

| INCH-POUND |

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MILITARY SPECIFICATION

CRANES, JIB, WITH ACCESSORIES

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 two types of jib cranes (pillar type and wall mounted type), and accessory hoisting equipment.

1.2 Classification. Jib cranes will be of the following types and sizes, as specified (see 6.2).

Type I - Pillar-jib.
Type II - Wall mounted.

Size 1 - 1-ton (900 kilograms (kg)) rated lifting capacity.
Size 2 - 2-ton (1800 kg) rated lifting capacity.
Size 3 - 3-ton (2700 kg) rated lifting capacity.
Size 5 - 5-ton (4500 kg) rated lifting capacity.

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, 621 Pleasant Valley Road, Port Hueneme, CA 93043-4300, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 3950

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

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document 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

- L-P-378 - Plastic Sheet and Strip, Thin Gauge, Polyolefin.
- PPP-B-601 - Boxes, Wood, Cleated Plywood.
- PPP-B-621 - Box, Wood, Nailed, and Lock-corner.
- PPP-B-636 - Box, Shipping, Fiberboard.
- PPP-B-640 - Box, Fiberboard, Corrugated, Triple-wall.
- PPP-B-1055 - Barrier Material, Waterproofed Flexible.

MILITARY

- MIL-P-116 - Preservation, Methods of.
- MIL-B-121 - Barrier Material, Greaseproofed, Waterproofed, Flexible.
- MIL-C-5501 - Cap and Plug, Protective, Dust and Moisture Seal.
- MIL-T-22085 - Tape, Pressure Sensitive, Adhesive, Preservation and Sealing.

STANDARDS

MILITARY

- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-1186 - Cushioning, Anchoring, Bracing, Blocking, and Waterproofing, with Appropriate Test Methods.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following document(s) 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 the documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. (AISC)

Steel Construction, Manual of.

(Application for copies should be addressed to the American Institute of Steel Construction, Inc., 1 East Wacker Drive, Suite 3100, Chicago, IL 60601-2001.)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, INC. (ASME)

- ASME B30.11 - Monorails and Underhung Cranes.
- ASME HST-2M - Performance Standard for Hand Chain Manually Operated Chain Hoists.
- ASME HST-4M - Performance Standard for Overhead Electric Wire Rope Hoists.
- ASME HST-5M - Performance Standard for Air Chain Hoists.
- ASME HST-6M - Performance Standard for Air Wire Rope Hoists.

(Application for copies should be addressed to the American Society of Mechanical Engineers, Inc., United Engineering Center, 345 East 47th Street, New York, NY 10017.)

ASTM

- ASTM D 3951 - Standard Practice for Commercial Packaging. (DoD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

(Non-Government standards and other publications are normally available from the organizations that prepare or that 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 document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. Type I jib cranes shall consist essentially of boom, mast, head, and mast (integrally drilled) mounting plate base. Type II jib cranes shall consist essentially of hinges, tie rods and boom. Jib cranes shall be complete with accessories and shall be delivered ready for erection and immediate use. This crane is not designed to handle hazardous or fissionable material.

3.2 First article. When specified (see 6.2), a jib crane shall be subjected to first article inspection (see 6.3) 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 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 is allowed under this specification unless otherwise specified.

3.4 Interchangeability. All jib cranes of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to ensure interchangeability of component parts, assemblies, accessories, and spare parts.

3.5 Ease of maintenance. The jib crane shall be so designed and constructed that normal adjustments, repair and overhaul can be readily accomplished by means of general purpose tools with a minimum removal or disturbance of other elements of the crane. Ease of maintenance provisions shall ensure operating clearances for facilitating maintenance and servicing. Lubrication fittings shall be accessible without the removal or adjustment of accessories or parts.

3.6 Safety. All rotating and reciprocating parts, and all parts subject to high operational temperatures, that are of such a nature or so located to be or become a hazard to the safety of the operating personnel shall be insulated, enclosed or guarded to the extent necessary to eliminate the hazard.

