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MIL-V-44416(GL)
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MILITARY SPECIFICATION

VEST, AIRCREW, SURVIVAL

This specification is approved for use by the Natick Research, Development, and Engineering Center, Department of the Army and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a survival vest, with or without components to be worn by aircrew personnel. The vest is part of an aircrew survival system. This is a special purpose Life Support Clothing and Equipment (LSC&E) item. All Government administrative and surveillance procedures applicable to LSC&E items shall be invoked in accordance with the contract or purchase order (see 6.2).

1.2 Classification. The vest shall be in the following types and sizes as specified (see 6.2).

Type I - Vest
Type II - Vest with components

Schedule of sizes

X-Small Small Medium Large X-Large

2. APPLICABLE DOCUMENTS

2.1 Government documents.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5019 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 8470

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

SPECIFICATIONS

FEDERAL

A-A-50041	-	Snap Link, Mountain, Piton, Locking
A-A-50083	-	Bag, Plastic, Folded Garment
V-F-106	-	Fastener, Slide, Interlocking
V-T-295	-	Thread, Nylon
QQ-P-416	-	Plating, Cadmium (Electrodeposited)
DDD-L-20	-	Label, For Clothing, Equipage, and Tentage, (General Use)
PPP-B-26	-	Bag, Plastic (General Purpose)
PPP-B-636	-	Boxes, Shipping, Fiberboard

MILITARY

MIL-B-18	-	Battery, Dry
MIL-R-3390	-	Rings, Dee
MIL-W-4088	-	Webbing, Textile, Woven Nylon
MIL-T-5038	-	Tape, Textile and Webbing, Textile, Reinforcing, Nylon
MIL-W-5664	-	Webbing, Textile, Elastic
MIL-C-10436	-	Compass, Magnetic, Unmounted: Lensatic, Luminous 5 Degree and 20 Mil Graduations
MIL-S-17980	-	Sea Marker Packet, Inflatable Survival Equipment
MIL-M-18371	-	Mirror, Emergency Signaling, Mark 3
MIL-F-21840	-	Fastener, Tapes, Hook and Loop, Synthetic
MIL-L-35078	-	Loads, Unit; Preparation of Semiperishable Subsistence Items; Clothing, Personal and Equipage, General Specification For
MIL-L-38217	-	Light, Marker Distress
MIL-L-38484	-	Life Preserver, Underarm, Pneumatic
MIL-C-43128	-	Cloth, Plain Weave, Nylon, Water Repellent, OG-106
MIL-W-43668	-	Webbing, Textile, Textured or Multifilament
MIL-W-43685	-	Webbing, Tape, Textile, Aramid Fiber
MIL-T-43709	-	Tape, Textile, Aramid
MIL-C-43842	-	Cloth, Oxford, Aramid
MIL-C-43989	-	Cloth, Knitted, Raschel, Aramid
MIL-P-44407	-	Packets for Vest, Aircrew, Survival
MIL-P-51409	-	Paper, Chemical Agent Detector VGH, ABC-M8, Booklet Of
MIL-D-51490	-	Detector Kit, Chemical Agent
MIL-R-81493	-	Radio Set, AN/PRC-90

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MIL-S-81941 - Survival Kit, Individual Airman (Flashguard)
MIL-C-83429 - Cloth, Plain and Basket Weave, Aramid
MIL-S-83352 - Signal Kit, Personnel, Distress, A/P 25S-5A

STANDARDS

FEDERAL

FED-STD-595 - Colors Used in Government Procurement
FED-STD-751 - Stitches, Seams, and Stitching

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-970 - Standards and Specifications, Order of Precedence for the Selection of
MS 22018 - Snap, Parachute Harness Quick Fit Ejector
MS 70101 - Adapter, Reversible, Quick Fit, 500 lbs., 1-3/4 Inch

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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

DRAWINGS

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

2-1-2247 - Container, Underarm, Life Preserver, Modified

(Copies of drawings are available from the U.S. Army Natick Research, Development, and Engineering Center, ATTN: STRNC-UX, Natick, MA 01760-5017.)

OTHER GOVERNMENT DOCUMENTS

JOINT COMMITTEE ON PRINTING (JCP) PUBLICATIONS

JCP-A-60 - Government Paper Specification Standards
JCP-L-50 - Government Paper Specification Standards

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

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 are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the issue of the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging

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

3.2 Guide samples. Samples, when furnished, are solely for guidance and information to the contractor (see 6.5). Variations from this specification may appear in the sample, in which case this specification shall govern.

3.3 Materials and components. The materials and components shall be as specified herein and on the applicable drawings. Materials and components not specified shall be selected by the contractor in accordance with MIL-STD-970. Materials and components specified in accordance with MIL-STD-970 shall not degrade the operational suitability or effectiveness of the vest. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

3.3.1 Cloth, knitted, raschel, aramid. The knitted, aramid cloth used for the body of the vest shall be Olive Green 106 and shall conform to MIL-C-43989.

