, especially at mastheads, and filling horizontal checks on upper surfaces of wooden spars, with appropriate fillers.	
Installing stopwaters in vertical checks on wooden masts, etc., above the point of deck penetration.	
Providing ventilated covers, historically appropriate in design and material, for open boats.	
Filling cracks, checks, open joints and seams, etc., on exposed boats. Applying sound protective coatings.	
Ensuring that water is not permitted to enter gun tubes or sensitive mechanisms of armament or machinery. Providing weatherproof covers for elements such as breech mechanisms, gun muzzles, control boxes, etc.	
Ensuring that deck equipment, armament, deck-mounted machinery, and associated mounts or bases are bedded or secured in such a manner as to prevent incursion of moisture between mount and deck, or into the vessel structure.	
Ensuring that mast coats, collars, electrical cable packing, caulking or seals around through-deck elements are intact and weather-tight. Replacing, when necessary, with new material that is historically appropriate.	

GUIDELINES FOR REHABILITATION

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT & VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Installing life rafts, safety equipment, and other new elements required by Coast Guard regulations in such a manner that historic fabric and the overall historic appearance of the vessel are destroyed or diminished to the least possible extent, while at the same time ensuring maximum accessibility and utility of safety equipment.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining and preserving to the greatest extent possible existing machinery, tankage, electrical equipment, mechanical systems, etc., that are important in determining the overall historic character of the vessel.	
Removing, when not essential for safety or maintenance of the restored vessel, machinery, electrical equipment, piping, wiring, etc., that are non-historic or inappropriate to the vessel.	
When removal or replacement of character-defining engines, machinery, electrical or mechanical equipment, etc., is necessitated by the new use, the elements removed should be carefully documented and preserved in another location, especially if they could be reinstalled in the vessel in a future restoration.	
Thoroughly documenting the characteristics, placement, method of attachment, fastening, etc., of elements temporarily or permanently displaced or removed in the process of restoration.	
Replacing, if possible, missing engines, boilers, motors, etc., that are essential in defining the historic character of the vessel with (1) elements of the same vintage, type, size, and appearance as those replaced; (2) accurate copies of the originals; or (3) copies that have the general form and appearance as the originals.	Replacing missing machinery with elements that are inappropriate, in vintage, type, size, or appearance, to the vessel as it existed at the time represented by the restoration.
Cleaning dirt, loose paint, corrosion, etc., from machinery, tankage, piping, electrical equipment, etc., using the least caustic or abrasive effective means.	Failing to recoat historically painted ferrous elements after removal of paint or treatment of corrosion.
Coating historically unpainted machinery surfaces with gun grease, oil, or other appropriate products to prevent corrosion.	Painting historically unpainted surfaces, or leaving bright surfaces that were historically painted.

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Removing lagging or insulation that did not exist in the vessel at the time represented by the restoration. Retaining asbestos insulation only if it is safely contained.	Failing to take appropriate safety precautions when working with or near asbestos. Permitting asbestos dust to dissipate through cracks or breaks in covering, etc.
Cleaning and scaling boilers, uptakes, exhaust stacks, and related surfaces. Coating with rust inhibitant. Painting, if appropriate, to prevent corrosion.	
Maintaining and using, wherever possible, existing plumbing, piping, ducting, and related fixtures for the new use.	
Installing new machinery, tanks, plumbing, wiring, and associated equipment required for contemporary use in such a manner that historic fabric is obscured or destroyed to the least possible degree, and that character-defining features and spaces are preserved.	Installing "dropped" or false overheads to conceal mechanical systems, thus destroying the proportions of character-defining spaces.
Wherever possible, locating new machinery, electrical panels, mechanical equipment, etc., in secondary (non-character-defining) spaces.	
Isolating, if possible, any plumbing, piping, and valves that are to remain in use for management or operation of the vessel. Ensuring that valves are operable and properly packed, and that pressurized pipes and related joints and fittings are sound and leak-free.	Failing to document modifications to the plumbing system, or to retain and safely store any historic fittings removed.
Flushing and draining all piping, pumps, and related fixtures not required for management or operation of the vessel. Opening unused piping to the air to prevent condensation and associated deterioration.	
Flushing and draining water, fuel, and oil tanks if not required for use. Cleaning, scaling, and coating inside and out if possible.	Failing to ensure that tanks, voids, etc., are gas-free and oxygen-safe before entry and/or before hot work such as welding, cutting, etc., is performed nearby.

