

MIL-B-10122D(ME)  
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 SUPERSEDING  
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MILITARY SPECIFICATION

BARGE, LIQUID CARGO: NONPROPELLED, STEEL,  
 4,160-BARREL, 120-FOOT, DESIGN 231B

This specification is approved for use by the USA Belvoir Research and Development Center, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a liquid cargo, nonpropelled, steel barge.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

TT-P-664	- Primer, Coating, Synthetic, Rust-Inhibiting, Lacquer-Resisting.
UU-T-81	- Tag, Shipping and Stock.
QQ-S-781	- Strapping, Steel, and Seals.
GGG-A-926	- Ax (Single Bit, Double Bit, Pick Head and Mattock Head).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: USA Belvoir Research and Development Center, ATTN: STRBE-DS, Fort Belvoir, VA 22060-5606 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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- PPP-P-40 - Packaging and Packing of Hand Tools.
- PPP-B-601 - Boxes, Wood, Cleated-Plywood.
- PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner.
- PPP-B-636 - Box, Fiberboard.

## MILITARY

- MIL-P-116 - Preservation, Methods of.
- MIL-B-121 - Barrier Material, Greaseproofed, Waterproofed, Flexible.
- MIL-R-196 - Repair Parts, Accessories, and Kits, Mechanical, Packaging of.
- MIL-L-2105 - Lubrication Oil, Gear, Multi-Purpose.
- MIL-C-3131 - Cordage; Preparation for Delivery of.
- MIL-F-3541 - Fittings, Lubrication.
- MIL-C-5501 - Cap and Plug, Protective, Dust and Moisture Seal.
- MIL-E-10062 - Engine, Preparation for Shipment and Storage of.
- MIL-M-11745 - Marking and Labeling of U.S. Army Marine Craft.
- MIL-C-16173 - Corrosion Preventive Compound Solvent Cutback, Cold Application.
- MIL-A-18001 - Anodes, Corrosion Preventive, Zinc; Slab, Disc and Rod Shaped.
- MIL-G-20241 - Gasket Material, Wool Felt, Impregnated, Adhesive, Pressure-Sensitive.
- MIL-T-22085 - Tape, Adhesive, Preservation and Sealing.
- MIL-B-22191 - Barrier Material, Transparent, Flexible, Heat Sealable.
- MIL-P-23377 - Primer Coating, Epoxy Polyamide, Chemical and Solvent Resistant.
- MIL-P-46093 - Primer Coating, Synthetic (For Brake Drums).
- MIL-A-46153 - Antifreeze, Ethylene Glycol, Inhibited, Heavy Duty, Single Package.
- MIL-S-81733 - Sealing and Coating Compound, Corrosion Inhibitive.

## STANDARDS

## MILITARY

- MIL-STD-129 - Marking for shipment and Storage.
- \*MIL-STD-167-2 - Mechanical Vibrations of Shipboard Equipment (Recipr Mach & Prop Sys & Shaft) Types 3, 4, & 5.

\*MIL-STD-167-2 copies required by suppliers in connection with specific procurements can be obtained from the contracting officer only.

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MIL-STD-769	- Thermal Insulation Requirements for Machinery and Piping.
MIL-STD-889	- Dissimilar Materials.
MIL-STD-1186	- Cushioning, Anchoring, Bracing, Blocking, and Waterproofing, With Appropriate Test Methods.
MIL-STD-1472	- Human Engineering Criteria for Military Systems, Equipment, and Facilities.
MIL-STD-1474	- Noise Limits for Army Materiel.

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein.

## DRAWINGS

## ME

TA13227E0000	- Barge, Liquid Cargo, Nonpropelled, Steel, 4,160 BBL, 120-Foot, Design 231B.
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## BULLETINS

TB 43-0144	- Painting of Vessels.
TB 740-97-4	- Preservation of Vessels for Storage.

## UNITED STATES COAST GUARD (USCG)

## Code of Federal Regulations

Title 33	- Navigation and Navigable Waters.
Title 46	- Shipping.

(Application for copies should be addressed to the Superintendent of Documents, US Government Printing Office, Washington, DC 20402).

(Copies of specifications, standards, and drawings required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

## AMERICAN BUREAU OF SHIPPING (ABS)

- Rules for Building and Classing Steel Vessels.
- Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways.
- Rules for Building and Classing Steel Barges for Offshore Service.

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(Application for copies should be addressed to the Secretary, American Bureau of Shipping, 65 Broadway, New York, NY 10006).

