

MIL-H-23599A (AS)

5 June 1969

Superseding

MIL-H-23599 (Wep)

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## MILITARY SPECIFICATION

## HOOK, HELICOPTER RESCUE

This specification has been approved by the Naval  
Air Systems Command, Department of the Navy.

## 1. SCOPE

1.1 Scope - This specification covers the requirements for one type of  
helicopter rescue hook.

## 2. APPLICABLE DOCUMENTS

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

## SPECIFICATIONS

Federal

NN-P-515	Plywood, Container Grade
UU-P-268	Paper, Kraft, Untreated, Wrapping
PPP-B-576	Box, Wood, Cleated, Veneer, Paper Overlaid
PPP-B-591	Box, Fiberboard, Wood-Cleated
PPP-B-601	Box, Wood, Cleated-Plywood
PPP-B-636	Box, Fiberboard
PPP-B-665	Box, Paperboard, Metal Stayed
PPP-B-676	Box, Set-up

Military

MIL-I-6866	Inspection, Penetrant Method of
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FSC 4030

MIL-H-23599A (AS)

## STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property
MS18027	Hook, Helicopter Rescue
MS20115	Shackle-Wire Rope

(When requesting any of the applicable documents, refer to both title and number. All requests should be made via the cognizant Government quality assurance representative. Copies of this specification and other unclassified specifications, standards, and drawings required by the contractors in connection with specific procurement functions should be obtained upon application to the Commanding Officer, Naval Publications and Forms Center (Code 1051), 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.)

## 3. REQUIREMENTS

3.1 First article inspection - Unless otherwise specified, the hooks furnished under this specification shall be a product which has been inspected and passed the first article inspection specified in Section 4.

3.2 Design and construction - The helicopter rescue hooks covered by this specification shall be designed and constructed in accordance with MS18027.

3.3 Performance -

3.3.1 Strength - When tested as specified in 4.5.4 the helicopter rescue hooks shall support the following loads and shall not exhibit permanent deformation:

- |   |             |
|---|-------------|
| (a) Large hook (This hook should be the only hook used to support personnel)  | 3000 pounds |
| (b) Small hook (This hook is intended for support of miscellaneous equipment) | 1000 pounds |

- (c) Ring at base (This ring is also intended  
for support of miscellaneous equipment) 1500 pounds

3.4 Identification of product - Each helicopter rescue hook shall be permanently and legibly marked in accordance with MIL-STD-130.

3.5 Workmanship - The helicopter rescue hooks furnished under this specification shall be uniform in quality and shall be free from irregularities or defects which would adversely affect performance, reliability or durability.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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.

4.2 Classification of inspection - The inspection and testing of the helicopter rescue hooks shall be classified as follows:

- (a) First article inspection - First article inspection consists of examinations and tests performed on samples which are representative of the production item after award of a contract to determine that the production item meets the requirements of this specification.
- (b) Quality conformance inspection - Quality conformance inspection consists of examinations and tests performed on individual products or lots to determine conformance of the products or lots to the requirements of this specification.

4.3 First article inspection - The first article inspection of the helicopter rescue hooks shall consist of examinations and tests for all of the requirements of this specification.

4.3.1 First article samples - Unless otherwise specified, as soon as practicable after the award of the contract or order, the manufacturer shall submit two first article samples. The samples shall be representative of the construction, workmanship and materials to be used during production. When a manufacturer is in

## MIL-H-23599A (AS)

continuous production of these helicopter rescue hooks from contract to contract, submission of further first article samples on the new contract may be waived at the discretion of the procuring activity. Approval of the first article samples on the waiving of first article inspection does not preclude the requirement for performing the quality conformance inspection. The first article samples shall be furnished to the Government as directed by the Contracting Officer (see 6.2). The samples shall be identified with the following information:

Sample submitted by (name), (date), (Contract No.) for first article inspection in accordance with the requirements of MIL-H-23599A (AS).

4.3.1.1 Upon the completion of the first article inspection, all the applicable inspection reports and when applicable, recommendations and comments pertinent for use in monitoring production will be forwarded to the cognizant Government activity. One approved first article sample shall be returned to the manufacturer for use in monitoring production. The remaining sample will be consumed or destroyed in the first article inspection and shall not be considered as part of the quantity to be delivered under contract.