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Stripping water from fuel and oil tanks that remain in use.	
Completely filling tanks or boilers that are required for use, in order to prevent condensation and retard deterioration of interior surfaces.	
Ensuring that all tanks are adequately vented. Removing or opening inspection ports of unused tankage in order to promote air circulation.	
Isolating electrical circuits not required for maintenance or use of the vessel. Eliminating ground losses, shorts, etc., from active circuits.	Failing to thoroughly document electrical systems before any changes are made; failing to thoroughly document changes or additions.

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
When contemporary use calls for repowering of an auxiliary or power vessel, installing the new engine(s), shafts, and auxiliaries, if possible, in the same space occupied by the original engines, shafts, etc.	
Installing engines, auxiliaries, propeller shafts, etc., when required for contemporary use of a previously unpowered vessel, in such a manner that interior character-defining features and spaces are obscured or displaced to the least possible degree, and that the hull form is altered as little as possible.	Failing to carefully engineer installation of propulsion machinery, taking into consideration added weight, vibration, destruction or displacement of historic fabric, etc.
Installing permanent or temporary covers over stacks, escape pipes, etc., to prevent water entry into machinery or boilers.	
Ensuring that through-hull fittings and fastenings are sound and operable if required for use.	
Blanking off below-waterline through-hull fittings not required for operation or maintenance of the vessel.	
Packing or heating sea chests and below-waterline through-hull fittings in freezing weather, especially on vessels in fresh water.	Failing to recognize the danger of freezing (and consequent failure) of below-waterline fittings as a result of sub-freezing temperatures within the vessel, even though exterior water temperature might be above the freezing point.
Installing an isolating transformer between a floating vessel's shore power line and shipboard electrical system.	
Installing ground fault interrupters in circuits likely to be used for pumps or machinery in damp or wet areas of the vessel.	
Ensuring that ventilators, air intake grilles, etc., are provided with adequate covers or hoods to prevent entry of rainwater, etc.	

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Complying with health and safety codes in such a manner that character-defining spaces, features, and finishes are preserved.	
Working with local code officials to investigate alternative life safety measures or variances available under some codes so that alterations or non-historic additions to the vessel can be avoided.	
Designing and constructing boarding ramps, ladders, stairs, gangplanks, etc., that do not require alteration, displacement, or removal of historic fabric or character-defining features of the vessel. Access over rails or bulwarks, or through existing gangways or ports, etc., is recommended.	
Utilizing, wherever feasible, existing stairs, companion ladders, etc., for access within the vessel.	
Constructing or adding railings, barriers, etc., when required for safety or security, that do not detract from or diminish the historic character of the vessel.	
Utilizing, when possible, existing mechanical system elements such as wiring, electrical fixtures, plumbing and ducting in providing light, heat, ventilation, etc.	
Installing on floating vessels operable pumps of sufficient capacity and accessibility to deal with substantial flooding on short notice. Providing generators to ensure backup power for pumps and emergency lighting in case of power outages.	
Installing bilge alarms, security alarms, and fire detection equipment; ensuring that alarms are monitored at all times, and that emergency backup power is provided.	

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Installing or activating a fire suppression system (a charged dry-chemical or inert gas system may be preferable to sprinklers).	
Designing and installing new lighting, electrical, mechanical, security, and fire suppression systems and devices in such a manner that character-defining spaces and features are preserved, and historic fabric and finishes are not damaged, displaced, or unnecessarily obscured.	

