INCH-POUND

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MILITARY SPECIFICATION

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

This specification is approved for use by the Naval Facilities Engineering Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

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 assembly or fitting will be one of the items listed in table I as specified (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and drawings. The following specifications, standards, and drawings form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

T-R-650 - Rope, Yarn and Twine, Bast Fiber.
FF-C-450 - Clamp, Wire Rope.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer (Code 156), Naval Construction Battalion Center, Port Hueneme, CA 93043-5000, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 4010

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

RR-S-550 - Sockets, Wire Rope.
RR-W-410 - Wire Rope and Strand.
UU-T-81 - Tags, Shipping and Stock.

MILITARY

MIL-P-116 - Preservation-Packaging, Method of.
MIL-I-6868 - Inspection Process, Magnetic Particle.
MIL-R-17343 - Rope, Nylon.
MIL-B-24141 - Block, Tackle, Wire Rope.
MIL-S-24214 - Shackles, Steel, General Purpose, Regular and High Strength.
MIL-P-24441 - Paint, Epoxy-Polyamide, General Specification for.
MIL-P-24648 - Primer Coating, Zinc Dust Pigmented for Exterior Steel Surfaces (Metric).

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection.
MIL-STD-129 - Marking for Shipment and Storage.
MIL-STD-2073-1A - DoD Materiel Procedures for and Application of Packing Requirements.

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.
Sheet 2 - Rigging Arrangement.
Sheet 3 - Lifting and Launching.
Sheet 4 - Pendants, Bridles, and Flounder Plates.
Sheets 5 & 6 - 34 inch Snatch Block.
Sheet 7 - Equalizer Block.

(Unless otherwise indicated, copies of the federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM - A 27 - Mild- to Medium-Strength Carbon-Steel Castings for General Application.
ASTM - A 36 - Structural Steel.
ASTM - A 123 - Zinc (Hot Galvanized) Coatings on Iron and Steel Products.
ASTM - A 148 - High Strength Steel Castings for Structural Purposes.
ASTM - A 153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.
ASTM - A 386 - Zinc Coating (Hot Dip) on Assembled Steel Products.
ASTM - A 514 - High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding.
ASTM - A 668 - Carbon and Alloy Steel Forging for General Industrial Use.
ASTM - B 633 - Electrodeposited coatings of Zinc on Iron and Steel.
ASTM - D 3951 - Commercial Packaging.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

AMERICAN WELDING SOCIETY (AWS)

D1.1 - Structural Welding Code

(Application for copies should be addressed to the American Welding Society, 2501 N.W. 7th St., Miami, FL 33125)

SOCIETY OF AUTOMOTIVE ENGINEERS, INC. (SAE)

SAE Handbook.

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, NY 10001.)

(Non-Government standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification takes precedence. Nothing in this specification, 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 that, 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 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 the prescribed dimensions or tolerances is permissible without prior approval of the contracting officer.

3.2 First article(s). When specified (see 6.2), the contractor(s) shall furnish one of each of the required items for first article inspection and approval (see 4.2.1 and 6.4).

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 same 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. None of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification unless otherwise specified.

3.3.1 Steel plate. Steel plate shall conform to ASTM A36 or A514, 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 A688 class as specified herein or as indicated by tensile requirements on the applicable drawings.

3.3.3 Cast steel. Cast steel shall conform to either ASTM A27 or A148, grade as specified herein or as indicated by tensile requirements on the applicable drawings.

3.4 Construction. Items, parts, and assemblies shall be as listed in table I, and shall be constructed to the dimensions, tolerances, and strength requirements shown on the applicable drawings listed in table I and as specified herein. All items, parts, and assemblies shall be of domestic manufacture. 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, one inch 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 1, class 3 (6 by 37) extra improved plow steel, IWRC, uncoated and sockets conforming to RR-S-550 of the appropriate size and type as indicated in NAVFAC Drawing No. 6028259.

TABLE I. Groups 1 through 7.

