

[INCH-POUND]
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SUPERSEDING
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FEDERAL SPECIFICATION

LIFTING, LAUNCHING, AND SIDE CARRYING EQUIPMENT FOR PONTOONS ON 1179 CLASS LST VESSELS

The General Services Administration has authorized the use of this specification by all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers wire rope assemblies, blocks, plates, and interconnecting fittings for side carry and side launching of P-series pontoon causeway sections, warping tugs, and ramp barges, utilized with class 1179 LST vessels.

1.2 Classification. The assemblies and fittings covered by this specification are listed in table I.

1.2.1 Size. Assembly and fitting sizes are listed in table I.

2. APPLICABLE DOCUMENTS

2.1 Government publications. The following documents, of the issues in effect on the date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Commanding Officer (Code 15E2), Naval Construction Battalion Center, 1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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Federal Standards

- T-R-650 - Rope, Yarn and Twine, Bast Fiber.
- FF-C-450 - Clamp, Wire Rope.
- RR-C-271 - Chains and Attachments, Welded and Weldless.
- RR-S-550 - Sockets, Wire Rope.
- RR-W-410 - Wire Rope and Strand.
- UU-T-81 - Tags, Shipping and Stock.

Military Specifications

- MIL-R-17343 - Rope, Nylon.
- MIL-P-24441 - Paint, Epoxy-Polyamide, General Specification for.
- DOD-P-24648 - Primer Coating, Zinc Dust Pigmented for Exterior Steel Surfaces (Metric).

Drawings

CIVIL ENGINEER SUPPORT OFFICE (CESO)

- SK 9115 - Block, Snatch, 18-inch.

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)

- 6028259 - 1179 Class LST Rigging Gear.

- Sheet 1 - Lifting and Launching Procedures and Bill of Materials.

(Copies of federal and military specifications and drawings required by contractors in connection with specific procurement functions are obtained from Defense Automated Printing Services, Attn: DoDSSP, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

- ANSI-Z1.4 - Procedures, Sampling and Tables for Inspection by Attributes.

(Application for a copy should be addressed to the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.)

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ASTM

- A 27 - Mild-Medium-Strength Carbon-Steel Castings for General Application.
- A 36 - Structural Steel.
- A 123 - Zinc (Hot Galvanized) Coatings on Iron and Steel Products.
- A 148 - High Strength Steel Castings for Structural Purposes.
- A 153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.
- A 514 - High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding.
- A 668 - Carbon and Alloy Steel Forging for Industrial Use.
- B 633 - Electrodeposited Coatings of Zinc on Iron and Steel.
- E 1444 - Magnetic Particle Examination.

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

SOCIETY OF AUTOMOTIVE ENGINEERS, INC. (SAE)

SAE Handbook.

- SAE J403 - Chemical Composition of SAE Carbon Steels, Standard.
- SAE J404 - Chemical Composition of SAE Alloy Steels, Standard.
- SAE J461 - Wrought and Copper Cast Alloys, Standard.

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

(DoD activities may obtain copies of those adopted voluntary standards listed in the DoD Index of Specifications and Standards free of charge from the Defense Automated Printing Services, Attn: DoDSSP, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document shall take precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The wire rope assemblies, chain assemblies, blocks, hooks, plates, and interconnecting fittings shall be extra heavy-duty items. These items, when interconnected to a power source, shall safely, capably, and efficiently lift or launch a P-series pontoon causeway section alongside an 1179 Class LST vessel.

3.1.1 Drawings. The drawings forming a part of this specification are engineering design drawings. The contractor is responsible for preparing his own shop drawings. Where tolerances

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prescribed could cumulatively result in incorrect fits, the contractor shall provide tolerances within those prescribed on the drawings to insure correct fit, assembly, and operation of the items. No deviation from prescribed dimensions or tolerances is permissible without prior approval of the contracting officer.

3.2 First article. When specified (see 6.2), a sample shall be subjected to the first article inspection in accordance with 4.2.1.

