

INCH-POUND

MIL-H-24900A(CG)
6 November 1989
SUPERSEDING
MIL-H-24900(CG)
14 July 1982

MILITARY SPECIFICATION

HAT, COMBINATION, WOMAN'S (COAST GUARD)

This specification is approved for use by the United States Coast Guard, Department of Transportation, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for a hat frame ensemble, consisting of a hat frame; band with mount; and a detachable hat cover.

* 1.2 Classification. The hat frame, hat cover, and hat band procured as an ensemble or hat covers separately, shall be in the following types and sizes as specified (see 6.2).

- Type I - Enlisted personnel
- Type II - Officer personnel (LCDR and below)
- Type III - Officer personnel (CDR and above)
- Type IV - Hat cover
 - Class 1 - Cloth, Polyester/Cotton, White
 - Class 2 - Cloth, Vinyl, White

Schedule of sizes

20, 20-1/2, 21, 21-1/2, 22, 22-1/2, 23, 23-1/2, and 24

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Officer in Charge, Navy Clothing and Textile Research Facility, 21 Strathmore Road, Natick, MA 01760-2490 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 8410

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2. APPLICABLE DOCUMENTS

2.1 Government documents.

* 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 shall be 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-504 | - Plastic Sheet and Film, Cellulose Acetate |
| V-T-276 | - Thread, Cotton |
| * NN-P-71 | - Pallet, Material Handling, Wood, Stringer Construction, 2 Way and 4 Way (Partial) |
| * UU-P-31 | - Paper, General Specification and Methods for Testing |
| CCC-C-438 | - Cloth, Buckram, Woven and Nonwoven |
| DDD-L-20 | - Label; for Clothing, Equipage, and Tentage (General Use) |
| PPP-B-566 | - Boxes, Folding, Paperboard |
| PPP-B-636 | - Boxes, Shipping, Fiberboard |

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- | | |
|---------------|---|
| MIL-C-368 | - Cloth, Satin, Rayon and Cloth Twill, Rayon |
| MIL-C-823 | - Cloth, Serge, Wool, Wool and Nylon: Polyester and Wool |
| MIL-B-3461 | - Button, Insignia, Metal, Uniform and Cap |
| * MIL-P-15011 | - Pallet, Material Handling, Wood, Post Construction, 4 Way Entry |
| MIL-E-17568 | - Embroidery Materials, Metallic and Synthetic Metallic |
| MIL-S-17615 | - Strap, Chin (Navy and Coast Guard) |
| MIL-B-17757 | - Box, Shipping, Fiberboard (Modular Sizes) |
| * MIL-C-24927 | - Cloth, Twill, Polyester/Cotton (Durable Press) |
| MIL-T-43548 | - Thread, Polyester Core: Cotton-, Rayon-, or Polyester-covered |
| MIL-C-43920 | - Cloth, Interlining, Cotton and Synthetic, and Nylon |
| * MIL-C-87074 | - Cloth, Twill, Acetate |

STANDARDS

FEDERAL

- | | |
|-------------|-----------------------------------|
| FED-STD-191 | - Textile Test Methods |
| FED-STD-406 | - Plastics: Methods of Testing |
| FED-STD-595 | - Colors |
| FED-STD-751 | - Stitches, Seams, and Stitchings |

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- 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-2073-1 - DoD Materials Procedures Development and Application of Packaging Requirements
- * MIL-STD-2073-2 - Packaging Requirement Codes
- MS-27982 - Fasteners, Snap, Style 3 (Pronged Ring Head Type)

* (Unless otherwise indicated, copies of 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.)

2.1.2 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.

U.S. POSTAL SERVICE MANUAL

(Copies of the manual may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

* 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 shall be 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).

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Association, ATTN: Traffic Department, 1616 P Street, N.W., Washington, DC 20036-1404).

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606-5808).

* THE COLOR ASSOCIATION OF THE UNITED STATES

DOD Standard Color Card of Official Standardized Shades for Sewing Threads

(Applications for copies of color cards should be addressed to the Color Association of the U.S., 343 Lexington Avenue, New York, NY, 10016-0927).

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* AMERICAN SOCIETY FOR TESTING AND MATERIALS

D1424 Tear Resistance of Woven Fabrics by Falling Pendulum (Elmendorf) Apparatus

(Applications 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 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 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 the contractor shall furnish sample unit(s) for first article inspection and approval (see 4.3 and 6.2).

3.3 Material.3.3.1 Hat frames.

3.3.1.1 Cloth, polyester/wool serge. The polyester/wool serge cloth used for the brim, band, mount, and band streamer pieces shall conform to type III, class 3, of MIL-C-823. The material shall be dyed to match Blue Shade 3362.

3.3.1.2 Cloth, interlining. The interlining cloth used for the crown pieces and brim reinforcement pieces shall conform to type II of MIL-C-43920.

3.3.1.3 Cloth, rayon. The rayon cloth used for the crown lining piece shall conform to class 1 of MIL-C-368. Acetate twill conforming to MIL-C-87074 may be used as an alternate material. When the alternate lining is used, the yarn size may be 100 denier warp x 150 denier filling. The cloth shall be dyed to approximate Blue Shade 3351.

3.3.1.4 Felt. The felt material used for the brim interlining piece shall be composed of not less than 30 percent wool and the remaining percentage viscose rayon. The felt material shall be dyed a suitable black shade, and shall conform to the following requirements when tests as specified in 4.4.1.

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Characteristic	Requirement	
	Minimum	Maximum
Weight, ounces per square yard	7.0	9.0
Thickness, inches	0.040	0.065
Ball bursting strength, pounds	40	-
Stiffness, load pounds:		
Initial, lengthwise	0.18	-
Initial, widthwise	0.17	-
After soaking, lengthwise	0.12	-
After soaking, widthwise	0.11	-

3.3.1.4.1 Non-fibrous materials. The starch and protein content, including chloroform-soluble and water-soluble material of the finished felt, shall not be less than 10 percent nor more than 20 percent when tested as specified in 4.4.1.

3.3.1.5 Cloth, buckram, cotton. The cotton buckram used for the brim interlining piece shall be white, bleached, or unbleached, plain weave, woven with 2 ply cotton yarns and conforming to CCC-C-438. Testing shall be as specified in 4.4.1. In addition, the cloth shall be treated with a water repellent resin finish.

Characteristic	Requirement	
	Minimum	Maximum
Weight, ounces per square yard (before water repellent finish)	6.4	6.8
Yarns per inch		
Warp	20	-
Filling	16	-
Stiffness, bending moment, inch-pound		
Warp	0.103	0.118
Filling	0.095	0.110

3.3.1.6 Sweatband. The sweatband shall be made of a plain rib weave grosgrain ribbon, consisting of a rayon warp and cotton filling with a woven edge. No loading agents shall be used. The sweatband ribbon shall be dyed blue, approximating the shade of the brim material. The finished sweatband shall conform to the following requirements when tested as specified in 4.4.1.

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Characteristic	Requirement	
	Minimum	Maximum
Weight, ounces per linear yard	0.17	0.21
Width, inches	13/16	15/16
Thread count		
Full width	122	-
Filling	30	-
pH	5.5	8.5
Colorfastness to:		
Crocking	Good	-
Wet-dry cleaning	Good	-
Perspiration	Good	-

* 3.3.1.7 Thread. The thread for seaming and stitching the hat frames shall be either cotton conforming to types IC1 and IC2, applicable, ticket numbers 0 and 00, 3 ply of V-T-276; or a cotton or rayon covered polyester thread conforming to size number 50 of MIL-T-43548. The thread used for the hat frame and hat band operations shall be dyed to match Navy Blue AT; Cable No. 66060. For all other stitching operations, excluding basting operations, the thread shall be of a white or natural shade (White AH, Cable No. 66050 or Natural White AG, Cable No. 66049). The thread used for basting shall be at the option of the contractor. All Cable numbers shall conform to the Department of Defense Color Card of Official Standardized Shades for Sewing Threads.

* 3.3.1.7.1 Colorfastness. The dyed thread shall show fastness to light, wet-dry cleaning, and perspiration equal to or better than the standard sample. As a limit of acceptability or when no standard sample is available, the dyed thread shall show a minimum of "good" fastness to light, wet-dry cleaning, and perspiration, when tested as specified in V-T-276 or MIL-T-43548, as applicable.

3.3.1.8 Stay material. The stay material used in the construction of insignia mounts for the hat band, shall be of a flexible paperboard which has been impregnated with a minimum of 15 percent inert mineral filler. The paperboard shall be made of a cellulosic fiber, and shall finish with a thickness of 0.025 (+ 0.001) inch and weight 110.0 (+ 5 percent) pounds per 1,000 square feet. The color shall be black. Testing shall be performed as specified in 4.4.1.

3.3.1.9 Leatherette. The leatherette used to back hat band insignia mounts shall be made of either a fabric or paper base conforming to the requirements specified in 3.3.1.9.1 and 3.3.1.9.2.

3.3.1.9.1 Fabric base. The leatherette shall be made of any suitable woven or knitted cotton material, vinyl coated, black in color and embossed with a simulated leather effect on one side only. The fabric shall have a finished weight of not less than 14 ounces per square yard, and shall show a minimum of "good" fastness to crocking and water. Testing shall be performed as specified in 4.4.1.

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3.3.1.9.2 Paper base. The leatherette shall consist of a polyvinyl chloride film bonded or laminated to a latex impregnated (30-35 percent by weight) cellulose pulpboard sheet with a suitable adhesive. The polyvinyl chloride film shall be black in color, embossed on one side only, with a finished thickness of 0.009 (+ 0.0005) inches. In addition, the polyvinyl chloride film shall show a minimum of "good" fastness to crocking and water. The latex impregnated pulpboard sheet, shall have a finished thickness of 0.030 (+ 0.0015) inches. Testing shall be performed as specified in 4.4.1.

3.3.1.10 Plastic lining. The clear plastic sheeting used for the top crown lining piece shall conform to type II of L-P-504 with a nominal thickness of 0.0075 inches and be crack resistant at minus 20°F. Testing shall be as specified in 4.4.1.

3.3.1.11 Snap fasteners. The snap fasteners used to secure the band to frame shall conform to MS-27982, finish b, except for the following stud and eyelet dimensions:

- a. The overall height of the stud shall be 0.234 (+ 0.002) inch and the flange diameter shall be 0.335 (+ 0.002) inch.
- b. The diameter of the stud shall be 0.156 (+ 0.002) inch.
- c. The overall height of the eyelet post shall be 0.335 (+ 0.002) inch and the flange diameter shall be 0.375 (+ 0.002) inch.

* 3.3.1.12 Label. Each hat frame shall have a cloth combination identification and size label conforming to type VI, class 4, of DDD-L-20 except that the inscription shall be as shown below. The size of the label shall be not more than 1-3/4 inches in height and 2-3/4 inches in length. When the type II and III hat frame is applicable, the inscription shall not include the "Contract No" and "Stock No". The printing on the label shall show a minimum of "good" fastness to accelerated dry cleaning, and shall bear the following inscription:

NAME:
 SERVICE:
 HAT, COMBINATION, WOMAN'S
 CONTRACT NO: DLA 100-00-0-0000 (EXAMPLE)
 STOCK NO: 8410-00-000-0000 (EXAMPLE)
 SIZE: 20 (EXAMPLE)
 NAME OF CONTRACTOR:
 NAME OF MANUFACTURER: (If other than contractor)

3.3.2 Hat cover.

3.3.2.1 Basic material. The basic material for the top and side pieces of the hat cover shall conform to the requirements of 3.3.2.1.1 or 3.3.2.1.2.