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

### 3. REQUIREMENTS

3.1 Description. The barge shall be in accordance with TA13227E0000 and as specified herein. Barge constructions and installation of machinery, equipment, and systems shall conform to CFR titles 33 and 46. Equipment (i.e., anchors, windlass, etc.) shall be rated (E) in accordance with ABS "Rules for Building and Classing Steel Barges for Offshore Service" and barge shall be classed  $\oplus$  A1 in accordance with ABS "Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways".

3.1.1 Drawings. The drawings forming a part of this specification are contract drawings (see 6.5.5). No deviation from the prescribed dimensions or tolerances is permissible without prior approval of the contracting officer. Where tolerances could cummulative result in incorrects fits, the contractor shall provide tolerances within those prescribed on the drawings to insure correct fit, assembly, and operation of the barge. The contractor is responsible for developing all additional details necessary for the construction of the barge. Any data (e.g., shop drawings, layouts, flow sheets, processing procedures, etc.) prepared by the contractor or obtained from a vendor to support fabrication and manufacture of the production item shall be made available, upon request, for inspection by the contracting officer or the designated representative.

3.1.2 Drawing and data approval. The drawings and technical data required by American Bureau of Shipping (ABS) and by Titles 33 and 46 shall be submitted through the contracting officer for approval. One copy of the approved drawings shall be submitted to the contracting officer.

3.1.3 Lofting. The lines shall be laid down full size from offsets shown on the drawings referenced on TA13227E0000. After fairing, any deviation shall be shown on a drawing and the drawing shall be submitted to the contracting officer for approval. After approval, alterations in the lines and offsets shall not be made without the approval of the contracting officer.

3.1.4 Hydrostatic pressure. All components, tanks, skegs and related piping systems shall conform to ABS requirements when hydrostatically tested.

3.1.5 Lifting pad welds. When radiographically inspected, all lifting pad welds shall conform to drawing requirements and ABS requirements. After satisfactory inspection, a brass label plate shall be affixed to the deck next to each pad giving the date of the inspection.

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3.2 Components and materials. Components and materials shall be as specified herein and on the drawings. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification. All components and materials shall be new.

3.2.1 Material deterioration and control. The barge shall be fabricated from compatible materials, inherently corrosion resistant or treated to be resistant to the various forms of corrosion and deterioration that may be encountered in any of the applicable storage and operating environments to which the barge may be exposed.

3.2.1.1 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, shall be electrically insulated from one another to minimize or prevent galvanic corrosion. Insulation may be provided by a barrier such as a coat of epoxy primer conforming to MIL-P-23377, or corrosion inhibiting sealant conforming to MIL-S-81733 or chromate tape conforming to MIL-G-20241.

3.2.1.2 Identification of materials and finishes. The contractor shall identify the specific material, material finish, or treatment for use with components or subcomponents and shall make information available, upon request, to the contracting officer or designated representative.

3.3 Anodes. Anodes shall comply with MIL-A-18001, type ZHS, 23 pound size, (except that the straps shall be straight). The cast-in straps on the anodes shall be bolted to clips welded to the hull. The bolts shall be corrosion-resistant steel. The attachment straps, clips, and bolts and the faying surface between the clips and cast-in straps shall not be painted. Anodes shall be located below the light load line as follows:

- 4 on bow rake.
- 5 equally spaced and at the turn of the bilge on each side.
- 8 on stern as follows:
  - 1 each on each side of skegs.
  - 1 outboard of each skeg.
  - 2 between skegs.

3.4 Safety. All rotating or reciprocating parts and other parts subject to high operational temperatures that are of such a nature or are so located as to be a hazard to operating personnel, shall be guarded or insulated to the extent necessary to eliminate the hazard. Protective devices shall not impair the operating functions. All walking surfaces shall be provided with an anti-skid surface. All platforms, steps, and handholds shall permit unhampered and nonhazardous entrance and exit. All points requiring lubrication during operation shall have fittings located or guarded so as to be accessible without hazardous exposure to personnel.

3.5 Foundations. Foundations shall be as shown on applicable drawings and as specified herein. Foundations of welded construction for equipment installations shall be supported by hull main structural members and designed with due consideration of physical characteristics, fittings, locations, and access and maintenance requirements of the equipment installed.

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3.5.1 Vibration. Foundations for equipment and components shall provide restraint in all directions and shall prevent excessive vibration during barge operating conditions. The alignment of moving parts either rigidly connected or with moving surfaces in contact shall be such that vibration due to misalignment is prevented. Limitations of vibrations and balancing of equipment and components shall comply with requirements of MIL-STD-167-2.

3.5.2 Reinforcement. The structure shall be reinforced as necessary to provide support to the foundation to meet the above requirement.

