

MIL-C-87000B
27 October 1987

SUPERSEDING
MIL-C-87000A
27 Sep 1979

MILITARY SPECIFICATION

COVERALLS, MEN'S

This specification is approved for use by the Navy Clothing and Textile Research Facility, Department of the Navy, 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 utility coverall fabricated from a polyester and cotton cloth.

1.2 Classification. The coveralls shall be of one type in the following sizes and lengths (see 6.2).

1.2.1 Sizes. 36, 38, 40, 42, 44, 46, and 48

1.2.2 Lengths. Short, regular, and long

* 2. APPLICABLE DOCUMENTS

2.1 Government documents.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: 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 8405

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

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* 2.1.1 Specifications, standards, and handbooks. 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 issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

- V-B-871 - Button, Sewing Hole, and Button, Staple (Plastic)
- V-F-106 - Fastener, Slide, Interlocking
- V-T-280 - Thread, Gimp, Cotton, Buttonhole
- NN-P-71 - Pallet, Material Handling, Wood, Stringer Construction, 2 Way and 4 Way
- DDD-L-20 - Label; For Clothing, Equipage, and Tentage (General Use)

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- MIL-F-10884 - Fasteners, Snap
- MIL-P-15011 - Pallet, Material Handling, Wood, Post Construction, 4 Way Entry
- MIL-B-17757 - Boxes, Shipping, Fiberboard (Modular Sizes)
- MIL-C-21851 - Cloth, Twill, Polyester and Cotton
- MIL-T-43548 - Thread, Polyester Core: Cotton-, Rayon-, or Polyester-Covered

STANDARDS

FEDERAL

- FED-STD-751 - Stitches, Seams, and Stitchings

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads
- MIL-STD-1668 - Provisions for Evaluating Quality of Cloth Coveralls

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

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

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LAWS AND REGULATIONS

US POSTAL SERVICE MANUAL

(Copies of the manual may be obtained from the superintendent of Documents, US Government Printing Office, Washington, DC 20402.)

* 2.2 Other publications. The following document(s) form a part of this specification 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 specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

DEPARTMENT OF DEFENSE (DOD) STANDARD SHADES FOR SEWING THREADS

DEPARTMENT OF DEFENSE (DOD) STANDARD SHADES FOR BUTTONS

(Application for copies of the above standards should be addressed to the Color Association of the United States, 343 Lexington Ave, New York, NY 10106).

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Applications 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

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

2.3 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 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).

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3.3 Material. (see 6.4)

3.3.1 Basic material. The cloth shall be a blend of polyester and cotton conforming to MIL-C-21851. The color shall be Shade Blue 3329.

* 3.3.2 Thread. The thread used shall be polyester covered, conforming to ticket Nos. 50, 2 or 3 ply and 70, 2 or 3 ply of MIL-T-43548. The color shall be Navy Blue AT. C.A. 66060 in accordance with standard shades for sewing threads (see 2.2).

3.3.2.1 Colorfastness. The dyed thread shall show fastness to laundering and light equal to or better than the standard sample when tested as specified in MIL-T-43548. When no standard sample is available, the dyed thread shall show "good" fastness to laundering and light when tested as specified in MIL-T-43548.

* 3.3.3 Buttons. The buttons shall conform to type II, class D, styles 20 and 21, 30 line of V-B-871. The color shall conform to Shade Blue BV Cable 62003 in accordance with standard shade for buttons (see 2.2).

* 3.3.4 Gimp. The gimp used for reinforcing the buttonholes shall conform to Type I and II size No. 8 of V-T-280. The color shall be Navy Blue AT C.A. 66060 in accordance with standard shades for sewing thread (see 2.2).

3.3.4.1 Colorfastness. The dyed gimp shall show fastness to laundering equal to or better than the standard sample when tested as specified in V-T-280. When no standard sample is available the dyed gimp shall show "good" fastness to laundering when tested as specified in V-T-280.

3.3.5 Slide fastener. The slide fastener for the front closure shall conform to type I, style 15, size LMS of V-F-106, except that all metal components of the slide fastener shall be fabricated of brass and purchased from the same contractor (see 4.4.1). The color of the tape shall match the basic material. The tab shall be a short pull.

* 3.3.5.1 Colorfastness. The slide fastener shall show fastness to laundering and light equal to or better than the standard sample when tested as specified in V-F-106. When no standard sample is available the slide fastener shall show a minimum of "good" fastness to laundering and light when tested as specified in V-F-106.

3.3.6 Snap fastener. The snap fastener for the fly front shall be 16-17 line conforming to style 3, finish 2 of MIL-F-10884.

* 3.3.7 Label. Each coverall shall have a combination size, instruction, and identification label conforming to type VI, class 14 of DDD-L-20. The fastness to laundering requirement of DDD-L-20 shall apply. The label shall bear the following inscription:

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COVERALLS, MEN'S

CONTRACT NO: DLA-100-00-0-000 (EXAMPLE)

STOCK NO: 8405-00-000-0000 (EXAMPLE)

SIZE: 36R (EXAMPLE)

NAME OF CONTRACTOR:

LAUNDERING INSTRUCTIONS

MACHINE WASH HOT, DO NOT BLEACH

TUMBLE DRY MEDIUM HEAT, REMOVE PROMPTLY

OR

USE NAVEDTRA 414-01-45-81,

FORMULA II

3.4 Design. The coverall shall consist of a double slider, slide fastener fly front with six patch type pockets; one on each breast with a sewn-down flap covering the top of the pocket, one on each trouser front with the top of the pocket caught in the waistband, and one hip pocket on each back just below the waistband. The left hip pocket shall have a sewn-down flap covering the top of the pocket. The left breast pocket shall have a pencil slot. The top of the deep V-neck shall be closed with a button. A gripper type snap fastener shall secure the fly front just above the top of the slide fastener tape. The cuff of the sleeves shall have an adjustable button-through sleeve tab. Two buttons shall be positioned on each sleeve cuff.