3.3.2.1.1 Cloth cover. The material for the class 1 hat cover shall be a polyester/cotton twill, shade White 3053 conforming to the MIL-C-24927.

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3.3.2.1.2 Vinyl cover. The material for the class 2 hat cover shall be a single coated cotton knit cloth with the coating formulated from vinyl chloride polymer or vinyl chloride acetate copolymer in shade white 27875 of FED-STD-595. The coating shall be embossed to simulate a twill weave. The coated cloth shall conform to the following requirements when tested as specified in 4.4.1.

Characteristic	Requirements	
	Minimum	Maximum
Weight, ounce per square yard		
Knit cloth	3.5	4.0
Vinyl coating	12.0	-
Combined	15.5	-
Breaking strength, lbs		
Wales	80.0	-
Courses	70.0	-
Tearing strength, grams		
Wales	3700	-
Courses	3700	-
Adhesion of coating, lbs per 2 inch width	8.0	-
Blocking, scale rating	-	No. 3
Resistance to weathering, 200 hours	1/	-
Resistance to cracking, -20°F	2/	-
Plasticizer loss, percent	-	8.0

1/ No appreciable signs of discoloration, exudation, tackiness, cracking or stiffness of coating when test specimen is compared with original.

2/ Coating shall not crack through the base cloth.

3.3.2.2 Sweatband. The sweatband for the hat cover shall be of 100% polyester plain rib weave grosgrain ribbon of a suitable white shade approximating the basic material and shall conform to the following requirements when tested as specified in 4.4.1.

Characteristic	Requirement	
	Minimum	Maximum
Width, inches	9/16	11/16
Weight, ounces per linear yard	0.35	0.45
Thread count		
Full width	70	-
Filling	30	-

3.3.2.3 Thread. The thread for seaming and stitching the hat cover shall be either cotton conforming to type ICl, ticket No. 0 or 00, 3-ply, of V-T-276, or a cotton or rayon covered polyester thread conforming to size number 50 of MIL-T-43548. The color of the thread shall be white, approximating the shade of the basic material.

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* 3.3.2.4 Label. Each finished hat cover shall have a cloth label conforming to type VI, class 2, of DDD-L-20, with the size to be expressed numerically. The printing on the label shall show fastness to laundering only. When the hat covers are procured separately, the applicable contract number shall also be indicated. The label shall bear the following inscription:

HAT COVER, COMBINATION WOMAN'S
 FIBER CONTENT: 100% COTTON (EXAMPLE)
 CONTRACT NO: DLA 100-00-0-0000 (EXAMPLE)
 STOCK NO: 8410-00-000-0000 (EXAMPLE)
 SIZE: 20 (EXAMPLE)
 NAME OF CONTRACTOR:
 NAME OF MANUFACTURER: (If other than contractor)

3.4 Design.

3.4.1 Hat frame ensemble. The hat frame ensemble shall consist of a frame with a detachable hat cover and detachable hat band. The frame shall have a stiffened oval shaped crown, a stiffened brim turned up at the sides and flat at the front and back, and a hat band with mount and streamers attached to the crown with four (4) snap fasteners. Each hat frame shall be furnished with two (2) hat covers as part of the ensemble. The hat covers shall be of corresponding hat frame size, so as to fit snugly without any evidence of distortion on either of the components (see Figure 1).

3.4.1.1 Type I, enlisted personnel. The hat frame, crown cover, hat band with streamers, and insignia shall be as described herein (see Figures 1, 3, and 5).

* 3.4.1.2 Type II, Officer personnel, LCDR and below. The hat frame, crown cover, hat band with streamers, and insignia mount shall be described herein. In addition, a 1/2 inch wide nonfunctional gold lace chin strap shall be secured to the hat band with two size 22-1/2 line-gold-gilt buttons. The chin strap shall conform to type I, class 3 of MIL-S-17615 and the metal buttons shall conform to type II, style 5, class A, subclass 2 of MIL-B-3461. A hole for insertion of the two wire prongs shall be punched through each side of the hat band directly in front, or in back of the snap fastener securing the hat band to crown. After the prongs are inserted through the holes of the chin strap and hat band, the two prongs shall be spread open to insure security (see Figures 2, 3 and 5).

3.4.1.3 Type III, Officer personnel, CDR and above. The hat frame, crown cover, hat band with streamers, and insignia mount shall be as described herein. In addition, the body of the hat band shall be embroidered in gold with oak leaves and acorns, with the top edge of band trimmed with gold braid piping approximately 1/4 inch wide (see Figures 2, 3, 4, and 5). The hat device (eagle and anchor) may be metal or embroidered. The ornamentation shall be embroidered with gold synthetic metallic yarn conforming to type III of MIL-E-17568.

3.4.2 Hat cover. The hat cover shall consist of a one piece top, a one piece side, a grosgrain ribbon sweatband, and four (4) horizontal buttonholes positioned to accept the four (4) snap fastener studs attached to the crown (see Figure 5).

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3.4.3 Figures. Figures 1 through 8 are furnished for information purposes only. When inconsistencies exist between the written specification and the figures, the written document shall govern.

3.5 Patterns and blocks.

* 3.5.1 Hat frame. Standard patterns to be used in cutting the contractor's working patterns will be furnished by the Government (see 6.3). In addition, the Government will provide one set of blocks (brim, plug and crown) in one size only (see 1.2). The Government patterns, the contractor's working patterns and blocks shall not be altered in any way. The Government blocks are not to be used as working blocks, but are restricted only for use in establishing the contractor's working blocks. Unless otherwise specified herein, the seam allowance shall be specified on the pattern parts. The Government loaned blocks shall be returned in good condition upon completion of the contract.

3.5.2 Hat cover. A set of guide patterns in size 22 only shall be used in making the contractor's working patterns and will be furnished by the Government (see 6.3). The contractor shall grade or modify all pattern parts to assure that the hat covers fit properly for the corresponding frame size without distortion to the frame or covers and provide proper alignment of buttonholes with the snap fasteners on the frame. When the hat cover is procured separately, the hat frames used for fitting the covers will be furnished by the Government to the contractor. The Government loaned frames shall be returned in good condition upon completion of the contract.

3.5.3 Pattern parts. The component parts of the hat frames and hat cover shall be cut from materials as specified, and in accordance with the following pattern parts:

Material	Nomenclature of pattern parts	Cut parts
Cloth, polyester/wool, Serge	Brim	2
	Band	1
	Band streamer	1
Cloth, interlining, cotton or synthetic, and nylon	Crown top (1 warp - 1 filling)	2
	Crown side (2 warp - 2 filling)	4
	Front visor reinforcement	2
	Back visor reinforcement	1
Felt	Brim interlining	2
Cloth, buckram, cotton	Brim interlining	1
Plastic lining	Crown top (inside)	1
Cloth, rayon or acetate, twill lining	Crown top (inside)	1
	Crown side	1
Templates	Brim marker	-
	Band shaper	-
	Finished Mount (Enlisted)	-
	Finished Mount (Officer)	-
	<u>Hat cover</u>	
Cloth, polyester/cotton or	Top piece	1
Cloth, vinyl coated	Side piece	1

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3.6 Construction.

3.6.1 Stitches, seams, and stitchings. Stitch, seam, and stitching types specified in Table I and II shall conform to FED-STD-751. Whenever two or more methods for seam or stitch types are given for the same part of the operation any one of them may be used. Where stitch types 101 and 401 are used, the looper (underthread) shall be on the inside of the hat frame or hat cover. Seam allowances shall be maintained with the seams properly sewn so that no raw edges, runoffs, pleats, or open seams will result. All seams shall start and finish evenly. Thread tension shall be maintained so that there is no tight or loose stitching. Buttonholes shall be cut clean and the stitching shall be securely caught in the fabric.

3.6.2 Thread breaks and ends of seams. Ends of all seams and stitching, when not caught in other seams or stitching, shall be backtacked not less than 1/4 inch. The ends of a continuous line of stitching shall be overlapped not less than 1/2 inch. Thread breaks shall be secured by stitching back of the break not less than 1/2 inch. Skipped stitches or thread breaks on 401 or 101 seaming, may be repaired using a 301 stitch type. Where stitch type 401 or 101 is permitted as an option, it shall not be used unless the ends are caught in other seams or stitching.

3.6.3 Stitches per inch. The minimum and maximum number of stitches per inch shall be specified in Tables I and II.

3.7 Manufacturing operations. The hat frames and hat covers shall be manufactured in accordance with operation requirements specified in Tables I and II. The contractor is not required to follow the exact sequence of operations listed, except for the following precaution:

- (a) Care shall be exercised by the contractor throughout the brim operation of the hat frame (see Table I, operation 4), in order to assure consistent stability and retainment of its blocked shape under adverse weather conditions.

3.7.1 Shade and size marking. The polyester/wool serge component parts of the hat frame only and all component parts of the hat covers, shall be marked, ticketed, or bundled to assure a uniform shade and size throughout the item. Any methods of shade and size marking may be used except:

1. Corrosive metal fastening devices.
2. Sew-on shade tickets or metal fastening devices.
3. Adhesive type tickets which show discoloration, or the adhesive mass adheres to the material upon removal of the tickets.

NOTE: The use of ink pad numbering machine, rubber stamp, or pencil is allowed, provided the numbering does not show on the outside of the hat and wherever possible, is covered by the seam allowance.

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* 3.7.2 Abbreviations in table of operations. The abbreviations used in Tables I and II are as follows:

Stch	-	Stitch
in	-	inch
Ndl	-	Needle
Bob	-	Bobbin
Lpr	-	Looper
Mchne	-	Machine
Brtck	-	Bartack
Comrc1	-	Commercial
smlr	-	similar
Btnhl	-	Buttonhole
incl	-	including
dbl	-	double
chnstch	-	chainstitch

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
1.	<u>Cutting.</u>					
	a. The component parts of the hat frames shall be cut in strict accordance with the patterns furnished, which show size; shape; directional lines for cutting; and notches for proper assembly of all component parts.					
	b. All component parts cut from the polyester/wool serge shall be from one piece of material. The remaining component parts for the hat frame, may be cut from ends.					
	c. Cut the two separate crown assemblies from the interlining material, with each assembly consisting of a top crown piece and two side crown pieces. One assembly shall have the parts cut in the warp direction of the fabric and the other assembly in the filling direction of the fabric.					
2.	<u>Replacement of defective components.</u>					
	During the spreading, cutting, and manufacturing process, components having material defects or damages that are classified as defects in Section 4, shall be removed from production and replaced with non-defective and properly matched components.					
3.	<u>Make insignia mount.</u>					
	a. Cut the paperboard stay and leatherette materials to shape using the finished mount template as a guide. The finished mount template shall be used as a guide by the contractor to make a pattern for the serge cloth mount covering to meet requirements of operations 3b and 3c. The height of the mount shall be cut in the warp direction.					
	b. Cement the impregnated paperboard stay to the serge cloth used for making the brim. Turn the edge of the cloth approximately 1/4 inch over the edge of the curved portion of the stay and cement the cloth edges down, forming a finished folded edge.					