3.6 Hardware. All attaching hardware exposed to weather shall be of corrosion-resistant and standard marine manufacture.

3.6.1 Locks. Exterior doors and the tool box shall be provided with padlocking.

3.6.2 Hold-back hook. A brass or bronze hold-back hook shall be provided for the machinery house door.

3.7 Firefighting equipment.

3.7.1 Fire ax. One 6-pound fire ax conforming to GGG-A-926, type II, shall be installed on the outside of the machinery house.

3.7.2 Fire extinguishers. Portable fire extinguishers shall be provided and located in accordance with USCG requirements specified in CFR title 46. Provisions shall be made for securely mounting the extinguishers.

3.7.3 Emergency engine shutdown. A cable-operated emergency engine shutdown system shall be installed. It shall be activated by a pull handle located on the center expansion truck, port side, in a break glass enclosure. As much of the cable as possible shall be run below deck without passing through cargo tanks. Exposed portions shall be painted red in accordance with TB 43-0144. The cable shall be rooted inside a steel pipe for protection.

3.8 Lifesaving equipment. Two 30-inch, international orange, ring life buoys conforming to USCG requirements specified in CFR title 46 shall be provided. Each buoy shall be equipped with a waterlight. Buoys shall be installed in galvanized steel holders located on both sides of the machinery house. Two brackets shall be located on the starboard side of the machinery house for stowage of a boat hook.

3.9 Piping insulation and lagging. Exhaust piping shall be insulated in accordance with MIL-STD-769. Before lagging, insulation shall be secured by banding. Insulation and lagging shall contain no asbestos and certification to this effect shall be made available for review by the contracting officer or the contracting officer's representative.

3.10 Engine and cargo pump. The cargo pump shall deliver 1,000 gallons per minute (GPM) against a total dynamic head of 183 feet without malfunction of the engine or pump.

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3.11 Lubrication. All surfaces requiring lubrication shall be provided with a means for lubricating. Bearings requiring grease and not served by central lubrication systems shall be provided with grease fittings conforming to MIL-F-3541. Fittings shall be located in a protected position and shall be accessible to a grease gun. Pressure release devices shall be provided where the use of pressure lubricating equipment will damage grease seals or other parts.

3.11.1 Lubricants. The barge machinery and equipment shall operate as specified herein when lubricated with military lubricants (see 6.3).

3.12 Human factors engineering. Design elements of the barge not included in the drawings shall conform with MIL-STD-1472 criteria, as applicable. Particular design attention shall be given, but not limited to, MIL-STD-1472, 4.0 (General), 5.1 (Controls/Display Integration), 5.4 (Controls), 5.5 (Labeling), 5.6 (Anthropometry), 5.9 (Design for Maintainability), 5.13 (Hazards and Safety), if and as applicable. The barge shall be designed to be operable and maintainable by 5th through 95th percentile soldiers who are dressed appropriate to the environments of interest. MIL-STD-1474, 4.3, 4.4, 5.1, and 5.5 requirements shall apply to the barge.

3.13 Identification marking. Unless otherwise specified on the drawings, the application or installation of designation markings, builder's nameplate, loadline markings, draft marks, and general marking and labeling throughout the barge shall conform to MIL-M-11745.

3.13.1 Instruction plates. The barge shall be equipped with instruction plates or diagrams, including warnings and cautions, describing any special or important procedures to be followed in assembling, operating, servicing, or relating human factors (see 3.12). Instructions shall be on photographic plates of a size compatible with the information supplied and plate location.

3.14 Treatment and painting. The barge shall be cleaned, treated, and painted in accordance with TB 43-0144. Finish paint on exterior surface shall be for Peacetime.

3.14.1 Skegs and fender guards. Skegs and fender guards shall be treated for corrosion prevention by filling each skeg and guard with MIL-C-16173, grade 1 corrosive preventative compound. Then the compound shall be drained and the fill vent and drain plugs replaced.

3.15 Notice frames. Glazed frames for certificates, documents, or notices that are required by applicable regulatory bodies shall be furnished and installed.

3.15.1 Certificates. The following certificates shall be obtained and posted under glass in the machinery house of each barge:

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American Bureau of Shipping Classification Certificate for Hull (⊕ A1 ⊕ E)  
Oil Barge, River and Intracoastal Waterway  
Service).

International Loadline Certificate.

U.S. Coast Guard Certificate of Inspection (Endorsed for the  
Carriage of Liquids of Grades B,C, and D).

3.16 Technical publications. Such technical publications as are specified shall be furnished (see 6.2 and 6.4).

3.16.1 Technical data. The contractor shall furnish and place the following data in the storage locker in the machinery house:

- a. Specification and drawings. One copy of this specification with design drawings (see 3.1.1).
- b. Drawings. One print of each "as constructed" drawing (see 6.5.1).
- c. Record of tests. One copy of each record of tests (see 6.5.2).
- d. List of machinery and equipment. One copy of the list of machinery and equipment (see 6.5.3).
- e. Instruction books. One complete set of instruction books (see 6.5.4).