3.4.1 Figure. The figure is furnished for information purposes only. When inconsistencies exist between the written specification and the figure, the written specification shall govern.

3.5 Patterns. Standard patterns will be furnished by the Government (see 6.3). The patterns allow 1/2 inch for all seams, except as otherwise indicated in Table I. The working patterns shall be identical to the Government patterns. Neither the Government patterns nor the working patterns shall be altered in any way.

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* 3.5.1 List of pattern parts. The component parts of the coveralls shall be cut from the materials as specified and in accordance with the number of parts required for the manufacturing process as follows:

<u>Material</u>	<u>Nomenclature of pattern parts</u>	<u>Cut parts</u>
Cloth, twill, polyester/cotton (shirt)	Back upper	2
	Front upper left side	1
	Front upper right side	1
	Top sleeve	2
	Undersleeve	2
	Top and undercollar 1/	2
	Collar interlining	1
	Sleeve cuff	2
	Front facing	2
	Breast pocket	2
	Breast pocket flap	2
Cloth, twill, polyester/cotton (trousers)	Front lower left side	1
	Front lower right side	1
	Back lower	2
	Front patch pocket	2
	Front patch pocket facing	2
	Hip pocket	2
	Hip pocket flap (left side)	1
	Waistband	1
Templates	Pockets (front, breast, hip)	-

1/ As an alternate, collar may be cut as one piece; a pattern part is supplied for this purpose.

3.6 Construction.

* 3.6.1 Stitches, seams, and stitchings. Stitch, seam, and stitching types shall conform to FED-STD-751. Wherever two or more methods for seam or stitch types are given for the same part of the operation, any one may be used. Where stitch type 401 is used, the looper, which is the underthread, shall be on the inside of the coveralls. Seam allowance shall be maintained with seams sewn so that no raw edges, runoffs, twists, pleats, or open seams will result. Unless otherwise specified, top or edge stitching shall be 1/16 to 1/8 inch from edge and all double needle stitching shall be 1/4 inch gauge with the row of stitching next to the folded edge not more than 1/16 inch from edge.

3.6.2 Thread breaks and ends of seams. Ends of all seams and stitchings, when not caught in other seams or stitchings, shall be backtacked not less than 3/8 inch. The ends of a continuous line of stitching shall be overlapped not less than 1/2 inch. Thread breaks (all stitch types) shall be secured by stitching back of the break not less than 1/2 inch. Skipped stitches or thread breaks on 401 stitch type (except on seat seam) may be repaired by using 301 stitch type. The seat seam must be re sewn. When stitch type 401 is permitted, as an option, it shall not be used unless the ends are caught in other seams or stitching or backtacking.

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

3.6.4 Buttonholes. Buttonholes shall be eyelet-end, taper-bar type, worked over gimp with the purling on the outside and the ends of the buttonhole stitching and gimp securely tacked.

3.7 Manufacturing operations requirements. The coverall shall be manufactured in accordance with operation requirements specified in Table I. The contractor is not required to follow the exact sequence of operations listed provided that the finished coveralls are identical to those produced by following the sequence of operations as listed in Table I.

3.7.1 Abbreviations in table of operations. The abbreviations used in Table I are as follows:

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

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL BOB/ LPR
*1.	<p><u>Cutting.</u></p> <p>a. Cut the coverall in accordance with patterns which show directional lines, and marks and notches for proper assembly. Directional lines shall be placed in the warp direction of the material. The directional lines on the fronts and backs of the coverall trouser parts may vary from the warp direction by not more than 1-1/2 inches. Measurements shall be taken from the top and bottom of the directional line on pattern to the selvage edge of the fabric and the difference between the two measurements shall not exceed 1-1/2 inches.</p> <p>b. Cut all component parts from the same piece of material except the hanger loop, collar interlining, belt loops and pocket facing, which may be cut from ends. Parts cut from ends should approximately match main assembly.</p> <p>c. The waistband may be stripped and placed on rolls.</p>				
2.	<p><u>Replacement of defective components.</u></p> <p>During the spreading, cutting, and manufacturing process, components having material defects or damages that are classified as defects in MIL-STD-1668 shall be removed from production and replaced with non-defective and properly matched components.</p>				
3.	<p><u>Marking.</u></p> <p>a. All parts shall be marked, ticketed, or bundled to insure a uniform shade, size, and proper assembly throughout the coverall. Parts cut from ends and stripped waistband need not be marked, however, they must match main assembly.</p> <p>b. The use of corrosive metal fastening devices or sewn-on tickets shall be prohibited.</p>				

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	c. Adhesive type shade tickets which discolor or adhere to the material upon removal of tickets shall be prohibited.					
	d. The use of ink pad numbering machine, rubber stamp, or pencil is acceptable provided the numbers do not show through the outside of the coverall. Whenever possible, numbers shall be covered by the seam allowance.					
4.	<u>Make belt loops and hanger loops.</u>					
	a. (1) Make loops by folding a piece of the basic material to center with the edges abutted and double stitched not less than 1/4 inch gage with a covering stitch on the underside.	406	Smlr to EFh-1	8-12	50	50
	or					
	(2) Seam loop pieces, turn, smooth out, and flatten. The seam shall not be exposed on the side edge of the loop.	301	EFu-1	8-12	50	50
	or					
	(3) Make loops by abutting folded edges and stitch with the line of stitching covering the abutted edges. The stitching shall not show through to the outside.	105	EFae-1	8-12	50	
	or					
	(4) Make loops by folding the material, turn in the side edges and stitch with two rows of edgestitching.	301	EFp-2	8-12	50	50
	b. Belt loops and hanger loops shall finish 1/2 (+1/16) inches in width.					