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3.3.2 Cloth, oxford, aramid. The oxford aramid cloth used for all pockets shall be Olive Green 106 and shall conform to MIL-C-43842.

3.3.3 Cloth, plain weave, aramid. The aramid cloth used for the radio pocket and radio pocket back shall be type II conforming to MIL-C-83429. The color shall be Olive Green 106.

3.3.4 Fastener tape, hook and loop, synthetic. The fastener tape shall be type I, class 1 conforming to MIL-F-21840. The color shall be Olive Green 106. The 3/4 inch tape shall be used on all pockets and pocket closures and the 1-1/2 inch tape shall be used on the waist adjustment straps on the rear of the vest.

3.3.5 Webbing, textile, woven nylon. The nylon webbing used for the chest adjustment strap, leg straps, leg strap tunnel, waist adjustment straps, waist adjustment strap loops and bottom reinforcement strap shall be type VIII, class 1 conforming to MIL-W-4088. The color shall be Olive Drab 7.

3.3.6 Webbing, tape, textile, aramid fiber. The webbing used for the pocket pull tabs shall be type I conforming to MIL-W-43685. The color shall be Olive Green 106.

3.3.7 Webbing, textile, elastic. The elastic webbing used on the leg straps and chest adjustment strap shall be type II, class 1, 1-1/2 inches wide conforming to MIL-W-5664. The color shall be Olive Green 106.

3.3.8 Webbing, textile, textured or multifilament nylon. The webbing used for attaching the "D" rings for the motor blower attachment, mask carrier attachment and leg strap storage attachments shall be type III conforming to MIL-W-43668. The color shall be Olive Drab 7.

3.3.9 Tape, textile, aramid. The tape used for the slide fastener pull tab shall conform to MIL-T-43709. The color shall be Olive Green 106.

3.3.10 Tape and webbing, nylon. The tape used to reinforce the webbing for the Snap, Parachute Harness, Quick Fit Ejector shall be type IV, class 2, 1-1/2 inches wide conforming to MIL-T-5038. The tape used for binding the vest and forming the chest adjustment strap loops shall be type IV, class 2 of 1 inch wide conforming to MIL-T-5038. The color shall be Olive Drab 7.

3.3.11 Thread, nylon. The thread used on the vest shall be types I, II, or III, class A, letter size E conforming to V-T-295. The color shall be Camouflage Green 483 approximating color chip 34094 of FED-STD-595. The following exceptions shall apply:

a. When type VIII, class 1 of MIL-W-4088 webbing is used, except in areas where WW stitching is required, the thread shall be types I, II, or III, class A, letter size FF conforming to V-T-295.

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b. When type VIII, class 1 of MIL-W-4088 webbing is used in areas where WW stitching is required, the thread shall be types I, II, or III, class A, number size 3 conforming to V-T-295.

3.3.12 Fasteners, slide, interlocking. The slide fastener shall be type IV, style 8, size MHS, 14 inches long with a brass chain and a black chemical finish and shall conform to V-F-106.

3.3.13 Labels. Each vest shall have a combination identification and instruction label and a size label conforming to type VI, class 14 of DDD-L-20 with the following exceptions and detailed requirements.

a. The size characters for the instruction label, except capital letters, shall be 1/16 inch minimum. All capital letters shall be 3/32 inch minimum.

b. The label material shall be nylon conforming to MIL-C-43128, except it shall not be water-repellent treated. The label material for class 1 shall be dyed Medium Green 614 matching the standard sample (see 6.4).

c. The required permanent coating shall not apply.

d. The label shall show fastness to laundering in accordance with class 14 of DDD-L-20.

3.3.13.1 Combination identification and instruction label. The combination identification and instruction label shall contain the following information:

READ THESE INSTRUCTIONS CAREFULLY

WASHING INSTRUCTIONS FOR VEST, AIRCREW, SURVIVAL

1. Remove the survival items from the pockets.

2. Hand/Machine Washing. Hand wash in warm water (120°F) and mild laundry detergent or machine wash at permanent press cycle.

3. Rinsing. Rinse thoroughly in clear warm water after laundering. All detergents must be removed. After rinsing, hang the vest to drip dry or tumble dry with the temperature dial set at permanent press cycle.

4. Fixed laundering procedure. Wash the vest according to laundry wash formula "K" of FM-10-17. Lightly extract, then tumble dry at 180°F (82°C) maximum.

5. Field laundry procedure. Wash the vest according to laundry wash formula "1" of TM 10-280. Lightly extract, then tumble dry at 180°F (82°C) maximum.

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6. DO NOT STARCH OR USE CHLORINE BLEACH UNDER ANY CONDITIONS.

7. DO NOT DRY CLEAN. DO NOT REMOVE THIS LABEL.

8. WARNING: Launder with the slide fastener and hook and loop fastener tapes engaged. Do not press hook and loop fasteners.