3.17 Repair parts. The on-board repair parts recommended by ABS and repair parts specified by the contracting officer shall be furnished (see 6.2).

3.18 Storage of navigation lights. A locker for the storage of navigation lights and batteries shall be provided in the forward rake compartment. The locker shall be steel plate construction and designed to protect the components from damage.

3.19 Tool box. A tool box shall be provided on the aft side of the machinery house. The box shall be of steel plate construction having dimensions of 18 inches high X 18 inches wide X 48 inches long. The box shall be weather tight and equipped with a hinged lid and lock hasp.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspections. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. The contractor is responsible for insuring that components and materials used are manufactured, examined, and tested in accordance with referenced drawings, specifications and standards, as applicable.

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4.1.2 Parts and components. Parts and components shall be inspected in accordance with applicable drawings. Evidence that any part or component does not comply with the applicable drawings shall be cause for rejection of the part or component.

4.1.3 Dissassembly inspection. Any machinery or equipment which fails a performance test shall be disassembled in the presence of a Government representative. Each disassembled item shall be inspected in detail for conformance to this specification and applicable drawings for materials, dimensions, and tolerances. Items not conforming to requirements shall be cause for rejection.

4.2 Classification of inspection. Inspection shall be classified as follows:

- a. Quality conformance inspection (see 4.3).
- b. Inspection of packaging (see 4.5).

4.3 Quality conformance inspection.

4.3.1 Examination. Each barge shall be examined as specified in 4.4.1. Presence of one or more defects shall be cause for rejection.

4.3.2 Tests. Each barge shall be tested as specified in 4.4.2 through 4.4.2.3. Failure of any test shall be cause for rejection. Failure of military design components shall be cause for performing the inspection specified in 4.1.3.

4.4 Inspection procedure.

4.4.1 Examination. Each barge shall be examined for the defects marked "X" for the applicable examination specified in table I.

TABLE I. Examination schedule.

Quality Conformance	Defect	Requirement Paragraph
X	101. Barge construction and installation of machinery, equipment, and systems not as specified.	3.1
X	102. Lofting not prepared and submitted as specified.	3.1.1, 3.1.3
X	103. Materials and methods not as specified. Each incorrect material or method shall constitute one defect.	3.2, 3.2.1
X	104. Materials are not corrosion resistant or treated to be corrosion resistant for the applicable storage and operating environment.	3.2.1

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TABLE I. Examination schedule. (continued)

Quality Conformance	Defect	Requirement Paragraph
X	105. Dissimilar metals, as defined in MIL-STD-889 are not effectively insulated from each other.	3.2.1.1
X	106. Contractor does not have documentation available for identification of materials, material finishes or treatments.	3.2.1.2
X	107. Anodes not as specified.	3.3
X	108. Safety provisions not as specified.	3.4
X	109. Foundations not as specified.	3.5
X	110. Hardware not as specified.	3.6
X	111. Firefighting equipment not as specified.	3.7
X	112. Lifesaving equipment not as specified.	3.8
X	113. Piping insulation and lagging not as specified or certification that insulation and lagging does not contain asbestos not available.	3.9
X	114. Machinery and equipment lubrication and lubricants not as specified.	3.11
X	115. Human factors not as specified.	3.12
X	116. Identification marking and instruction plates not as specified.	3.13
X	117. Treatment and painting not as specified.	3.14
X	118. Notice frames and certificates not as specified.	3.15
X	119. Type and amount of technical publications and data not as specified.	3.16
X	120. On-board repair parts not as specified.	3.17
X	121. Storage and navigation lights not as specified.	3.18
X	122. Tool box not as specified.	3.19

4.4.2 Tests.

4.4.2.1 Engine and cargo pump. The cargo pump shall be operated continuously for 4 hours at rated capacity and pressure. Engine and pump data shall be recorded at 1/2-hour intervals. Any malfunction of the engine or pump or inability of the pump to deliver 1,000 gallons per minute against a total dynamic head of 183 feet shall constitute failure of this test. Engine data shall conform to manufacturer's specifications.

4.4.2.2 Hydrostatic tests. All compartments, tanks, skegs, and related piping systems shall be hydrostatically tested for conformance to drawings and ABS requirements. Nonconformance to the drawings and ABS requirements shall constitute failure of this test.

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4.4.2.3 Lifting pads. The contractor shall radiographically inspect all welds required to fabricate the lifting pads. Nonconformance to the drawings and ABS requirements shall constitute failure of this test.