3.7 Design and construction. The jib crane shall conform to accepted engineering and manufacturing practices relative to design, capacity and quality of materials. The rated lifting capacity shall be based on full-rated live load at the hoist hook. Full allowance shall be made for the dead weight of the hoist and trolley and an impact load of 1/2 percent of rated load per foot per minute of hoisting speed but not less than 15 percent. The maximum allowable stress on mast, boom, tie rod assembly, and mounting brackets shall not exceed 20 percent of the minimum yield strength of the material. Hardware necessary for field erection of sections disassembled for shipment and parts required for installation of a trolley and hoist shall be provided. Conditions which can be hazardous to personnel or deleterious to equipment shall not be permitted.

3.7.1 Type I. Floor mounted jib cranes shall be designed for anchorage to a concrete floor or foundation. The height of the underside of the boom above the floor shall be as specified (see 6.2).

3.7.1.1 Head assembly. The head assembly shall support the boom beam atop the mast tube on a tapered roller bearing assembly which allows a full 360-degree ($^{\circ}$) rotation. A self-aligning guide roller assembly shall support the radial load between the mast tube and lower portion of the head. When specified (see 6.2), a self-aligning guide roller assembly shall support the radial load between the mast tube and upper portion of the head. Guide rollers shall be ball or roller bearing mounted and shall make full contact with the roller race. An adjustment means shall be provided for leveling of the boom.

3.7.1.2 Mast assembly. The mast assembly shall consist of a structural steel pipe, seamless steel tube, or a rolled section as specified (see 6.2). The mast shall be heavily gusseted to a steel flange plate base, and fitted at the top with a center mounted bearing support. The mast shall be designed to support the boom in level position when the rated load is suspended at the end of the boom less the applicable deflection specified in 3.7.3.

3.7.2 Type II. Wall bracket jib cranes shall be designed for mounting to existing building columns, walls or supports.

3.7.2.1 Hinge assembly. The hinge assembly shall consist of steel hinge brackets, fittings and pins for mounting of the tie rod assembly and boom. The hinge brackets shall be designed for welded or bolted attachment to the supporting structure, as specified (see 6.2). Fittings shall be constructed with formed or fabricated steel and shall be designed so that all load carrying parts will be in double shear. Each fitting shall be designed and sized so that no bolt will be stressed beyond 10,000 pounds per square inch shear stress. Load carrying welds shall not be in tension. The boom web fitting and the upper pivot fitting shall turn on roller bearings and shall be provided with pressure lubrication fittings. Hinges shall be equipped with suitable thrust washers or thrust bearings. The hinge assembly shall enable rotation of the boom through at least 180°.

3.7.2.2 Tie rod assembly. The tie rod assembly shall consist of one or two diagonal tie rod(s), a top flange fitting and required clevises for connection of the upper hinge to the boom at a point which minimizes the largest deflection imparted to the beam when traversing the rated load the length of the beam. The tie rod(s) shall be furnished with threaded adjustments which permit leveling of the boom.

3.7.3 Boom section. The boom section dimensions and properties shall correspond to AISC structural steel "S" shapes or "W" shapes, as specified (see 6.2). The upper surface of the lower flange shall be free from bumps, depressions and irregularities. Trolley stops shall be provided to stop the trolley at both ends of the boom. The stops shall be mounted on both sides of the web of the boom and shall be in alignment. The span, from the mast centerline (Type 1) or lower hinge pin (Type 2) to the free end of the boom, shall be as specified (see 6.2). Span should be specified in 2-foot (60 centimeter (cm)) increments from 8 feet (240 cm) to 20 feet (610 cm). Unless otherwise specified (see 6.2), the maximum vertical deflection of the boom produced by the dead load, the weight of hoist, trolley, and the rated load shall not exceed L/300 of the span. Impact shall not be considered when determining deflection.

3.7.4 Bearings. All anti-friction bearings shall be of the commercially standard type as specified herein and shall have not less than a 5,000-hour fatigue life rating at 90 percent reliability. Unless otherwise specified (see 6.2), the ball and roller bearing ratings shall be in accordance with the manufacturer's standard practice, as applicable, and shall be determined for maximum thrust and radial loads developed at the rated capacity. Bushings, where permitted, shall be grooved to distribute the lubricant.

