

INCH-POUND
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SUPERSEDING
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MILITARY SPECIFICATION

SUSPENSION ASSEMBLY, GROUND TROOPS' - 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 one type of suspension assembly for the ground troops' parachutists' helmet.

1.2 Classification. The suspension assembly shall in the following sizes as specified (see 6.2).

X-Small	(XS)
Small	(S)
Medium	(M)
Large	(L)
X-Large	(XL)

2. APPLICABLE DOCUMENTS

2.1 Government documents.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014, 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 8470

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

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

SPECIFICATIONS

FEDERAL

- PPP-B-26 - Bag, Plastic (General Purpose)
- PPP-B-636 - Boxes, Shipping, Fiberboard
- PPP-T-45 - Tape, Gummed, Paper, Reinforced and Plain, for Sealing and Securing

MILITARY

- MIL-L-35078 - Loads, Unit: Preparation Of Semiperishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification For

STANDARDS

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads
- MIL-STD-731 - Quality of Wood Members for Containers and Pallets

(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.)

2.1.2 Other Government documents, drawings, and publications. The following other government documents, drawings and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS

U.S. ARMY NATICK RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER

- 2-1-1386 - Suspension Assembly, Ground Troops' - Parachutists' Helmet

(Copies of drawings are available from the U.S. Army Natick Research, Development and Engineering Center, ATTN: STRNC-EMSS, Natick, MA 01760-5014.)

2.2 Non-Government publications. The following document forms 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)

D 3951 - Standard Practice for Commercial Packaging

(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 organizations that prepare or 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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.2 Guide sample. Guide samples, when furnished are solely for guidance and information to the contractor (see 6.4). Variations from this specification may appear in the sample, in which case this specification shall govern.

3.3 Materials and components. The materials and components shall be as specified on Drawing 2-1-1386. It is encouraged that recycled material be used where practical as long as it meets the requirements of this specification.

3.3.1 Identification marking. A white paper label with legible and durable black marking shall be placed inside the polyethylene bag specified in 5.1.1 so that the label can be read through the bag. The label paper shall be made of commercial quality white writing or printing paper, having a minimum basis weight of 20 pounds (17 x 22/500). The paper label shall contain the following information:

Item description (approximately 1/4 inch)
Contract number (approximately 1/4 inch)
Stock number (approximately 1/4 inch)
Contractor's name (approximately 1/4 inch)

3.4 Design and construction. The design and construction of the suspension assembly shall be as specified herein, and as shown on Drawing 2-1-1386, and all subsidiary drawings and parts lists.

3.4.1 Stitching. All stitching shall be as specified on Drawing 2-1-1386 and 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 shown.

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

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

b. Any thread break or two or more consecutive skipped or runoff stitches noted during inspection of the item (in-process or end item) shall be repaired by overstitching. 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 stitching.

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

3.4.4 Automatic stitching. Automatic stitching 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 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 nylon webbing and cord. All ends of the nylon webbing and cord, and all slots in the nylon webbing, shall be fused as specified on Drawing 2-1-1386.

3.4.7 Setting of eyelets. Holes for setting eyelets in nylon webbing shall be prepunched and shall be smaller than the outside diameter of the eyelet barrel so that the barrel must be forced through the hole. The eyelets shall be securely clinched without cutting the adjacent material and no more than one split shall occur in the eyelet or washer barrels.

3.4.8 Repairs. Except as otherwise specified herein, repairs are not allowed to be made to the suspension assembly.

3.4.9 Replacement of defective components. During the spreading, cutting, and manufacturing process, components having material defects or damages that are classified as defects in 4.4.3 shall be removed from production and replaced with non-defective and properly matched components.

3.5 Workmanship. The suspension assembly shall conform to the quality of product established by this specification.

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 shall 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 requirement 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 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for ensuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point or at all points in the manufacturing process necessary to ensure compliance with all dimensional requirements.

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

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

4.3 First article inspection. When a first article is required (see 3.1 and 6.2), it shall be examined for the defects specified in 4.4.3 and 4.4.4.

4.4 Quality conformance inspection. Unless otherwise specified, , sampling for inspection shall be performed in accordance with MIL-STD-105.

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

4.4.2 In-process inspection. Inspection of subassemblies shall be made to ascertain that construction details which cannot be examined in the finished product are in accordance with specified requirements. The Government reserves the right to exclude from consideration for acceptance, any material or service for which in-process inspection has indicated nonconformance.

4.4.3 End item visual examination. The end items shall be examined for the defects listed in table I. The lot size shall be expressed in units of suspension assemblies. The sample unit shall be one suspension assembly. The inspection level shall be II. The acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 10 for total (major and minor combined) defects.