4.4.2.4 Noise level. The test requirements of 5.1.2 of MIL-STD-1474 shall be performed. If the limits of category D, 5.1.1, MIL-STD-1474, cannot be met, the requirements of 4.3 and 4.4 must be implemented. The noise hazard caution signs if required will be modified to read: "CAUTION: High Intensity Noise Hearing Protection Required Within \_\_\_\_\_ Feet."

4.5 Inspection of packaging.4.5.1 Quality conformance inspection of packaging.

4.5.1.1 Unit of product. For the purpose of inspection, a complete barge prepared for shipment shall be considered a unit of product.

4.5.1.2 Examination. Each barge prepared for shipment shall be examined for the following defects. Presence of one or more defects shall be cause for rejection.

No.	Defect	A	C
123.	Disassembly not as specified.	5.1.1.1	
124.	Disassembled parts not matchmarked as specified.	5.1.1.2	
125.	Tag for matchmarking not as specified.	5.1.1.2	
126.	Preservatives not as specified.	5.1.1.3	
127.	Unprotected surfaces not preserved as specified.	5.1.1.4/5.1.1.5	5.1.2
128.	Gears not protected as specified.	5.1.1.6/5.1.1.7	
129.	Chains not protected as specified.	5.1.1.8/5.1.1.9	
130.	Drive belts and pulleys not protected as specified.	5.1.1.10	
131.	Drive shaft and universal joint not protected as specified.	5.1.1.11	
132.	Cargo discharge pump and piping not protected as specified.	5.1.1.12	
133.	Cargo tanks not coated as specified.	5.1.1.13	
134.	Fuel tanks not fogged, drained, and plugged as specified.	5.1.1.14	
135.	Void areas not clear of waste, foreign material, drained and dried as specified.	5.1.1.15	
136.	Engines and engine components not preserved as specified.	5.1.1.16	5.1.2.1
137.	Cooling system not protected as specified.	5.1.1.16	5.1.2.1
138.	Repair parts not protected as specified.	5.1.1.17	
139.	Firefighting equipment not preserved as specified	5.1.1.18	
140.	Electrical component not preserved as specified when required.	5.1.1.19	

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No.	Defect	A	C
141.	Instruments not protected as specified when required.	5.1.1.20	
142.	Maintenance tools not preserved as specified.	5.1.1.21	
143.	Technical publications not preserved as specified.	5.1.1.22	
144.	Keys, locks, and key openings not protected and preserved as specified.	5.1.1.23	
145.	Keys and locks not positioned in tool box as required.	5.1.1.23	
146.	Tag for locating keys not positioned in machinery house as specified.	5.1.1.23	
147.	Machinery house not preserved as specified.	5.1.1.24	
148.	Cordage not preserved as specified.	5.1.1.25	
149.	Lifesaving equipment not protected as specified.	5.1.1.26	
150.	Disassembled items not placed in boxes as specified.	5.1.1.28	
151.	Unlike items placed in one box.	5.1.1.28	
152.	Items not cushioned and blocked as required.	5.1.1.28	
153.	Parts not stowed as specified.	5.1.1.29	5.1.2
154.	Parts not consolidated into boxes as specified when required.	5.2.1	
155.	Consolidation boxes not as specified.	5.2.1	
156.	Strapping not as specified.	5.1.1.24/5.2.1	
157.	Parts/boxes not secured on barge as specified.	5.2.1	5.2.2
158.	Marking not as specified.	5.3	5.3
159.	Depreservation guides not furnished as specified.	5.4	5.4

## 5. PACKAGING

5.1 Preservation. Preservation shall be level A or level C, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Disassembly. Disassembly of detachable item located on deck shall be the minimum necessary to safeguard parts vulnerable to damage, pilferage, and loss; however, disassembly shall be limited to those parts that can be removed and reinstalled without special tools or skilled personnel. Removed bolts, nuts, pins, screws, and washers shall be reinstalled to mating parts and secured to prevent their loss.

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5.1.1.2 Matchmarking. Removed parts and mating parts remaining on the barge shall be matchmarked when necessary to facilitate reassembly. Matchmarking information shall be marked on cloth shipping tags conforming to UU-T-81, type A, grade optional and the marked tags shall be attached to mating parts with wire or twine. The tags shall be marked with waterproof ink. Alternatively, the matchmarking may be accomplished by stenciling with gasoline-soluble paint. Items too small to be effectively tagged or stenciled shall be matchmarked by affixing the identification information on an exterior wrap or container as applicable.

5.1.1.3 Preservatives. The provisions of MIL-P-116 shall apply when selecting and when determining the applicability of preservatives. When preservatives are specified herein by "P" numbers, they shall conform to the applicable specifications listed in MIL-P-116 and shall be applied in accordance with MIL-P-116.