GUIDELINES FOR RESTORATION

General Guidelines

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Identifying, retaining, and preserving to the greatest extent possible original or historic fabric, as well as material, elements, features, and form that are important in defining the historic character of the vessel.	
Choosing a specific time or period in a vessel's history to be represented by the restoration. In making this decision, carefully assessing:	
- the availability of information about the appearance of the vessel at the time or period selected;	
- the historic, cultural, and technological significance of the vessel in the period selected;	Sacrificing historic significance to romanticism or popular appeal in making restoration decisions.
- the degree to which the vessel's historic fabric will be affected by restoration to a particular period.	
Basing decisions for restoration work on actual knowledge of the past appearance of the vessel, obtained from photographs, drawings, measurements, reliable descriptions, etc.	Giving the vessel an appearance it never had.
Removing features that are known to have been added to the vessel after the period represented by the restoration.	Failing to document thoroughly any features removed prior to their removal.
Replacing by new construction missing elements or features that are known to have existed in the period represented by the restoration. Wherever possible, ensuring that replacement material is the same in composition, size, detail, and method of fastening or incorporation as the original.	Applying new material that is inappropriate or that was not available in the period represented by the restoration.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Whenever possible, repairing rather than replacing historic elements, using materials and methods historically appropriate to the vessel. When deteriorated elements **must** be replaced, ensuring that the replacement matches the original as closely as possible in composition, size, form, and method of fastening.	Departing from original methods of construction or configuration of material in making repairs or replacements, especially where changes will be visible.
Carefully documenting material or features displaced, removed, or otherwise affected during treatment, even if the material is not of historic significance.	Failing to document or preserve material samples for possible future use in manufacturing replacements.
Clearly and unobtrusively marking, by branding, stamping, affixing welded tabs, or other permanent means, the date of installation on any new or replacement material that is incorporated into the vessel.	Failing to thoroughly document repairs or replacement of material, with reasons for the action taken.
Using the gentlest means possible when cleaning historic elements or finishes.	Failing to exercise care when cleaning, so that delicate historic elements or features are damaged.
Stabilizing or removing corrosion on metal surfaces; sealing and coating with appropriate protective coatings.	Leaving corrosion on metal surfaces untreated, especially between or behind structural members.
	Failing to reapply protective coating systems to metals or alloys that require them after stabilization or cleaning, so that accelerated corrosion occurs.
When removing loose paint, scale, or corrosion from wood or metal surfaces, using the least abrasive method effective for the task.	Removing coatings that are sound and intact, unless removal is required for good adhesion of new coatings.
Treating areas or pockets of active rot or pest infestation in wood with appropriate chemical fungicides, insecticides, preservatives, etc.	Failing to assign a high priority to treatment of rot or pest infestation, thus ensuring further contamination.
	Applying fungicides or other chemical treatments that are hazardous to humans or the natural environment after application.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Removing rot- or pest-infected wood when adjacent areas are threatened with contamination, if stabilization measures such as chemical treatment, ventilation and drying, etc., cannot be effected within a reasonable time, or if structural stability is threatened.	Failing to remove wood beyond the area of infestation when removal is required, thus permitting spread of contamination. Failing to thoroughly document removal of any material or features.
Treating new wood with chemical preservatives (after shaping, drilling, and fitting) before incorporation into the vessel. Using fungicidal bedding compounds where appropriate.	Treating one material with chemical treatments that could have an adverse reaction with other materials in proximity.
Retaining, protecting, and preserving original or historic finishes whenever possible.	Failing to collect, document, and preserve samples when removal of the original finish is necessary.
Discovering original paint colors and finishes; repainting or refinishing with colors based on the original.	Refinishing with colors that cannot be documented through research and investigation to be appropriate to the vessel and period.
	Painting historically unpainted or varnished surfaces; varnishing or leaving unfinished surfaces that were historically painted.
	Applying a high-gloss, yacht-like finish to work boats, etc., unless specifically appropriate.
Using "traditional" paints and protective coatings that match the original as closely as possible in composition, appearance, and other properties.	Sealing, or applying impermeable coatings to, wood structural members that have high moisture content, thus promoting rot and preventing drying.

General Guidelines (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Using modern, long-lasting, low-maintenance protective coatings where substantially improved protection and reduced maintenance will add to the life of the vessel, so long as the new finish is reversible, and matches the original in color, texture, and appearance.	Applying "new technology" products or methods on the recommendation of salesmen, shipyard personnel, etc., without first investigating the long term effects.
Following Guidelines for Preservation after restoration work is complete.	Failing to ensure that all surfaces, whether wood or metal, receive proper preparation before application of coatings. This may include scaling, grit blasting, degreasing, deacidifying, etching, drying, priming, etc.

GUIDELINES FOR RESTORATION

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Ensuring that a vessel out of water, whether permanently or temporarily, is adequately supported, including overhanging sections at bow and stern. Ensuring that the weight of masts, machinery, heavy deck equipment, etc., is transmitted to support blocks and/or shores, especially if deck beams, frames, keel or other major structural members are weak.	
Removing deckhouses, bulwarks, extensions of the hull or superstructure, structural members, etc., that were added to the vessel after the period represented by the restoration.	
Recovering the hull form that existed in the period represented by the restoration, using materials and methods of construction that are historically appropriate, and making every effort to retain and minimize displacement of historic fabric.	
Repairing or, if necessary, replacing severely weakened, deteriorated, or missing structural members or hull material (planking, caulking, sheathing, hull plates, etc.) with new material of the same composition, size, scale, and methods of fastening and construction as the original (e.g., riveted iron plates should, if at all possible, be replaced with iron plates of the same size and shape, riveted in place; white oak planking should be replaced by white oak planks of the same dimensions, fastened in the same manner as the originals, etc.).	Leaving untreated known structural problems that will cause continued deterioration and shorten the life of the vessel.
Repairing or, if necessary, replacing deteriorated or missing deckhouse tops and sides, deck planks, deck plates, etc., with new material of the same composition, size, scale, and method of fastening as the original.	Replacing or covering over (except as a temporary protective measure) planked decks with plywood sheeting. Fiberglassing over a deck that was not originally so covered.