4.4 Quality conformance inspection - The quality conformance inspection shall consist of the following:

Visual examination  
Dimensional examination  
Metal examination  
Metal inspection  
Strength tests

4.4.1 Sampling -

4.4.1.1 Inspection lot - An inspection lot shall be expressed in units of one helicopter rescue hook made under essentially the same conditions and from the same materials and components. The sample unit shall be one helicopter rescue hook.

4.4.1.2 Preparation for delivery - An inspection lot shall be expressed in units of one fully prepared shipping container, containing a helicopter rescue hook fully prepared for delivery, made from essentially the same materials and components. The sample unit shall be one shipping container, fully prepared for delivery with the exception that it need not be sealed.

4.4.1.3 Sampling for tests and examinations of the helicopter rescue hooks - The sample size, acceptance criteria, tests and examinations required for the helicopter rescue hooks shall be as specified in Table I.

4.5 Inspection methods -

4.5.1 Visual examination - Each helicopter rescue hook selected in accordance with Table I shall be examined visually to determine conformance with this specification. The classification of defects, Table II, shall be used to classify the defects found. For dimensional defects, each helicopter rescue hook, selected as a sample unit shall be thoroughly checked dimensionally to determine conformance to this specification. The classification of defects, Table III, shall be used to classify the defects found.

TABLE I  
SAMPLE SIZE, ACCEPTANCE CRITERIA, EXAMINATIONS  
AND TESTS OF THE HOOKS

INSPECTION	METHOD PARA- GRAPH	SAMPLE SIZE	ACCEPTANCE CRITERIA <sup>1/</sup>
Visual examination	4.5.1	Every unit for critical defects. Inspection Level II for minor defects	Reject all units with any critical defects and an Acceptable Quality Level of 4.0 defects per 100 units for minor defects.
Dimensional examination	4.5.1	Inspection Level S-2	An acceptable quality level of 2.5 defects per 100 units.
Metal examination	4.5.3	Inspection Level S-2	An acceptable quality level of 2.5 defects per 100 units.
Metal inspection	4.5.3.1	Inspection Level S-2	An acceptable quality level of 2.5 defects per 100 units.
Strength tests	4.5.4	Inspection Level S-2	An acceptable quality level of 2.5 defects per 100 units.
Preparation for delivery	4.5.2	Inspection Level S-2	An acceptable quality level of 4.0 defects per 100 units.

<sup>1/</sup> The sampling plan acceptance number shall apply collectively to all the characteristics within a stated acceptable quality level.

MIL-H 23599A (AS)

TABLE II

CLASSIFICATION OF DEFECTS FOR VISUAL EXAMINATION  
OF THE HOOKS

DEFECT	CRITICAL	MINOR
Material imperfections-foreign matter embedded	X	
Surface-unclean, rough, misaligned or containing cracks, nicks or other flaws	X	
Any component missing, fractured, malformed, or otherwise damaged	X	
Any component loose or otherwise not securely retained	X	
Incorrect assembly or improper positioning of components	X	
Any functioning part that works with difficulty	X	
Faulty workmanship that would materially reduce performance, reliability or durability	X	
Faulty workmanship or defects that would not materially reduce performance, reliability, or durability		X

TABLE III

## LIST OF DEFECTS FOR FINISHED DIMENSIONS

EXAMINE	DEFECT
Measure all visible components of the helicopter rescue hook	Any measurement deviating from the dimensions and tolerances as specified in this specification or applicable drawing shall be classified a defect.

4.5.2 Preparation for delivery - Each of the fully prepared shipping containers, containing helicopter rescue hooks selected as a sample unit from the lot shall be visually examined to determine that the packaging, packing, and marking conform to this specification. The classification of defects, Table IV, shall be used to classify the defects found.

