NCTRF PD 05-06B 20 June 2007 SUPERSEDING NCTRF PD 05-06A 18 April 2006

PURCHASE DESCRIPTION

CAP, GARRISON, SERVICE

1. SCOPE

- 1.1 This purchase description covers the requirements for a lined, gender neutral, service garrison cap for use by US Navy personnel.
- 1.2 <u>Classification</u>. The garrison cap is available in one type of dual sizing for men and women as follows (see 6.2):

Men's	Women's
6-3/8	20
6-1/2	20-1/2
6-5/8	21
6-3/4	21-1/4
6-7/8	21-1/2
7	22
7-1/8	22-1/2
7-1/4	22-3/4
7-3/8	23
7-1/2	23-1/2
7-5/8	24
7-3/4	24-1/4
7-7/8	24-1/2
8	25
8-1/8	25-1/2
8-1/4	25-3/4
8-3/8	26
8-1/2	26-1/2

NCTRF CAGE CODE: 32263

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 or 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 or 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 <u>Specifications</u>, standards, and <u>handbooks</u>. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the solicitation or contract.

COMMERCIAL ITEM DESCRIPTIONS

A-A-50186	- Cloth, Buckram, Woven and Non-woven
A-A-50199	- Thread, Polyester Core, Cotton- or Polyester-Covered
A-A-52106	- Cloth, Twill or Plain Weave, Polyester and Polyester Blend

DEPARTMENT OF DEFENSE SPECIFICATIONS

CCC-C-461 - Cloth, Twill, Uniform Cotton

MIL-DTL-32075 - Label; for Clothing, Equipage and Tentage (General Use)

DEPARTMENT OF DEFENSE STANDARD

MIL-STD-901 – Provisions for Evaluating Quality of Caps, Garrison, Men's

(Copies of these documents are available online at http://assist.daps.dla.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 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 specified in the solicitation or contract.

NAVY CLOTHING AND TEXTILE RESEARCH FACILITY

NCTRF PD 04-06 - Cloth, Tropical: Polyester and Wool

(Copies of this document is available at Defense Supply Center Philadelphia, 700 Robbins Avenue, Philadelphia PA 19111 or the procuring activity, see 6.4.)

2.3 <u>Non-Government publications</u>. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN SOCIETY FOR TESTING AND MATERIALS

ASTM D3776 – Mass Per Unit Area (Weight) of Fabric

ASTM D2724 - Standard Test Methods for Bonded, Fused, and Laminated Apparel Fabrics

ASTM D6193 – Standard Practice for Stitches and Seams

(Copies should be obtained online at http://www.astm.org or from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959).

AMERICAN ASSOCIATION OF TEXTILES CHEMISTS AND COLORISTS (AATCC)

AATCC 158 – Dimensional Changes on Drycleaning in Perchloroethylene: Machine Method

(Copies of these documents are available online at http://www.aatcc.org or AATCC, P.O. Box 12215, Research Triangle Park, NC 27709.)

AMERICAN SOCIETY FOR QUALITY (ASQ)

ASQ Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Copies of this document are available online at http://www.asq.org or from the American Society for Quality, P.O. Box 3005, Milwaukee, WI 53201-3005.)

2.4 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

- 3.1 <u>First article</u>. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.
- 3.2 <u>Design</u>. The cap shall be of a garrison style, having a three piece crown and one piece curtain turned up on the outside of the cap with the tapered ends crossing at the front. Garrison cap shall have a laminated back on the base material, an interlining and polyester lining on the side crown and shall have a fabric sweatband. The curtain overlap shall be on the right side as worn (see Figure 1).
- 3.2.1 <u>Design details</u>. The side crown pieces and the sweatband shall be interlined with buckram. The sweatband shall be constructed with the edges turned under approximately 3/8 inch and