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD		
					NDL	BOB/ LPR	
	c. The serge cloth shall not be folded over the straight cut edges of the stay piece.						
	d. Cement the leatherette piece to the back side of the cloth covered stay piece with a suitable adhesive.						
	e. Top stitch all outer edges of the cloth covered mount approximately 1/16 inch from the folded edge (see Figure 3). Overstitch the ends of the stitchline.	301		12-14	00/3	00/3	
	f. The holes for attaching the metallic insignia shall be centered on the mount as specified in the finished mount template. Maximum off center tolerance shall be 1/32 inch from true position.						
4.	<u>Make brim.</u>						
	a. The component parts shall be superimposed and finish in the following sequence to form the brim:						
	- one ply of serge cloth (top of brim)						
	- one ply of visor reinforcement cloth at front						
	- one ply of visor reinforcement cloth at back						
	- one ply of felt abutted at center back						
	- one ply of buckram cloth overlapped at center back						
	- one ply of felt abutted at center back						
	- one ply of visor reinforcement cloth at front						
	- one ply of serge cloth (bottom of brim)						
	b. Superimpose the two felt pieces over the buckram piece with their respective notches aligned. The buckram piece shall be sandwiched in between the two felt pieces.						
	c. Position the two front reinforcement pieces on the felt pieces, one on top of brim and one on bottom of brim, with their respective notches aligned. Staystitch all five layers of brim materials together.	101 or 301 or 401		6-8			

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	d. Overlap the ends of the buckram piece, abut the ends of the two felt pieces, and stay stitch around the outer circumference of brim approximately 1 inch in from raw edge simultaneously positioning and catching the back reinforcement piece on upper side of brim. Align notch in reinforcement piece with abutted ends of felt.	101 or 301 or 401		6-8		
	e. Continue stay stitching across width of brim and around entire inner circumference of brim approximately 1 inch in from raw edge simultaneously catching the reinforcement pieces. As an alternate, operations 4b, 4c, 4d and 4e may be performed in one simultaneous operation.	101 or 301 or 401		6-8		
	f. Stitch the ends of each ply of the serge cloth outershell $1/4$ ($\pm 1/16$) inch from raw edge.	301 or 401	SSa-1	12-14	0/3 0/3 0/3 00/3	
	g. Press seams open.					
	h. Superimpose one ply of the serge cloth outershell face up, over the felt interlining and baste stitch around circumference of brim to secure plies.	Baste		6-8		
	i. Superimpose the second ply of the serge cloth outershell, face to face, over the first ply of serge cloth outershell and stitch around circumference of brim $3/16$ to $1/4$ inch from felt edge. A second row of stitching shall be positioned $1/16$ to $1/8$ inch from the felt edge. Trim edges evenly, when necessary.	301 or 401	SSa-1	12-14	0/3 0/3 0/3 00/3	
	j. Turn the second ply of serge cloth to the underside, so that the interlining assembly is encased. Smoothing out the excess outershell material baste stitch the brim with two or three rows of equidistant stitching to secure all plies.	Baste		6-8		

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	k. Stitch the entire brim with 19 or more continuous and equally spaced rows of circular stitching. Rows shall be visually counted at widest portion of brim. Remove baste stitching performed in operation 4.i.	301	SSv-19 or more	12-14	0/3	0/3
	l. Turn the assembled brim to its finished position. Using the brim marker template chalk a line or baste stitch along inner edge of brim as a guide for attaching and centering the crown.					
	m. Block brim into proper shape by using contractor supplied blocks that have been formed and size graded based on data obtained from the Gov't furnished sample block. The brim shall be thoroughly steamed using saturated steam at 212°F until pliable and then fitted and hand shaped to the block. Insert the block plug to insure proper size and comfortable fit. Additional steaming may be necessary to obtain the desired shape of brim. Cover the brim with a pressing cloth and fasten cloth to the block with some form of cord to hold the brim in shape. Place the brim and block in a drying oven with a temperature of approximately 280°F until thoroughly dry. Remove cord, pressing cloth, plug and brim from block.					
	n. The finished width of the brim in all hat frame sizes shall be in accordance with the dimensions specified in 3.8.1.					
5.	<u>Make crown.</u>					
	a. Overedge the two (2) top crown pieces together with a 3/16 inch bite. Cut one piece in the warp direction and the other in the filling direction.	503 or 504 or 505	EFd-1	8-10	0/3	0/3 00/3 00/3
	b. Superimpose two (2) side crown pieces, one piece cut in the warp direction and one piece cut in the filling direction.					

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD		
					NDL	BOB/ LPR	
	c. Overlap approximately 1/2 inch, the ends of the doubled side crown pieces over the ends of the other doubled side crown pieces and join together with a 3/16 to 1/4 inch gauge double needle stitch. The outer row of the double needle stitching shall be 1/16 to 1/8 inch from the raw edge.	301 or 401	LSa-2	8-10	0/3 0/3	0/3 00/3	
	d. Overlap 1/4 to 3/8 inch the doubled top crown pieces over the top of the doubled side crown assembly and join together 1/8 to 3/16 inch from the edge of top crown piece. The side crown seams shall finish at the center front and center back of top crown piece.	301 or 401	LSa-1	8-10	0/3 0/3	0/3 00/3	
	e. Block the crown as follows:						
	1. Position the crown snugly over a corresponding size block.						
	2. Fasten a tie cord securely around the base of the block so as to hold the crown taut, or trim the bottom edges of crown side pieces.						
	3. Steam press blocked crowns thoroughly using a heated oven. Guide marks shall be made for positioning the four (4) snap fastener studs just prior to removing the crown from the block (see operation 9).						
	4. Upon removal of the crowns from the blocks the crowns shall be sufficiently air dried.						
6.	<u>Make crown lining assembly.</u>						
	a. The crown lining shall consist of a two ply top, consisting of an upper layer of rayon or acetate cloth and an underside of plastic sheeting; and a one-piece bias-cut side crown lining piece.						

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD		
					NDL	BOB/ LPR	
	b. With the circular piece of clear plastic sheeting sandwiched in between the top rayon or acetate crown piece and the side rayon or acetate crown piece, stitch the three pieces together around the circumference of the plastic film, 3/8 to 1/2 inch from the raw edges, simultaneously taking up the fullness of the side crown piece by pleating. The width of each pleat shall be approximately 5/8 inch. The ends of the side crown piece shall overlap at the back of the crown and they shall be folded under and caught in the stitching when forming the last few pleats. As an alternate, the side crown lining may be pre-pleated before joining to top crown lining.	301 or 401	SSa-1	10-14	0/3 0/3	0/3 00/3	
7.	<u>Attach lining to crown.</u>						
	a. In the finished position insert the lining assembly within the crown assembly distributing equally the fullness of lining around the entire circumference of crown.						
	b. Stitch the lining to crown side pieces around the bottom edge, approximately 5/8 inch from the raw edge.	101 or 301 or 401	SSa-1	10-12	0/3 - 0/3 0/3 0/3 00/3		
	c. Trim off even, the bottom edge of crown and crown lining assemblies, to conform to the crown heights specified in 3.8.1.						
	d. Overedge stitch the lining and crown side pieces together around the bottom edge.	503 or 504 or 505	SSa-1	8-10	0/3 0/3 0/3 00/3 0/3 00/3		
8.	<u>Attach crown to brim.</u>						
	a. Position and center crown over brim using the chalk or stitch guide marks inserted in operation 4.1 and stitch all around its circumference simultaneously inserting and catching the identification label in the line of stitching at back of brim. The label shall finish with the top edge "(Name----)" segment facing towards the front of the hat frame, with all of the printing clearly visible when the sweatband is turned down. As an alternate, the label may be stitched to the brim before joining brim to the crown.	301 or 401	LSb-1 or LSa-1	12-14	0/3 0/3 0/3 00/3		

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL BOB/ LPR
	NOTE: To ensure proper appearance of finished hat, it is critical that the crown and brim be centered (front and back) before stitching them together.				
	b. Press to shape. Care shall be taken not to form sharp lines along the brim upturn area.				
	c. The finished crown shall conform to the measurements specified in 3.8.1.				
9.	<u>Attach snap fastener studs.</u> Attach and secure the four (4) snap fastener studs to the face side of the side crown pieces on guide marks indicated in 5.e. The lower edge of each stud shall finish 1/4 to 3/8 inch from the bottom finished edge of the crown. The snap fastener studs shall be positioned as follows:				
	1. One stud at center front.				
	2. One stud centered on each side.				
	3. One stud positioned 1 (+ 1/16) inch to left of back center.				
10.	<u>Attach sweatband.</u> a. Position and stitch the bottom woven edge of the sweatband to the inside of brim, 3/8 to 5/8 inch from the inner raw edge, simultaneously overlapping and folding under the overlapping end of sweatband approximately 1/2 inch. The ends of sweatband shall commence approximately 1-1/2 inches from either side of center back.	301 or SSa-1 401		12-14	0/3 0/3 0/3 00/3
	b. Wet sponge and hot press sweatband to shape.				
11.	<u>Make hat band.</u> a. Fold under one side of bias-cut band in the length direction approximately 3/8 inch, and stitch approximately 1/16 inch from the folded edge.	301 or EFa-1 401		12-14	0/3 0/3 0/3 00/3

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD		
					NDL	BOB/ LPR	
	b. Fold band approximately in half lengthwise, with the raw edge positioned approximately 1/16 inch in from the folded edge formed in sequence (a). Edge stitch on the face side, the unstitched top folded edge of band with a double row of 1/8 to 3/16 inch gauge stitching. The outer row of double stitching shall be 1/16 inch from the folded edge.	301 or 401	OSf-2	12-14	0/3 0/3	0/3 00/3	
	c. Steam and hot press band using the curved band shaper template. NOTE: Guide marks shall be made for positioning the four (4) snap fastener sockets on the band to correspond with snap fastener studs on the crown of the hat frame.						
	d. Secure snap fastener sockets according to guide marks. The sockets shall be inserted through the inner ply only.						
	e. Trim raw edge of band when necessary, and stitch a single row of stitching 1/8 to 3/16 inch from the single row of edge stitching formed in sequence (a).	301 or 401	-	12-14	0/3 0/3	0/3 00/3	
	f. Stitch ends of band together 3/16 to 1/4 inch from the raw edges. Press seam open and flat.	301 or 401	SSa-1	12-14	0/3 0/3	0/3 00/3	
	g. Center and align top straight edge of insignia mount evenly with top straight edge of band on back side and stitch with two (2) rows of stitching aligned with the two (2) rows of stitching on the band. The stitching shall extend beyond the side edges of mount by a minimum of 1/2 inch.	301	-	12-14	0/3	0/3	
	h. The finished band shall measure 1-1/4 to 1-3/8 inches in width.						
12.	Make band streamer.	301	EFa-1	12-14	0/3	0/3	
	a. Fold under one side of bias-cut band streamer in the length direction approximately 3/8 inch and stitch approximately 1/16 inch from the folded edge.						

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TABLE I - CONSTRUCTION OF HAT FRAMES

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	b. Fold band approximately in half lengthwise, with the raw edge positioned approximately 1/16 inch from the folded edge formed in sequence (a). Edge stitch on the face side, the unstitched folded edge of band with a double row of 1/8 to 3/16 inch gauge stitching. The outer row of double stitching shall be 1/16 inch from the folded edge.	301	OSf-1	12-14	0/3	0/3
	c. Trim raw edge of band streamer, when necessary and stitch a single row of stitching 1/8 to 3/16 inch from the single row of edge stitching formed in sequence (a).	301	-	12-14	0/3	0/3
	d. Press band streamer.					
	e. The finished band streamer shall measure 6 to 6-1/2 inches in length and 1-1/4 to 1-3/8 inches in width.					
13.	<u>Attach streamer to band.</u>					
	a. The finished streamer shall be doubled over the band at back center with the overlapping half of streamer angled diagonally towards the left side of hat as worn. Invisibly stitch the properly positioned streamer to the band.	Hand fell				
	b. The ends of the streamer shall be cut square and pinked and shall not protrude beyond the outer edge of brim when attached to crown.					
14.	<u>Finishing.</u>					
	a. Trim ends of stitching and remove all loose thread.					
	b. Remove all spots, stains, and shade tickets.					
	c. Prepare applicable type hat frame with hat covers for packaging and packing (see Section 5).					