5.1.1.4 Unfinished (not machined) surfaces. Unfinished exterior metal surfaces shall be coated with type P-I preservative.

5.1.1.5 Machined surfaces. Exposed machined surfaces shall be coated with type P-6 or P-11 preservative and wrapped or covered, as applicable, with barrier material conforming to MIL-B-121, type I or II, grade A, class 2 or MIL-B-22191, type II. The material shall be secured in place with tape conforming to MIL-T-22085, type II.

5.1.1.6 Exposed gears. Exposed gears shall be coated with type P-1 preservative or with primer conforming to TT-P-664 or MIL-P-46093.

5.1.1.7 Enclosed gears. Gears operating on lubrication oil (SAE 10, 30, or 50) shall have the housing filled to the operating level with type P-10 preservative, type I, grade 10, 30, or 50 as applicable and tagged to indicate: "The preservative oil is adequate for operation. Do not drain until the first required lubrication change." Gears operating on gear lubricant (SAE 80 or 90) shall be filled to the operating level with lubricant conforming to MIL-L-2105, grade as applicable, and tagged to indicate: "The lubricant is good for operation. Do not drain until the first required lubrication change." Gears not operating on lubrication oil (SAE 10, 30, or 50) or lubricant (SAE 80 or 90) shall be filled to the operating level with the approved lubricant required for operation. The gear housings shall be tagged to indicate: "The housing is filled to the operating level with the applicable type lubricant. Do not drain prior to the first required lubrication change." The tags shall conform to UU-T-81, type A. Information on the tags shall be applied with waterproof ink. The tags shall be attached in a conspicuous location.

5.1.1.8 Exposed drive chains. Exposed drive chains shall be coated with enough type P-3 or P-9 preservative to insure penetration of the preservative to the inner surfaces of the rollers, pins, and bushings. After the excess preservative has drained, the entire chain and the unpainted surfaces of the sprocket shall be coated with type P-1 preservative.

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5.1.1.9 Enclosed chains. Enclosed chains and chain housings shall be preserved and tagged as specified in 5.1.1.7 for enclosed gears.

5.1.1.10 Drive belts and pulleys. Drive belts shall be removed or released from tension. Removed belts shall be preserved in accordance with MIL-P-116, method IC-1 or IC-3. Unpainted faces of pulley grooves shall be coated with primer conforming to TT-P-664 or primer conforming to MIL-P-46093. A tag conforming to UU-T-81, type A, shall be attached in a conspicuous location indicating: "Belts have been removed or released from tension. Install or tension as applicable, prior to operation." The information on the tag shall be applied with waterproof ink.

5.1.1.11 Drive shafts and universal joints. Unpainted surfaces of drive shafts and universal joints shall be coated with type P-1 preservative. Dust boots, if furnished, shall be reinstalled.

5.1.1.12 Cargo discharge pump and piping. The cargo discharge pump and cargo discharge and distribution piping systems shall be flushed with type P-10, type II, grade 30, preservative oil. All excess preservative oil shall be allowed to drain. Drain cocks and drain valves, as applicable, shall be left open. All other openings shall be sealed closed with plastic caps or plugs conforming to MIL-C-5501, or with pressure sensitive tape conforming to MIL-T-22085, type II. All valves shall be injected with the proper amount of sealant necessary to provide a sealant film between the tapered plug and body.

5.1.1.13 Cargo tanks. All interior surfaces of the cargo tanks shall be coated with P-10, type II, grade 30, preservative oil.

5.1.1.14 Fuel tank. Interior surfaces of the fuel tank requiring a preservative (see 5.1.1.3), shall be fogged with preservative lubricating oil conforming to P-10, type II, grade 10. Excessive preservative shall be allowed to drain. Drain cocks and drain valves shall be left open. All other openings shall be sealed with plastic caps or plugs conforming to MIL-C-5501 or with pressure sensitive tape conforming to MIL-T-22085, type II. Fuel filters, strainer, and lines shall be clean and in operating condition.

5.1.1.15 Other void areas. Other void areas not specifically provided for herein shall be clear of waste, free of foreign material, drained, and dry.

5.1.1.16 Engine. Engine, engine components, and engine accessories shall be preserved in accordance with level A requirements of MIL-E-10062, type I, method I.

5.1.1.16.1 Cooling system. The liquid cooling system for the engine shall be preserved by the water and antifreeze procedure specified in MIL-E-10062 except that the antifreeze shall conform to MIL-A-46153.

5.1.1.17 Repair parts. When repair parts are specified (see 6.2), the repair parts for each barge shall be protected in accordance with the level A preservation-packaging requirements of MIL-R-196. Parts not specifically named

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therein shall be protected as specified for parts of similar design and construction.