3.8 Accessories. The following accessories shall be provided, as specified (see 6.2).

3.8.1 Plain trolley. The plain trolley shall be a four-wheel monorail type. The wheels shall be ball or roller bearing mounted, flanged, and contoured for use on the jib crane boom supplied. The side frames shall be connected at the bottom by a heavy steel equalizer pin or plate on which a steel hook plate is centrally located, to assure equal distribution of the load on the trolley wheels. The hole for hook attachment shall be shaped to receive the rated

capacity hoist suspension hook required. The trolley shall be capable of operation without damage and visible distortion when supporting 125 percent of the rated load. When specified (see 6.2), a trolley wheel adjustment means shall be provided to set the wheels for alternative size beams of the same type.

3.8.2 Air motor powered trolley tractor. The tractor shall be complete with air motor, a reversible power transfer gear train, hoist trolley towing and pushing connection, with adapter for alternative frame or upper hoist hook connection and air supply hose connection. When specified (see 6.2), the tractor shall be equipped with a pendant controlled diaphragm released trolley travel brake. An air supply system shall be provided with connections to a jib crane compressed air supply system, or an independent source by hose extension, as specified (see 6.2).

3.8.3 Air motor powered hoist. The air motor powered hoist shall conform to ASME HST-5M or HST-6M, as applicable, and the trolley wheels shall be designed for use on the boom of the jib crane provided. Rated load capacity of the hoist shall not exceed that of the jib crane. The type of hoist, lift, reach, air supply characteristics and air connections shall be as specified (see 6.2).

3.8.4 Electric motor powered hoist. The electric motor powered hoist shall conform to ASME HST-4M and the trolley wheels shall be designed for use on the boom of the jib crane provided. Rated load capacity of the hoist shall not exceed that of the jib crane. Hoist and power supply characteristics, and festooned conductor or trolley supported conductor system shall be as specified (see 6.2).

3.8.5 Hand operated hoist. The hand operated chain hoist shall conform to ASME HST-2M, with characteristics and accessories as specified (see 6.2).

3.9 Performance. The boom shall have no tendency to drift, without assistance, toward any point of the circumference of rotation under loaded or unloaded conditions. When rotated manually, the boom shall start moving easily and shall move steadily without evidence of bearing binding. The suspended load shall not rise or fall unduly at any point of rotation. Plain accessory trolleys shall move smoothly along the boom and shall have no tendency to drift when stopped. Powered accessory hoist and trolleys shall perform in accordance with the applicable referenced specification. The jib crane shall perform properly over the full area the crane is designed to service and shall do so when supporting any load within the rated capacity. An overload of 125 percent of the rated load shall cause no bearing damage as a result of the various motions.

3.10 Capacity marking. Crane capacity marking shall be in accordance with ASME B30.11.

3.11 Identification plate. An identification plate will be furnished by the contracting officer for each jib crane. The contractor shall stamp all necessary data in the blank spaces of the plate provided for that purpose, and securely affix a plate to each jib crane in a conspicuous place with nonferrous screws, rivets, or bolts not less than 1/8-inch (3 millimeters) in diameter. The applicable nomenclature contained in the contract item description shall be placed in the top blank.

3.12 Lubrication. Unless otherwise specified (see 6.2), means for lubrication shall be in accordance with the manufacturer's standard practice. The lubricating points shall be easily visible and accessible. The unit shall be lubricated as specified in section 5.

3.13 Treatment and painting. Unless otherwise specified (see 6.2), the jib crane shall be treated and painted in accordance with the manufacturer's standard practice. All surfaces of the jib crane other than corrosion-resisting steel shall be protected against corrosion and present a neat appearance.

3.14 Workmanship.

3.14.1 Steel fabrication. The steel used in 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.

3.14.2 Bolted connections. Boltholes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

3.14.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.14.4 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.

3.14.5 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.

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 this specification where such inspections are deemed necessary to ensure 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 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.

4.2 Classification of inspections. 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 the jib cranes when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.3 and the tests of 4.4. 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 the 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 4.3, the tests of 4.4, and the packaging inspection of 4.5.

4.3 Examination. Each jib crane shall be examined for compliance with the requirements specified in section 3 of this specification. 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 inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 Tests. The first article shall receive the tests of 4.4.1. Each production unit shall receive the test of 4.4.2. Failure to pass any test shall constitute cause for rejection.