TABLE I. End item visual defects

Examine	Defect	Classification	
		Major	Minor
Webbing	Any hole, cut, tear, or frayed edge	101	
	Not firmly or tightly woven; edge frayed or scalloped		201
	Any end of webbing not fused		202
Fastener tape	Any hole, cut, or tear	102	
	Hooks flattened, broken, or missing impairing function	103	
Cord	Any cut or frayed area	104	
Eyelets	Clinched loosely, permitting either component to rotate freely	105	
	Clinched excessively tight, cutting adjacent material	106	
	Washer omitted	107	
	Two or more splits in eyelet or washer barrel		203
Seams and stitching: Open seam	Up to and including 1/2 inch		204
	More than 1/2 inch	108	
Note: A seam shall be classified as open when one or more stitches joining a seam are broken or when two or more consecutive skipped or runoff stitches occur.			
Stitch tension	Loose, resulting in a loose top or bobbin thread		205
	Excessively tight, resulting in puckering of material		206

TABLE I. End item visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Seams and stitching (cont'd)			
Stitch type	Incorrect stitch type	109	
Stitches per inch	One stitch less than minimum specified		207
	Two or more stitches less than minimum specified	110	
	One or more stitches in excess of maximum specified		208
Stitching ends	Ends of stitching not secured as specified (except when caught in other stitching)		209
Thread breaks, skipped stitches or runoffs	Thread break or two or more consecutive skipped or runoff stitches overstitched less than 1/2 inch in each direction beyond the defective stitching area		210
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	111	
Components and assembly	Any required component or operation omitted (unless otherwise classified herein)	112	
	Any component misplaced or not assembled as specified (unless otherwise classified herein)	113	
	Needle chews	114	
	Any unauthorized repair	115	
Identification and size marking	Omitted, incorrect, illegible or misplaced or size of characters not as specified	116	
Cleanness	Spots or stains clearly noticeable thread ends not trimmed throughout as specified		211

4.4.4 End item dimensional examination. The end items shall be examined for conformance to the dimensions specified on the drawings. Only those dimensions that can be evaluated without damaging or disassembling the end items shall be examined. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of suspension assemblies. The sample unit shall be one suspension assembly. The inspection level shall be S-3. The AQL, expressed in terms of defects per hundred units, shall be 4.0.

4.4.5 Packaging examination. The fully packaged end items shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2. The AQL, expressed in terms of defects per hundred units, shall be 2.5.

<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 sealing or closure of flap, improper taping, loose strapping or inadequate stapling Bulged or distorted container
Content	Number of bundles per shipping container is more or less than specified Number of suspension assemblies per bundle is more or less than required <u>1/</u>

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

4.4.6 Palletization examination. The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1. The AQL, expressed in terms of defects per hundred units, shall be 6.5.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirement
Palletization	Pallet pattern not as specified Interlocking of loads not as specified Load not bonded as specified

<u>Examine</u>	<u>Defects</u>
Weight	Exceeds maximum load limits
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application

5. PACKAGING

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

5.1.1 Level A preservation.

5.1.1.1 Unit packing. Ten suspension assemblies nested within each other along with the paper label specified in 3.3.1 (with marking facing the outside of the bag) shall be unit packed in a clear bag conforming to type I or II, style 1 or 2 of PPP-B-26.

5.1.1.2 Intermediate packing. Twenty unit packs, as specified in 5.1.1.1, of one size only shall be packed on edge one in length, four in width, and five in depth in an intermediate fiberboard box conforming to style RSC, type CF (variety SW), class domestic, grade 200 of PPP-B-636. Approximate inside dimensions of each intermediate box shall be as specified in table II. Box closure shall be effected with 2-inch minimum width gummed paper tape conforming to type III, grade B of PPP-T-45.

TABLE II. Approximate inside dimensions of intermediate box and shipping container 1/

<u>Intermediate box</u> <u>(inches)</u>	<u>Shipping container</u> <u>(inches)</u>
12-1/2 x 10 x 10	20-1/2 x 13 x 10-1/2

1/ Approximate inside dimensions are furnished as a guide only

5.1.2 Commercial. Suspension assemblies shall be preserved in accordance with ASTM D 3951.

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

5.2.1 Level A packing. Four hundred suspension assemblies of one size only, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC, grade V2s of PPP-B-636. Approximate inside dimensions of each shipping container shall be as specified in table II. Each

shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced as specified in the appendix of the container specification, except that the inspection shall be in accordance with 4.4.5. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078, for the type and class of load specified (see 6.2). Strapping shall be limited to non-metallic strapping, except for type II, class F loads.

5.2.2 Level B packing. Four hundred suspension assemblies of one size only preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. Approximate inside dimensions of each shipping container shall be as specified in table II. 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 4.4.5.

5.2.2.1 Weather-resistant fiberboard container. When specified (see 6.2), the fiberboard 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 container specification, except that the inspection shall be in accordance with 4.4.5.

5.2.3 Commercial packing. Suspension assemblies preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

5.3 Palletization. When specified (see 6.2), suspension assemblies, packed as specified in 5.2.2 or 5.2.3, shall be palletized in accordance with load type Ia of MIL-STD-147. Pallet types shall be type I (4-way entry) type IV, or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D or film bonding means F or G. Pallet pattern shall be number 5 in accordance with the appendix of MIL-STD-147.

5.4 Marking. In addition to any special marking required by the contract or purchase order, unit packs, intermediate packs, shipping containers, and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

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 suspension assembly is intended to be used with the Ground Troops' - Parachutists' Helmet.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and data of this specification.

- b. Size 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 a first article is required (see 3.1, 4.3, and 6.3).
- e. Levels of preservation and packing (see 5.1 and 5.2).
- f. Type and class of unit load required (see 5.2.1).
- g. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).
- h. When palletization is required (see 5.3).

6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.4 Samples. For access to samples, address the contracting activity issuing the invitation for bids or request for proposal.

6.5 Subject term (key word) listing.

Equipage
Headgear
Protection
Shock resistant
Strap

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.

Custodians:

Army - GL
Navy - MC
Air Force - 99

Preparing activity:

Army - GL
(Project 8470-0137)

Review activities:

Army - MD
Air Force - 82
DLA - CT

User activity:

Air Force - 45