finish in the cap no less than 1 inch or more than 1¼ inches wide (the length will vary with the size of the cap). The sweatband shall be stitched to the lower edge of the cap with the ends overlapping 1 (+1/4) inch at the back. The seam shall not finish more than 1-1/2 inches to the right or left of the center back seam of cap and the ends shall not finish on the back seam. The sweatband shall finish 1/8 to 3/16 inch from folded edge of curtain. The sweatband overlap shall be joined with a zigzag (304 stitch type) and shall be reinforced on the underside. The sweatband fabric and interlining shall be cut on a bias and may be pre-cut and pre-folded to specified width and put on rolls. As an alternate, the area of joining of the pre-cut and pre-folded sweatband fabric that is placed on rolls shall be diagonal with the raw edges turned to the inside. The top crown (gusset) dart shall be stitched 3/8 inch deep at center, along the length of the gusset tapering to finish 3/8 to ½ inch from each pointed end. After stitching the dart along the length of the gusset, the finished top crown (gusset) piece shall measure 1-1/4 (- 1/8, + 1/4) inch wide at center (see Figure 1, section B-B), when measured from gusset seam to gusset seam. The lining pieces to side crown pieces around the bottom edge and the outer edge and bottom edges of curtain shall be overedged. The top edge of the curtain shall be double needle finished with a 1/8 inch gauge. The finished edge of the top crown gusset shall be edgestitched. The bottom edge of the buckram shall be stay stitched to the side crown.

3.3 Materials.

- 3.3.1 <u>Basic material</u>. The basic material for the cap shall be a tropical, polyester and wool blend, 10.0 ± 0.5) ounces per linear yard, shade Blue 3346 conforming to Class 1 of NCTRF PD 04-06.
- 3.3.2 <u>Laminate interlining</u>. The interlining for the cap shall be polyester foam with nylon tricot laminate, having a weight of 0.6 to 1 ounce per square yard, and shall be pre-bonded to the basic material. Under no circumstances shall the dry heat temperature of the lamination process exceed $315^{\circ}F \pm 6^{\circ}F$ when applying the foam/knit to the basic material. The color of the nylon tricot shall be black and the color of the foam shall be charcoal or black.
- 3.3.2.1 <u>Interlining requirements</u>. The foam/knit laminate, after being bonded to the basic material, shall requirements stated in Table I when tested as in Table VIII.

Table I - <u>Laminated component physical requirements</u>.

Characteristic	Test Method
Appearance of laminated sample:	
Initial	No evidence of bubbling, color change or bleed-through
After 5 dry cleanings	No evidence of bubbling, color change or bleed-through
Bond strength	
Initial	12 oz/inch width (min.)

- 3.3.3 <u>Buckram</u>. The side crown and the sweatband shall be interlined with buckram, Type III conforming to A-A-50186.
- 3.3.4 <u>Sweatband</u>. The sweatband shall conform to polyester twill, black, Class 2 conforming to A-A-52106, except it shall contain a minimum of 35% cotton and the remainder shall be

polyester. As an alternate, cotton uniform twill cloth, black, 8 ounce, conforming to Type III of CCC-C-461 may be used.

- 3.3.5 <u>Lining</u>. The lining for the side crown shall be in accordance with Class 1 of A-A-52106. The fabric shall be 100% Polyester and the color shall be black.
- 3.3.6 <u>Thread</u>. The thread shall conform to Type I, A-A-50199, Ticket No. 70, 2 ply. The thread color shall be black or match the basic fabric.

3.3.7 <u>Labels</u>.