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
*5.	<u>Make pocket flaps.</u>					
	a. Fold flaps in half, face to face, and stitch both sides 1/4 inch from raw edges.	301	SSe-2(a)	8-12	50	50
	NOTE: On the flap to be used for the pencil pocket opening, continue the stitching across pencil pocket opening to notch, and notch seam allowance.					
	b. Turn to finished position, forcing out corners.					
*6.	<u>Join center back seam (shirt portion).</u>					
	a. Join center back seam with a double lapped and double stitched seam with right back over left back.	301 or 401	LSc-2	8-12	50 50	50 70
	or					
	b. As an alternate, stitch, face to face, 1/2 inch from raw edges.	301 or 401	SSa-1	8-12	50 50	50 70
	c. Overedge the two raw edges together.	503, 504, or 602	SSa-1	8-12	70	70
	d. Operations 6b and 6c may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516, or 519	SSa-2	8-12	50 70 70	70 (chain-stitch) (over-edge stitching)
	e. Position combination size and identification label 2-3 inches down from neckline centered (+ 1/2 inch) over center back seam on inside of coverall. Stitch on all four sides.	301	LSbj-1	8-12	50	50

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
7.	<u>Join back arm seam.</u>					
	a. Stitch, face to face, 3/8 inch from raw edge.	301 or 401	SSa-1	8-12	50	50
	b. Overedge stitch the raw edges together	503, 504, or 602	SSa-1	8-12	70	70
	c. Operations 7a and 7b may be performed in one operation by simultaneously stitching and overedging.	515, 516, or 519	SSa-2	8-12	50	70 (chain-stitch) 70 70 (over-edge stitching)
*8.	<u>Join shoulder seam.</u>					
	a. Stitch shoulder seam, with a double lapped and double stitched seam, with front lapped over the back.	301 or 401	LSc-2	8-12	50	50
	or					
	b. As an alternate, stitch, face to face, 1/2 inch from raw edges.	301 or 401	SSa-1	8-12	50	50
	c. Overedge stitch the raw edges together.	503, 504 or 602	SSa-1	8-12	70	70
	d. Operation 8b and 8c may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516, or 519	SSa-2	8-12	50	70 (Chain-stitch) 70 70 (Over-edge stitching)
*9.	<u>Set sleeve.</u>					
	a. Set sleeve to armhole, with a double lapped and double stitched seam, with the front and back over the sleeve.	301 or 401	LSc-2	8-12	50	50

or

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	b. As an alternate, stitch, face to face, 1/2 inch from raw edges.	301 or 401	SSa-1	8-12	50 50	50 70
	c. Overedge stitch the raw edges together.	503, 504, or 602	SSa-1	8-12	70	70
	d. Operations 9b and 9c may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516 or 519	SSa-2	8-12	50 70 70	70 (Chain-stitch) (Over-edge stitching)
<u>*10. Join underarm and side seams</u>						
	a. Join the underarm and side seams in one continuous operation with a double lapped and double stitched seam with the fronts over the backs.	301 or 401	LSc-2	8-12	50 50	50 70
	or					
	b. As an alternate, stitch the two raw edges together, face to face.	301 or 401	SSa-1	8-12	50 50	50 70
	c. Overedge stitch the two raw edges together.	503, 504 or 602	SSa-1	8-12	70	70
	d. Operations 10b and 10c may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516 or 519	SSa-2	8-12	50 70 70	70 (Chain-stitch) (Over-edge stitching)

NOTE: The seam at the armhole junction shall not be staggered more than 3/8 inch (measured from center of seam to center of seam).

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
11.	<u>Make and attach breast pockets to fronts</u>					
	a. Form a 1 (+ 1/8) inch hem on breast pocket, back to back, turning raw edge under 3/8 inch and stitch.	301 or 401	Eft-2 (inverted)	8-12	50	50
	b. Center pocket over marks on front pattern piece. Fold under the sides and bottom edges of pocket 5/8 inch and double stitch 1/4 inch gauge with the outer row of stitching 1/16 inch from the folded edges.	301 or 401	Lsd-2	8-12	50 50	50 70
*12.	<u>Attach breast pocket flaps to fronts</u>					
	1. <u>Right flap</u>					
	a. Turn top raw edge under 3/16 to 1/4 inch and position flap 3/4 to 7/8 inch from folded top edge of pocket. The flap shall be centered over the pocket.					
	b. Double stitch flap to front 1/4 inch gauge along the top and sides with the outer row of stitching 1/16 inch from the folded edge.	301	Lsd-2 and SSe-3(b)	8-12	50	50
	c. Place two vertical 1/2 (+ 1/16) inch bartacks, superimposed on the inner row of stitching at bottom corner of flap.	Bartack		28 per bartack	50	50
	2. <u>Left flap</u>					
	a. Double stitch 1/4 inch gauge, from notch on pattern across pencil pocket opening to end of flap, with the outer row of stitching 1/16 inch from the folded edge.	301	SSe-3(b)	8-12	50	50
	b. Turn remaining top raw edge under 3/16 to 1/4 inch and position flap 3/4 to 7/8 inch from folded top edge of pocket. The flap shall be centered over the pocket.					
	c. Double stitch flap to front, 1/4 inch gauge, from end of pencil pocket opening, along the top and both sides, with the outer row of stitching 1/16 inch from the folded edge.	301 or 401	SSe-3(b) and Lsd-2	8-12	50	50