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TABLE II - CONSTRUCTION OF HAT COVERS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
1.	<u>Cutting.</u> a. The component parts of the hat cover shall be cut in strict accordance with the contractor's patterns utilizing the government's guide patterns furnished which show size; shape; direction lines for cutting; and notches for proper assembly of the component parts. b. All component parts shall be cut from one piece of material. c. Cut the grosgrain ribbon 1/2 (+ 1/16) inch longer than the applicable head size.					
2.	<u>Replacement of defective components.</u> During the spreading, cutting, and manufacturing process, components having material defects or damages that are classified as defects in Section 4, shall be removed from production and replaced with non-defective and properly matched components.					
3.	<u>Shade and size marking.</u> All component parts shall be marked, ticketed, or bundled in accordance with 3.7.1.					
4.	<u>Make hat cover.</u> a. Join ends of side piece, face to face, and stitch 3/16 to 1/4 inch from the raw edge. Spread seam open and press flat.	301 or 401	SSz-3(a)	10-12	0/3 0/3 0/3 00/3	
	b. Double stitch 1/8 to 3/16 inch gauge, with the seam centered between the two rows of stitching.	301 or 401	SSz-3(b)	10-12	0/3 0/3 0/3 00/3	
	c. Join side piece to top piece, face to face, and stitch 3/16 to 1/4 inch from the raw edges. Spread seam open and press flat, with the side piece seam centered at center back length of top piece.	301 or 401	SSz-3(a)	10-12	0/3 0/3 0/3 00/3	
	d. Double stitch 1/8 to 3/16 inch gauge, with the seam centered between the two rows of stitching.	301 or 401	SSz-3(b)	10-12	0/3 0/3 0/3 00/3	

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TABLE II - CONSTRUCTION OF HAT COVERS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
	e. Join ends of sweatband approximately 1/4 inch from raw edges.	301 or 401	SSa-1	10-12	0/3 0/3 0/3 00/3	
	f. The joined ends of the sweatband may be spread open or turned to one side when the sweatband is attached to bottom open edge of side piece.					
	g. Fold under the bottom open edge of side piece 3/16 to 5/16 inch, and stitch one edge of sweatband to side piece around its entire inner circumference not less than 1/16 inch from the folded edge.	301	SSt-2	10-12	0/3 00/3	
	h. Stitch other edge of the sweatband to the side piece, simultaneously inserting and catching the length of one side of label in the closing seam (see 3.3.2.4). The label shall finish 1 (+ 1/2) inch from either side of center back seam of side piece, face side up with the printing clearly visible.	301	-	10-14	0/3 0/3	
5.	<u>Make buttonholes.</u> Make four horizontal buttonholes in each sweatband, straight style 7/8 (+ 1/16) inch in length, and with each buttonhole positioned 1/4 (+ 1/16) inch from the bottom edge of sweatband to the center of the buttonhole. All buttonholes shall be barred at each end and positioned as follows:	Buttonhole	-	45 per Buttonhole	00/3 00/3	
	1. One at the center front.					
	2. One centered on each side.					
	3. One positioned 1 (+ 1/8 inch) inch to left of center back seam.					
6.	<u>Finishing and Blocking.</u> a. Turn the hat cover to its finished position, with the seams and label on the inside.					
	b. Trim ends of stitching and remove all loose thread.					

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TABLE II - CONSTRUCTION OF HAT COVERS

NO.	OPERATION	STCH	SEAM/	STCH	THREAD	
		TYPE	STCH TYPE	IN	NDL BOB/	LPR
	c. Remove all spots, stains, and shade tickets.					
	d. Each hat cover shall be fitted over the correct size wooden blocks furnished by the contractor.					
	e. Insert each blocked hat cover into a heated steam oven for approximately one minute, with the temperature of the oven properly controlled.					
	f. Upon removal of the hat covers from the blocks, the hat covers shall be thoroughly air dried and free from wrinkles.					

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3.8 Finished measurements.

3.8.1 Hat frames. The sizes and measurements of the finished hat frames shall be in strict accordance with Table III. All measurements and tolerances are expressed in inches.

Table III - Finished Measurements

	SIZE									
Measurement	20	20-1/2	21	21-1/2	22	22-1/2	23	23-1/2	24	Tol
Width of brim:										
Center front	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	$\pm 1/8$
Center sides <u>1/</u>	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	$\pm 1/8$
Center back	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4	$\pm 1/8$
Center length of crown top	5-5/8	5-3/4	5-7/8	6	6-1/8	6-1/4	6-3/8	6-1/2	6-5/8	$\pm 1/8$
Center width of crown top	5	5-1/8	5-1/4	5-3/8	5-1/2	5-5/8	5-3/4	5-7/8	6	$\pm 1/8$
Height of crown:										
Center front	2-3/8	2-3/8	2-3/8	2-7/16	2-1/2	2-9/16	2-5/8	2-11/16	2-3/4	$\pm 1/8$
Center sides <u>2/</u>	2-1/2	2-1/2	2-1/2	2-9/16	2-5/8	2-11/16	2-3/4	2-13/16	2-7/8	$\pm 1/8$
Center back	2-5/8	2-5/8	2-5/8	2-11/16	2-3/4	2-13/16	2-7/8	2-15/16	3	$\pm 1/8$

1/ Measurement shall be taken at the center sides as indicated by the snap fastener studs, from the bottom edge of crown to the edge of brim. The difference between the two center side brim measurements shall not be more than 1/8 inch.

2/ Measurement shall be taken at the center sides as indicated by the snap fastener studs, from bottom edge of crown to joining seam at top of crown. The difference between the two center side crown measurements shall not be more than 1/8 inch.

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3.8.2 Hat covers. The sizes and measurements of the finished hat covers shall be as determined by the contractor.

3.9 Workmanship. The finished hat frames and hat covers shall conform to the quality of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels specified in 4.4.3.

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 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 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 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 acceptance of defective material.

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

1. First article inspection (see 4.3)
2. Quality conformance inspection (see 4.4)

4.3 First article inspection. When required, the first article submitted in accordance with 3.2, shall be inspected as specified in 4.4.2 and 4.4.3 for compliance with design, construction, workmanship, appearance and dimensional requirements.

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

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4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document. In addition, testing shall be performed on components and materials listed in Table IV in accordance with FED-STD-191, whenever applicable, and as specified. All tests reports shall contain the individual values utilized in expressing the final result. The lot size and sample size shall be as shown below, and the lot shall be unacceptable if one or more units fail to meet any of the requirements specified.

<u>Lot size</u>	<u>Sample size</u>
800 or less	2
801 through 22,000	3
22,001 and over	5

Table IV - Component Testing

<u>Component and lot size unit</u>	<u>Characteristic</u>	<u>Requirement paragraph</u>	<u>Test method</u>	<u>Sample unit for testing</u>
Felt(yds)	Mat'l Ident.			
	(fiber content and color)	3.3.1.4	1/	1-1/2 yards
	Weight	3.3.1.4	5041	
	Thickness	3.3.1.4	5030	
	Ball burst strength			
	Stiffness:			
	Initial	3.3.1.4	5202	
	After soaking	3.3.1.4	5202 2/	
	Non-fibrous material	3.3.1.4.1	2611	
Cloth, buckram (yds)	Mat'l Ident.	3.3.1.5	1/	1-1/2 yards
	Weave	3.3.1.5	1/	
	Yarn ply	3.3.1.5	1/	
	Water repellent finish	3.3.1.5	1/	
	Weight	3.3.1.5	1/	
	Yarn per inch	3.3.1.5	5050	
	Stiffness	3.3.1.5	5202	
Sweatband ribbon, hat frame (yds)	Mat'l Ident.	3.3.1.6	1/	1-1/2 yards
	Weave	3.3.1.6	1/	
	Color	3.3.1.6	1/	
	Width	3.3.1.6	1/	
	Weight	3.3.1.6	5041	
	Thread count	3.3.1.6	5050	
	pH	3.3.1.6	2811	
	Colorfastness:			
	Crocking	3.3.1.6	5651	
	Wet-dry cleaning	3.3.1.6	5622	
	Perspiration	3.3.1.6	5680	

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Table IV - Component Testing cont'd

Component and lot size unit	Characteristic	Requirement paragraph	Test method	Sample unit for testing
Stay material (sheets or sq. ft)	Mat'l Ident.	3.3.1.8	1/	
	Percent filler	3.3.1.8	1/	
	Thickness	3.3.1.8	7173 1/ 3/	
	Weight	3.3.1.8	110 1/ 3/	
Leatherette (yards)	Mat'l Ident.	3.3.1.9	1/	
	Coating Ident.	3.3.1.9	1/	
	Weight	3.3.1.9	5041 1/	
	Thickness	3.3.1.9	5030 1/	
	Colorfastness to:			
	Crocking	3.3.1.9	5651 1/	
Plastic liner (sheets or rolls)	Mat'l Ident.	3.3.1.10	1/	
	Thickness	3.3.1.10	1/	
	Crack resistance	3.3.1.10	1/	
Vinyl coated cloth (yds)	Weight	3.3.2.1.2	5041	2 yards
	Breaking strength	3.3.2.1.2	5100	
	Tearing strength	3.3.2.1.2	ASTM D1424	
	Adhesion	3.3.2.1.2	5970	
	Blocking	3.3.2.1.2	5872	
	Weathering	3.3.2.1.2	5804 4/	
	Cracking	3.3.2.1.2	5874 5/	
	Plasticizer loss	3.3.2.1.2	6081 6/	
Sweatband ribbon hat cover (yds)	Mat'l Ident.	3.3.2.2	1/	
	Type of weave	3.3.2.2	1/	
	Color	3.3.2.2	1/	
	Width	3.3.2.2	1/	
	Weight	3.3.2.2	5041 1/	
	Thread count	3.3.2.2	1/	
1/	A certificate of compliance shall be submitted and will be acceptable for the characteristics specified.			
2/	The felt shall be immersed in 80°F water for ten minutes. After drying and conditioning the stiffness reading shall not be less than the minimum specified.			
3/	As specified in UU-P-31			
4/	A single 3 by 6 inch specimen shall be used with coated side exposed.			
5/	Except that a five pound roller shall be used and a single test specimen shall be subjected to a temperature of -20 (+ 2)°F for two hours. The hydrostatic test shall not be performed.			
6/	FED-STD-406, except that 2 by 2 inch test specimens shall be heated at 220 ± 5°F for 24 hours.			

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4.4.1.1 In-process inspection. Inspection shall be made at any point or during any phase of the manufacturing process to determine if specified material and manufacturing operations are being adhered to. The Government reserves the right to exclude from consideration for acceptance any material for which inprocess inspection has indicated non-conformance.

4.4.2 Examination of the end item.

- (a) Hat frame ensemble. The finished hat frame ensemble as packaged in the unit set-up hat box (see 5.1.1.1 and 5.1.1.1.2), shall be examined and classified in accordance with 4.4.2.1 and 4.4.2.2. The applicable inspection levels and acceptable quality levels shall be as indicated in 4.4.3. The sample unit shall be comprised of the entire contents within a hat box. The lot size shall be expressed in terms of the sample unit.
- (b) Hat covers (procured separately). The finished hat covers as packaged in 5.1.1.1.3, shall be examined and classified in accordance with 4.4.2.3. The applicable inspection levels and acceptable quality levels shall be as indicated in 4.4.3. The sample unit shall be one finished hat cover. The lot size shall be expressed in terms of the sample unit. The Government will furnish hat frames in the appropriate sizes to be used during the examination for fit.
- (c) Outside - Inside. The terms "outside" and "inside" as used throughout this examination, are defined as follows:

Outside - Any part of the hat frame ensemble that is visible in the "as worn" position from a distance of approximately 2 feet at shoulder level. The ensemble shall be completely rotated.