3.3.7.1 Size, combination, identification, personnel and care label. Each garrison cap shall have a combination identification, personal and care label conforming to conforming to Type VI, Classes 4 and 10 of MIL-DTL-32075. The size of the label shall be not more than 1-1/2 inches in height and 2-1/2 in length. The sewn in label shall be located on the left side lining piece, approximately 2 inches from the bottom edge and center back seam of the lining piece. The bottom edge of the label shall finish parallel to the bottom edge of the lining. All of the printing shall be legible throughout the expected life of the garrison cap. The label shall bear the following inscription:

SIZE: Men's Women's

7 22 (Example)

NAME:

SERVICE NO:

CAP, GARRISON, SERVICE

CONTRACT NO: SPO100-00-C-0000 (EXAMPLE)

NAME OF CONTRACTOR:

NAME OF MANUFACTURER: (IF OTHER THAN CONTRACTOR)

NSN: 8405-00-000-0000 (Example)

CARE INSTRUCTIONS DRY CLEAN ONLY

- 3.3.7.2 <u>Bar code label.</u> Each item shall be individually bar-coded with a paper tag for personal clothing items. The paper used for the tags shall be a standard bleached sulfate having a basis weight of 100 pounds with a smooth finish to accept thermal transfer and direct printing. The tags shall have a hole and be attached to each item by a fastener, clearly legible and readable by scanner. The bar code element shall be a 13 digit national stock number (NSN). There shall be a twelve digit Universal Product Code (UPC) assigned for all NSNs by the Government. The initials "UPC" shall appear beneath code. The bar codes for NSN and UPC shall be a medium to high density and shall be located so that they are completely visible on the item when it is folded and or packaged as specified. The label's location shall cause no damage to the item.
- 3.3.8 <u>Recycled, recovered, or environmentally preferable materials</u>. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided

that the materials meet or exceed the operational and maintenance requirements, and promote economically advantageous life cycle costs.

3.4 Construction.

- 3.4.1 <u>Patterns.</u> Standard patterns, to be used to cut working patterns, will be furnished by the Government (see 6.2). The working patterns shall be identical to the Government patterns. Neither the Government patterns nor the working patterns shall be altered in any way, except that additional notches for use during construction are permitted on the working patterns. Minor modifications are permitted where necessary when using automatic equipment or manufacturing processes. These modifications shall not alter the dimensional, serviceability or appearance requirements cited in the specification. Government patterns allow for seam allowance of ½ inch.
- 3.4.1.1 <u>List of pattern parts</u>. The component parts of the garrison cap shall be cut from the materials as specified and in accordance with the number of parts required for the manufacturing process as specified. There is no pattern piece for the sweatband interlining buckram.

Table II - <u>List of pattern parts</u>.

PIECE NAME SPEC NAME		CUT#	
LAMINATED BASIC	MATERIAL		
SIDECROWN	Side crown	2	
TOPCROWN	Top crown (gusset)	1	
CURTAIN	Curtain	1	
<u>LINING</u>			
CROWNLIN	Side crown lining	2	
INTERLINING/BUCK	<u>KRAM</u>		
SDCROWNIN	Side crown	2	
TEMPLATES			
TEMPLATE	Side Crown	Template	
	2100 010 111	- ompiaco	

3.4.2 Stitches, seams and stitching. Stitch, seam and stitching types shall conform to the requirements of ASTM D6193. Seam allowances shall be maintained throughout the cap with seams sewn so that no raw edges, runoffs, twists, pleats, puckers or open seams result. All seams shall start and finish evenly. The guides and knives on the safety stitch machine shall be set to trim only the raveled ends of the fabric. All thread ends shall be trimmed to 1/8 inch maximum and all loose thread shall be removed from the cap. Raw edges shall not be acceptable anywhere on the cap, except the sweatband. The 301 stitch type edgestitching and topstitching shall be 12-14 stitches per inch. All other 301 or 401stitch types shall have 10-12 stitches per inch. For overedge stitching, the stitches per inch shall have 8-12 stitches per inch. Edgestitching shall be 1/16 inch from the edge.