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	d. Place two vertical $1/2$ ($+ 1/16$) inch bartacks, superimposed on the inner row of stitching at the bottom corners of flaps. Place two vertical bartacks as indicated by marks on pattern for pencil pocket opening.	Bartack		28 per bartack	50	50
	e. Pencil pocket opening shall measure $1-1/8$ to $1-1/4$ inches wide.					
*13.	<u>Join seat seam.</u>					
	a. Join the seat seam with a double lapped and double stitched seam, with right back over left back.	301 or 401	LSc-2	8-12	50 50	50 70
	or					
	b. Join the seat seam with a double needle seat seamer with the two rows of stitching $1/64$ to $1/32$ inch apart, from crotch to top of trouser back.	401	SSa-2	8-10 each needle	70	70
	c. Overedge the two raw edges together.	503, 504 or 602	SSa-1	8-12	70	70
14.	<u>Make and attach hip pockets to trouser back</u>					
	a. Form a 1 ($+ 1/8$) inch hem on hip pockets, back to back, turning raw edges under $3/8$ inch and stitch.	301 or 401	Eft-2 (inverted)	8-12	50 50	50 70
	b. Position pocket according to marks on pattern. Fold under sides and bottom edges of pocket $1/2$ inch and double stitch $1/4$ inch gauge with the outer row of stitching $1/16$ inch from the folded edge.	301 or 401	LSd-2	8-12	50 50	50 70
	c. Place two $1/2$ ($+ 1/16$) inch horizontal bartacks at the top corners of the right hip pocket.	Bartack		28 per bartack	50	50
*15.	<u>Attach pocket flap to left back pocket.</u>					
	a. Turn top raw edge inward $3/16$ to $1/4$ inch and position flap $3/4$ to $7/8$ inch from folded top edge of pocket. Flap shall be centered over pocket.					

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	b. Double stitch flap to back, 1/4 inch gauge, along the top and sides with the outer row of stitching 1/16 inch from folded edge.	301 or 401	LSc-2	8-12	50 50	50 70
	c. Place two vertical 1/2 (+ 1/16) inch bartacks, superimposed on the inner row of stitching at bottom corner of flap.		Bartack	28 per bartack	50	50
16.	<u>Make trouser front pockets</u>					
	a. Stitch facing to pocket, face to face, along outer edge, 1/4 inch from raw edge.	301	SSe-3(a)	8-12	50	50
	b. Turn to finished position, double stitch, 1/4 inch gauge, with the outer row of stitching 1/16 inch from folded edge.	301	SSe-3(b)	8-12	50	50
	c. Turn under inner raw edge of facing, 1/4 inch and stitch 1/16 inch from folded edge.	301	LSc-1	8-12	50	50
*17.	<u>Attach pockets to trouser fronts</u>					
	a. Turn under 1/4 inch along the front and bottom edges of the pocket. Double stitch, 1/4 inch gauge, to trouser fronts according to notches, with the outer row of stitching 1/16 inch from folded edge. The top raw edges of the pockets may be stay stitched to the raw edges of trouser waist edge.	301 or 401	LSc-2 and SSa-1	8-12	50 50	50 70
	b. Stitch, 1/4 inch from the raw edge, the back edge of pocket to side seams.	301 or 401	SSa-1	8-12	50 50	50 70
*18.	<u>Join outseams</u>					
	a. Stitch the outseams, with a double lapped and double stitched seam with fronts over backs.	301 or 401	LSc-2	8-12	50 50	50 70
	or					
	b. As an alternate, stitch, face to face, 1/2 inch from the raw edge.	301 or 401	SSa-1	8-12	50 50	50 70

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
	c. Overedge stitch the two raw edges together.	503, 504 or 602	SSa-1	8-12	70	70
	d. Operations 18b and 18c may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516 or 519	SSa-2	8-12	50 70 (Chain- stitch) 70 70 (Over- edge stitch- ing)	
	e. Place a 1/2 (+ 1/16) inch bartack at each end of pocket opening. The bartack at the top of pocket shall be horizontal and at the bottom shall be vertical.	Bartack		28 per bartack	50	50
19.	<u>Make sleeve openings</u>					
	a. Turn raw edge of underply extension up over itself, 1/2 inch from edge of sleeve tapering to 1/4 inch at top of sleeve opening. Fold over body of material and stitch 1/16 inch from folded edge.	301	EFb-1	8-12	50	50
	b. Turn raw edge of top ply facing under 1/2 (+ 1/16) inch. Fold back under body of material and stitch 1/16 inch from folded edge continuing across width of facing. Facing shall finish 1/2 (+ 1/16) inch in width.	301	EFb-1	8-12	50	50
	c. Place a 1/2 (+ 1/16) inch horizontal bartack superimposed on the stitching across facing width at the top of sleeve opening.	Bartack		28 per bartack	50	50
*20.	<u>Make and attach cuffs</u>					
	a. Fold cuff in half lengthwise, face to face. Stitch 1/4 inch from raw edges, along the sides of cuff.	301 or 401	SSa-1	8-12	50	50
	b. Turn to finished position, working out corners and points.					

