

MIL-S-44022A
29 May 1980

SUPERSEDING
MIL-S-44022(GL)
20 February 1980

MILITARY SPECIFICATION

STRAP, RETENTION, PARACHUTISTS HELMET

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a helmet retention strap of one type and class.

2. APPLICABLE DOCUMENTS

2.1 Issues of documents. 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

UU-P-268 - Paper, Kraft, Wrapping
PPP-B-636 - Boxes, Shipping, Fiberboard

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection
by Attributes
MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-1188 - Commercial Packaging of Supplies and Equipment

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Natick Research and Development Command, Natick, MA 01760 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 8470

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DRAWING

US ARMY NATICK RESEARCH AND DEVELOPMENT COMMAND

8-2-663 - Strap, Retention, Parachutists Helmet

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

3. REQUIREMENTS

3.1 Guide sample. Samples, when furnished, are solely for guidance and information to the contractor (see 6.3). Variations from this specification may appear in the sample in which case this specification shall govern.

3.2 First article. When specified (see 6.2), the contractor shall furnish a sample for first article inspection and approval (see 4.3 and 6.4).

3.3 Materials and components. Materials (see 6.5) and components shall be as specified on Drawing 8-2-663.

3.4 Construction. The construction shall conform in all respects to Drawing 8-2-663 and as specified herein.

3.4.1 Stitching. All stitching shall be as specified on Drawing 8-2-663 and as specified herein.

3.4.2 Thread tension. Thread tension shall be maintained so that there will be no loose stitching resulting in loose bobbin or top thread, or excessively tight stitching resulting in puckering of the materials sewn. The lock shall be embedded in the materials sewn.

3.4.3 Repairs of type 301 stitching. Repairs of type 301 stitching shall be as follows:

a. When thread breaks or bobbin run-outs occur during sewing, the stitching shall be repaired by restarting the stitching a minimum of 1/2 inch back of the end of the stitching. 1/

b. Thread breaks, two or more consecutive skipped or runoff stitches noted during inspection of the item (in-process or end item) shall be repaired by over-stitching. The stitching shall start a minimum of 1/2 inch in back of the defective area, continue over the defective area and continue a minimum of 1/2 inch beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching, without damaging the materials and restitching in the required manner. 1/

1/ When making the above repairs the ends of the stitching are not required to be backstitched.

3.4.4 Automatic stitching. Automatic machines may be used to perform any of the required stitch patterns provided the requirements for the stitch pattern, stitches per inch, size and type of thread are met, and at least three or more tying, overlapping or back stitches are used to secure the ends of the stitching.

3.4.5 Thread ends. All thread ends shall be trimmed to a length of not more than 1/4 inch.

3.4.6 Fusing of ends of nylon webbing. All ends of nylon webbing shall be fused as specified on Drawing 8-2-663. The apparatus used to fuse the webbing ends shall be capable of providing sufficient heat to provide a smooth edge. The cut ends of the webbing yarns shall be fused together.

3.4.7 Setting of grommet. The hole for setting the grommet in the nylon webbing shall be prepunched and shall be smaller than the outside diameter of the grommet barrel so that the barrel must be forced through the hole. The grommet shall be securely clinched without cutting the adjacent material. There shall be no more than two splits in the grommet barrel.

3.4.8 Replacement of defective components. During the cutting and manufacturing process, components having material defects or damages that are classified as defects in 4.4.2.1 shall be removed from production and replaced with non-defective and properly matched components.

3.5 Workmanship. The finished retention strap shall conform to the quality of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels.

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 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 assure supplies and services conform to prescribed requirements.

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

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

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4.3 First article inspection. When a first article is required (see 6.2), the strap shall be examined for the defects specified in 4.4.2.1 and 4.4.2.2. The presence of any defect shall be cause for rejection of the first article.

4.4 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all requirements of referenced specifications, standards and drawings unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document.

4.4.2 End item examination. The defects found during examination shall be classified in accordance with 4.4.2.1 and 4.4.2.2. The lot size shall be expressed in terms of individual retention straps. The sample unit shall be one complete retention strap. The inspection levels and acceptable quality levels for these examinations shall be specified in 4.4.2.3.

4.4.2.1 Visual examination.

Examine	Defect	Classification	
		Major	Minor
Webbing	Any hole, cut, or tear	X	
	Not firmly or tightly woven; edge frayed or scalloped		X
	Any end of nylon webbing not fused or not fused as specified		X
Fastener tape	Any hole, cut, or tear	X	
	Hooks flattened, broken or missing impairing function	X	
	Clinched loosely, permitting either component to rotate freely	X	
Grommet	Clinched excessively tight, cutting adjacent material	X	
	Washer omitted	X	
	More than two splits in grommet barrel		X
	Incorrect size	X	