- 3.4.2.1 <u>Thread breaks and ends of seams</u>. Thread breaks and ends of stitching not caught in another line of stitching shall be backstitched at least 1/2 inch. The ends of a continuous line of stitching (except label) shall be overlapped not less than 1/2 inch. The ends of the label stitching shall be overlapped not less than 3 stitches. Thread breaks (all stitch types) shall be secured by stitching back of break not less than 1/2 inch. Skipped stitches or thread breaks (401 stitch type) may be repaired by using 301 stitch type.
- 3.5 <u>Pressing</u>. The cap shall be pressed smooth and flat with a heated pressing machine or a heated steam iron form a crease on the bottom edge. The entire cap may be touched up as necessary using steam, to remove all wrinkles and unwanted creases. All gloss and pressing impressions by using live steam.
- 3.6 <u>Shade and size marking.</u> The component parts of the cap shall be marked or ticketed to insure a uniform shade and size throughout the item. Any method may be used except those listed below. The use of ink pad numbering machine, rubber stamp or pencil is allowed, provided the numbering does not show on the outside of the item and wherever possible, is covered by the seam allowance.
 - (1) Corrosive metal fastening devices
 - (2) Sew-on shade tickets
 - (3) Adhesive type tickets, which discolor or adhere to the material upon removal of tickets.
- 3.7 <u>Sizes and measurements.</u> The finished caps shall conform to the measurements as shown in Table III. All measurements and tolerances are expressed in inches.

Table III – Sizes and Finished Measurements

			Cro	wn Height		Curtain	Height	
Size		A	В	С	D	E	F	G
Men's	Women's	Inside Circumference	Front	Center	Back	Front	Back	Length of Overlap
6 3/8	20	20-1/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
6 1/2	20-1/2	20-1/2	3 1/4	4 1/2	4	2 ½	3	4 5/8
6 5/8	21	20-7/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
6 3/4	21-1/4	21-1/4	3 1/4	4 1/2	4	2 ½	3	4 5/8
6 7/8	21-1/2	21-5/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
7	22	22	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 1/8	22-1/2	22-3/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 1/4	22-3/4	22-3/4	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 3/8	23	23-1/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 ½	23-1/2	23-1/2	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 5/8	24	23-7/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 3/4	24-1/4	24-1/4	3 1/4	4 1/2	4	2 ½	3	4 5/8
7 7/8	24-1/2	24-5/8	3 1/4	4 1/2	4	2 ½	3	4 5/8
8	25	25	3 1/4	4 1/2	4	2 ½	3	4 5/8
8 1/8	25-1/2	25-1/2	3 1/4	4 1/2	4	2 ½	3	4 5/8
8 1/4	25-3/4	25-3/4	3 1/4	4 1/2	4	2 ½	3	4 5/8
8 3/8	26	26	3 1/4	4 1/2	4	2 ½	3	4 5/8
8 ½	26-1/2	26-1/2	3 1/4	4 1/2	4	2 ½	3	4 5/8
	Tolerance	+ ¼, -1/8	+/- 1/8	+/- 1/4	+/- 1/4	+/- 1/8	+/- 1/8	+/- 1/4

- A. <u>Inside Circumference</u>: Twice the measurement taken from bottom of cap, inside folded edge to inside folded edge.
- B. <u>Crown Height Front:</u> Measurement shall be taken from bottom folded edge of curtain to the juncture of side crown and top crown (gusset) at center front.
- C. <u>Crown Height Center</u>: Measurement shall be taken at center of cap, from bottom folded edge of curtain to top edge of side crown.
- D. <u>Crown Height Back</u>: Measurement shall be taken at bottom folded edge of curtain to junction of side crown and top crown (gusset) at center back.
- E. Curtain Height Front: Measurement shall be taken from bottom folded edge of curtain to top

edge of curtain at center front.

- F. <u>Curtain Height Back:</u> Measurement shall be taken from bottom folded edge of curtain to top edge of curtain at center back.
- G. <u>Length of Overlap</u>: Measurement shall be taken from base of overlap to folded edge of curtain at the center front.
- 3.8 <u>Workmanship.</u> The finished caps shall be uniform in quality and free from defects that adversely affect form, fit, or function and those specified in MIL-STD-901. The occurrence of defects shall not exceed the applicable point value specified in MIL-STD-901.