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	c. Stitch inside edge of cuff to sleeve, 1/4 inch from raw edge.	301	BSj-2(a)	8-12	50	50
	d. Turn cuff to finished position turning raw edge under 1/8 inch and edgestitch 1/16 inch from folded edge around the periphery of cuff.	301	BSj-2(b)	8-12	50	50
21.	<u>Attach shirt and trouser portions at waist</u>					
	a. Stitch back to back, the shirt to trousers, 3/8 inch from the raw edge at the waist, forming the pleats on back. The folded edges of pleats shall face the center back seam.	301 or 401	SSa-1	8-12	50 50	50 70
	b. Turn seam allowance up on to shirt portion and stitch 1/8 inch from raw edge, through seam allowance and shirt portion.	301 or 401	SSa-1	8-12	50 50	50 70
*22.	<u>Attach waistband and belt loops</u>					
	a. There shall be five belt loops positioned as follows: One on each side seam, one on center back seam and one at each front centered half way (+ 1/2 inch) between side seam and center raw edge.					
NOTE: In finished garment, front belt loops may be uneven.						
	b. Position waistband, centered over the joining seam of coveralls at waist. Stitch lower edge of waistband to coveralls, face to face, 1/4 inch from raw edges. Belt loops shall be positioned and inserted 3/8 inch under lower edge of waistbands and shall be caught in the stitching.	301 or 401	LSq-2(a)	8-12	50 50	50 70
	c. Turn waistband to finished position and edgestitch bottom edge of waistband 1/16 inch from folded edge.	301 or 401	LSq-2(b)	8-12	50 50	50 70
	d. Drop belt loops 1/2 (+ 1/16) inch below waistband seam and secure with a 1/2 (+ 1/16) inch bartack.	Bar- tack		28 per bar- tack	50	50
	e. Turn top edge of waistline under 1/4 inch, edgestitch 1/16 inch from folded edge.	301 or 401	LSb-1	8-12	50 50	50 70

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	f. Turn belt loop under 1/4 inch, with top even with waistband top. Secure belt loops to waistband and coveralls with a 1/2 (+ 1/16) inch bartack.	Bartack		28 per bartack	50	50
	g. Waistband shall finish 1-3/4 (+ 1/16) inches wide.					
	h. Belt loops shall measure finished 2-1/4 (+ 1/16) inches long from folded edge to folded edge.					
	or					
	As an alternate, the waistband can be attached by means of a double needle, 1/8 inch from edge. The gauge shall be 1-1/2 (+ 1/16) inches. The waistband shall finish 1-3/4 (+ 1/16) inches wide. The belt loops shall be attached in the same manner as in operations 22b, 22d, and 22f.					
*23.	<u>Attach lapel facings</u>	301	Smlr to SSa-1	8-12	50	50
	a. Turn raw edge of left front facing under 3/8 to 1/2 inch and position slide fastener tape even with the turned folded edge. As an alternate, the top of the slide fastener tape maybe folded under 1/2 inch before positioning. Stitch through turned portion of front facing and slide fastener tape.					
	b. Turn under bottom edge of each lapel facing 1/4 to 3/8 inch.					
	c. Stitch raw edge of lapel facings to raw edge of fronts using 1/2 inch seam allowance. Clip notch at gorge line, trim points, turn to finished position and force out points.	301	SSa-1	8-12	50	50
	d. Neck portion of lapel facing may be stay stitched to the notch at the gorge line.	301	SSa-1	8-12	50	50

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
	e. With bottom edge of lapel facing folded in, fold side edge and top edge of lapel facing in 1/2 inch and stitch 1/16 inch from the folded edge, continuing the stitching down the front fly opening adjacent to the folded edge.	301	LSb-1	8-12	50	50
	f. Stitch bottom edge of lapel facing 1/16 inch from folded edge catching each front.	301	LSb-1	8-12	50	50
	g. Position slide fastener tape on right front with top of tape folded under 1/2 inch and placed adjacent to stitching across step. Superimpose back edge of tape on front fly stitching and stitch tape to front 1/16 inch from back edge.	301 or 401	LSd-1 and LSbj-1	8-12	50 50	50 70
	h. Stitch a diagonal buttonhole 3/4 to 7/8 inch finished cut length on left front lapel. The eyelet of the buttonhole shall be positioned 1 (+ 1/16) inch from point of lapel.	Button- hole		44-46 per button- hole in- cluding tack	50	50
	i. Bartack top folded ends of slide fastener to front.	Bartack		28 per bartack	50	50
*24.	<u>Stitch crotch seam</u>					
	a. <u>Stitch crotch seam</u> 1/2 to 5/8 inch from the raw edge.	301	LSq-3(a)	8-12	50	50
	b. Overedge stitch the two raw edges together.	503, 504 or 602	SSa-1	8-12	70	70
	c. Turn seam with left front over right front and stitch with two rows of stitching 3/16 to 1/4 inch gauge. The outer row of stitching shall be 1/16 inch from the folded edge. Continue the stitching so that it meets the stitching on the left front and across both slide fastener tapes.	301	LSq-3(b)	8-12	50	50