3.3.13.2 Size label. The size label shall contain the following information for each size.

X-Small		Small		Medium	
Chest:	Under 33 inches	Chest:	33-37 inches	Chest:	38-41 inches
Waist:	Under 27 inches	Waist:	27-31 inches	Waist:	32-35 inches

Large		X-Large	
Chest:	42-45 inches	Chest:	Over 45 inches
Waist:	36-39 inches	Waist:	Over 39 inches

3.3.14 Operator's manual. An operator's manual shall be furnished by the contractor with each vest assembly. The manual shall be placed in the pocket indicated on figure 1. The printing, collation, folding and stitching of the manual shall be in accordance with the standard sample (see 6.4). The cover shall be a vellum finish white paper conforming to JCP-L-50, 130 pound weight basis 20 by 28 inches per 1000 sheets (see 4.4.1.2). The text paper shall be white offset book paper conforming to JCP-A-60, 120 pound weight basis 25 by 38 inches per 1000 sheets.

3.3.15 Rings, dee. Rings used for the motor blower attachment, mask carrier attachment and leg strap storage attachments shall be class 1, style 1, size X, with an "A" dimension of 3/4 inch conforming to MIL-R-3390. The color shall be black.

3.3.16 "V" ring. The rings used on the leg strap attachments shall be the "Ring 'V' Target Safety Webbing" of AF PN 54A90B2 (see 6.5). The color shall conform to type II, class 2 of QQ-P-416 and shall be black chromate.

3.3.17 Snap, parachute harness quick fit ejector. The quick fit ejector snap used on the leg straps shall conform to MS 22018. The color shall conform to type II, class 2 of QQ-P-416 and shall be black chromate.

3.3.18 Adapter, reversible, quick fit, auxilliary equipment. The adapter used on the chest adjustment strap shall be cadmium plated and conform to MS 70101. The color shall conform to type II, class 2 of QQ-P-416 and shall be black chromate.

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3.3.19 Snap link, mountain, piton, locking. The snap link used on the chest straps shall conform to type III of A-A-50041. The color shall be black chromate.

3.3.20 Vest components. The components of the vest shall be as specified in table I. Each component shall conform to the applicable document cited therein, or as otherwise specified. In assembling components of the vest, each vest shall include the items listed in table I, unless otherwise specified. The components shall be included in the pockets specified on figure 1.

TABLE I. Vest components

Nomenclature	Applicable Document	Unit	Quantity
Mirror, emergency, signaling, type I, class 1 (6350-00-105-1252)	MIL-M-18371	Each	1
Compass, magnetic, unmounted (6605-00-151-5337)	MIL-C-10436	Each	1
Light marker, distress, type I, class 2, SDU-5/E (6230-00-938-1778)	MIL-L-38217	Each	1
Flashguard (6230-00-401-2285)	MIL-S-81941 1/	Each	1
Paper, chemical agent detector (6665-00-050-8529)	MIL-P-51409	Each	1
Signal kit, personnel distress, A/P25S-5A (1370-00-490-7362)	MIL-S-83352	Each	1
Signal, smoke and illumination, MK24 (1370-01-030-8330)	----	Each	2
Radio set, AN/PRC-90, survival (5820-00-782-5308)	MIL-R-81493	Each	1 2/
Battery, nonrechargeable, BA 1568/U (6135-00-838-0706)	MIL-B-18	Each	1 2/
Sea marker packet, fluorescein (6850-00-270-9986)	MIL-S-17980	Each	1
Life preserver, underarm, LPU-10/P, pneumatic (4220-00-850-8655)	3.3.20.1	Each	1
Detector kit, chemical agent M256 (6665-01-133-4964)	MIL-D-51490	Each	1
Packet, basic, type I	MIL-P-44407	Each	1
Packet, medical, type II	MIL-P-44407	Each	1
Packet, first aid dressing and water storage bag, type III	MIL-P-44407	Each	1
Packet, combat casualty blanket, type IV	MIL-P-44407	Each	1
Operator's manual	3.3.14	Each	1

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1/ Only the flashguard of MIL-S-81941 is required. It is used with the Light Marker, Distress
2/ Item procured separately and issued by unit commanders in the field.

3.3.20.1 Life preserver. The life preserver shall conform to the requirements of MIL-L-38484, with the following exceptions:

a. The adjustable harness and belt shall not be included on the life preserver.

b. The dimensions and design shall be as specified on Drawing 2-1-2247.

3.4 Age of components. Unless otherwise specified by the contracting officer (see 6.2), the vest components shall have been manufactured within one year prior to the date of delivery.

3.5 Design. The vest consists of a raschel knitted aramid cloth body and 12 aramid oxford cloth pockets which are intended for storage of survival items (see figure 1). The vest has rescue lift straps and quick release mechanisms for emergency recovery operations.

3.6 Patterns. Standard patterns, to be used for cutting the contractor's working patterns, will be furnished by the Government. The standard patterns shall not be altered in any way and are to be used as a guide for cutting the contractor's working patterns. The working patterns shall be identical to the standard patterns. The patterns provide a 3/8 inch seam allowance.

3.6.1 List of pattern parts. The components of the vest shall be cut from the material as specified in accordance with the pattern parts indicated below.