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Recaulking and/or paying seams in wooden decks as required, using historically appropriate materials and methods.	Caulking or paying seams with historically inappropriate materials that do not have the same appearance as the original, or that are irreversible or non-removable.
Replacing deteriorated historically appropriate coverings on decks and deckhouse tops (painted canvas, concrete, linoleum, tar, etc.) with new material that matches the old in composition, size, shape, color, and texture after reestablishing the structural stability of the deck or deckhouse top.	Painting or otherwise covering decks that were historically unfinished. Applying deck coverings such as fiberglass, rubber, or vinyl compounds, etc., unless specifically appropriate to the vessel.
Retaining existing hull, deck, and deckhouse openings, such as doors, hatches, scuttles, windows, ports, port lights, etc., when they are appropriate to the period represented by the restoration.	
Duplicating the material, design, and hardware of historically appropriate openings or closures if new openings or closures are used.	Installing new openings, closures, or hardware that are incompatible with the vessel's historic appearance or that obscure, damage, or destroy character-defining features.
Using original doors, windows, port lights, and other closures, with their associated hardware, when they can be repaired and used in place.	Discarding original closures or hardware when they can be repaired and used.

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Using state-of-the-art, long-lasting, low-maintenance coatings on underwater portions of the vessel's hull, provided that such coatings are reversible and that their application does not require destruction of historic fabric or departure from historic methods of bottom construction.	Coating underwater portions of the hull with gunnite, fiberglass, or other non-historic products that are non-reversible, that would interfere with historic methods of maintenance, or that could accelerate deterioration of bottom material.
Renewing or installing hull zincs.	Installing too many or too few zincs.
Determining the electrolytic potential of a floating vessel's hull; testing for stray electrical current in surrounding water. Designing an active or passive cathodic system to compensate.	Failing to monitor an active cathodic protection system, or allowing untrained staff to monitor or adjust system.
Rigging temporary or seasonal canopies, covers, etc., over vessel to prevent incursion of rainwater, if decks cannot be made watertight.	Damaging or altering distinctive features or historic fabric in installation of temporary protective measures.
Relieving hogging, sagging, and shear forces caused by improper distribution of ballast, fuel, water, etc., after consultation with a naval architect.	
Ensuring that decks, hull topsides, deckhouses, etc., are weathertight.	
Renewing or repairing caulking, welds, riveted joints, seals, gaskets, collars, mast coats, etc., that allow rainwater to enter the vessel's interior or structural members.	
Ensuring that cracks, checks, open joints and seams in mouldings, waterways, margins, covering boards, rail caps, etc., are filled with appropriate fillers and properly coated to prevent water entry.	Deferring, or discounting as "minor," repairs that could prevent fresh water intrusion into structural members.
Eliminating the causes of standing water on decks, deckhouse tops, etc. Cleaning, repairing, or replacing, if required, deck drains, scuppers, etc.	

Hull, Decks, Structural Members, Deckhouses and Superstructure, Hull and Deck Openings (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Adjusting the trim of a floating vessel by repositioning, removal, or addition of ballast, water, fuel, anchor chain, etc., in order to render existing deck drains and scuppers effective. Ensuring that the stability of the vessel is maintained in the operation, and that undue hull stresses that might cause hogging, sagging, etc., are not introduced.	Installing ballast that cannot be removed, or that renders the inside of the hull inaccessible (e.g., concrete poured between floors).
Installing new drains or scuppers in topside areas that hold standing water, if decay or damage would result from lack of drainage. Designing new drains that are historically appropriate in appearance and construction, and that require minimal displacement of historic fabric.	Failing to thoroughly document addition of non-historic features, with justification for the addition, details of construction, etc.
Ensuring that hull, deck, and superstructure openings and their closures are sound and weathertight. Repairing, if required, with historically appropriate materials. Where replacement is necessary, duplicating the material, design, and hardware of the original.	