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
	d. Operations 24a and 24b may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516 or 519	SSa-2	8-12	50 70 (Chain- stitch) 70 70 Overedge stitch- ing	
	e. Place a 1/2 (+ 1/16) inch horizontal bartack at the top of crotch seam. The end of the bottom edge of grown on facing shall be caught in the stitching.	Bartack		28 per bartack	50 50	
*25.	<u>Join inseams.</u>	301 or 401	LSc-2	8-12	50 50 50 70	
	a. Join inseams in one continuous operation with a double lapped and double stitched seam with the fronts over the backs. The seam at the crotch junction shall not be staggered more than 3/8 inch (measured from center of seam to center of seam).					
	OR					
	b. As an alternate, stitch face to face, 1/2 inch from the raw edge.	301 or 401	SSa-1	8-12	50 50	
	c. Overedge stitch the raw edges together.	503, 504 or 602	SSa-1	8-12	70 70	
	d. Operation 25b and 25c may be performed in one operation by simultaneously stitching and overedging 3/8 inch from edge.	515, 516, or 519	SSa-2	8-12	50 70 Chain- stitch) 70 70 (Over- edge stitch- ing)	
*26.	<u>Make and attach collar.</u>					
	a. With top collar and undercollar face to face, place collar interlining on top of top collar. Stitch the 3 plies together along outside edges.	301	SSe-2(a)	8-12	50 50	

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
	b. When one piece collar is used, fold top collar and undercollar together face to face. Place interlining under top collar and stitch 3 plies together on sides.	301	SSe-2(a)	8-12	50	50
	c. Turn collar to finished position, forcing out points and edges.					
	d. Stay stitch bottom of interlining to top collar, making sure that collar and interlining pieces are flat with no bubbles or fullness.	301	SSa-1	8-10	50	50
	e. The collar shall be topstitched 3/16 to 1/4 inch from folded edge excluding neckline seam allowance and 1/4 inch of turned collar.	301	SSe-2(b)	8-12	50	50
	f. Attach undercollar to neckline 3/16 to 1/4 inch from raw edge, catching the ends of hanger loop in the stitching. The hanger loop shall be centered over the center back seam (1/2 inch off center tolerance).	301	SSe-2(a)	8-12	50	50
	g. Turn collar to finished position, turning in lower edge of topcollar 3/16 to 1/4 inch and edgestitch 1/16 inch from folded edge.	301	SSe-2(b) and LSb-1	8-12	50	50
	h. The free opening of the hanger loop shall measure 2 (+ 1/4) inches.					
	i. Topstitch 3/16 to 1/4 inch from lapel facing to gorge line and up through collar overlapping topstitching of collar by 1/2 inch. Backtack to secure.	301	SSe-2(b)	8-12	50	50
	j. As an alternate, the lapel facing and collar may be topstitched 3/16 to 1/4 inch from folded edge in one continuous operation.	301	SSe-2(b)	8-12	50	50
27.	<u>Sew buttonhole in cuff.</u> Stitch a 3/4 to 7/8 inch finished cut length buttonhole on each cuff. Buttonhole shall be centered on cuff with the center of eyelet 1-1/8 (+ 1/16) inches from pointed end.	Button- hole		44-46 per button- hole in- cluding tack	50	50

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TABLE I- CONSTRUCTION OF COVERALLS

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL BOB/ LPR	
28.	<u>Sew buttons on cuffs.</u>					
	a. There shall be two buttons sewn on each cuff in the following positions:	101 or 301		20-24 per button	50	
	(1) First button shall be 1-1/4 (+ 1/4) inches from finished square edge.			14-16 per button	50	50
	(2) Second button shall be 1-1/2 (+ 1/4) inches from first button (measured from center to center of button).					
	b. Position a button on right front to correspond with buttonhole on left lapel.	101 or 301		20-24 per button	50	
				14-16 per button	50	50
29.	<u>Attach snap fasteners.</u>					
	a. Attach socket on left lapel facing abutting the bottom joining seam of lapel facing to front. The edge of socket shall be 5/16 to 3/8 inch from finished outside edge of lapel facing.					
	b. Attach stud to right lapel facing corresponding to socket so that a smooth closure is obtained.					
30.	<u>Hem leg bottoms.</u>					
	a. Turn raw edge under 3/8 (+ 1/16) inch. Fold back over body of material and stitch 1/16 inch from folded edge.	301	EFb-1	8-12	50	50
	b. Hem shall finish 1-3/16 (+ 1/16) inches in width.					
*31.	<u>Cleaning.</u>					
	a. Trim and remove all loose ends of thread.					
	b. Remove all loose threads.					
	NOTE: Thread trimming and removal may be preformed after each operation or upon completion of all sewing operations.					
	c. Remove all spots, stains, and shade tickets.					

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3.8 Sizes and measurements. Sizes and measurements of finished coveralls shall be as shown in Table II (see Figure 1). All measurements are expressed in inches.

Table II - Measurements of coveralls

Sizes	Chest			Sleeve Inseam			Leg Inseam		
	Short	Regular	Long	Short	Regular	Long	Short	Regular	Long
36	40	40	—	19-1/2	20-1/2	—	27-1/2	28-1/2	—
38	42	42	42	19-1/2	20-1/2	21-1/2	27-3/4	28-3/4	29-3/4
40	44	44	44	19-1/2	20-1/2	21-1/2	28	29	30
42	46	46	46	19-1/2	20-1/2	21-1/2	28-1/4	29-1/4	30-1/4
44	48	48	48	19-1/2	20-1/2	21-1/2	28-1/2	29-1/2	30-1/2
46	50	50	50	19-1/2	20-1/2	21-1/2	28-3/4	29-3/4	30-3/4
48	—	52	52	—	20-1/2	21-1/2	—	30	31
Tolerance:									
	+ 1	+ 1	+ 1	+1/2	+1/2	+1/2	+3/4	+3/4	+3/4
				-1/4	-1/4	-1/4	-3/8	-3/8	-3/8

NOTE: Chest, sleeve inseam and leg inseam measurements shall be taken with coveralls fully zippered, laid flat and smooth.