Material	Nomenclature	Parts
Cloth, knitted, raschel, aramid	Right front	1
	Left front	1
	Back	1
Cloth, oxford, aramid	Signal pocket	1
	Signal pocket flap	1
	Radio set pocket	1
	Radio set pocket back	1
	Radio set pocket flap	1
	Packet pocket (basic and medical)	2
	Packet pocket back (basic and medical)	2
	Packet pocket flap (basic and medical)	2
	Compass and mirror pocket	2
	Compass and mirror pocket flap	2

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Material	Nomenclature	Parts
Cloth, oxford, aramid (cont'd)	Light marker distress pocket	1
	Light marker distress pocket flap	1
	Sea marker pocket	1
	Sea marker pocket flap	1
	Operator's manual pocket	1
	Operator's manual pocket flap	1
	Spare pocket	1
	Spare pocket flap	1
	Inside pocket (for types III and IV survival packets)	2
Cloth, plain weave, aramid	Radio set pocket back	1
	Radio set pocket	1
Webbing, textile, woven nylon	Adjustable strap	2
	Tunnel	2

3.7 Construction. The construction shall conform in all respects to the requirements specified in table II and herein.

3.7.1 Stitches, seams, and stitching. All stitches, seams, stitching types and stitches per inch specified in table II shall conform to FED-STD-751. Seam allowances shall be maintained with seams sewn so that no raw edges, runoffs, twists, pleats, puckers, or open seams will result. When two or more methods of seam or stitch types are given for the same operation, any one may be used. The height of overedge stitching shall be 3/16 to 1/4 inch. Unless otherwise specified, edge stitching shall be 1/4 to 5/16 inches from edge.

3.7.1.1 Thread breaks and ends of seams. Ends of all stitching shall be backstitched or overstitched not less than 1/4 inch except where ends are turned under in a hem or caught in other seams or stitching. Thread tensions shall be maintained so that there will be no loose stitching resulting in loose bobbin or top thread or excessively tight stitching resulting in puckering of the materials sewn. The lock shall be embedded in the materials sewn.

3.7.1.1.1 Repairs of stitching. Repairs of stitching shall be as follows:

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

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b. Except for prestitching, thread breaks or two or more consecutive skipped or run-off stitches noted during inspection of the item shall be repaired by overstitching. The stitching shall start a minimum of 1/2 inch in back of the defective area, continue over the defective area, and continue a minimum of 1/2 inch beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching without damaging the materials, and restitching in the required manner. 1/

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

3.7.2 Bartacks. Bartacks shall measure 1/4 to 3/8 inch long, unless otherwise specified, and be free from thread breaks and loose stitching.

3.7.3 Fusing of ends of nylon tape and webbing. All ends of nylon tape and webbing shall be fused. The apparatus used to fuse the tape ends shall be capable of providing sufficient heat to provide a smooth edge with the cut ends of the tape yarns fused together.

3.8 Fit. The finished vest shall accommodate the components in their designated pockets without strain on the seams. The components required for the fit examination shall be obtained from the contracting activity (see 6.4).

3.9 Repairs. Repairs such as mends, darns, patches, or splices are not permitted on the vest.

3.10 Manufacturing operations requirements. The vest shall be manufactured in accordance with operations specified in table II. The contractor is not required to follow the exact sequence of operations. Any additional basting or holding stitches used to facilitate manufacture is permissible provided the thread is removed or does not show on the finished vest.

3.11 Use of automated apparel equipment. Automated apparel equipment may be used to perform any of the operations specified in table II, providing that the seam and stitch type are as specified and the finished component conforms to the required configuration. When a government furnished shaper pattern is forwarded, the component shall conform to that pattern.

3.12 Figure. Figure 1 is furnished solely for guidance and information. Should variation from the written specification appear in the figure, the written specification shall govern.