4.4.1 First article tests. The first article jib crane shall be completely assembled and shall be mounted on a foundation or to a column support, as applicable to the jib crane type. Prior to testing, the jib crane shall be properly adjusted and lubricated. With the rated load at maximum span and elevation, the boom shall be fully rotated at least twice to detect any tendency of the boom to settle at any position and to check irregularities in bearing

operation. The rated load shall be lowered to approximately 3 feet (90 cm) above the floor at maximum reach and completely rotated to verify minimal load height variation in accordance with 3.7.1.2 or 3.7.2.2, as applicable, and 3.7.3. An overload equal to 125 percent of the rated load shall not cause permanent deformation or damage during any operating cycle. Unstable support of the load, permanent deformation, or damage to bearings shall be cause for rejection.

4.4.2 Production jib crane tests. Assembly and disassembly shall be made to the extent necessary to assure proper fit and alignment of rollers, bearings, fittings and assemblies. A trolley shall be hand traversed the length of the boom to determine smoothness and freedom from warp of the trolley wheel running surfaces.

4.5 Packaging inspection. The preservation, packing, and marking of the item shall be inspected to verify conformance to the requirements of section 5.

5. PACKAGING

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

5.1.1 Level B.

5.1.1.1 Cleaning. Shall be in accordance with process C-1 of MIL-P-116.

5.1.1.2 Drying. Shall be dried in accordance with MIL-P-116.

5.1.1.3 Disassembly. Disassembly shall be the minimum necessary to protect the subject from damage or loss, and to accomplish reduction in cube. Removed bolts, nuts, pins, screws and washers shall be reinstalled in mating parts and secured to prevent their loss.

5.1.1.4 Match marking. Parts removed and mating parts on the equipment and attachments shall be matchmarked to facilitate reassembly. Large parts shall be matchmarked by stenciled letters or numerals using lusterless white enamel overcoated with varnish. Small parts and matching parts on the basic unit and attachments shall be matchmarked with weatherproof tags attached to mating parts and locations with wire or twine. Markings shall be applied to the tags with a waterproof material.

5.1.1.5 Unprotected surfaces. Unprotected exterior metal surfaces requiring the application of a contact preservative in accordance with MIL-P-116 and not specifically provided for herein shall be preserved as follows:

5.1.1.5.1 Unfinished (not machined) surfaces. Unfinished exterior metal surfaces shall be coated with type P-1 preservative.

5.1.1.5.2 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 1, Grade A, Class 2. The material shall be secured in place with waterproof tape.

5.1.1.6 Hoist and trolley. All openings in the hoist and trolley shall be sealed with tape conforming to MIL-T-22085, Type II, or covered with waterproofed barrier material conforming to PPP-B-1055, class E-1, or E-2, secured in place with tape as specified herein.

5.1.1.7 Electric motors and controls. All openings in electric motors shall be sealed with tape conforming to MIL-T-22085 Type II. All openings in electrical controls not detached from the hoist shall be sealed with tape as specified herein. Detached electrical controls shall be preserved in accordance with MIL-P-116, Method 1A.

5.1.1.8 Air motor. Coat interior surfaces of air motors with Type P-10, Grade 30 preservative by applying the preservative through the lubricating system or by feeding the preservative into the air inlet. Attach air hose and operate the motors until preservative appears at the exhaust port. Cover all openings into the interior of the motors, such as air inlets and outlets, with caps or plugs conforming to MIL-C-5501 or with waterproof tape. Coat exterior unpainted metal surfaces of the air motor and hose couplings and fittings with Type P-1 preservative.

5.1.1.9 Enclosed gears. Enclosed gears, shall be filled to the operating level with the approved lubricant required for operation. Gear mechanism shall be operated to insure coating of all interior surfaces with preservative. The gear housing shall be identified with a weatherproof tag to indicate this housing is filled to the operating level with lubricant for operation. Do not drain until first required lubrication change. Marking shall be applied to the tags with a waterproof material. The tags shall be attached in a conspicuous location.

5.1.1.10 Bearings. Bearings exposed through disassembly shall be coated with Type P-6 or P-11 preservative, and covered with a protective wrap or barrier material conforming to MIL-B-121, Type 1, Grade A, Class 2. The wrap shall be individually preserved in accordance with MIL-P-116, Method 1A-8.