Inside - Any part of the hat frame ensemble that is not visible in the "as worn" position from a distance of approximately 2 feet at shoulder level. The ensemble shall be completely rotated.

4.4.2.1 Visual examination. The finished hat frames, hat bands, and hat covers shall be examined for defects in design, material, construction, workmanship, dimension and fitting. The sample unit shall consist of one completely finished hat frame with band and two detachable hat covers.

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Defect	Classification			
	Major	Minor	A	B
I. <u>Material defects and workmanship damages</u>				
a. Any hole, cut or tear		X		
b. Any smash, misweave or broken yarn		X		
c. Any uncoated area, coating separation or tackiness		X		
d. Needle chew, loose yarn, snagged yarn, visible mend, woven in waste, cracked coating, blister, lump, grain indistinct or not uniform or permanent wrinkle or crease				
1. On outside brim (longest dimension in any direction)				
(a) up through 1/4 inch			X	
(b) more than 1/4 inch		X		
2. On outside, crown with band and cover (longest dimension in any direction):				
(a) up through 1/4 inch			X	
(b) more than 1/4 inch		X		
3. On inside (longest dimension in any direction)				
(a) 1/4 up through 1/2 inch				X
(b) more than 1/2 inch			X	
e. Knot and slub on outside <u>1/</u>			X	
<u>1/</u> Only a knot or slub which exceeds the limit shown on Sears Fabric Defect Scales (see 6.5), "C" for slubs and "B" for knots shall be scored.				
II <u>Shaded parts</u>				
Any part shaded or variation in shade within a part:				
1. On outside, brim			X	
2. On outside, crown with band and cover			X	
3. On inside				X

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		Classification	
Major Defect	Minor	A	B
<u>III Cleanness</u>			
a.	Spot or stain		
1.	On outside, brim (longest dimension in any direction)		
	(a) up through 1/4 inch		X
	(b) more than 1/4 inch	X	
2.	On outside, crown with band and cover (longest dimension in any direction)		
	- more than 1/4 inch	X	
3.	On inside (longest dimension in any direction)		
	(a) 1/4 up through 1/2 inch		X
	(b) more than 1/2 inch	X	
b.	Thread ends		
1.	Three or more on outside more than 1/4 inch	X	
2.	Five or more inside 1/2 inch or more		X
c.	One or more shade or size tickets not removed		X
<u>IV Blocking and Pressing</u>			
a.	Blocking and/or pressing omitted	X	
b.	Poorly blocked and/or pressed, i.e., evidence of gloss marks; shine; or wrinkles		X
<u>V Component and Assembly</u>			
a.	Any component part or operation omitted	X	
b.	Any component part not as specified	X	
c.	Any operation not performed as specified	X	
<u>VI Accuracy of seaming</u>			
1.	Seam irregular, pleated, twisted, puckered, or wavy	X	
2.	End of stitching, when not caught in another seam or stitching, not finished as specified		X
3.	End of a continuous line of stitching overlapped less than 1/2 inch		X

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Defect	Classification	
	Major	Minor A B
4. Stitching overlapping end of thread break less than 1/2 inch		X
5. Not specified color or varying shades of thread used on outside		X
b. <u>Gauge of stitching and seam allowance</u>		
1. Seam allowance not as specified by 1/16 inch or more (score only when the condition exists on more than 1/2 the length of seam)		X
2. Irregular or not within the range specified		X
c. <u>Open seam 1/</u>		
1. On outside:		
(a) up through 1/4 inch		X
(b) more than 1/4 inch	X	
2. On inside:		
(a) up through 1/4 inch		X
(b) more than 1/4 inch		X
<u>1/</u> Two or more broken skipped stitches on joining seams shall constitute an open seam. On double stitched seams, a seam is considered open when one or both stitches on the seam is open.		
d. <u>Runoff, skipped or broken stitch</u>		
1. Joining seam - use "Open seam" classification		
2. Top or edge stitching		
(a) up through 1/4 inch		X
(b) more than 1/4 inch	X	

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Defect	Classification	
	Major	Minor A B
<u>e. Raw edge</u>		
1. On outside, excluding the overlapped front and back seams of crown on hat frame		
(a) up through 1/4 inch		X
(b) more than 1/4 inch	X	
<u>f. Seam and stitch type</u>		
1. Not specified seam or stitch type		X
2. Any line of stitching omitted	X	
3. Any line of stitching not beginning or ending where specified (unless otherwise classified herein)		X
4. Looper thread of 401 or 101 stitch type on outside	X	
<u>g. Stitch tension</u>		
1. Loose tension resulting in a loose seam	X	
2. Loosely exposed loops of lower or top thread on top or edge stitching		X
3. Tight tension (stitches break when normal strain is applied in the direction of the seam or stitching)	X	
<u>h. Stitches per inch (score only when condition exists on more than 1/2 the length of seam):</u>		
1. more than the maximum specified		X
2. two or more less than the minimum specified	X	
<u>VII Crown lining</u>		
a. Twisted or loosely attached		X
b. Pleats not evenly distributed, as evident by excessive fullness in an area or throughout		X
<u>VIII Brim</u>		
a. Twisted or poorly shaped	X	
b. Finished turned up sides of the brim, when viewed from the center front of the hat frame, not even in height or not equidistant from the crown sides		

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Defect	Classification	
	Major	Minor A B
1. Seriously affecting appearance		X
2. Not seriously affecting appearance		X
IX <u>Sweatband, hat frame or hat cover as applicable</u>		
a. Twisted or loosely attached		X
b. Exposed below bottom edge of hat cover by more than 1/16 inch		X
c. Finished width of hat frame sweatband, less than 13/16 inch or more than 15/16 inch		X
d. Finished width of hat cover sweatband, less than 9/16 inch or more than 11/16 inch		X
X <u>Band mount, and streamer assembly</u>		
a. Twisted, puckered, or poorly shaped		X
b. Mount not attached to band as specified, i.e., top straight edge of mount not aligned evenly with the top edge of band		X
c. Mount not conforming to the configuration in the template mount guide		X
d. Finished mount on band when attached to the hat frame and viewed from the center front distorted; crooked, or not in alignment with center front of brim		
1. Seriously affecting appearance		X
2. Not seriously affecting appearance		X
e. Band streamer not securely stitched or incorrectly positioned to band		X
f. Ends of band streamer not cut square or protrude beyond outer edge of brim		X
g. Finished width of band less than 1-1/4 inches or more than 1-3/8 inches		X
h. Finished width of band streamers less than 1-1/4 inches or more than 1-3/8 inches		X
XI <u>Snap fasteners</u>		
a. Stud portion omitted, misplaced or insecurely attached on crown	X	
b. Socket portion omitted, misplaced or insecurely attached on band assembly	X	

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Defect	Classification	
	Major	Minor A B
<u>XII Buttonholes, hat cover</u>		
a. Any omitted, uncut, misplaced or stitching incomplete	X	
b. Broken stitch or two or more skipped stitches in two or more buttonholes		X
c. Tacking at ends omitted or not serving intended purpose		X
d. Stitches per buttonhole less than minimum specified:		
1. Two to four stitches		X
2. More than four stitches		X
e. Cut length less than 13/16 inch or more than 15/16 inch		X
<u>XIII Hat cover</u>		
a. Cover size not compatible with frame size	X	
b. Cover tight, causing the crown and/or sides of frame to buckle		X
c. Cover loose, causing a loose fit or puckering condition	X	
d. Buttonholes do not line up with snap fastener studs on frame causing twist or bulge	X	
<u>XIV Combination label, hat frame</u>		
a. Missing, incorrect, or illegible		X
b. Misplaced or insecurely attached		X
c. Size of label more than 1-3/4 inches in height and 2-3/4 inches in length		X
<u>XV Size ticket, hat cover</u>		
a. Missing, incorrect, or illegible		X
b. Misplaced or insecurely attached		X

4.4.2.2 Size measurements (hat frame). Any measurement deviating from the dimensions and tolerances in Table III shall be scored as a size measurement defect.

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4.4.2.3 Hat covers (procured separately). The appropriate number of hat covers, as determined from 4.4.3 shall be fit tested against the applicable size hat frames furnished by the Government and scored for defects noted below. The lot size shall be unacceptable if the total number of defects resulting from this examination exceeds the acceptable quality level specified in 4.4.3. Each size hat cover present in the lot, shall be represented in the sample selected.

Fit test of hat covers
(ONE CLASS OF DEFECT)

1. Cover size not compatible with frame size
2. Cover tight, causing the crown and/or sides of frame to buckle
3. Cover loose, causing a loose fit or puckering condition
4. Buttonholes do not line up with snap fastener studs on frame, causing twist or bulge

4.4.3 Inspection levels and acceptable quality levels. The inspection levels and acceptable quality levels (AQL's), expressed in terms of defects per hundred units shall be as follows:

	<u>AQL</u>	<u>Inspection Level</u>
For visual examination in 4.4.2.1		
Major defects	1.0	III
Major and Minor A (combined)	4.0	III
Total (Major, Minor A and Minor B, combined)	10.0	III
For dimensional examination in 4.4.2.2	4.0	S-3
For fit examination in 4.4.2.3	4.0	S-3

4.5 Examination of packaging requirements. An examination shall be made to determine that the packaging, packing, and marking complies with the Section 5 requirements of this specification. The sample size for this examination shall be five shipping containers fully prepared for delivery. Examination for the closure defects listed below shall be made, and shall be scored one point. The lot shall be unacceptable if one or more points are scored for this examination.

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<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted, incorrect, illegible, or improper size, location, sequence, or methods of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate application of components, such as incomplete closure of container flaps, loose stripping, inadequate stapling. Bulged or distorted container.
Content	Number of hat frames with hat covers (hat boxes) or hat covers when procured separately, more or less than required in the shipping container. Size shown on the hat box and/or shipping container not related to the specified size item being procured. <u>1/</u>

1/ For these defects, two shipping containers in the sample shall be examined.

4.6 Palletization examination. An examination shall be made to determine that the palletization complies with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one palletized unit load fully packaged. The lot size shall be the number of palletized unit loads in the end item inspected lot. The inspection level shall be S-1, and the AQL expressed in terms of defects per hundred units shall be 6.5 in accordance with MIL-STD-105.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirements.
Palletization	Pallet pattern not as specified. Interlocking of loads not as specified. Load not bonded with required straps as specified. Pallet not specified type or construction
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).

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5.1.1 Unit packaging.

5.1.1.1 Hat frame ensemble. Each finished type I, II, and III hat frame ensemble, consisting of the applicable hat frame with an attached type IV hat cover, a replacement hat cover, and the hat band, shall be prepared for packaging as follows:

- Each finished hat frame shall be wrapped with tissue paper around its crown and snugly against the sides of the brim.
- The replacement hat cover shall be folded to form a three part oval, with the two side pieces overlapping each other beneath the top piece of the cover.
- Insert the folded hat cover into a polyethylene film bag of the type specified in 5.1.1.3.