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NO.	TABLE II. MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	Cutting. a. The raschel knit cloth should be cut just before the binding tape is sewn on. This will help to keep it from curling up or stretching out of shape. b. The aramid oxford cloth for the pocket parts and the plain weave aramid cloth for the radio pocket shall be cut in strict accordance with patterns furnished which show size, shape, directional lines and placement of components. c. No components shall be drilled for positioning. d. The webbing and tape, unless otherwise specified, shall be cut to the lengths specified on the patterns for the applicable size. The ends of all webbing and tape shall be fused (see 3.7.3). e. The webbing for the chest adjustment strap shall be cut in the following lengths with a ± 1/4 inch tolerance for the specified sizes: X-Small - 57 inches Small - 61 inches Medium - 65 inches Large - 69 inches X-Large - 73 inches f. The webbing for the leg straps shall be cut in the following lengths with a ± 1/4 inch tolerance for the specified sizes:						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	Cutting. (cont'd) X-Small - 126 inches Large - 132 inches Small - 128 inches X-Large - 134 inches Medium - 130 inches g. The webbing for the pocket pull tabs shall be cut 4-1/2 ± 1/8 inches long (11 for each vest). h. The elastic webbing used on the leg straps and chest adjustment strap shall be cut 4-1/2 ± 1/8 inches long (five for each vest). i. The tape that is attached to the snap, parachute harness for reinforcement (two on each vest) and the buckle on the chest adjustment strap shall be cut 6 ± 1/8 inches long. j. The tape for binding the vest shall be cut as specified. The tape for making the loops to hold the chest adjustment strap in place shall be cut 3-1/2 ± 1/16 inches in length (two for each vest). k. Cut the hook and loop portions of fastener tape in the lengths specified on the patterns for the applicable size with a ± 1/8 inch tolerance.						
2.	Replacement of defective components. During the spreading, cutting and manufacturing process, components having material defects or damages that are classified as defects in 4.4.3 shall be						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
2.	Replacement of defective components. (cont'd) removed from production and replaced with nondefective and properly matched components.						
3.	Marking. Mark, ticket or bundle all component parts to ensure a uniform shade throughout the vest. Any method of marking may be used except: a. Metal fastening devices b. Sew-on tickets c. Adhesive type tickets which leave traces of adhesive on the material after removal of the tickets						
4.	Prepare the leg straps. a. Select the correct length of webbing for the leg straps for the size of vest you are constructing (see operation 1.f.). At each of the first loop mid point measurements found on the following chart, fold the edges of webbing together so that they meet at the middle of the webbing.						

Size	Length	Top loop	Bottom loop
X-Small	126 inches	14-1/2 inches	31 inches
Small	128 inches	14-1/2 inches	31 inches
Medium	130 inches	14-1/2 inches	31 inches
Large	132 inches	14-1/2 inches	31 inches
X-Large	134 inches	14-1/2 inches	31 inches

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
4.	Prepare the leg straps. (cont'd)						
	b. Double-stitch perpendicularly across the middle.	301	SSa-2	8-10	FF	FF	
	c. Stitch close to the folded over edge, holding down that edge so that it tapers off 2 ± 1/4 inches from the measured point to where the webbing edge is flat again. Continue this stitching across to the other edge and around until it overlaps the beginning of the stitch.	301	SSa-1	8-10	FF	FF	
	d. Construct the bottom loop in the same manner at the bottom loop midpoint, however, curl the edges over facing the opposite side of the webbing from the first.	301	SSa-1	8-10	FF	FF	
	NOTE: For convenience do not assemble ejector snaps or end tabs until the vest is otherwise completed.						
5.	Prepare the chest adjustment strap.						
	a. Thread the tape for the reinforcement of the chest adjustment strap through the buckle. With the ends even, stitch 1/4 ± 1/16 inch away from the buckle.	301 or Bar-tack	SSa-2	10-12 28 per bartack	E	E	
	b. Thread one end of the webbing for the chest adjustment strap through the adapter (see 3.3.18) and over the tape attached in operation 5.a, so that the "V" shape of the adapter faces away from the strap.						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
5.	Prepare the chest adjustment strap. (cont'd)						
	c. Pull 5 ± 1/4 inches of the end through the adapter and fold over. Stitch together 2-1/2 ± 1/8 inches from the adapter with a 1 ± 1/16 inch vertical stitch or place a 1 ± 1/16 inch bartack across the webbing.	301 or Bar-tack	SSa-2	10-12 28 per bartack	FF	FF	
	d. At the other end of the webbing turn under the end 1 ± 1/8 inch then turn onto itself another two times and boxstitch with a 1-1/2 by 3/4 inch box-stitch.	301	LSb-2	10-12	FF	FF	
	e. Take one of the 4-1/2 ± 1/8 inches long pieces of elastic webbing (see operation 1.h) and line up raw edges. Overedge the ends together with a 3/16 ± 1/16 inch stitch. Turn the webbing inside out and slip it over the end of the chest adjustment strap.	503 or 504	EFd-1	10-12	E	E	
6.	Labels.						
	The labels shall be sewn to the vest on all four sides with stitching not more than 3/16 inch from edge of label. Stitching shall not be through the writing on the label. Locate the labels as follows:	301	LSbj-1	10-12	E	E	
	a. Combination identification and instruction label. The combination identification and instruction label shall be placed on the outside of the left front inside pocket 1 ± 1/8 inch down from the top and centered from the sides of the finished pocket.						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
6.	Labels. (cont'd)						
	b. Size label. The size label shall be placed on the outside of the right front inside pocket 1 ± 1/8 inch down from the top and centered from the sides of the finished pocket.						
7.	Assemble the body of the vest.						
	a. Stitch the fronts to the back at shoulders and side seams with a 1/2 ± 1/16 inch seam.	301	SSa-1	10-12	E	E	
	b. Sew the 1 inch binding tape along the shoulder seams. Attach one side of the tape at the stitching line of the seams with stitching 1/8 inch from the edge of tape. Turn binding over onto opposite side of seam allowance and stitch the tape on with stitching 1/8 inch from the edge of tape.	301	BSa-1	10-12	E	E	
	c. Repeat operation 7.b. for attaching the binding to the side seams.						
8.	Attach binding tape around body of vest.						
	a. Sew the 1 inch binding tape along the edge of the armholes. Start at bottom of armhole by attaching one side of the tape at the stitching line of the seam with stitching 1/8 inch from the edge of tape. Turn binding over onto opposite side of seam allowance and stitch the tape on with stitching 1/8 from the edge of tape. Overlap the ends of the tape by 1 ± 1/8 inch, folding the end under for a smooth edge.	301	BSa-1	10-12	E	E	