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining or recreating the basic plan of a vessel's interior as it existed at the time represented by the restoration, including the relationship and size of spaces.	
Removing bulkheads, decks, platforms, doors, hatches, fixtures, furniture, etc., that were added to the vessel after the period represented by the restoration.	Failing to thoroughly document the interior arrangements of the vessel before restoration. Failing to preserve removed elements of particular historic or architectural significance.
Retaining and protecting, whenever possible, original or historic features such as furniture, fixtures, panelling, mouldings, hardware, etc., that may be affected in the restoration process.	Failing to provide proper protection of interior features and finishes during work, so that they are gouged, scratched, dented, or otherwise damaged.
Retaining existing historically appropriate doors and doorways, stairs, ladders, etc., for access within the vessel.	Removing historically appropriate material, hardware, or architectural features except where essential for safety or efficiency.
Replacing missing features such as hardware, lamps or light fixtures, furnishings, fabrics, mouldings, panelling, etc., only after thorough research. Basing designs for new material on actual knowledge obtained from photographs, drawings, measurements, reliable accounts, etc., specific to the vessel under restoration or similar vessels of the same period.	Installing new material that is inappropriate or was unavailable at the time represented by the restoration, such as plastic, vinyl, imitation wood, etc.
Removing debris and dirt from all interior spaces, including bilges, frame bays, etc.	Installing features, fixtures, or furnishings for which there is no historical evidence.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Protecting and maintaining interior surfaces and finishes through appropriate treatments such as cleaning, rust removal, and reapplication of protective coating systems.	Failing to maintain interior surface coatings on a cyclical basis so that loss or deterioration of interior features and hardware results.
	Radically changing the type of surface finishes or their color, such as painting a previously varnished wood feature.
Protecting interior features and finishes against arson and vandalism before project work begins by erecting protective fencing and other barriers, installing fire alarm systems that are keyed to local protection agencies, etc.	Permitting unauthorized entry into historic ships so that interior features and finishes are exposed to vandalism and theft.
	Stripping interiors of features such as woodwork, doors, hardware, light fixtures, mechanical equipment, or of decorative materials.
Retaining and documenting miscellaneous objects discovered on board during restoration treatment, especially items such as moulding fragments, turnings, hardware, fasteners, etc., that may be useful in replicating features that are missing.	
Making provision for adequate ventilation of interior spaces in the restored vessel in such a manner that historic fabric and the historic character of spaces are preserved to the greatest extent possible and structural integrity is not compromised.	Breaching, or removing sections of, deck, hull, ceiling, or interior panelling in order to create circulation between frame bays, etc., without first determining that the effect of such an action on the vessel's hull's strength will be acceptable.

Interior Spaces, Including Cabins, Holds, Compartments, Trunks, Passageways, etc., with Appurtenant Joinery, Trim, Furnishings, and Fittings (continued)

- APPLICABLE TO VESSELS AFLOAT AND EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that dry ballast is clean, appropriately coated, and installed in such a manner that air circulation and physical access to the inside of the hull are provided.	Failing to distribute ballast, fuel, water, anchor chain, etc., in such a manner that hogging and sagging forces are minimized.
Ensuring that limber holes, scuppers, drains, sumps, pump wells, etc., are free of debris.	
Installing new drains, scuppers, limber holes, etc., if necessary to provide drainage and prevent standing water in below-deck areas. Designing drains that are historically appropriate in appearance and construction, and that require minimal displacement of historic fabric.	Failing to thoroughly document addition of non-historic features, including justification for the addition, details of construction, etc.
Coating hard-to-reach areas of the inside of iron and steel hulls with penetrating coatings, such as "Eureka Fluid," that work their way under frames, etc., to prevent rust.	

GUIDELINES FOR RESTORATION

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc.

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining and preserving existing masts, spars, rigging, equipment, armament, etc., that are appropriate to the vessel and its use in the period represented by the restoration.	
Recreating the form and configuration of a vessel's rig, arrangement of deck equipment, armament, etc., as they existed at the time represented by the restoration, incorporating to the greatest degree possible existing original or historic elements and material.	Failing to thoroughly document repairs or replacement of material.
Removing rotten, decayed, or wasted portions of masts, spars, or other elements when structural stability is affected or when adjacent areas are threatened with contamination. Effecting repairs in such a manner that existing material is preserved to the greatest extent possible, and that the completed repair matches the surrounding area in texture, finish, etc.	
Replacing missing, inappropriate, or unsound masts, spars, and associated elements with new material that is historically appropriate, in composition, size, shape, method of fastening, and finish, to the vessel as it appeared in the period represented by the restoration.	Except when specifically appropriate to the vessel, replacing wooden masts or spars with steel, or vice versa.
Applying sound, historically appropriate coatings to masts, spars, blocks, and associated structures and fittings after proper cleaning and preparation. When refinishing, matching the historic coatings as closely as possible in color, texture, and appearance.	Painting spars that were bright or slushed at the time represented by the restoration, or vice versa. Failing to ensure that ironwork, blocks, etc., are properly sealed and coated.
Replacing unsound or missing rigging with new material that matches in composition, size, color, texture, etc., the rigging that was in place at the time represented by the restoration.	Replacing hemp rigging with wire (or vice versa) when there is no historical basis for the change; replacing lanyards and deadeyes with turnbuckles, or vice versa, without historical justification.
Applying wire rope preservative to wire rigging.	