5.1.1.11 Consolidation. The disassembled components for each jib crane shall be consolidated in containers conforming to PPP-B-636, class weather-resistant. Contents shall be cushioned, blocked and braced to prevent movement in accordance with MIL-STD-1186.

5.1.2 Commercial. Commercial preservation shall be in accordance with ASTM D 3951.

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

5.2.1 Level A. The boom, heads and mast assemblies shall be shipped uncrated. The hoist, trolley, consolidated packaged items and any other small component parts shall be packed in close-fitting boxes conforming to PPP-B-601, overseas type; or PPP-B-621, Class 2. The contents shall be cushioned, blocked and braced to prevent movement within the boxes or damaging of the contents.

5.2.2 Level B. The jib cranes shall be packed as specified for Level A, except that the boxes shall be fiberboard containers conforming to weather-resistant class of PPP-B-636 or PPP-B-640; or whenever practicable, by means of shrink-film conforming to L-P-378, Type IV.

5.2.3 Commercial. Commercial packing shall be in accordance with ASTM D 3951.

5.3 Marking. In addition to any special marking required by the commodity specification, contract or order, all unit packages, intermediate packages, shipping containers, and palletized loads shall be marked in accordance with the requirements of 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 jib cranes are intended for use outdoors and indoors in various repair, assembly, and maintenance shops. Wall bracket types are used in conjunction with existing building columns or structural supports. Base mounted types are used where self supporting jib crane is required.

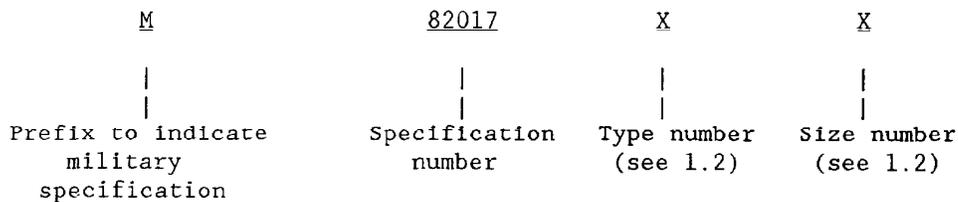
6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. Type and size of jib crane required (see 1.2).
- c. 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).
- d. When first article is required for inspection and approval (see 3.2, 4.2.1 and 6.3).
- e. Height of underside of boom above floor (see 3.7.1).
- f. When an upper guide roller assembly is required (see 3.7.1.1).
- g. Type of pillar mast required (see 3.7.1.2).
- h. Hinge bracket attachment design required (see 3.7.2.1).
- i. Shape of boom section required (see 3.7.3).
- j. Reach or span of boom required (3.7.3).
- k. When maximum vertical boom deflection is other than $L/300$ (see 3.7.3).
- l. When the ball and roller bearings ratings are other than the manufacturer's standard practice (see 3.7.4).
- m. Accessories required (see 3.8).
- n. When trolley wheel adjustment range provisions are required (see 3.8.1).
- o. When a trolley tractor brake is required (see 3.8.2).
- p. Air supply requirements when trolley tractor is required (see 3.8.2).
- q. Type of hoist, lift, reach, air supply and air connection requirements when air powered hoist is required (see 3.8.3).
- r. Hoist and power supply characteristics when electric motor powered hoist is required (see 3.8.4).
- s. Characteristics and accessories when hand operated chain hoists are required (see 3.8.5).
- t. When lubrication means shall be other than the manufacturer's standard practice (see 3.12).

- u. When treatment and painting shall be other than the manufacturer's standard practice (see 3.13).
- v. Level of preservation and level of packing required (see 5.1 and 5.2).

6.3 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the items should be a preproduction sample, a first article sample, a first production item, a sample selected from the first production items, a standard production item from the contractor's current inventory (see 3.4), and the number of items to be tested as specified in 4.4. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for sample for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.4 Part or Identifying Number (PIN). The PIN to be used for jib cranes acquired to this specification is created as follows:



6.5 Subject term (key word) listing.

- Boom
- Hoist
- Material handling
- Pillar mounted
- Wall mounted

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian:
Navy - YD

Preparing activity:
Navy - YD

Review activity:
DLA - GS

(Project 3950-N023)