5.1.1.2 Hat box. The hat frame and individually packaged replacement hat cover shall be placed in a square hat box conforming to variety 1, group III, style IV (w/o double sidewalls), class K of PPP-B-566. The box lid shall conform to style VIII, type H of PPP-B-566. The square box lid shall be bleached white inside and printed black or navy blue with gold or yellow trim on the outside. The box shall be provided with a carrying cord made of two stands of gold color rayon yarn over a cotton core. The strands shall be twisted together to form a cord approximately 1/4 inch in diameter and 29 inches in length. The cord shall be laced through brass eyelets on each side of the box in a manner to form a carrying handle on one side, and to extend across the cover to the other side of the box in a manner that will prevent the cover from slipping off the box when carried. Each end of the cord shall be secured on the inside of the box by a small knot or by any other means which will permit the ends of the cord to be as flat as possible against the sides of the box (see 6.6 and Figures 6 and 7). As an alternate, the hat box and lid may be oval in shape and fabricated from chipboard that is white on the inside and covered on the outside with high gloss black or navy blue colored paper and trimmed with gold or yellow paper (see Figure 8).

The hat frame and individual packaged replacement hat cover shall be placed into the hat box as follows:

- Insert the polyethylene bagged hat cover into the hat box first.
- Position that hat frame over a snug-fitting cylindrical paperboard support inserted into the hat box, using additional tissue paper around the hat frame to prevent shifting in any direction. The cylindrical paperboard support shall be 3 (+ 1/16) inches in height, with the ends overlapped approximately 1/2 inch and secured by either taping; stapling; or any other mechanical means.

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5.1.1.3 Hat covers (when procured separately). Each type IV hat cover folded as specified in 5.1.1.1, shall be inserted into a snug-fitting, flat style, clear polyethylene film bag of 0.00125 inch thickness (\pm 25 percent thickness). As an alternate, the bag may be fabricated from polyethylene film tubing or sheeting. The polyethylene bag shall be formed with heat sealed seams that are straight, continuous and parallel to each other and the formed edges of the bag, and shall be not less than 1 inch greater in length than the hat cover. The final closure of the bag shall be heat sealed, with the heat seal made as close as possible to the open end. A 1/4 inch diameter hole shall be made at one corner of each polyethylene bag to allow excess air to escape.

5.1.1.4 Label, hat box. Each hat box shall have a round or oval shaped white pressure sensitive label securely affixed and centered at the narrow end of the box. The label shall be approximately 2 inches in diameter and it shall designate the size of the hat frame in black numerals not less than 1 inch in height.

5.1.2 Commercial. Hat frames with hat covers furnished as an ensemble or hat covers only when procured separately, shall be preserved to afford adequate protection against deterioration and physical damage during shipment from the supply source to the first receiving activity. The package and the quantity per package shall be the same as that normally used by the contractor for retail distribution.

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

5.2.1 Level A.

5.2.1.1 Hat frame ensemble. Twenty-four (24) hat boxes, containing one type and size hat preserved-packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, type SF, class weather-resistant, grade V2s, of PPP-B-636. Packages shall be packed flat, three in length, two in width, and four in depth. When the alternate oval shaped hat box is used the inside of each shipping container shall be fitted with three (3) box partitions conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. A partition shall be inserted between the first and second layer, second and third layer, and third and fourth layer. Inside dimensions of each container shall approximate 30 inches in length, 24 inches in width, and 23 inches in depth. Approximate dimensions are furnished as a guide only. 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 PPP-B-636, except that the inspection shall be in accordance with 4.5.

5.2.1.2 Hat covers (when procured separately). One hundred fifty (150) type IV hat covers of one size and class only, preserved-packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to type SF, class weather-resistant, grade V2s, size 1, of MIL-B-17757. Level A packages shall be packed uniformly throughout the shipping container. Closure requirements for the shipping container shall be as specified in the appendix of the box specification.

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5.2.2 Level B.

5.2.2.1 Hat frame ensemble. Twenty-four (24) hat boxes containing one type and size hat, preserved-packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, type CF (variety SW), or SF, class domestic, grade 275, of PPP-B-636. Packages shall be packaged flat, three in length, two in width and four in depth. When the alternate oval shaped hat box is used the inside of each shipping container shall be fitted with three (3) box partitions conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. A partition shall be inserted between the first and second layer, second and third layer, and third and fourth layer. Inside dimensions of each container shall approximate 30 inches in length, 24 inches in width, and 23 inches in depth. Approximate dimensions are furnished as a guide only. 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 4.5.

5.2.2.2 Hat covers (when procured separately). One hundred fifty (150) type IV hat covers of one size and class only, preserved-packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to type CF, class domestic, grade 275, size 1, of MIL-B-17757. Level A packages shall be packed uniformly throughout the shipping container. Closure requirements for the shipping container shall be as specified in the appendix of the box specification.

5.2.3 Level C. Hat frame ensembles or type IV hat covers (procured separately) preserved-packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. The quantity per shipping container shall be the same as that normally used by the contractor for retail distribution. Containers shall be in accordance with US Postal Service Manual, Uniform Freight Classification Rules, or National Motor Freight Classification Rules as applicable.

* 5.3 Marking. In addition to any special marking required by the contract or order, unit packs, intermediate or exterior containers and palletized unit loads shall be marked in accordance with MIL-STD-129.

* 5.4 Palletization. When specified (see 6.2) item packed as specified shall be palletized on a 4-way entry pallet in accordance with load type 1A of MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D and F or G. Pallet pattern shall be in accordance with the appendix of MIL-STD-147. The pallet shall be 4-way, type IV; type V, class 1, size 2; or type VIII, fabricated from wood group I, II, III or IV, grade A of NN-P-71, or 4-way, style 1, size A, type I, class 1 fabricated from wood groups specified in MIL-P-15011. Interlocking of loads shall be effected by reversing the pattern of each course. If the container is of a size which does not conform to any of the patterns specified in MIL-STD-147, the pallet pattern used shall be approved by the contracting officer.

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*5.5 MIL-STD-2073. When specified (see 6.2) Preservation and Packing shall be in accordance with MIL-STD-2073-1 and MIL-STD-2073-2.

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 hat frames and hat covers are intended for use by female personnel of the Coast Guard.

6.2 Acquisition data. Acquisition documents should specify the following:

- a. Title, number, and date of specification.
- * b. Type, class and size required (see 1.2)
- * c. When first article inspection is required, (see 3.2), the item will be tested and should be a first article sample. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, quantity, and testing and approval of the first article.
- * d. Issue of DODISS to be cited in the solicitation, and if required, the specified issue of individual documents referenced (see 2.1.1 and 2.2).
- e. Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- * f. When palletization is required (see 5.4).
- * g. When all packaging data is to be found in MIL-STD-2073-1 and MIL-STD-2073-2 (see 5.5).

6.3 Samples and patterns. For access to samples and patterns, address the procuring activity issuing the invitation for bids.

*6.4 Recycled materials. It is encouraged that recycled materials be used when practical as long as it meets the requirements of this specification.

6.5 Equal item. Prior to the use of an "or equal" item, the contractor shall submit the item with supporting data to the contracting officer for subsequent approval or disapproval.

6.6 Fabric defect scales. Sears Fabric Defect Replica Kits are available from:

Sears, Roebuck and Company
Department 817, (ATTN: BSC 23-29)
Sears Tower
Chicago, IL 60684

6.7 Square hat box. A square hat box and lid conforming to the requirements of 5.1.1.2 may be obtained from Triangle Container Corp, Erie Ave and E. Street, Philadelphia, PA 19134 under Style No. S-316. Other suppliers of this hat box may gain initial approval of their item by submitting a sample to Navy Clothing and Textile Research Facility, 21 Strathmore Road, Natick, MA 01760.

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* 6.8 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

6.9 Subject term (key word) listing.

Cloth, Twill polyester/cotton
Crown cover
Frame
Mount and band
Sweatband, grosgrain

Custodian:
Navy - NU

Preparing Activity:
Navy - NU

Review activities:
Navy - CG
DLA-CT

Project 8410-N702

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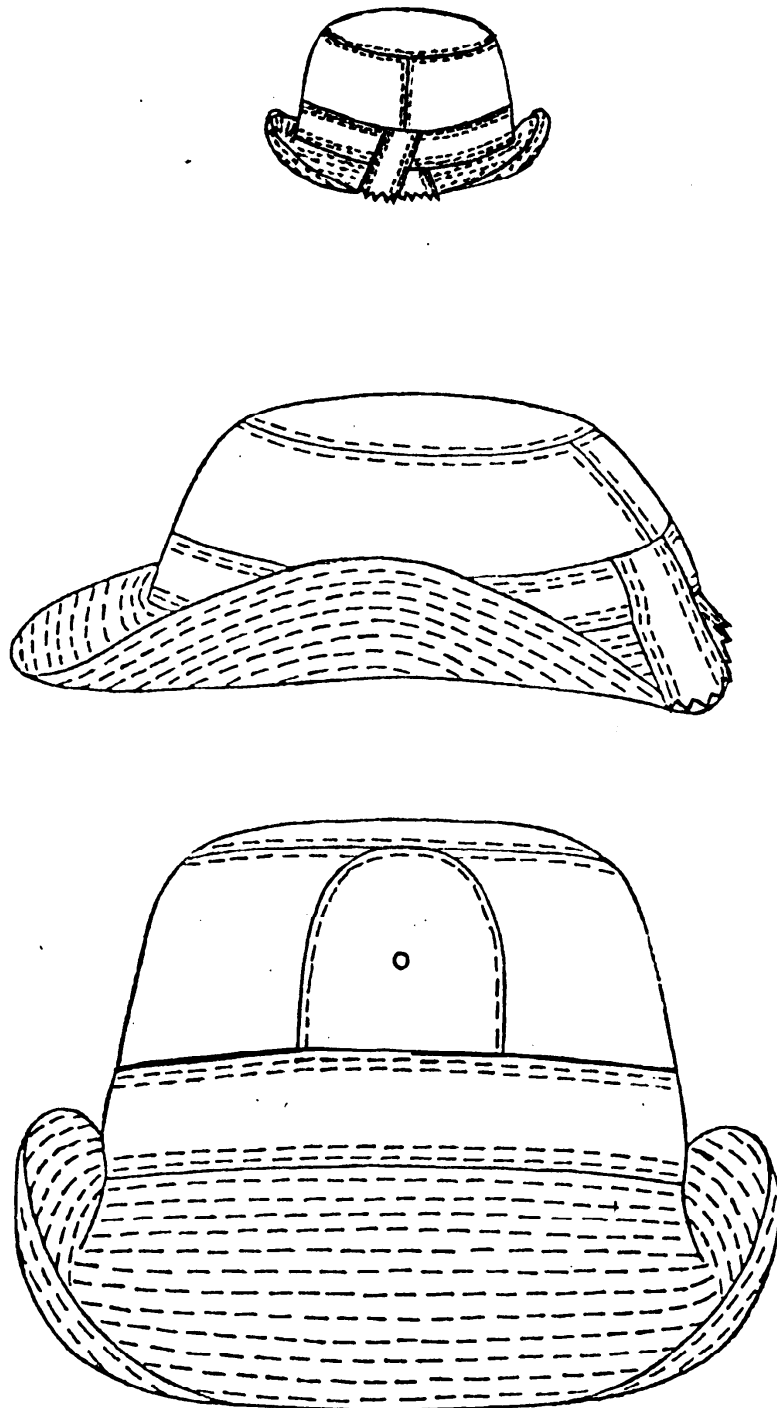


FIGURE - 1
HAT, COMBINATION, WOMAN'S (TYPE I HATBAND)