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Renewing worming, parcelling, service, seizings, etc., where appropriate, using historically appropriate materials and methods.	
Applying historically appropriate protective coatings to standing rigging.	
Retaining, and restoring if required, boats that are historically appropriate to the vessel as it existed in the period represented by the restoration.	
When missing boats are essential to establishing the historic character or use of a vessel, replacing with (1) boats of the same type, style, size, age, and appearance as the original; (2) accurate copies, based on the originals; or (3) copies that have the general form and appearance of the original.	Fitting a vessel with boats that are not historically appropriate in type, size, material, finish, or method of construction.
Repairing or replacing davits, chocks, skids, and other shipboard elements associated with support and handling of boats. Ensuring that replacement elements are historically appropriate to the vessel in material, method of construction, scale, finish, and placement.	
Retaining existing deck equipment (capstans, windlasses, winches, deck pumps, etc.) that are historically appropriate to the vessel. Repairing, if necessary. Recreating as closely as possible the appearance it had at the time represented by the restoration. Restoring to operable condition, if possible.	Retaining deck equipment that is not appropriate to the vessel as it existed in the period represented by the restoration.
When missing deck equipment or armament is essential to establishing the historic character or use of vessel, replacing with (1) elements of the same type, style, size, age, and appearance as the original; (2) accurate copies, based on the originals; or (3) copies that have the general form and appearance of the original.	Installing elements inappropriate to the vessel in type, style, size, or appearance.

GUIDELINES FOR RESTORATION

Equipment, Including Masts and Spars, Rigging, Boats, Deck Equipment, Armament, etc. (continued)

- APPLICABLE TO VESSELS AFLOAT & VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Ensuring that water is not permitted to enter masts, spars, or the vessel structure through cracks, checks, open joints, wasted iron or steel, inadequately bedded or loose fittings, etc.	
Filling open joints and end-grain checks, especially at mastheads, and filling horizontal checks on upper surfaces of wooden spars, with appropriate fillers.	
Installing stopwaters in vertical checks on wooden masts, etc., above the point of deck penetration.	
Providing ventilated covers, historically appropriate in design and material, for open boats.	
Filling cracks, checks, open joints and seams, etc., on exposed boats. Applying sound protective coatings.	
Ensuring that water is not permitted to enter gun tubes or sensitive mechanisms of armament or machinery. Providing weatherproof covers for elements such as breech mechanisms, gun muzzles, control boxes, etc.	
Ensuring that deck equipment, armament, deck-mounted machinery, and associated mounts or bases are bedded or secured in such a manner as to prevent incursion of moisture between mount and deck, or into the vessel structure.	
Ensuring that mast coats, collars, electrical cable packing, caulking or seals around through-deck elements are intact and weathertight. Replacing, when necessary, with new material that is historically appropriate.	

GUIDELINES FOR RESTORATION

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Retaining and preserving to the greatest extent possible existing machinery, tankage, electrical equipment, mechanical systems, etc., that were a part of the vessel at the time represented by the restoration.	Replacing missing machinery with elements inappropriate in vintage, type, size, or appearance to the vessel as it existed at the time represented by the restoration.
Removing, when not essential for safety or maintenance of the restored vessel, machinery, electrical equipment, piping, wiring, etc., that is non-historic or inappropriate to the vessel as it existed at the time represented by the restoration.	
Thoroughly documenting the characteristics, placement, method of attachment, fastening, etc., of elements temporarily or permanently displaced or removed in the process of restoration.	
Replacing missing engines, boilers, motors, etc., that were extant in the vessel at the time represented by the restoration with (1) elements of the same vintage, type, size, and appearance as those replaced; (2) accurate copies of the originals; or (3) copies that have the general form and appearance as the originals.	Replacing missing machinery with elements that are inappropriate, in vintage, type, size, or appearance, to the vessel as it existed at the time represented by the restoration.
Cleaning dirt, loose paint, corrosion, etc., from machinery, tankage, piping, electrical equipment, etc., using the least caustic/abrasive effective means.	Failing to recoat historically painted ferrous elements after removal of paint or treatment of corrosion.
Coating historically unpainted machinery surfaces with gun grease, oil, or other appropriate products to prevent corrosion.	Painting historically unpainted surfaces, or leaving bright surfaces that were historically painted.
Disassembling and thoroughly cleaning interiors and moving parts of machinery. Coating with appropriate preservatives before reassembly if machinery is to remain static; otherwise, lubricating parts with clean lubricant.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Removing lagging or insulation that did not exist in the vessel at the time represented by the restoration. Retaining asbestos insulation only if it is safely contained.	Failing to take appropriate safety precautions when working with or near asbestos. Permitting asbestos dust to dissipate through cracks or breaks in covering, etc.
Cleaning and scaling boilers, uptakes, exhaust stacks, and related surfaces. Coating with rust inhibitant. Painting, if appropriate, to prevent corrosion.	
Isolating, if possible, any plumbing, piping, and valves that are to remain in use for management or operation of the vessel. Ensuring that valves are operable and properly packed, and that pressurized pipes and related joints and fittings are sound and leak-free.	Failing to document modifications to the plumbing system, or to retain and safely store any historic fittings removed.
Flushing and draining all piping, pumps, and related fixtures not required for management or operation of the vessel. Opening unused piping to the air to prevent condensation and associated deterioration.	Failing to ensure that tanks are gas-free and oxygen-safe before they are entered by personnel and/or before heat-generating work such as welding, cutting, etc., is performed in their vicinity.
Flushing and draining water, fuel, and oil tanks if not required for use. Cleaning, scaling, and coating inside and out if possible.	
Stripping water from fuel and oil tanks that remain in use.	
Completely filling tanks or boilers that are required for use, in order to prevent condensation and retard deterioration of interior surfaces.	
Ensuring that all tanks are adequately vented. Removing or opening inspection ports of unused tankage in order to promote air circulation.	
Isolating electrical circuits not required for maintenance or use of the vessel. Eliminating ground losses, shorts, etc., from active circuits.	Failing to thoroughly document electrical systems before any changes are made; failing to thoroughly document changes or additions.