Group	Description	Reference	Quantity
1.	Wire Rope and Wire Rope Assemblies		
	Wire Rope, 1 inch (850 ft roll)	Paragraph 3.4.1	2
	Wire Rope Bridle (2 inches by 12 feet 0 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (2 inches by 67 feet 0 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (2 inches by 74 feet 6 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (2 inches by 100 feet 3 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (2 inches by 107 feet 6 inches)	Paragraph 3.4.2	4
	Wire Rope Pendant (2 inches by 113 feet 6 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (1-1/4 inches by 3 feet 0 inches)	Paragraph 3.4.2	8
	Wire Rope Pendant (1-1/4 inches by 4 feet 0 inches)	Paragraph 3.4.2	8
	Wire Rope Pendant (1-1/4 inches by 27 feet 0 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (1-1/4 inches by 38 feet 6 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (1-1/4 inches by 59 feet 6 inches)	Paragraph 3.4.2	2
	Wire Rope Pendant (1-1/4 inches by 69 feet 0 inches)	Paragraph 3.4.2	2
	Clip, Wire Rope, 1 inch	FF-C-450, Type 1, Class 1	8
2.	Blocks		
	Block, Tackle, 20 inch, Septem	Paragraph 3.4.3	2
	Block, Tackle, 20 inch, Sextuple	Paragraph 3.4.4	2
	Block, Snatch, 18 inch	MIL-B-24141, Type 3 and SK 9115	1
	Block, Snatch, 34 inch	Dwg. No. 6028259	16

TABLE I. Groups 1 through 7 - continued.

Group	Description	Reference	Quantity
3.	Chain Fittings		
	Shackle, Chain, Screw Pin, 3 inch	MIL-S-24214 Type II Class 2, Grade B	20
	Shackle, Anchor, Screw Pin, 1-1/2 inch	MIL-S-24214 Type I Class 2, Grade B	16
	Shackle, Anchor, Screw Pin, 1-3/4 inch	Paragraph 3.4.5	24
	Shackle, Anchor, Screw Pin, 2-1/4 inch	Paragraph 3.4.6	8
	Shackle, Anchor, Screw Pin, 2-1/2 inch	MIL-S-24214 Type I, Class 2, Grade B	1
	Shackle, Swivel, 1-5/8 inch	Paragraph 3.4.7	8
	Shackle, Swivel, 2 inches	Paragraph 3.4.8	8
4.	Rope		
	Rope, Nylon, 1 inch (750 yard roll)	MIL-R-17343	1
	Ratline, Hemp, 1-1/8 inch circumference (200 yard coil)	T-R-650	1
5.	Equalizer Block and Flounder Plates		
	Equalizer Block, P-17	6028259	2
	Flounder Plate, FP-11	6028259	8
6.	Hooks		
	Hook, Release, 150 Ton (hook, release, causeway launching)	Paragraph 3.4.9	2
	Hook, Quick Release, 50 Ton (hook, release, causeway lifting)	Paragraph 3.4.10	8
7.	Wire		
	Wire, Steel, Bright No. 9 (100 lb coil)	6028259	1

3.4.3 Block, tackle, 20 inch, septem. The septem block shall be a 20 inch outside diameter, cast steel, oval pattern, septem block for use with 1 inch diameter wire rope. Minimum breaking strength shall be 800,000 pounds (lb) and the proof load shall be 310,000 lb (see 4.6.2.2). The block shall be zinc coated (see 3.4.11). The block shall be provided with SAE 660 bronze bushing. Grease fittings shall be provided 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 indicated in figure 2. Bearing mounted rollers shall be provided to facilitate block travel over the metal deck surface. The hanging device shall be provided with the block and include an attaching mechanism compatible with the fixture of figure 2.

3.4.4 Block, tackle, 20 inch, sextuple. The sextuple block shall be a 20 inch outside diameter, cast steel, oval pattern, sextuple block for use with one inch diameter wire rope. Minimum breaking strength shall be 800,000 lb and the proof load shall be 310,000 lb (see 4.6.2.2). The block shall be coated in accordance with 3.4.11. The block shall be provided with SAE 660 bronze bushings and grease fittings shall be provided 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 indicated in figure 3. Bearing mounted rollers shall be provided to facilitate block travel over the metal deck surface. The hanging device shall be provided with the block.