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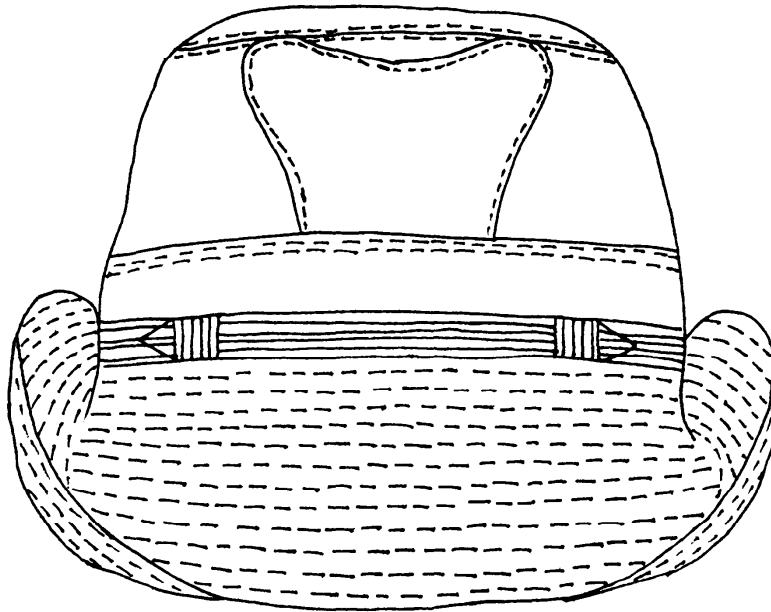
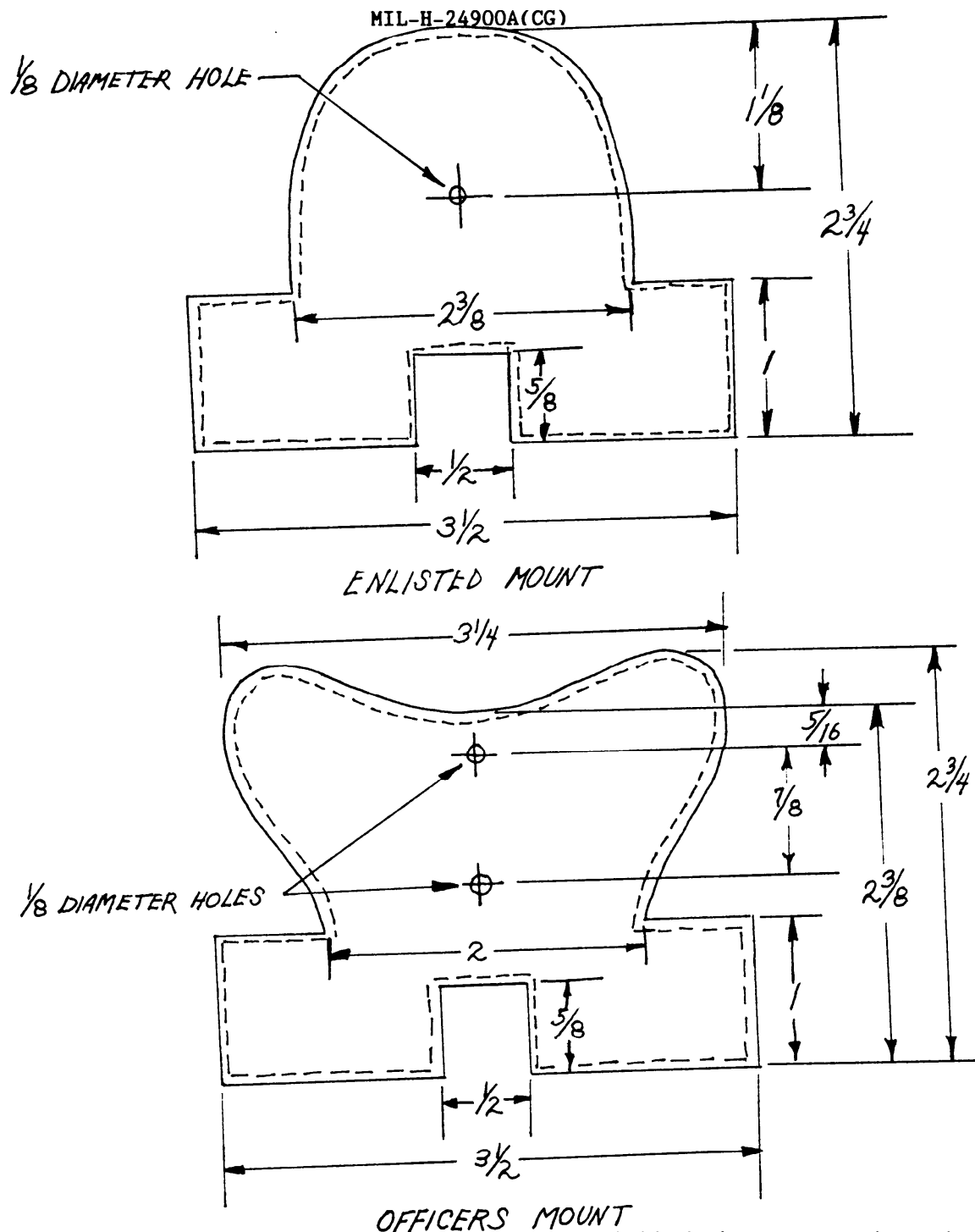


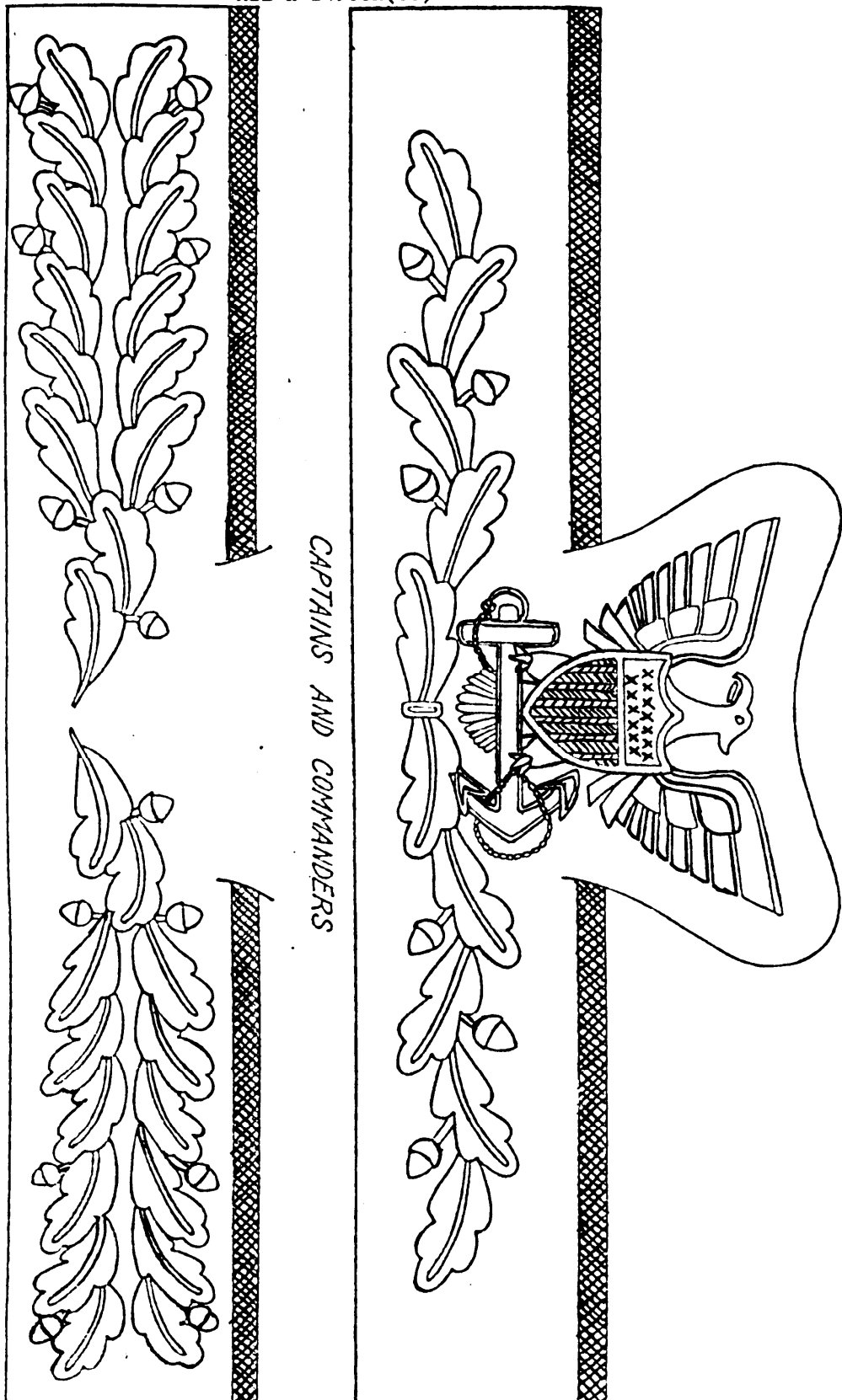
FIGURE - 2
HAT, COMBINATION, WOMAN'S (TYPE II HATBAND)



NOTE: Measurements in inches - Tolerance $\pm \frac{1}{16}$ inch, except that the tolerance for positioning insignia attachment holes shall be $\pm \frac{1}{32}$ inch

FIGURE - 3
INSIGNIA MOUNTS

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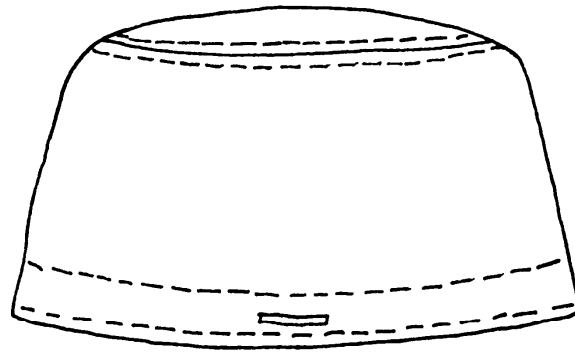