TABLE IV

## CLASSIFICATION OF DEFECTS FOR PREPARATION FOR DELIVERY

ITEM	DEFECTS
Exterior and Interior Markings	Missing, incorrect, incomplete, illegible of improper size, location, sequence or method of application
Materials	Any non-conforming component; component missing, damaged or otherwise defective
Workmanship	Inadequate assembly of components
Exterior and Interior Weight or Content	Number per containers is more or less than required; gross or net weight exceeds the requirement

4.5.3 Metal examination - The helicopter rescue hooks shall be examined to insure that they are free from all sharp edges, burrs, cracks, or any other imperfections which will affect the performance of the hooks.

4.5.3.1 Metal inspection - Forgings for the helicopter rescue hooks and swivel fittings shall be subjected to 100 percent fluorescent penetrant inspection in accordance with MIL-I-6866.

4.5.4 Strength tests - The helicopter rescue hooks shall be supported by a 3/8 inch round bar, to simulate MS20115 shackle, through the swivel fitting of the hook. The loads may be applied by means of hydraulic or pneumatic press, jacks, or equivalent high density material. All proof loads shall be sustained for a period sufficient to obtain the load data. The hooks shall support the loads specified in 3.3.1. The hooks should be checked dimensionally after loading to assure absence of permanent deformation.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging - Preservation and packaging shall be level A or C, as specified (see 6.2). Other than as specified in paragraph 5.1.1.1, no preservation is required.

MIL-H-23599A (AS)

5.1.1 Level A -

5.1.1.1 Unit package - Each helicopter rescue hook shall be unit packaged with a suitable Kraft paper wrap, Specification UU-P-268, and placed within a set-up or fiberboard box conforming to Specification PPP-B-676, PPP-B-665, or PPP-B-636, Type I or II, Class 1, maintaining a snug even fit.

5.1.1.2 Intermediate package - Intermediate packages shall contain the number of unit packages specified by the procuring activity. The intermediate packages shall be fiberboard boxes conforming to Specification PPP-B-636.

5.1.2 Level C -

5.1.2.1 Preservation and packaging shall be in accordance with the manufacturer's commercial practice.

5.2 Packing - Packing shall be Level A, B, or C, as specified (see 6.2).

5.2.1 Level A - Rescue hooks packaged as specified in 5.1.1 shall be packed in overseas type cleated fiberboard, cleated plywood or wood cleated, fiberboard, paper-overlaid containers conforming to Specification PPP-B-576, PPP-B-591, PPP-B-601, or PPP-B-636. The containers shall be closed and strapped in accordance with the requirements of the appendix of the applicable box specification. The gross weight of the exterior shipping container when fully packed shall not exceed approximately 200 pounds. Plywood, when used, shall conform to Specification NN-P-515, Type I or II, Class 2.

5.2.2 Level B - Rescue hooks packaged as described in paragraph 5.1.1 shall be packed in domestic type exterior containers conforming to Specification PPP-B-576, PPP-B-591, PPP-B-601, or PPP-B-636. The gross weight of wood or wood cleated shipping containers shall not exceed 200 pounds.

5.2.3 Level C - Rescue hooks packaged as specified in 5.1.1 shall be packed in a manner to insure carrier acceptance and safe delivery at destination. Containers shall be in accordance with Uniform Freight Classification Rules or regulations of other carriers applicable to the mode of transportation.

5.3 Marking - In addition to any special marking required by the contract or order, marking for shipment shall be in accordance with Standard MIL-STD-129 and shall include the date of manufacture, month, and year.

HELICOPTER RESCUE HOOK  
Specification MIL-H-23599A (AS)  
FSC 4030

## 6. NOTES

6.1 Intended use - The helicopter rescue hook covered by this specification is used to assist personnel performing rescue work from helicopter aircraft.

6.2 Ordering data - Procurement documents should specify the following:

- (a) Title, number, and date of this specification
- (b) Quantity desired
- (c) Whether first article inspection is waived (see 4.3.1)
- (d) Selection of applicable level of packaging and packing
- (e) Name and address of the first article inspection laboratory (see 4.3.1)

6.3 Standard sample - Standard sample may be examined at the hangar of Helicopter Combat Support Squadron (HC-2), Naval Air Station, Lakehurst, New Jersey.

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