3.4.5 Shackle, anchor, screw pin, 1-3/4 inch. The 1-3/4 inch shackle shall conform to the requirements of MIL-S-24214 type I, class 2 except that material requirements shall be altered as necessary to provide a required breaking strength of 400,000 lb. Proof load shall be 160,000 lb (see 4.6.2.3). Shackles shall be marked with a Safe Working Load (SWL) of 40 tons.

3.4.6 Shackle, anchor, screw pin 2-1/4 inch. The 2-1/4 inch shackle shall conform to the requirements of MIL-S-24214 type I, class 2 except that material requirements shall be altered as necessary to provide a required breaking strength of 520,000 lb. Proof load shall be 208,000 lb (see 4.6.2.3). Shackles shall be marked with a SWL of 52 tons. The dimensional requirements for the 2-1/4 inch shackle are as follows:

Size (D) (Minimum)	2-1/4 inches
Diameter pin (P) (Minimum)	2-1/2 inches
Width between eyes (W):	
Nominal	3-7/8 inches
Tolerance	± 1/8 inches
Length inside (L):	
Nominal	8-3/4 inches
Tolerance	± 1/4 inches
Width bow (B) (Minimum)	6-1/2 inches
Diameter outside eye (R) (Maximum)	5-1/2 inches
Weight per 100 shackles (approximate)	6,000 lb

3.4.7 Shackle, swivel, 1-5/8 inch. The 1-5/8 inch shackle shall be of heavy duty construction designed for a 1-3/8 inch recommended wire rope size and shall have a minimum breaking strength 260,000 lb. Proof load shall be 104,000 lb (see 4.6.2.3). Shackles shall be marked with a Safe Working Load (SWL) of 26 tons. Sampling for proof and break tests shall be per table X of MIL-S-24214. Loads tested shall be those stated herein. A lubrication system shall be incorporated into the eye bolt guide block to enable lubrication by a standard recessed pressure grease fitting (ZERK). Guide blocks shall be groved to facilitate the distribution of the 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 depicted in figure 1. Nominal dimensions shall be the following:

Overall length (A).....14 inches
Inside diameter shackle (C).....3-1/2 inches
Inside diameter eye (E).....1-3/16 inches

3.4.8 Shackle, swivel, 2 inches. The 2 inch shackle swivel shall be of heavy duty construction designed for a 1-3/4 inch recommended line size and shall have a minimum breaking strength of 400,000 lb. Proof load shall be 160,000 lb (see 4.6.2.3). Shackles shall be marked with a SWL of 40 tons. Sampling for proof and break tests shall be per table X of MIL-S-24214. Loads shall be those stated herein. A lubrication system shall be incorporated into the eye bolt guide block to enable lubrication by a standard recessed pressure grease fitting (ZERK). Guide blocks shall be grooved to facilitate the distribution of the 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 depicted in figure 1. Nominal dimensions shall be the following:

Overall length (A).....17 inches
Inside diameter shackle (C).....4-1/2 inches
Inside diameter eye (E).....2-3/16 inches

3.4.9 150 ton release hook. The 150 ton release hook shall have the block attachment of figure 3 and be fabricated of alloy steel. A forged alloy master link of 3 inch stock diameter shall be provided with the release hook. The hook shall have 150 ton 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 a metal deck surface. The alloy master link shall be of 3 inch stock diameter and have inside dimensions of 9 inches by 18 inches. The minimum breaking strength of the link shall be 1,140,000 lbs. Proof strength shall be 380,000 lbs. The release hook shall be coated in accordance with 3.4.11 and shall be in accordance with NAVFAC Drawing 6028259, sheet 1.

3.4.10 50 ton lifting hook. The 50 ton lifting hook shall be part number 430, as supplied by Washington Chain and Supply Co. of Seattle, WA, or equal, and shall be fabricated of alloy steel. The hook shall have 50 ton lift capacity and shall release manually at 50 tons. 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 and 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. Lifting hook shall be coated in accordance with 3.4.11 and shall be in accordance with NAVFAC Drawing 6028259, sheet 1.