3.3 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use or rebuilt products is allowed under this specification.

3.3.1 Steel plate. Steel plate shall conform to ASTM A 36 or A 514, grade B, or SAE J403, grade 1023. Alloy steel plate shall conform to SAE J404, grade 4140.

3.3.2 Forging steel. Forging steel shall conform to ASTM A 668 class as specified herein or as indicated by tensile requirements on the applicable drawings.

3.3.3 Cast steel. Cast steel shall conform to ASTM A 27 or A 148, grade as specified herein or as indicated by tensile strength requirements on the applicable drawings.

3.4 Construction. Items, parts, and assemblies shall be as listed in table I. The equipment shall be constructed to the dimensions, tolerances, and strength requirements shown on applicable drawings listed in table I and as specified herein. The items are grouped for inspection designation purposes.

3.4.1 Wire rope. Wire rope shall conform to RR-W-410, type I, class 3 (6 by 37), improved plow steel, independent wire rope core (IWRC), uncoated, 1-inch (25 millimetre (mm)) diameter.

3.4.2 Wire rope bridles and pendants. Wire rope bridles and pendants shall be constructed from wire rope conforming to RR-W-410, type I, class 3 (6 by 37) extra improved plow steel. The IRWC, uncoated with sockets conforming to RR-S-550 of the appropriate size and type as indicated in NAVFAC drawing 6028259.

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TABLE I. Groups 1 through 7.

Group	Description	Reference	Quantity
1.	Wire Rope and Wire Rope Assemblies		
	Wire Rope, 1-inch (25 mm) (850 foot (259 080 mm) roll)	Paragraph 3.4.1	2
	Wire Rope Bridle 2 inches by 12 feet (51 mm by 3 658 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 2 inches by 67 feet (51 mm by 20 422 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 2 inches by 74.5 feet (51 mm by 22 708 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 2 inches by 100.25 feet (51 mm by 30 556 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 2 inches by 107.5 feet (51 mm by 32 766 mm)	Paragraph 3.4.2	4
	Wire Rope Pendant 2 inches by 113.5 feet (51 mm by 34 595 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 1.25 inches by 3 feet (31.75 mm by 914 mm)	Paragraph 3.4.2	8
	Wire Rope Pendant 1.25 inches by 4 feet (31.75 mm by 1 219 mm)	Paragraph 3.4.2	8
	Wire Rope Pendant 1.25 inches by 27 feet (31.75 mm by 8 230 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 1.25 inches by 38.5 feet (31.75 mm by 11 735 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 1.25 inches by 59.5 feet (31.75 mm by 18 136 mm)	Paragraph 3.4.2	2
	Wire Rope Pendant 1.25 inches by 69 feet (31.75 mm by 21 031 mm)	Paragraph 3.4.2	2
	Clip, Wire Rope, 1-inch (25 mm)	FF-C-450, type 1, class 1	8
2.	Blocks		
	Block, Tackle, 20-inch (508 mm), Septem	Paragraph 3.4.3	2
	Block, Tackle, 20-inch (508 mm) Sextuple	Paragraph 3.4.4	2
	Block, Snatch, 18-inch (457 mm)	RR-C-271 and Dwg. SK 9115	1

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TABLE I. Groups 1 through 7- (continued).