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TABLE II. (cont'd)

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
8.	Attach binding tape around body of vest. (cont'd)						
	b. Attach the binding tape for the bottom edge, up the front opening and around the neck edge in the same manner as in operation 8.a. Start at the back bottom of one side and finish at the bottom of the other side. Fold in the ends on each side for a smooth edge.						
	c. Make two waist adjustment strap loops out of the 1 inch webbing cut to the measurement specified on the pattern. Fold the tape in half and stitch on both sides of the tape 1/16 inch.	301	SSa-1	10-12	E	E	
	d. Place the loop on the binding tape of the armhole, as indicated on pattern, and place a bartack at each end of the loop.	Bar-tack		28 per bartack	E	E	
9.	Attach slide fastener to vest.						
	Position the slide fastener on the inside of the vest with the edge of slide fastener tape lining up with the edge of binding tape and stitch with one row of stitching 1/8 ± 1/16 inch from the edge of fastener tape. Top edge of slide fastener shall be turned under and caught in the stitching. The bottom of the slide fastener shall finish 1/2 inch from bottom of vest. Place a second row of stitching 1/4 ± 1/16 inch from the first.	301	LSbj-1	10-12	E	E	

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TABLE II. (cont'd)

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
10.	Attach chest adjustment strap.						
	a. Stitch the chest adjustment strap to the body of the vest, as indicated on pattern, with 4 point, 2-1/2 ± 1/4 inches long "WW" stitch. Ensure that the outer edge of the buckle is closely aligned with the slide fastener. This is especially important on the X-Small and Small vests.	301	LSbj-1	10-12	3	3	
	b. Stitch the chest adjustment strap to the left (as worn) armhole in the same location as the binding is stitched to the armhole with a 1-1/2 ± 1/8 inch stitch.	301	SSa-1	10-12	FF	FF	
11.	Attach leg straps.						
	a. Fold the first loop of the leg strap directly over at the mid point so that the folded edges are outside the loop and the free end is underneath. Align the loop with the edge of the vest, just above the slide fastener on the left side.						
	b. Superimpose the length of the webbing over the left side of the vest front. Stitch the webbing to the vest as indicated on pattern with a 4 point, 4 ± 1/8 inch "WW" stitch using three cord nylon thread.	301	LSbj-1	10-12	3	3	
	c. Stitch around the entire piece of webbing in a box pattern, holding it to the vest as indicated on pattern. This should result with the second loop mid point falling 2 ± 1/4 inches below the bottom edge of the vest.	301	SSa-1	10-12	FF	FF	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
11.	Attach leg straps. (cont'd)						
	d. Insert the free end of the leg strap into the narrow slot of the "V" ring and slide it all the way to the loop center.						
	e. Fold the leg strap at the loop center so that the "V" shape of the buckle faces down. Lay the webbing on the vest, as indicated on pattern, and stitch along both edges of the webbing holding it flat on the vest.	301	LSbj-1	10-12	FF	FF	
	f. At the bottom of the vest, just above the "V" ring loop where the webbing overlaps itself, stitch a 4 point, 4 ± 1/8 inches long "WW" stitch using three cord thread.	301	SSa-1	10-12	3	3	
	g. Where the chest adjustment strap and the leg strap intersect (on the left side), place a 1-1/2 by 1-1/2 inch boxstitch using three cord thread.	301	LSb-2	10-12	3	3	
	h. Assemble the right leg strap the same way as in operations 11.a through 11.g.						
	i. Attach the webbing cut to form the tunnel on the leg strap. Center it over the intersection of the two leg straps on the top strap (right one). Stitch as indicated on pattern with a 4 point 2-1/2 ± 1/4 inches long "WW" stitch at each end.	301	LSbj-1	10-12	3	3	

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TABLE II. (cont'd)