3.4.11 Treatment. The following treatment system shall apply to the 20 inch septum block, 20 inch sextuple block, 150 ton release hook, 50 ton release hook, 34 inch snatch block, 18 inch snatch block, equalizer block, and flounder plate: one coat of MIL-P-24648 inorganic zinc primer, type I, class 1, composition B having a dry film thickness of 2-1/2 to 3 mils. One mist coat of MIL-P-24441 epoxy-polyamide, formula 150 having a dry film thickness of 0.5 to 1.0 mils. One coat of MIL-P-24441 epoxy-polyamide, formula 153 having a minimum dry film thickness of 3 mils. Surface preparation shall be in accordance with the paint manufacturer's recommendation. Swivel shackles shall be zinc coated in accordance with either ASTM A123, A153, A386 or B633 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 high for stenciled information and not less than 3/16-inch 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.
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 the 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 not to exceed 3/4 inch in height by 1/8 inch 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.

3.6 Workmanship.

3.6.1 Steel fabrication. Steel used in the fabrication of equipment shall be free form kinks and sharp bends. The straightening of material shall be done by methods that will not cause injury to the metal. Shearing and chipping shall be done neatly and accurately. All bends of a major character shall be made with controlled means in order to insure uniformity of size and shape.

3.6.2 Welding. Welding procedures shall be in accordance with AWS D1.1. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Spot, tack, or intermittent welds for strength will not be permitted. Weld penetration shall be such as to provide transference of maximum design stress through the base metal juncture. Fillet welds shall be provided when necessary to reduce stress concentration.

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

3.6.4 Forgings. Forgings shall show no flaws, cracks, pipes, contraction cavities, or other harmful defects.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) 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 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of 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.

4.2 Classification of inspection. 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. All first article testing shall be performed in the presence of a designated Government representative. First article inspection shall be performed on one of each item in Table I when a first article sample is required (see 3.2, 6.2, and 6.4). This inspection shall include the examination of 4.5 and the tests of 4.6. The first article may be a standard production item from the contractor's current inventory provided the item meets the requirements of this specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. Quality conformance inspection shall be performed on the sample units selected in accordance with 4.4. This inspection shall include the examination of 4.5, the tests of 4.6 and the packaging inspection of 4.7.

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 MIL-STD-105. The inspection level shall be level II. The acceptable quality level (AQL) shall be 2.5 percent defective for examination and 1.0 percent defective for proof load testing. For group 1, all wire rope assemblies shall be tested in accordance with 4.6.2.1 and marked as specified in 3.5.3. For swivel shackles, samples shall be selected at inspection level S-1 of MIL-STD-105. AQL shall be 1.0 percent defective. Proof and break tests shall be per 3.4.7 and 3.4.8.

4.5 Examination. Each first article and sample selected in accordance with 4.4 shall be examined for compliance with the requirements in Section 3 of this specification. This element of 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	

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)	Safe Working Load (pounds)	Proof Strength (pounds)	Breaking Strength (pounds)
1-1/4	31,160	62,320	155,800
2	77,200	154,400	386,000

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 exceeding 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.

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 MIL-I-6868. 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.

4.6.4 Break test of wire rope assemblies. A minimum of 2 additional nominal 4-foot length wire rope assemblies of the 1-1/4 and 2 inch 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 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.

4.7 Packaging inspection. The preservation, packing, and marking of the equipment shall be inspected to verify conformance to the requirements of Section 5.

5. PACKAGING

5.1 Preservation. The preservation shall be level A or commercial, as specified (see 6.2).

5.1.1 Level A. Uncoated ferrous metal surfaces of the wire rope and chain assemblies, blocks, plates, and fittings shall be coated with type P-1 preservative conforming to the applicable specification listed in, and applied in accordance with MIL-P-116.

5.1.2 Commercial. The wire rope and chain assemblies, blocks, plates, and fittings shall be preserved and packaged in accordance with ASTM D3951.

5.2 Packing. The packing shall be level A, B, or commercial as specified (see 6.2).

5.2.1 Level A. Wire rope assemblies shall be coiled to the minimum safe diameter and adequately secured. The wire rope and chain assemblies, blocks, plates, and fittings shall be packed in accordance with the level A requirements of MIL-STD-2073-1A. Containers shall be in accordance with Appendix C, table VII, level A requirements.

5.2.2 Level B. Wire rope assemblies shall be coiled to the minimum safe diameter and adequately secured. The wire rope and chain assemblies, blocks, plates, and fittings shall be packed in accordance with the level B requirements of MIL-STD-2073-1A. Containers shall be in accordance with Appendix C, table VII, level B requirements.