A. Chest - Twice the measurement taken across the front at base of armholes from folded edge to folded edge.

B. Sleeve inseam - Measurement shall be taken from base of the armhole, along sleeve inseam to bottom of sleeve.

C. Leg inseam - Measurement shall be taken from junction of crotch and back seam along leg inseam to bottom of leg.

3.9 Workmanship. The finished coveralls shall conform to the quality of product established by this specification. The occurrence of defects shall not exceed the applicable point values.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or 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 assure supplies and services conform to prescribed requirements.

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* 4.1.1 Responsibility for compliance. All items must 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

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. The first article submitted in accordance with 3.2 and 6.2 shall be inspected as specified in 4.4.2 for compliance with design, construction, workmanship, and dimensional requirements.

4.4 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-1668, except where otherwise indicated.

4.4.1 Component and material inspection. In accordance with 4.1 above, 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 procurement documents. In addition, a certificate of compliance shall be furnished stating that all components of slide fastener shall be furnished by the same contractor (see 3.3.5).

4.4.2 Examination of the end item. Examination of the end item shall be in accordance with provisions for finished coveralls as specified in MIL-STD-1668.

4.4.3 Examination of packaging requirements. Packaging inspection will be in accordance with MIL-STD-1668.

4.4.4 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.

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<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.
Weight	Exceeds maximum load limits.
Marking	Omitted, incorrect, illegible, of improper size, location, sequence, or method of application.

* 5. PACKAGING

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

5.1.1 Level A. Each coverall shall be folded as follows: (1) Secure all slide fasteners, buttons, and snap fasteners. (2) Lay coverall flat, face down. (3) Fold coveralls in half along the length. (4) Fold sleeves at shoulder seam and place them on top and parallel to the folded sides of coverall. (5) Fold leg bottoms up approximately 4 inches and fold coverall in quarters by bringing the legs up and the top down. The folded coveralls shall measure approximately 11-1/2 inches by 15 inches. Five pairs of coveralls shall be stacked in a bundle, with collars alternated, securely cross-tied with cotton tape or twine.

5.1.2 Level C (Commercial packaging). Coveralls shall be packaged 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. Thirty (30) coveralls, of one size only, packaged as specified in 5.1 shall be packed in a fiberboard shipping container assembled, closed and reinforced conforming to class weather resistant, type CF, variety DW, grade V15c, size 3A of MIL-B-17757. The fiberboard for the liner shall conform to type CF, class domestic of MIL-B-17757. Level A folded coveralls shall be stacked flat, one in width, two in length and fifteen (three bundles of five) in depth within a shipping container. Each container shall have the contents completely covered on the top and bottom with a sheet of commercial grade kraft paper. Toward the end of the contract, or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same shipping container.

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5.2.2 Level B. Thirty (30) coveralls, of one size only, packaged as specified in 5.1, shall be packed in a fiberboard shipping container assembled, closed, and reinforced conforming to class domestic, type CF, variety DW, grade 275, size 3A of MIL-B-17757. The fiberboard for the liner shall conform to class domestic, type CF, of MIL-B-17757. Level A folded coveralls, shall be stacked flat, one in width, two in length and fifteen (three bundles of five) in depth within a shipping container. Each container shall have the contents completely covered on the top and bottom with a sheet of commercial grade kraft paper. Toward the end of the contract, or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same shipping container.

5.2.3 Level C. Item 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 comply with the 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, interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

5.3.1 Labels, mixed sizes. Each shipping container, packed with mixed sizes only, shall have securely attached to the end and side, directly under the printing or stenciling, a white paper label 4 by 5 inches with the words "Mixed NSN'S" plainly stamped or printed thereon and under these words shall be legibly stamped or printed the correct quantity and National Stock Numbers contained therein.

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, K, and L or O or P. 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 of 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.

6. NOTES

6.1 Intended use. The coveralls are intended for wear by the Department of Defense male personnel.

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* 6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this specification
- b. Sizes and lengths required (see 1.2)
- c. When first article sample 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 examination, quantity and testing and approval of the first article.
- d. Levels of packaging and packing required (see 5.1 and 5.2)
- e. When palletization is required (see 5.4)

6.3 Samples and patterns. For access to samples and patterns, address the procuring activity issuing the invitation for bids (see 3.1 and 3.5).

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 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.

6.6 Subject term (key word) listing.

Clothing, protective
 Coverall, blue
 Coverall, poly/cotton
 Coveralls, shipboard
 Suit, working