4. QUALITY ASSURANCE PROVISIONS

- 4.1 <u>Classification of inspection</u>. The inspection requirements specified herein are classified as follows:
 - 1. First article inspection (see 4.2).
 - 2. Conformance inspection (see 4.3).
- 4.2 <u>First article inspection</u>. First article inspection shall consist of the examinations and tests specified in Table IV. The first article inspection shall be unacceptable if the requirements in Table IV are not met.
- 4.2.1 <u>First article samples</u>. Unless otherwise specified in the procurement document, first article samples shall be provided. The sample size will be specified in the procurement document. The sample unit shall be one garrison cap and the lot shall be expressed in units of garrison caps.

Table IV - First article inspection.

	Requirement	
Inspection	Paragraph	Verification
Materials and components examinations	3.3.1, 3.3.2, 3.3.2.1,	4.4.1 and
	3.3.3, 3.3.4, 3.3.5, 3.3.6,	Table VI,
	3.3.7	Table VII,
		Table VIII
In process inspection		
Visual and dimensional examinations	3.2, 3.4.2, 3.4.2.1, 3.5,	4.4.2, 4.4.3
	3.6, 3.7, 3.8	and 4.4.4
Laminated component	3.3.2, 3.3.2.1	4.4.1
End item inspections:		
Visual examination	3.2, 3.4.2, 3.4.2,1, 3.5,	4.4.3
	3.6, 3.8	
Dimensional examination	3.7	4.4.4

4.3 Conformance inspection. Conformance inspection shall consist of the examinations and tests

specified in Table V. The presence of any nonconformance to Table V shall be cause to reject any production lot.

Table V - Conformance inspection.

	Requirement	
Inspection	Paragraph	Verification
In process inspection		
Visual and dimensional examinations	3.2, 3.4.2, 3.4.2.1, 3.5,	4.4.2, 4.4.3,
	3.6, 3.7	4.4.4
Laminated component	3.3.2, 3.3.2.1	
_		4.4.1
End item inspection:		
Visual examination	3.2, 3.4.2, 3.4.2,1, 3.5,	4.4.3
	3.6, 3.7	
Dimensional examination	3.7	4.4.4

- 4.3.1 <u>Conformance inspection samples</u>. Sampling for conformance inspection shall be performed in accordance with ASQ Z1.4. The sample shall be one garrison cap and the lot shall be expressed in units of garrison caps.
- 4.4 Methods of inspection.
- 4.4.1 <u>Material and component verification</u>. Materials and components shall be verified (see 4.2) in accordance with the requirements of Table VI.

Table VI - Material and component verification

Component	Requirement paragraph	Verification <u>1</u> /
Basic material	3.3.1	NCTRF PD 04-06
Laminate interlining	3.3.2.1	4.4.1.1
Buckram	3.3.3	A-A-50186
Sweatband and	3.3.4	A-A-52106 or
alternate		CCC-C-461
Lining	3.3.5	A-A-52106
Thread	3.3.6	A-A-50199
Labels	3.3.7	MIL-DTL-32075

- $\underline{1}$ / The material or component shall be evaluated according to the test methods and requirements in its respective document.
- 4.4.1.1 <u>Laminate interlining conformance</u>. The laminate cited under 3.3.2.1 shall be verified in accordance with the requirements of Table VII.