Group	Description	Reference	Quantity
	Block, Snatch, 34-inch (864 mm)	Dwg. 6028259	
3.	Chain Fittings		
	Shackle, Chain, Screw Pin, 3-inch (76 mm)	RR-C-271	20
	Shackle, Anchor, Screw Pin, 1.5-inch (38 mm)	RR-C-271	16
	Shackle, Anchor, Screw Pin, 1.75-inch (44 mm)	Paragraph 3.4.5	24
	Shackle, Anchor, Screw Pin, 2.25-inch (57 mm)	Paragraph 3.4.6	8
	Shackle, Anchor, Screw Pin, 2.50-inch (63 mm)	RR-C-271	1
	Shackle, Swivel, 1.625-inch (41 mm)	Paragraph 3.4.7	8
	Shackle, Swivel, 2-inch (51 mm)	Paragraph 3.4.8	8
4.	Rope		
	Rope, Nylon, 1-inch (25 mm) (750-yard (685 800 mm) roll)	MIL-R-17343	1
	Ratline, Hemp, 1.125-inch (29 mm) circumference (200 yard (182 880 mm) coil)	T-R-650	1
5.	Equalizer Block and Flounder Plates		
	Equalizer Block, P-17	Dwg. 6028259	2
	Flounder Plate, FP-11	Dwg. 6028259	8
6.	Hooks		
	Hook, Release, 150-ton (136 078 kilogram (kg)) (hook release, causeway lifting)	Paragraph 3.4.9	2
	Hook, Quick Release, 50-ton (45 359 kg) (hook release, causeway lifting)	Paragraph 3.4.10	8
7.	Wire		
	Wire, Steel, Bright No. 9 100 lb (45 kg) coil	Dwg. 6028259	1

3.4.3 Block, tackle, 20-inch (508 mm), septem. The septem block shall be a 20-inch (508 mm) outside diameter, cast steel, oval pattern, septem block for use with 1-inch (25 mm) diameter wire rope. The breaking strength of the block shall be not less than 800,000 pounds (lb) (362 874 kg) and have a proof load of 310,000 lb (140 614 kg) (see 4.6.2.2). The block shall be zinc-coated (see 3.4.11). It shall be provided with bronze bushings which conform to SAE J461, grade 660. Grease fittings shall be provided which lubricate all bushings from either side of the block. A hanging device shall attach the block, with sheaves horizontal to the deck, to the fixture shown in figure 2. Bearing mounted rollers shall be provided to facilitate block travel over metal deck surfaces. The hanging device shall be provided with the block and include an attaching mechanism compatible with the fixture shown in figure 2.

3.4.4 Block, tackle, 20-inch (508 mm), sextuple. The sextuple block shall be a 20-inch (508 mm) outside diameter, cast steel, oval pattern, sextuple block for use with 1-inch (25 mm) diameter

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wire rope. The breaking strength of the block shall be not less than 800,000 lb (362 874 kg) and have a proof load of 310,000 lb (140 614 kg) (see 4.6.2.2). The block shall be coated in accordance with 3.4.11. It shall be provided with bronze bushings which conform to SAE J461, grade 660 and grease fittings which can lubricate all bushings from either side of the block. The hanging device shall attach the block, with sheaves horizontal to the deck, to the fixture shown in figure 3. Bearing mounted rollers shall be provided to facilitate block travel over metal deck surfaces. The hanging device shall be provided with the block.

3.4.5 Shackle, anchor, screw pin, 1.75-inch (44 mm). The 1.75-inch (44 mm) shackle shall conform to the requirements of RR-C-271 except when material requirements shall be altered as necessary to provide a required breaking strength of not less than 400,000 lb (18 437 kg). The proof load shall be 160,000 lb (72 575 kg) (see 4.6.2.3). Shackles shall be marked to indicate a Safe Working Load (SWL) of 40 tons (36 287 kg).

3.4.6 Shackle, anchor, screw pin 2.25-inch (57 mm). The 2.25-inch (57 mm) shackle shall conform to the requirements of RR-C-271 except when material requirements must be altered as necessary to provide a required breaking strength of not less than 520,000 lb (235 868 kg). The proof load shall be 208,000 lb (94 347 kg) (see 4.6.2.3). Shackles shall be marked to indicate a SWL of 52 tons (47 174 kg). The dimensional requirements for the 2.25-inch (57 mm) shackle are as follows:

Size (D).....	2.25 inches	(57 mm)
Diameter pin (P) (Minimum).....	2.50 inches	(63 mm)
Width between eyes (W):		
Nominal.....	3.875 inches	(98 mm)
Tolerance.....	0.125 inches	(3.175 mm)
Length inside (L):		
Nominal.....	8.75 inches	(222 mm)
Tolerance.....	±0.25 inches	(6.35 mm)
Width bow (B) (Minimum).....	6.50 inches	(165 mm)
Diameter outside-eye.....	5.50 inches	(140 mm)
Weight per 100 shackles (approximate).....	6,000 lb.	(2 722 kg)

3.4.7 Shackle, swivel, 1.625-inch (41 mm). The 1.625-inch (41 mm) shackle shall be of heavy duty construction for use with a 1.375-inch (35 mm) recommended line size and shall have a breaking strength of not less than 260,000 lb (117 934 kg). Proof load shall be 104,000 lb (47 174 kg) (see 4.6.2.3). Shackle shall be marked to indicate a SWL of 26 tons (23 587 kg). Sampling for proof and break tests shall be per RR-C-271. Loads tested shall be those stated herein. A standard recessed pressure grease fitting (ZERK) shall be installed in the eye bolt guide block to provide lubrication. Guide blocks shall be grooved to facilitate distribution of lubricant to all rotating and thrust surfaces. The swivel shall be coated in accordance with 3.4.11. The general configuration shall be similar to that shown in figure 1. Nominal dimensions shall be the following:

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Overall length (A)	14.0 inches	(356 mm)
Inside diameter shackle (C)	4.5 inches	(114 mm)
Inside diameter eye (E)	1.1875 inches	(30 mm)

3.4.8 Shackle, swivel, 2-inch (51 mm). The 2-inch (51 mm) shackle swivel shall be of heavy duty construction for use with a 1.75-inch (44 mm) recommended line size and shall have a breaking strength of not less than 400,000 lb (181 437 kg). Proof load shall be 160,000 lb (72 480 kg) (see 4.6.2.3). Shackles shall be marked to indicate a SWL of 40 tons (36 287 kg). Sampling for proof and break tests shall be per RR-C-271. Loads tested shall be those stated herein. A standard recessed pressure grease fitting (ZERK) shall be installed in the eye bolt guide block to provide lubrication. Guide blocks shall be grooved to facilitate distribution of lubricant to all rotating and thrust surfaces. The swivel shall be coated in accordance with 3.4.11. The general configuration shall be similar to that shown in figure 1. Nominal dimensions shall be the following:

Overall length (A)	17 inches	(432 mm)
Inside diameter shackle (C)	4.5 inches	(114 mm)
Inside diameter eye (E)	2.1875 inches	(56 mm)

3.4.9 150-ton (136 078 kg) release hook. The 150-ton (136 078 kg) release hook shall have the block attachment shown in figure 3 and be fabricated of alloy steel. A forged alloy master link of 3-inch (76 mm) stock diameter shall be provided with the release hook. The hook shall have 150 ton (136 078 kg) quick release lifting or launching capacity, and shall have a built-in, self-contained, spring loaded pin and plunger mechanism to allow an intermediate or partial loading position and to prevent accidental tripping. The hook shall have a double latch, one at the bottom of the hook to the pawl, one at the tang of the hook to the release pin. Bearing mounted rollers shall be provided to facilitate hook travel over metal deck surfaces. The alloy master link shall be of 3-inch (76 mm) stock diameter and have inside dimensions of 9 inches by 18 inches (229 mm by 457 mm). The breaking strength of the link shall be not less than 1,140,000 lb (517 095 kg). Proof strength shall be 380,000 lb (172 365 kg). The release hook shall be coated in accordance with 3.4.11 and shall be in accordance with NAVFAC drawing 6028259.