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Drying out, if required, and cleaning corrosion from, electric motors, generators, electrical panels, switch boards, etc. Applying appropriate moisture- and corrosion-inhibiting products to motor and generator commutators, armatures, electrical contacts, etc.	
Lubricating bearings, etc., of motors and generators. Rotating on a regular basis, if possible.	
Removing radio and other electronic gear (including antennas, etc.) not appropriate to the vessel as it existed at the time represented by the restoration. Replacing, if possible, with (1) equipment of the same type, style, size, age, and appearance of the originals; (2) accurate copies of the originals; or (3) copies that have the general form and appearance of the originals.	

Machinery, Tankage and Piping, Electrical Equipment, Mechanical Systems (continued)

- APPLICABLE TO VESSELS AFLOAT AND VESSELS EXPOSED TO WEATHER -

Recommended	*Not Recommended*
Thoroughly cleaning ducts, air passages, blowers, fan housings, etc., to remove corrosion and/or accumulated dirt. Recoating, if required.	
Installing permanent or temporary covers over stacks, escape pipes, etc., to prevent water entry into machinery or boilers.	
Ensuring that through-hull fittings and fastenings are sound and operable if required for use.	
Blanking off below-waterline through-hull fittings not required for operation or maintenance of the vessel.	
Packing or heating sea chests and below-waterline through-hull fittings in freezing weather, especially on vessels in fresh water.	Failing to recognize the danger of freezing (and consequent failure) of below-waterline fittings as a result of sub-freezing temperatures within the vessel, even though exterior water temperature might be above the freezing point.
Installing an isolating transformer between a floating vessel's shore power line and shipboard electrical system.	
Installing ground fault interrupters in circuits likely to be used for tools, hand-held lighting, pumps, or machinery in damp or wet areas of the vessel.	
Ensuring that ventilators, air intake grilles, etc., are provided with adequate covers or hoods to prevent entry of rainwater, etc.	

GUIDELINES FOR RESTORATION

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems

- APPLICABLE TO ALL VESSELS -

Recommended

Complying with health and safety codes in such a manner that character-defining spaces, features, and finishes are preserved.

Working with local code officials to investigate alternative life safety measures or variances available under some codes so that alterations or non-historic additions to the vessel can be avoided.

Designing and constructing boarding ramps, ladders, stairs, gangplanks, etc., that do not require alteration, displacement, or removal of historic fabric or character-defining features of the vessel. Access over rails or bulwarks, or through existing gangways or ports, etc., is recommended.

Utilizing wherever feasible, existing stairs, companion ladders, etc., for access within the vessel.

Constructing or adding railings, barriers, etc., when required for safety or security, that do not detract from or diminish the historic character of the vessel.

Utilizing, when possible, existing mechanical system elements such as wiring, electrical fixtures, plumbing and ducting in providing light, heat, ventilation, etc.

Installing on floating vessels operable pumps of sufficient capacity and accessibility to deal with substantial flooding on short notice. Providing generators to ensure backup power for pumps and emergency lighting in case of power outages.