Custodian:
 Navy - NU

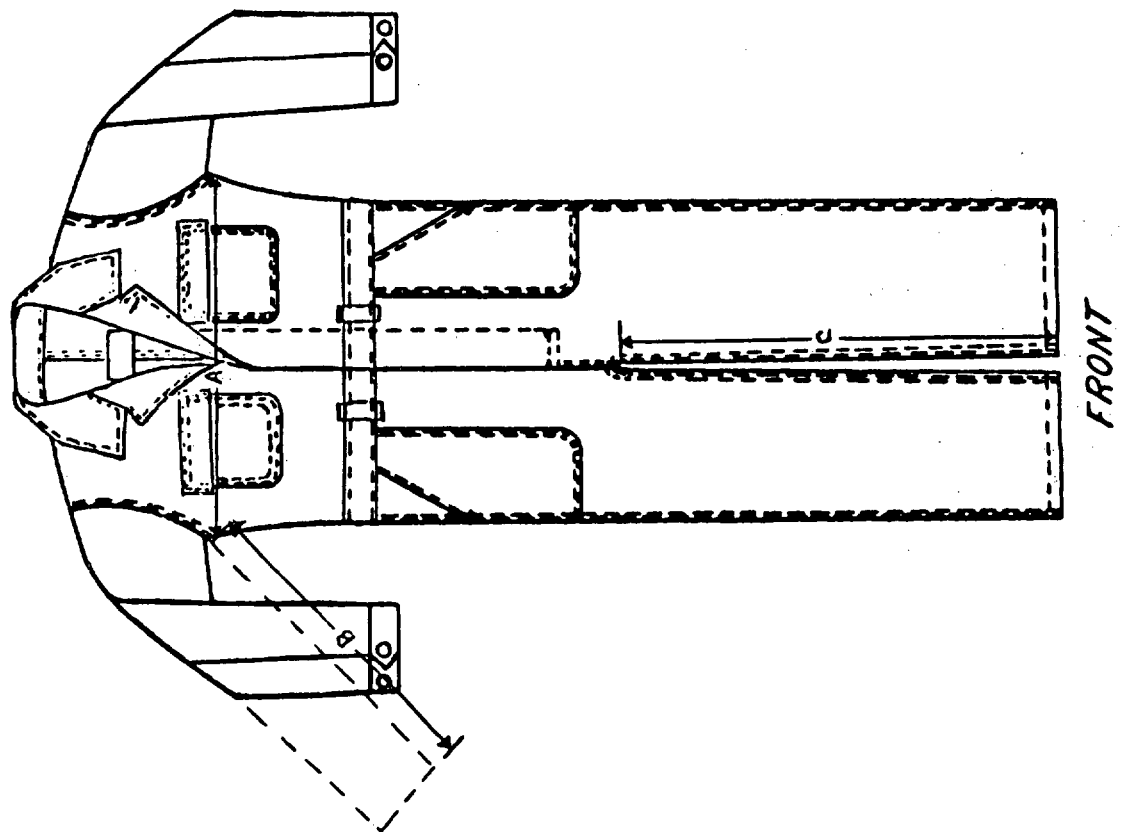
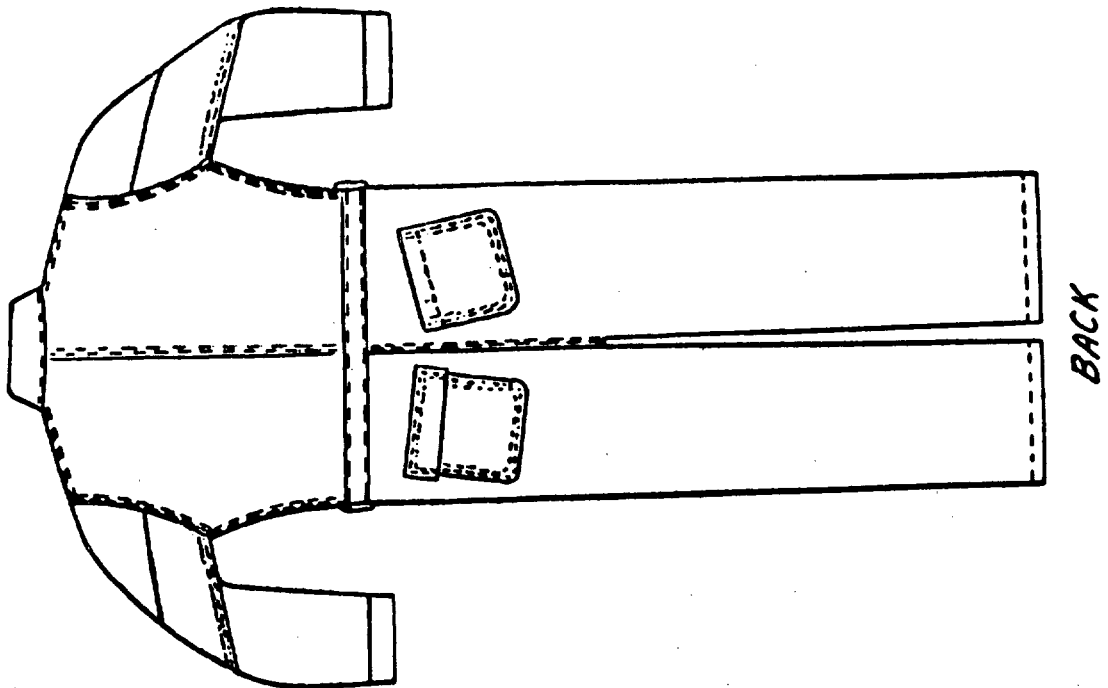
Preparing Activity:
 Navy - NU

Review Activity:
 DLA - CT
 Navy - CG

Project No. 8405-N006

User Activity:
 Navy - SH

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL*(See Instructions – Reverse Side)***1. DOCUMENT NUMBER****2. DOCUMENT TITLE****3a. NAME OF SUBMITTING ORGANIZATION****4. TYPE OF ORGANIZATION (Mark one)**☐**VENDOR**☐**USER**☐**MANUFACTURER**☐**OTHER (Specify):** _____**b. ADDRESS (Street, City, State, ZIP Code)****5. PROBLEM AREAS****a. Paragraph Number and Wording:****b. Recommended Wording:****c. Reason/Rationale for Recommendation:****6. REMARKS****7a. NAME OF SUBMITTER (Last, First, MI) – Optional****b. WORK TELEPHONE NUMBER (Include Area Code) – Optional****c. MAILING ADDRESS (Street, City, State, ZIP Code) – Optional****8. DATE OF SUBMISSION (YYMMDD)**