3.4.10 50-ton (45 359 kg) lifting hook. The 50 ton (45 359 kg) lifting hook be part number 430, as supplied by Washington Chain and Supply Co. of Seattle, WA, or equal. It shall be fabricated of alloy steel and be in accordance with NAVFAC Drawing 6028259. It shall have a 50 ton (45 359 kg) lift capacity and shall release manually at 50 tons (45 359 kg). The hook shall have a built-in self-contained, spring loaded, pin and plunger mechanism to allow for intermediate or partial loading position and to prevent accidental tripping. The hook shall have a double latch, one at the bottom of the hook to the pawl and one at the tang of the hook to the release pin. The lifting hook shall be coated in accordance with 3.4.11 and shall be in accordance with NAVFAC drawing 6028259.

3.4.11 Treatment. The following treatment system shall apply to the 20-inch (508 mm) septum block, 20-inch (508 mm) sextuple block, 150-ton (136 078 kg) release hook, 50-ton

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(45 359 kg) release hook, 34-inch (864 mm) snatch block, 18-inch (457 mm) snatch block, equalizer block, and flounder plate: one coat of DOD-24648 inorganic zinc primer, type I, class 1, composition B having a dry film thickness of 2.5 to 3 mils (0.0635 mm to 0.0762 mm). One mist coat of MIL-P-24441 epoxy-polyamide, formula 150, having a dry film thickness of 0.5 to 1.0 mils (0.0127 to 0.0254 mm). One coat of MIL-P-24441 epoxy polyamide, formula 153, having a dry film thickness of not less than 3 mils (0.0762 mm). Surface preparation shall be in accordance with paint manufacturer's recommendations. Swivel shackles shall be zinc-coated in accordance with either ASTM A 123, A 153, or B 633, as applicable.

3.5 Marking.

3.5.1 **General.** Each item covered by this specification shall be marked for identification purposes. The identification marking shall be stenciled on the item or on an attached cloth tag conforming to UU-T-81, waterproofed and wired securely to the part, in the case of narrow or odd shaped items. Marking shall be in Gothic-type capital letters and Arabic numerals not less than 1-inch (25 mm) high for stenciled information and not less than 0.1875-inch (5 mm) high for information on cloth tags.

3.5.2 **Blocks.** Each block shall be marked with the following information:

- a. Manufacturer's name or trademark.
- b. Manufacturer's part number.
- c. Safe working load in tons (kg).
- d. Block size (sheave diameter).
- e. Wire rope diameter.

The marking shall be applied to an identification plate (nameplate) which shall be securely fastened to the block. At the manufacturer's option, the marking may be applied directly to the surface of the block by acid or electric etching, engraving, embossing, casting, or molding. Marking shall be on the side of the block and shall be of such size and type as to be clearly legible. Method of marking shall not degrade sectional strength or induce stress connections to the block.

3.5.3 **Wire rope assemblies.** Each wire rope assembly shall be marked with safe working load, length of assembly, and date of testing stamped into the metal of both sockets of each assembly. Marking shall be of such size and type as to be clearly legible.

3.5.4 **Shackles and shackle swivels.** Each shackle body shall be permanently and legibly marked, in raised or stamped letters, on the side of the shackle bow, with an identifying manufacturer's name or trademark, the shackle size, and recommended safe working load. Grade B, high strength shackle pins and bolts shall be marked by the raised or stamped letters "HS" on the head. Markings shall be raised or stamped letters or figures of the maximum practical height permitted by the size of the shackle component being marked, but be not greater than 0.75-inch (19 mm) in height by 0.125-inch (3 mm) in relief. Stamping dies shall be of the round bottom, low stress type. Marking shall be a part of the manufacturing process. Cold stamping is not acceptable. Marking locations shall be such as not to interfere with the serviceability of the shackle assembly.

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3.6 Workmanship.

3.6.1 **Steel fabrication.** The steel used in the fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to ensure uniformity of size and shape.

3.6.2 **Welding.** Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.6.3 **Castings.** All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the casting's ability to perform its intended function.