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD NEEDLE	THREAD BOBBIN/ LOOPER	THREAD COVER
12.	Make waist adjustment straps.						
	a. Take one piece of webbing and the hook portion of fastener tape and attach them together, lining up the end of the hook with the end of the webbing. Stitch around all four sides 1/16 to 3/32 inch from edge of tape.	301	SSa-1	10-12	FF	FF	
	b. Take the other piece of webbing and the loop portion of the fastener tape and attach them together, lining up the end of the loop with the end of the webbing. Stitch around all four sides 1/16 to 3/32 inch from edge of tape, but leave 1 ± 1/8 inch free at the end of the tape.	301	SSa-1	10-12	FF	FF	
13.	Attach webbing to bottom of vest.						
	Cut webbing 17 ± 1/8 inches long to match the bottom edges of the vest, as shown on the pattern. Position as indicated on pattern and stitch the webbing to outside of vest around the entire piece of webbing in a box pattern.	301	LSb-2	10-12	FF	FF	
14.	Attach waist adjustment straps.						
	a. Diagonally cut the webbing for the tunnels for the waist adjustment straps 3-3/4 ± 1/8 inches, to match the shape indicated on the pattern. Position as indicated on pattern and stitch the webbing to the inside of the vest on the diagonal ends.	301	LSbj-1	10-12	FF	FF	
	b. Align the bare end of the loop waist adjustment strap 3/4 inch in back of the side seam below the	301	LSb-2	10-12	FF	FF	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
14.	Attach waist adjustment straps. (cont'd) right armhole, 1/2 inch above the bottom edge of the vest. The loop shall face inside the vest. Stitch to vest with a 1-1/2 by 1/4 inch boxstitch. c. Attach the hook waist adjustment strap to the left inside seam in the same manner as operation 12.b. The hook shall face to the outside of the vest. d. Slip both hook and loop waist adjustment straps through their respective tunnels and attach them together via the hook and loop fastener tape.						
15.	Attach dee rings to bottom of vest. Cut six 4-1/2 ± 1/8 inch pieces of 3/4 inch webbing. Attach one small dee ring on each piece, fold with 3/4 inch of one side folded under and boxstitch with a 1 by 5/8 inch boxstitch in locations indicated on patterns.	301	BSa-1	10-12	E	E	
16.	Make outside pocket flaps. Finished appearance. The outside pocket flaps shall be uniformly stitched and shall finish smooth and flat, without twists, gathers, puckers, pleats or raw edges. a. All ten outside pockets have separate flaps. The construction of all the flaps is the same.						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
16.	Make outside pocket flaps. (cont'd)						
	b. Fold each flap in half, with fabric face to face, and raw edges even and stitch 1/4 ± 1/16 inch from the edges, leaving the top raw edges open.	301	SSe-2(a)	10-12	E	E	
	c. Turn flap right side out and work out edges. Top-stitch side and bottom edges 1/4 ± 1/16 inch from edges.	301	SSe-2(b)	10-12	E	E	
	d. Overedge stitch the top raw edges of each pocket flap together.	503 or 504	SSa-1	10-12	E	E	
	e. Cut a 4-1/2 ± 1/8 inch piece of webbing for the pocket pull tabs, one for each pocket except cut two for manual pocket.						
	f. Before stitching the hook portion of the fastener tape, positioned as indicated on patterns, center the raw edges of the webbing for the pull tab 1/2 inch under the hook.						
	g. The two pocket pull tabs for the manual pocket should be located 2-1/2 ± 1/4 inches apart from each other and attached in the same manner as the other pull tabs.						
	h. Position hook portion of fastener tape over pull tab and stitch on all four sides 1/16 to 3/32 inch from edge of tape.	301	LSbj-1	10-12	E	E	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
17.	Make all outside pockets.						
	a. Overedge the raw edges of all pockets, except the radio set pocket, along three sides. The top does not need to be overedged.	503 or 504	SSa-1	10-12	E	E	
	b. The two pieces cut for radio set pocket shall be superimposed and overedged on all four sides.	503 or 504	SSa-1	10-12	E	E	
	c. Fold under top of all pockets 1/2 ± 1/16 inch and then turn under again 1 ± 1/8 inch, as indicated on patterns. Stitch 1/16 to 1/8 inch from folded edge.	301	EFb-1	10-12	E	E	
	d. Make pockets for the compass pocket, mirror pocket and light marker distress pocket in the following manner:						
	(1) Fold the right sides together of the two open corners and overedge.	503 or 504	SSa-1	10-12	E	E	
	(2) Topstitch the corner seam with two rows of stitching superimposed on each other for reinforcement.	301	LSd-2	10-12	E	E	
	(3) Position the loop portion of the fastener tape to each pocket as indicated on the patterns. Stitch on all four sides 1/16 to 3/32 inch from the edge of tape.	301	LSbj-1	10-12	E	E	
	e. Make the remaining seven outside pockets in the following manner:						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
17.	Make all outside pockets. (cont'd)						
	(1) Fold the right sides together of the two open corners and overedge.	503 or 504	SSa-1	10-12	E	E	
	(2) Topstitch the corner seam with two rows of stitching superimposed on each other for reinforcement.	301	LSd-2	10-12	E	E	
	(3) Fold and form square edges, as indicated on patterns, by topstitching around entire front of pocket 1/16 to 3/32 inch from the edge.	301	LSd-2	10-12	E	E	
	(4) Position the loop portion of the fastener tape to each pocket as indicated on the patterns. Stitch on all four sides 1/16 to 3/32 inch from the edge of tape.	301	LSbj-1	10-12	E	E	
18.	Attach outside pockets and flaps.						
	a. The pockets and flaps shall be stitched to the vest on the positions indicated on the patterns.	301	LSd-1	10-12	E	E	
	b. The medical packet pocket, basic packet pocket and and the radio set pocket all have a back. Overedge the back of the medical packet pocket and the basic packet pocket on all four sides. Superimpose the two pieces cut for the radio set pocket and overedge on all four sides.	503 or 504	SSa-1	10-12	E	E	
	c. Bind the pockets to the back with 1 inch binding tape on three sides.	301	BSa-1	10-12	E	E	