5.1.1.18 Firefighting equipment.

5.1.1.18.1 Fire ax. The cutting head of the ax shall be preserved with type P-1 preservative. The head shall then be wrapped with a single wrap of barrier material conforming to MIL-B-121, type II, class 2, which shall be secured to the handle with pressure sensitive tape conforming to MIL-T-22085, type II. Stowage of the ax shall be in the forward rake compartments.

5.1.1.18.2 Fire extinguishers. Unpainted exterior metal surfaces of fire extinguishers requiring the application of a contact preservative in accordance with MIL-P-116 shall be coated with type P-1 preservative. Fire extinguishers shall be individually placed in a box conforming to PPP-B-636, class weather-resistant. Blocking and cushioning shall be provided within the box to prevent movement or damage. Boxes shall be sealed in accordance with the appendix to the box specification, method IV.

5.1.1.19 Electrical components (as applicable). Openings in sockets, coupling plugs, and switches shall be sealed with tape conforming to MIL-T-22085, type II. Disassembled electrical components shall be placed in boxes as specified in 5.1.1.28.

5.1.1.20 Instrument panels (as applicable). Instruments, meters, and gages not protected by a metal cover or by the barge machinery house shall have the instrument glass or gage glass covered with barrier material conforming to MIL-B-121, type II, grade A, class 2, over which a fitted piece of hardboard or 1/4-inch-thick plywood shall be placed and secured with tape conforming to MIL-T-22085, type II.

5.1.1.21 Maintenance tools. Maintenance tools shall be preserved in accordance with the level A preservation and packing requirements of PPP-P-40. The tool box lid shall be closed and secured to prevent pilferage.

5.1.1.22 Technical publications. Technical publications, when required for each barge, shall be preserved together in accordance with MIL-P-116, method IC-1 or IC-3.

5.1.1.23 Locks, keys, and key openings. Interior of locks shall be coated with powdered graphite. The locks shall be operated to insure penetration of the graphite. Openings into locks (except padlocks) shall be sealed with tape conforming to MIL-T-22085, type II. Door keys and padlocks with keys shall be preserved in accordance with MIL-P-116, method IC-1 or IC-3. The preserved keys and padlocks with keys for each barge shall be placed in the tool box. A tag shall be attached in a conspicuous location in the machinery house indicating: "The keys for the barge are in the tool box."

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5.1.1.24 Machinery house. House door shall be closed. When applicable, house windows shall be closed and protected from breakage by covering each glass surface with a fitted piece of hardboard, with 1/4-inch-thick plywood, or with a sheet-metal panel secured in place with bolts or with steel strapping conforming to QQ-S-781, class 1, type I or IV, finish B, size as applicable. There shall be not less than 1-inch clearance between the panels and the glass. The panels shall be painted the same color as the house. Small openings into the house shall be sealed with tape conforming to MIL-T-22085.

5.1.1.25 Cordage. Unless previously treated to resist mold and fungus growth, all cordage shall be preserved in accordance with the level A requirements of MIL-C-3131. The cordage shall be stowed in the forward rake compartment.

5.1.1.26 Lifesaving equipment. Each 30-inch lifebuoy shall be completely wrapped in barrier material conforming to MIL-B-121, type II, grade A, class 2, which is held in place with tape conforming to MIL-T-22085, type II. The 2 wrapped buoys shall then be placed in a snug-fitting box conforming to PPP-B-636, class weather-resistant. Box closure shall be method IV as specified in the appendix to PPP-B-636.

5.1.1.27 Other components. Other components, not specifically mentioned herein, requiring protection from corrosion or physical or mechanical damage shall be preserved as specified for components of similar design and construction. Moveable parts of attached items shall be retracted or lowered and secured to the barge.

5.1.1.28 Disassembled items. As practicable, an item removed from its installed operating position, which has been preserved and matchmarked as applicable in accordance with 5.1.1.2 and 5.1.1.3, shall be individually placed in a close-fitting box conforming to PPP-B-636, class weather-resistant, grade as applicable. In order to protect the item against damage, cushioning and blocking of the item within the box shall be in accordance with MIL-STD-1186. Box closure shall be in accordance with method IV of the appendix to the box specification. When multiples of the same item are disassembled, they may be combined into one or more boxes provided the sizes of such boxes are compatible with the assigned stowage accommodations (see 5.1.1.29) and that such boxes do not exceed the weight and cube limitations prescribed by the box specification. Unlike items should not be placed in one box.

5.1.1.29 Stowage. Unless otherwise specified herein, items which have permanently assigned stowage accommodations shall be stowed in the location provided. Unless otherwise specified herein, items which do not have permanently assigned stowage accommodations shall be stowed in the forward rake compartment.