Examine	Defect	Classification	
		Major	Minor
Seams and stitchings:			
Open seams	Up to and including 1/2 inch More than 1/2 inch	X	X
	NOTE: A seam shall be classified as an open seam when one or more stitches joining a seam are broken, or when two or more consecutive skipped or runoff stitches occur.		
Stitch type	Incorrect stitch type	X	
Stitch tension	Loose tension, resulting in a loose top or bobbin thread Excessively tight tension, resulting in puckering of material		X X
Stitches per inch	One stitch less than minimum specified Two or more stitches less than minimum specified One or more stitches in excess of maximum specified	X	X X
Stitching ends	Not secured as specified		X
Thread breaks, skipped stitches or runoffs	Thread breaks, or two or more consecutive skipped or runoff stitches overstitched less than 1/2 inch in each direction beyond the defective stitching area		X
	NOTE: Thread breaks, or two or more consecutive skipped or runoff stitches not overstitched shall be classified as open seams.		
Rows of stitching	Any row omitted	X	

Examine	Defect	Classification	
		Major	Minor
Component and assembly	Any required component or operation omitted (unless otherwise classified herein)	X	
	Any component misplaced or not assembled as specified (unless otherwise classified herein)		X
	Needle chews	X	
	Any unauthorized repair	X	
Cleanness	Dirt or stain clearly noticeable, thread ends not trimmed throughout as specified		X
Identification marking	Omitted, incorrect, or illegible		X

4.4.2.2 Dimensional examination. The retention strap shall be examined for compliance with all dimensions shown on Drawing 8-2-663, including stitch margins. Any dimension not within the specified tolerance shall be considered a defect.

4.4.2.3 Inspection levels and acceptable quality levels (AQLs). The inspection levels and AQLs expressed in defects per hundred units shall be as follows:

<u>Examination paragraph</u>	<u>Inspection level</u>	<u>AQL</u>	
		<u>Major</u>	<u>Total</u>
4.4.2.1	II	1.5	6.5
4.4.2.2	S-3	-	4.0 (One class)

4.4.3 Packaging inspection. An examination shall be made to determine that the preservation, packing and marking comply with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully packaged with the exception that it need not be closed. Examination of closure defects listed below shall be made on shipping containers fully packaged. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 and the AQL shall be 2.5 defects per hundred units.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate application of components, such as incomplete closure of container flap, loose strapping, inadequate stapling, improper taping. Bulged or distorted container.
Content	Number of straps per bundle not as specified. <u>1/</u> Number of bundles per container is more or less than required.

1/ For this defect one bundle from each shipping container in the sample shall be examined.

5. PACKAGING

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

5.1.1 Level A. Twenty-five straps shall be neatly stacked to form a bundle. The bundle shall be securely tied with twine or tape.

5.1.2 Commercial. The straps shall be preserved in accordance with MIL-STD-1188.

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

5.2.1 Level A packing. One thousand straps, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class weather-resistant, variety DW, grade V15c of PPP-B-636. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to type I, grade B of UU-P-268. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V and reinforced in accordance with the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.3.

5.2.2 Level B packing. One thousand straps, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC-L, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. Each container shall have the contents completely covered on the top and bottom with a sheet

of 30-pound minimum basis weight kraft paper conforming to type I, grade B of UU-P-268. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.3.

5.2.2.1 Weather-resistant fiberboard containers. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of the box specification, except that the inspection shall be in accordance with 4.4.3.

5.2.3 Commercial packing. Straps, preserved as specified in 5.1, shall be packed in accordance with MIL-STD-1188.

5.3 Marking. In addition to any special marking required by the contract, interior packs and shipping containers shall be marked in accordance with MIL-STD-129 or MIL-STD-1188, as applicable. Each fifth interior pack shall have attached a manila colored paper shipping tag for identification information.

6. NOTES

6.1 Intended use. The retention strap is used by parachutists with the Ground Troops'-Parachutists' Helmet (Kevlar).

6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) When a first article sample is required (see 3.2, 4.3 and 6.4).
- (c) Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
- (d) When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

6.3 Samples. For access to standard samples address the procuring activity issuing the invitation for bids.

6.4 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of ASPR 7-104.55. The first article should be a preproduction sample consisting of one retention strap. The contracting officer should include specific instructions in all procurement instruments regarding arrangements for inspection and approval of the first article.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the specification (see 3.3).

Custodians:

Army - GL
Air Force - 99

Review activities:

Army - MD
DLA - CT

User activities:

Navy - MC
Air Force - 45

Preparing activity:

Army - GL

Project No. 8470-0076

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

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DOCUMENT IDENTIFIER (Number) AND TITLE

MIL-S-44022A - Strap, Retention, Parachutists Helmet

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

 VENDOR USER MANUFACTURER

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? IS ANY PART OF IT TOO RIGID, RESTRICTIVE, LOOSE OR AMBIGUOUS? PLEASE EXPLAIN BELOW.

A. GIVE PARAGRAPH NUMBER AND WORDING

B. RECOMMENDED WORDING CHANGE

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2. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

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