Installing bilge alarms, security alarms, and fire detection equipment; ensuring that alarms are monitored at all times, and that emergency backup power is provided.

Not Recommended

GUIDELINES FOR RESTORATION

Health, Safety and Code Requirements; Access; Lighting; Mechanical and Alarm Systems (continued)

- APPLICABLE TO ALL VESSELS -

Recommended	*Not Recommended*
Installing or activating a fire suppression system (a charged dry-chemical or inert gas system may be preferable to sprinklers).	
Designing and installing new lighting, electrical, mechanical, security, and fire suppression systems and devices in such a manner that character-defining spaces and features are preserved, and historic fabric and finishes are not damaged, displaced, or unnecessarily obscured.	

GUIDELINES FOR INTERPRETATION

General Guidelines

APPLICABLE TO ALL VESSELS

Recommended	*Not Recommended*
Identifying and presenting the vessel accurately. Avoiding hyperbole or falsehood in characterizations (e.g., describing a vessel as the "last commercial sailing vessel under the American flag" when that fact cannot be firmly established and documented).	Presenting a vessel as having had a role or use that it never had in order to create a more compelling image (e.g., using terms such as "death ship" or "convict ship" unless such characterizations can be established by factual evidence).
	Presenting as fact only that information about the vessel, its history, use, etc., that has been confirmed by careful research. Surmise and conjecture should be presented as such.
Interpreting the vessel under a name that corresponds to its appearance or configuration. (e.g.: If a sailing vessel, originally named Jekyll, was later converted as a steamship and renamed Hyde, then it should be interpreted under the name Hyde if so preserved. If the vessel is restored to its original sailing configuration, it should be interpreted under the name Jekyll.)	Renaming a vessel with a name it never had, or a name that is historically inappropriate to its appearance or configuration as preserved.
Ensuring that the paint color scheme and the configuration of the vessel are historically appropriate to the time period and historic use that are being interpreted.	
Identifying and explaining the preservation treatment that the vessel has undergone; indicating major changes, renewals, etc., including their extent and the degree to which they are either conjectural or based on factual evidence.	
Clearly indicating which materials and features are original or historic, and which are replacements. Indicating whether replacements or restorations are based on conjecture or factual evidence. (This may be done in statements about the vessel in general, or about specific features. While it is obviously impractical to specifically interpret every non-historic element or feature, it is important to convey the general extent of replacements, and the degree of their authenticity.)	Falsely identifying material or features as original or historic; or omitting mention of replacement material when it is present, thus leaving the impression that all material is original or historic.

General Guidelines (continued)

APPLICABLE TO ALL VESSELS

Recommended	*Not Recommended*
Furnishing and equipping spaces or areas of the vessel with material that is historically appropriate to the period and use represented, in order to create an understanding of the function or historic use of the vessel or of specific spaces.	Furnishing or equipping the vessel or any of its interpreted spaces with material that is historically inappropriate, or that was not available at the time represented in the vessel's interpretation.
Indicating whether furnishings, equipment, or accessories are original to the vessel; contemporary to the vessel but from another source; accurate copies, based on the originals or historical evidence; etc.	Failing to identify non-original furnishings, equipment, etc.
Designing and constructing ramps, stairs, railings, barriers, ballast containment, and other such non-historic structures required for safety, access, vessel stability, etc., in such a manner that they are clearly differentiated from other structures or features that are original or historically appropriate to the vessel.	Designing or employing such features so that they appear to be historic or original, thus creating a false historic impression
Employing exhibit furniture, display panels, and interpretative signs and labels that are clearly differentiated by design, construction, and/or finish from the vessel or its historically appropriate equipment.	"Building in," or otherwise installing exhibits or interpretative furniture that might be confused with features or structure of the vessel itself.
Designing and installing structures for access, safety, exhibits, interpretation, etc., in such a manner that significant or character-defining features are obscured, displaced, or damaged to the least possible degree.	
Avoiding installation of exhibits, interpretative panels, etc., to such an extent that the size and scale of spaces is lost, or that features indicative of the vessel's historic use are obscured or overwhelmed.	

General Guidelines (continued)

APPLICABLE TO ALL VESSELS

Recommended	*Not Recommended*
Providing live interpretation by interpreters, guides, or docents who have a sound knowledge of the history of the vessel, its use, the principal features of its construction, its preservation treatment, etc., emphasizing to all interpreters the absolute necessity for presenting accurate information to visitors.	Employing interpreters who are (a) not knowledgeable about the vessel and related matters; or (b) not capable of, or willing to, impart information to visitors.
Producing, publishing, or otherwise making available brochures, monographs, videotapes, recordings, or other interpretative materials that include more detailed information about the vessel than can be provided by interpretation on board.	