5.1.2 Level C. The barge, with mounted and installed components, shall be preserved in accordance with applicable marine requirements to assure protection against deterioration, damage, and pilferage from the supplier to the initial destination. Repair parts shall be stowed in spaces provided.

5.1.2.1 Engine. Liquid cooling systems shall be filled with a fresh, clean solution of 50-percent water and 50-percent antifreeze conforming to MIL-A-46153.

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A tag shall be attached indicating the temperature to which the cooling system can be subjected to before damage. All lubrication reservoirs, sumps, and hydraulic fluid supply tanks or reservoirs shall be filled to the operating level with the lubricant or fluid designated for use in the temperature range at the shipping destination. A tag or tags, as applicable, shall be attached in a conspicuous location indicating which lubricant or fluid has been used.

5.1.3 Dynamic dehumidification. When dynamic dehumidification is required for long term storage (see 6.2), the barge shall be prepared in accordance with TB-740-97-4.

5.2 Packing. Packing shall be level A or level C as specified (see 6.2).

5.2.1 Level A. All equipment and parts that have been preserved as specified in 5.1.1, for which stowage space cannot be provided, shall be consolidated into a minimum number of snug-fitting boxes conforming to PPP-B-601, overseas type, style optional, or PPP-B-621, class 2, style optional. Box closure and strapping shall be as specified in the box specification or the appendix thereto except that strapping shall be flat and the finish B. The number, size, weight, and configuration of the boxes shall be determined by space and the convenience for securing the boxes on the barge. The boxes shall be secured on the barge with appropriate size strapping conforming to QQ-S-781, class 1, type I or IV, finish B. Straps shall be properly tensioned and sealed.

5.2.2 Level C. All equipment and parts for which stowage space has not been provided shall be secured on the barge to prevent shifting.

5.2.3 Dynamic dehumidification. When dynamic dehumidification is required for long term storage (see 6.2), the barge shall be prepared in accordance with TB-740-97-4.

5.3 Marking. In addition to any special identification marking required by the contract or purchase order, the barge and all wraps and containers shall be marked in accordance with MIL-STD-129.

5.4 Depreservation guides. Two depreservation guides shall be furnished with each barge. Each guide shall be preserved in a waterproof envelope marked "Depreservation Guide". One preserved guide shall be secured in a conspicuous location in the machinery house. The other preserved guide shall be placed in the tool box. Unless otherwise specified (see 6.2 and 6.6), DA Form 2258 "Depreservation Guide for Vehicles and Equipment" shall be used.

## 6. NOTES

6.1 Intended use. The nonpropelled, steel, liquid cargo barge is intended for use in rivers, bays, or coastal waters in transporting liquid bulk cargo from deep water areas to shallow water distribution points. The barge is capable of being delivered overseas in ballast condition.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this specification.
- b. Technical publications required (see 3.16).

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- c. Repair parts required (see 3.17 and 5.1.1.17).
- d. Level of preservation and level of packing required (see 5.1 and 5.2).
- e. When dynamic dehumidification is required (see 5.1.3 and 5.2.3).
- f. Special marking required (see 5.3).
- g. When other than DA Form 2258 is to be used (see 5.4).
- h. Army designation numbers.

6.3 Lubricants. The contracting officer should furnish a list of lubricants applicable to the barge equipment and machinery covered by this specification as contained in the Federal Supply Catalog, Department of Defense Section, Identification List C9100-IL, for FSC group 91.

6.4 Technical data.

6.4.1 "As-constructed" drawings and drawing deviations. The procurement document should specify that masters of "as-constructed" drawings will be furnished to the contracting officer in accordance with DOD-D-1000, level 2.

6.4.2 Test records. The procurement documents should specify that detailed test records be prepared and supplied in the number of copies specified for technical publications.

6.5 Definitions.

6.5.1 "As-constructed" drawings. "As-constructed" drawings reflect deviations from design drawings and include any additional details developed during construction of the barge.

6.5.2 Test records. Test records consist of records from the tests required by ABS and USCG and as specified herein.

6.5.3 List of machinery and equipment. A list of machinery, equipment, and repair parts that are on board when the barge is delivered to the procuring activity.

6.5.4 Instruction books. Instruction books provide operation and maintenance instructions for machinery, equipment, and systems installed on the barge.

6.5.5 Contract drawings. Contract drawings are drawings that illustrate features of the barge which are mandatory requirements.

6.6 DA Form 2258. The contracting officer should arrange to furnish DA Form 2258 when requested by the contractor (see 5.4).

6.7 Data requirements. The contracting officer should make arrangements to acquire data for approval required by 3.1.2.

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