Table VII - <u>Laminate component inspections</u>

Characteristic	Reference	Verification
Color	3.3.2	Visual <u>1</u> /
Weight	3.3.2	ASTM D3776
Bond Strength		
Initial	3.3.2.1	ASTM D2724 <u>2</u> /
Appearance <u>3</u> /		
Initial	3.3.2.1	Visual
After 5 dry cleaning	3.3.2.1	Visual, AATCC 158 <u>3</u> /

- $\underline{1}$ / One sample shall be visually examined for conformance. The results shall be reported as pass or fail.
- 2/ The laminated sample shall be accepted if the laminate either splits from itself rather than separate from the outer shell material or if it begins to separate from the outer shell material higher than the minimum peel strength and then splits from itself.
- $\underline{3}$ / The samples shall be visually examined for conformance. The results shall be reported as pass or fail.
- 4.4.2 <u>In process inspection</u>. Visual and dimensional examinations shall be made at any point or during any phase of the manufacturing process to determine whether construction details which cannot be examined in the finished product are in accordance with requirements specified in Section 3. Materials and components, which can be classified as having defects in accordance with MIL-STD-901, shall be removed from production.
- 4.4.3 <u>Visual examination</u>. The end item shall be visually examined for compliance to 3.2, 3.2.1, 3.4.2, 3.4.2.1, 3.5, and 3.7. The cap shall be examined for defects in shade, design, material, construction, and workmanship. The defects shall be classified in accordance with MIL-STD-901. Side crown template shall be used to inspect shape and size.
- 4.4.4 <u>Dimensional examination</u>. The finished garrison cap shall be examined for conformance to the dimensions specified in 3.7 and in Table III. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of garrison caps. The sample unit shall be one garrison cap. Any suitable measuring device shall be used. A cap measuring device designed for measuring headwear circumference may be used for measuring the inside circumference.

5. PACKAGING

5.1 <u>Packaging</u>. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the

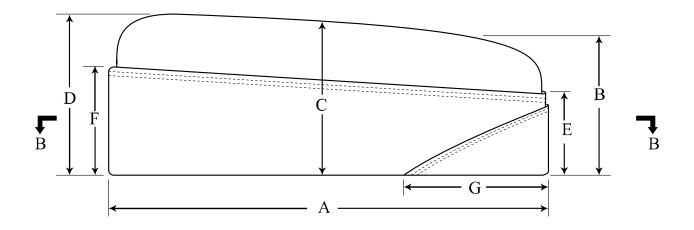
managing Military Department's or Defense Agency's automated packaging files, CD-ROM products or by contacting the responsible packaging activity.

- 6. NOTES.
- 6.1 Intended use. The garrison caps are intended for wear by male and female Navy personnel.
- 6.2 Acquisition requirements. Procurement documents should specify the following:
 - a. Title, number and date of this specification
 - b. Sizes required (see 1.2)
 - c. National stock number (see 3.3.6.1)
 - d. Applicable Government patterns. (see 3.4.1)
 - e. When first article inspection is required (see 3.1)
 - f. Number of first article inspection samples (see 4.2)
 - g. Name and address of the first article inspection facility; and the name and address of the Government activity responsible for conducting the first article inspection program h. Packaging required (see 5.1)
- 6.3 <u>First article</u>. When first article inspection (see 3.1) is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be first article sample, a first production item, or a standard production item from the contractor's current inventory, and the number of items to be tested as specified in 4.2. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government and that bidders offering such products, who wish to rely on such production or tests, must furnish evidence with the bid that prior Government approval is presently appropriate for pending contract. Bidders should not alternate submit bids unless specifically requested to do so in the solicitation.
- 6.4 <u>Information requests</u>. For access to information such as patterns, drawings, standard samples, etc. visit DSCP's Warfighter website, http://warfighter.dla.mil. Choose Vendor Info > Specification/Pattern Request. Complete the request form, and then submit form.
- 6.5 Subject term (key word) listing.

Material, polyester/wool blend Interlining Lining Hat

Preparing activity:

Navy-NU



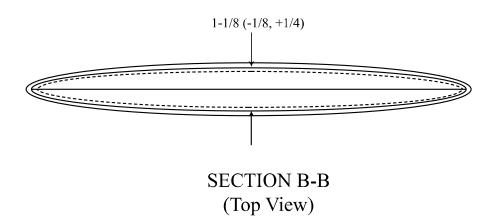


Figure 1 – CAP, GARRISON, SERVICE