3.6.4 **Forgings.** Forgings shall be properly shaped and free from fins, cracks, nicks, flaws, seams, and any other injurious defects which might affect the serviceability of the forgings. Tolerances and gages from metal fits shall conform to standards of commercial practice. Finished contact and bearing surfaces shall be true and exact.

4. QUALITY ASSURANCE PROVISIONS

4.1 **Responsibility for inspection.** Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract, 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 ensure that supplies and services conform to prescribed requirements.

4.1.1 **Responsibility for compliance.** All items shall meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this document shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 **Component and material inspection.** Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

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4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on one of each item in table I when a first article is required (see 3.2, 6.2, and 6.3). This inspection shall include the examination of 4.5 and the tests of 4.6. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.5 and the tests of 4.6. This inspection shall be performed on the samples selected in accordance with 4.4.

4.3 Inspection lot. All items of the same description offered for delivery at one time shall be considered a lot for purposes of inspection.

4.4 Sampling. With the exception of group 1 items and the swivel shackles of group 3, random samples of the items shall be selected from each lot in accordance with ANSI - Z1.4. For group I, all wire rope assemblies shall be tested in accordance with 4.6.2.1 and marked as specified in 3.4.3. For swivel shackles, samples shall be selected at inspection level of S-1 of ANSI - Z1.4. Guidance for inspection level and Acceptance Quality Level (AQL) is provided in 6.4.

4.5 Examination. Each first article and sample selected in accordance with 4.4 shall be examined for compliance with the requirements specified in section 3 of this document. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of the inspection shall encompass all visual examinations and dimensional measurements.

4.6 Tests.

4.6.1 Test procedures. Each first article and sample selected in accordance with 4.4 in groups 1 through 5 shall be tested as indicated in table II for conformance to this specification or the applicable tests indicated in the specifications and drawings referenced in table I.

TABLE II. Test for groups 1 through 5.

Test	Group						
	1	2	3	4	5	6	7
Proof load test	X	X	X	X	X	X	X
Magnetic particle test		X			X	X	

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4.6.2 Proof load test. The proof load determination shall be made on a static testing machine approved by the appropriate Government inspector.

4.6.2.1 Group 1 proof load test. Each wire rope assembly shall be proof tested at 40 percent of the breaking strength for the following sizes.

Size (inches) (mm)	Safe Working Load (pounds) (kg)	Proof Strength (pounds) (kg)	Breaking Strength (pounds) (kg)
1.25 (31.75 mm)	31,160 (14 134 kg)	62,320 (28 268 kg)	155,800 (70 670 kg)
2.00 (50.80 mm)	77,200 (34 017 kg)	154,400 (70 035 kg)	386,000 (175 087 kg)

After the proof load test, each wire rope assembly tested shall be thoroughly inspected, and any end connection (including zinc spelter) showing surface cracks, unusual deformation, or other defects which would be detrimental to the intended use shall be cause for rejection.

4.6.2.2 Group 2 proof load test. Each first article and all sample blocks shall withstand the proof load test specified in 3.4.3, 3.4.4, or on the applicable drawing for the block being tested. After the proof test, and prior to galvanizing the part, each block shall be thoroughly inspected. Any evidence of damage, permanent distortion, or failure while under proof load shall constitute failure of this test.

4.6.2.3 Group 3 proof load test. Each first article and all sample fittings of group 3 shall be tested individually or joined together and subjected to the proof loads specified in 3.4.5 through 3.4.8 or on the applicable drawings for the sizes indicated in table I. After the proof load test, each fitting shall be measured for its greatest elongation. Any fitting greater than the dimensional tolerances indicated on the applicable drawing shall be rejected.

4.6.2.4 Group 4 proof load test. Each first article and sample of nylon rope shall either be tested in accordance with or have a manufacturer's certificate of compliance verifying adherence to the requirements of MIL-R-17343. Each first article and sample of ratline hemp shall either be tested in accordance with or have a manufacturer's certificate of compliance verifying adherence to the requirements of T-R-650.