5.2.3 Commercial. The wire rope and chain assemblies, blocks, plates, and fittings shall be packed in a manner which will insure arrival at destination in satisfactory condition. Packing shall comply with applicable carrier rules and regulations.

5.3 Marking. Shipping containers shall be marked in accordance with MIL-STD-129.

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 must specify the following:

a. Title, number, and date of this specification.
b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
c. Item required (see 1.2 and table I).
d. When a first article is required for inspection and approval (see 3.2, 4.2.1, and 6.4).
e. Level of preservation and level of packing required (see 5.1 and 5.2).

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements should be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DOD FAR Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data will be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 First article. When a first article is required, it will be tested and approved under the appropriate provisions of paragraph 7-104.55 of the FAR. The first article should be a first production item. The first article should consist of one unit. The contracting officer should include specific instructions in all procurement instruments, regarding arrangements for examinations, test, and approval of the first article (see 3.2 and 4.2.1).

6.5 Subject term (key word) listing.

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

Preparing activity:
Navy - YD

(Project 4010-N037)

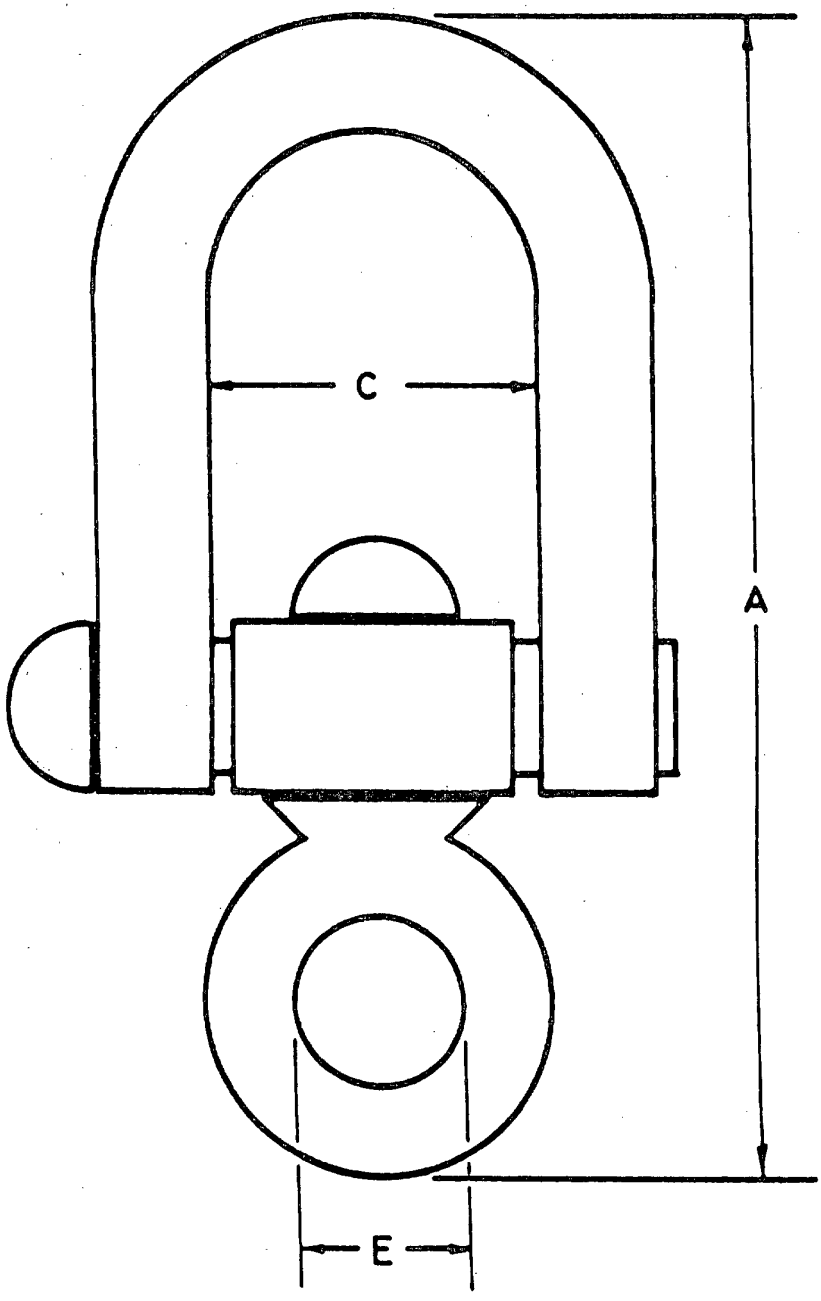

FIGURE 1. SHACKLE SWIVEL ASSEMBLY

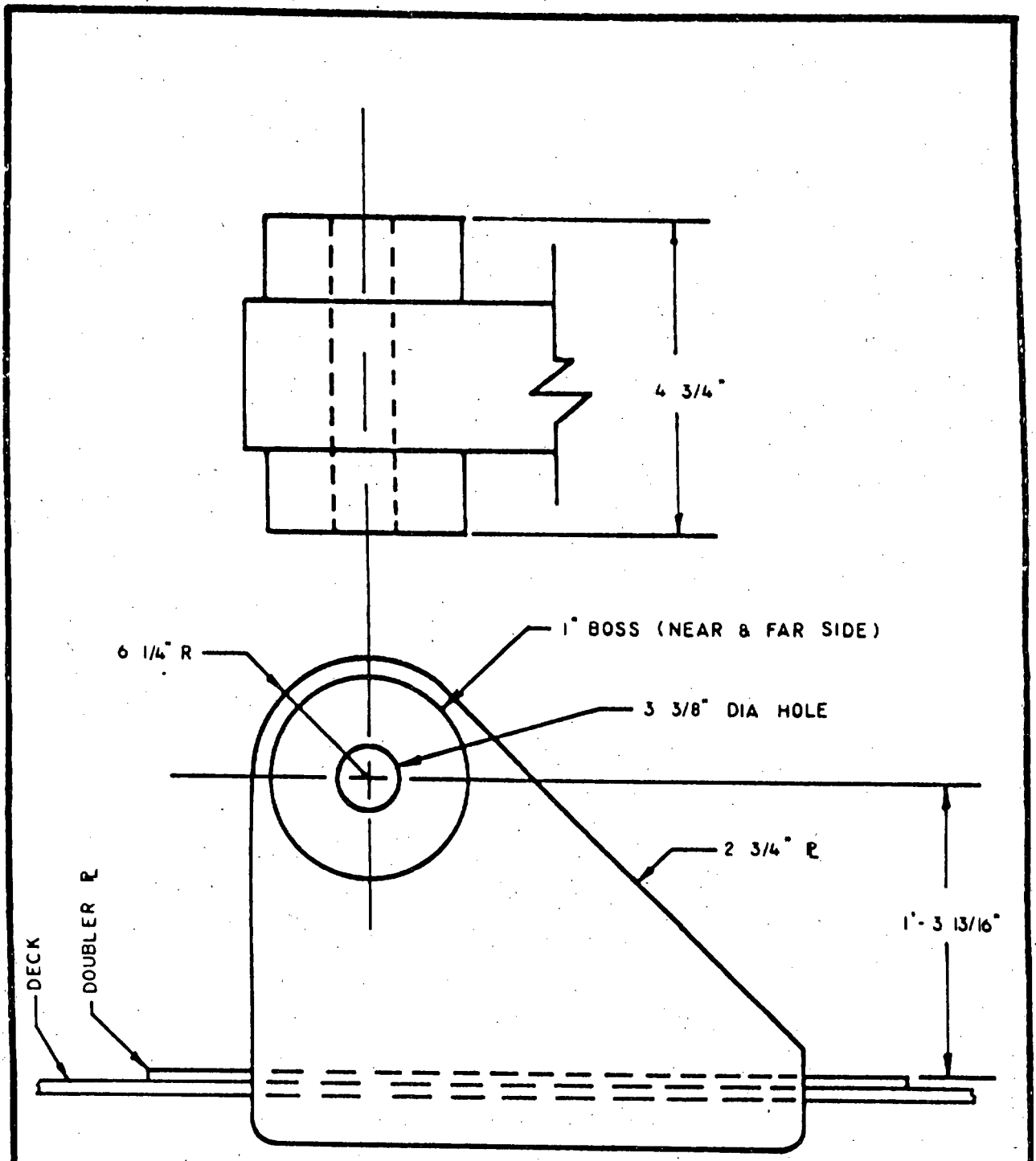

FIGURE 2. DECK PAD, SEPTEM BLOCK ATTACH

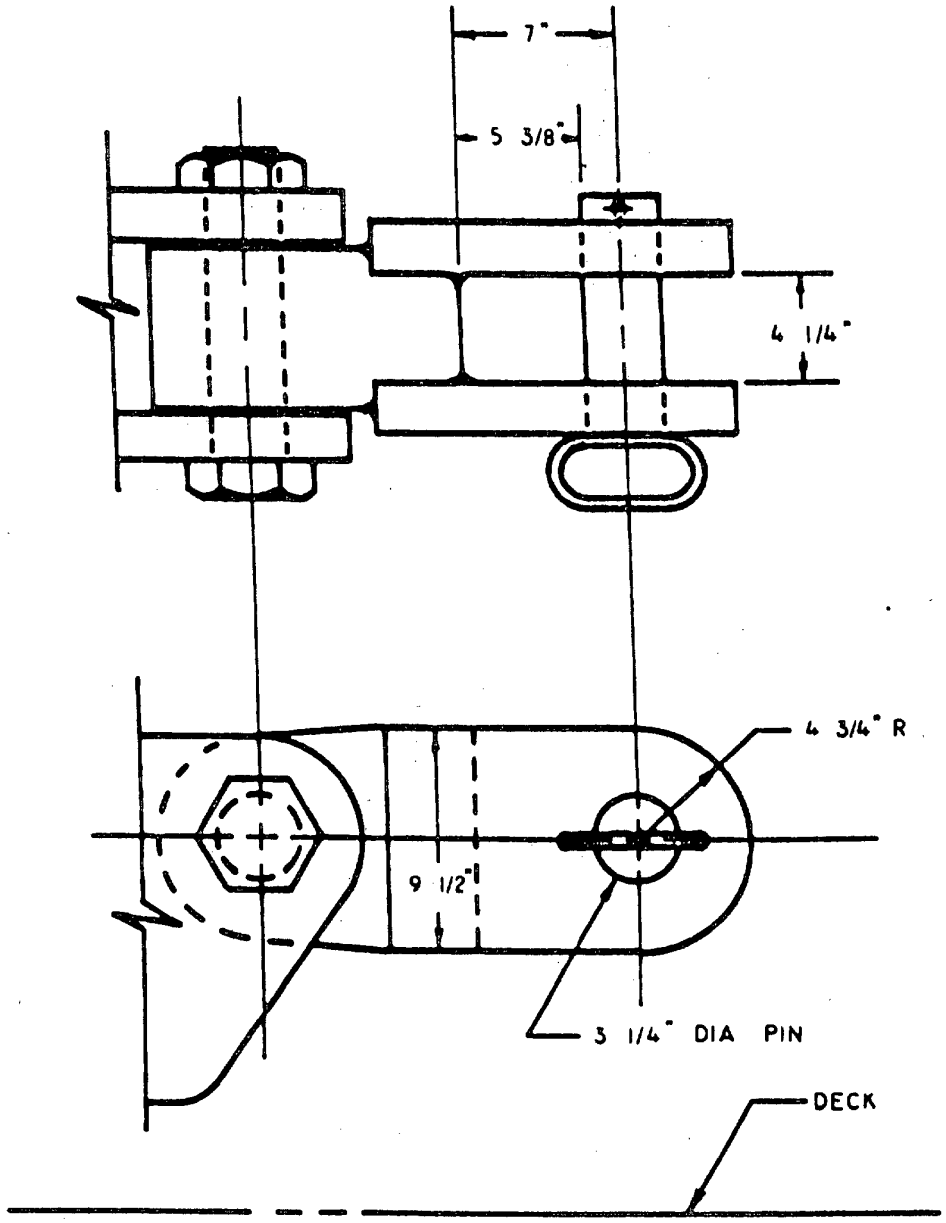

FIGURE 3. RELEASE HOOK, SEXTUPLE BLOCK ATTACH