CAPTAINS AND COMMANDERS

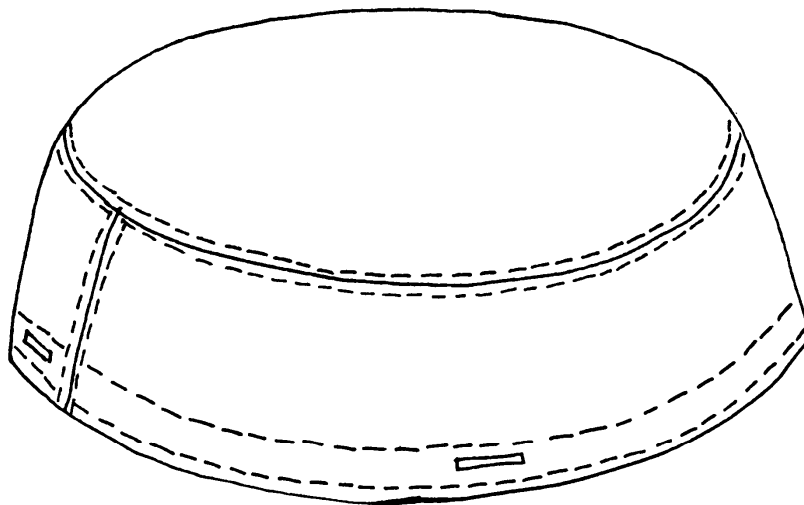
FLAG OFFICERS

FIGURE - 4
HAT BAND ORNAMENTATION FOR OFFICERS

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FRONT



BACK AND SIDE

FIGURE - 5
HAT COVER

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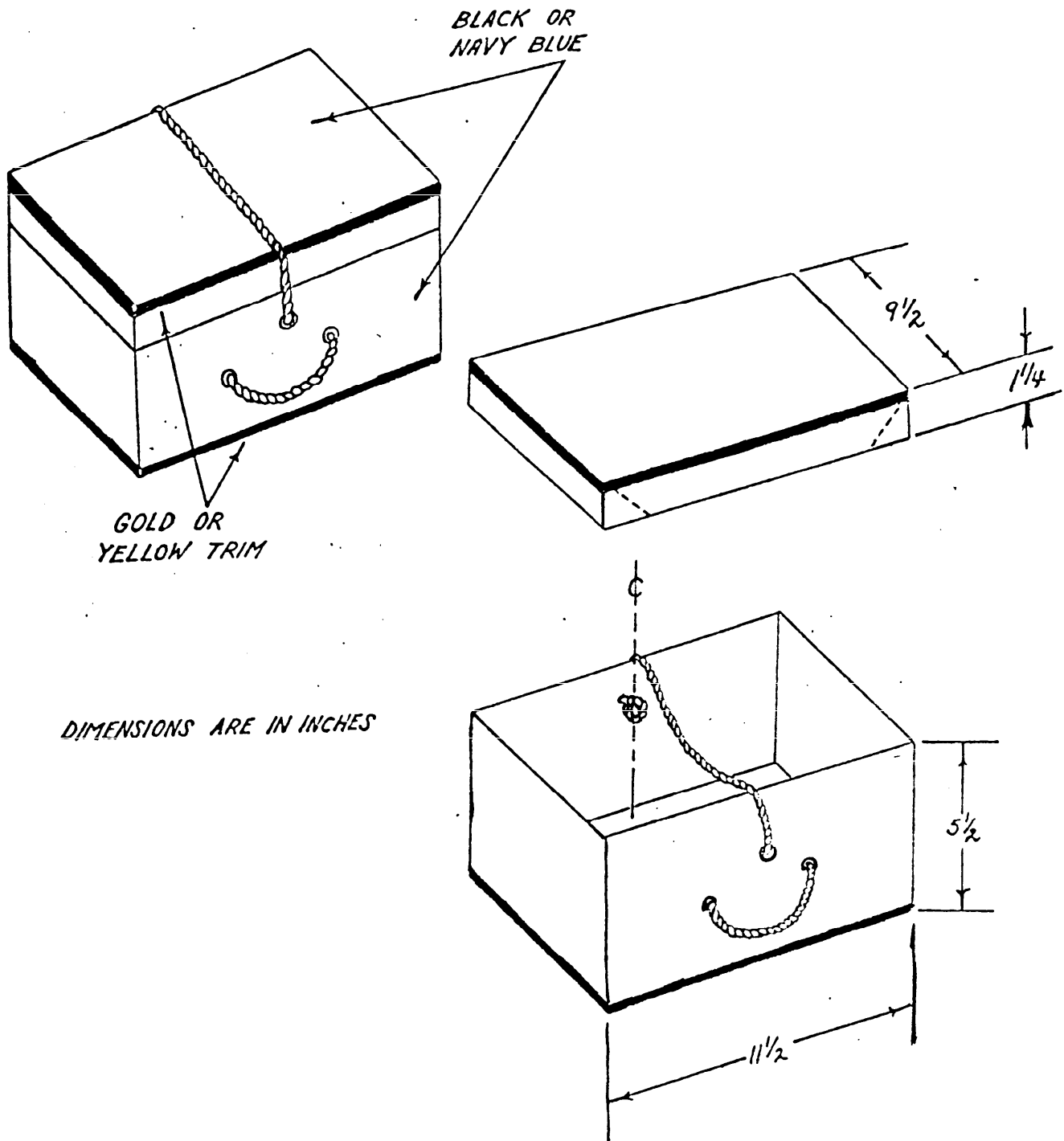


FIGURE - 6
HAT BOX AND COVER

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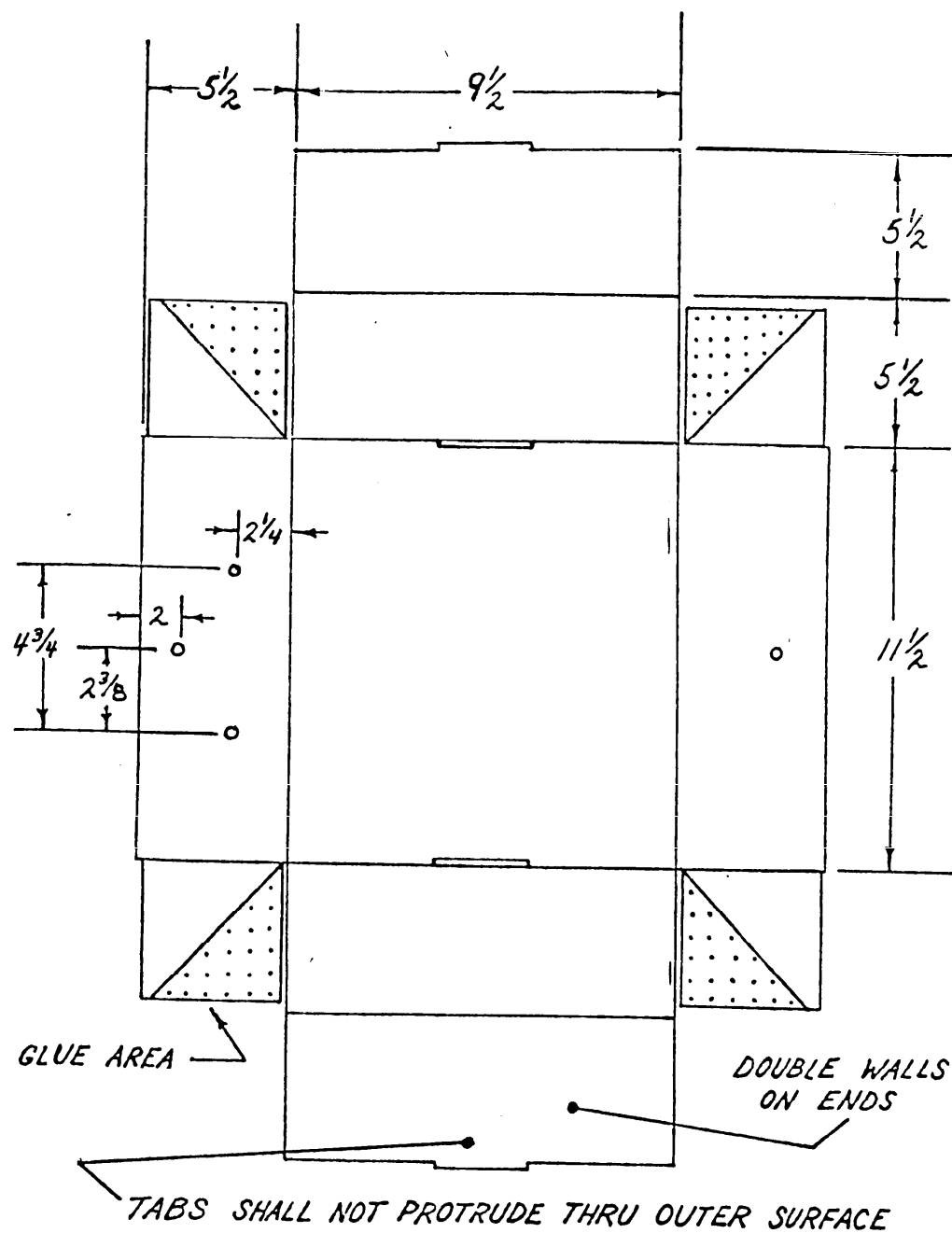


FIGURE - 7
HAT BOX, KNOCKED DOWN FLAT (KDF)

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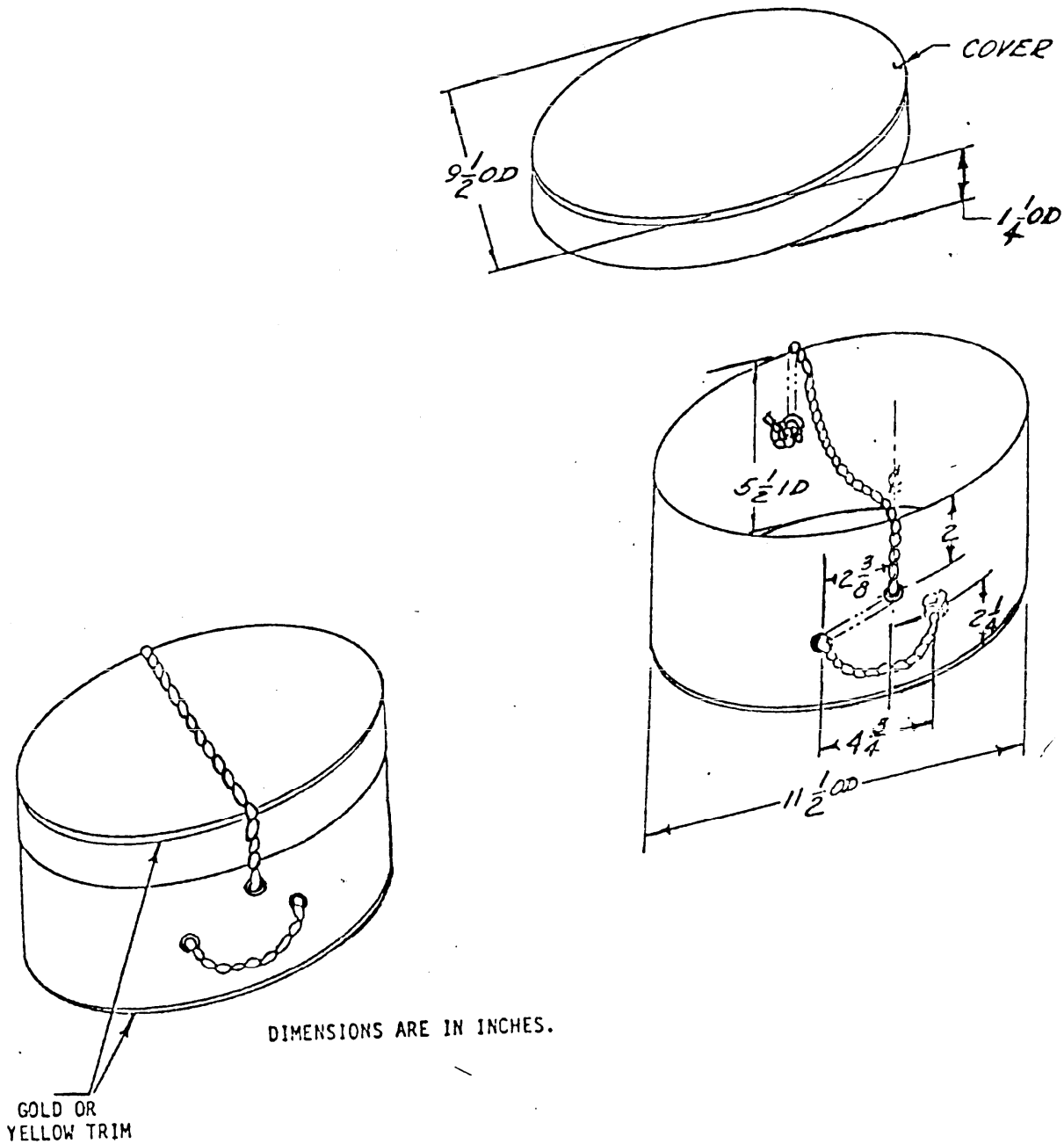


FIGURE - 8
HAT BOX AND COVER (ALTERNATE)