4.6.2.5 Group 5 proof load test. Each first article, sample equalizer block, and flounder plate in group 5 shall be proof tested to 310,000 lb (140 614 kg).

4.6.2.6 Group 6 proof load test. Each first article and sample hooks in group 6 will be proof load tested to the proof strength listed in 3.4.9.

4.6.3 Magnetic particle inspection test. Each first article and all sample blocks in table I, group 2, the equalizer assembly and flounder plates in group 5, and hooks in group 6, shall be given a magnetic particle test in conformance to ASTM E 1444. This test shall be performed after the proof test to all applicable load bearing points and before the treatment of 3.4.11. Any injurious defects shall be cause for rejection.

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4.6.4 **Break test of wire rope assemblies.** Not less than 2 additional nominal 4-foot (1 219 mm) length wire rope assemblies of the 1.25 and 2-inch (32 and 51 mm) diameter size wire rope are required to be tested to failure prior to production. End terminations for the test assemblies shall be poured spelter sockets of the open end type on one end and closed type on the opposite end. Samples shall not break at less than the specified minimum breaking load shown in 4.6.2.1. Test results shall indicate no failure until 100 percent of the rated breaking strength. Manufacturer's certificate of compliance shall not be acceptable as an indication of having performed these tests.

5. PACKAGING

5.1 **Packaging requirements.** The preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 **Intended use.** The equipment, assemblies, and component parts covered in this specification are for the handling of pontoon causeway sections, warping tugs, and ramp barges by class 1179 LST vessels.

6.2 **Acquisition requirements.** Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. When a first article is required for inspection and approval (see 3.2, 4.2.1, and 6.3).

6.3 **First article.** When a first article is required, the item will be tested and should be a first production item, or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.4 **Sampling procedures.** Recommended inspection levels for items with the exception of group 1 items and the swivel shackles of group 3 shall be level II and the AQL is 2.5 percent defective for examination and 1.0 percent defective for proof load testing. For group 1 and the swivel shackles of group 3, the AQL is 1.0 percent defective.

6.5 **Supersession data.** This specification replaces Military Specification MIL-L-28654C(YD) dated 30 September 1988.

6.6 **Classification cross reference.** Classifications used in this specification (see 1.2) are identical to those found in the superseded Military Specification MIL-L-28654C(YD).

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6.7 Subject term (key word) listing.

Blocks, tackle
Chain fittings
Equalizer blocks
Flounder plates
Hooks
Launching equipment
Lifting equipment
Rope
Side carrying equipment
Wire rope

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to previous issue.

MILITARY INTERESTS:

Custodian:
Navy - YD1

Review Activities:
Navy - SH
DLA - IS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS
DOI - BLM
DOI - MIN

PREPARING ACTIVITY:
Navy - YD1

(Project 4010-0215)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER A-L-2924	2. DOCUMENT DATE (YYMMDD) 970612
3. DOCUMENT TITLE LIFTING, LAUNCHING, AND SIDE CARRYING EQUIPMENT FOR PONTOONS ON 1179 CLASS LST VESSELS		
4. NATURE OF CHANGE <i>(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)</i>		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME <i>(Last, First, Middle Initial)</i>	b. ORGANIZATION	
c. ADDRESS <i>(Include Zip Code)</i>	d. TELEPHONE <i>(Include Area Code)</i> (1) Commercial (2) AUTOVON <i>(if applicable)</i>	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY		
a. NAME G.M. KRALIK	b. TELEPHONE <i>Include Area Code</i> (1) Commercial (805)-982-5471 (2) AUTOVON 551-5471	
c. ADDRESS <i>(Include Zip Code)</i> COMMANDING OFFICER, NCBC CODE 15E2R 1000 23RD AVENUE PORT HUENEME, CA 93043-4301	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: DEFENSE QUALITY AND STANDARDIZATION OFFICE 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466 Telephone (703) 756-2340 AUTOVON 289-2340	