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TABLE II. (cont'd)

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
18.	Attach outside pockets and flaps. (cont'd)						
	d. Bind the raw edge of the flap to the back with 1 inch binding tape.	301	BSa-1	10-12	E	E	
	e. Stitch the radio set pocket to the vest, as indicated on pattern. Stitch around the entire back 1/8 ± 1/16 inch from the edge.	301	LSd-1	10-12	E	E	
	f. Stitch the medical packet and basic packet pockets to the vest, as indicated on patterns. Stitch across the top and bottom only of back 1/8 ± 1/16 inch from the edge.	301	LSd-1	10-12	E	E	
	g. The remaining seven pockets do not have backs. Stitch the pockets and flaps directly to the vest, as indicated on patterns. Turn the edges of the pocket in 1/2 ± 1/8 and topstitch around the three sides 1/16 to 3/32 inch from the edge. Line up the flaps with the pockets and stitch the overedged edge 1/2 ± 1/8 inch.	301	LSd-1	10-12	E	E	
19.	Make inside pockets and attach labels.						
	a. Overedge the raw edges of the pockets along three sides. The top does not need to be overedged.	503 or 504	SSa-1	10-12	E	E	
	b. Fold under top of each pocket 1/2 ± 1/16 inch and then turn under again 1 ± 1/8 inch, as indicated on patterns. Stitch 1/16 to 1/8 inch from folded edge.	301	EFa-1	10-12	E	E	

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TABLE II. (cont'd)

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
19.	Make inside pockets and attach labels. (cont'd)						
	c. Attach labels in positions specified in operation 6.						
	d. Stitch the pockets directly to the vest, as indicated on patterns. Turn the edges of the pocket in 1/2 ± 1/8 and topstitch around the three sides 1/16 to 3/32 inch from the edge.	301	LSd-1	10-12	E	E	
20.	Clean vest.						
	a. Trim all ends of stitching to 1/4 inch maximum length throughout (inside and outside) and remove loose threads from the vest.						
	b. Remove all spots, stains, and visible shade or size markings.						

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3.13 Workmanship. The end item shall conform to the quality of product established by this specification and the occurrence of defects shall not exceed the applicable acceptable quality levels. Utmost care shall be taken during fabrication to ensure quality workmanship and safety of the service person using the item.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection 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 accept defective material.

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

4.1.3 Certificates of compliance. When certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification.

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

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

4.3 First article inspection. When a first article is required (see 3.1 and 6.3), it shall be examined as specified in 4.4.3 and 4.4.4.

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

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

4.4.1.1 Component and material certification. A certificate of compliance may be acceptable as evidence that the components conform to the requirements specified in 3.3.1 through 3.3.20.1.

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

4.4.3 End item visual examination. The end items shall be examined for the defects listed in table III. The lot size shall be expressed in units of vests. The sample unit shall be one vest. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects, 6.5 for major and minor A combined defects, and 15.0 for total (major, minor A, and minor B combined) defects.

TABLE III. End item visual defects

Examine	Defect	Classification Major	Minor A	Minor B
Cutting	Any component part not cut in accordance with directional lines indicated on patterns, or not in accordance with specified requirements	101		
Fabric	Any hole, cut, tear, smash, or broken or missing yarn	102		
	Any abrasion mark			301
Fastener tape, hook and loop	Any cut, hole, or tear	103		
	Missing hooks	104		
	Hooks flattened	105		
	Hook and loop out of alignment or not able to be fastened properly		201	
	Set on crookedly			302

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

Examine	Defect	Classification Major	Minor A	Minor B
Fastener tape, hook and loop (cont'd)	Width of hook and loop not as specified			303
	Loop portion of fastener tape attached to pocket flap		202	
	Hook portion of fastener tape attached to pocket		203	
Tape and webbing, nylon	Any hole, cut, tear or frayed edge	106		
	Ends not fused as specified	107		
	Not specified width		204	
Webbing, elastic	Cut, chafed, abraided, or otherwise damaged affecting serviceability	108		
	Not specified width		205	
Components and assembly	Any component or required operation omitted, including components to be included in pockets of type II vest (unless otherwise specified herein)	109		
	Any component not as specified	110		
	Any component part twisted, distorted, pleated, misshaped, tight or full (unless otherwise specified)		206	
	Any operation not performed as specified (unless otherwise specified)			304
	Needle chews	111		
Seams and stitching	Accuracy of seaming: - Seam irregular, twisted, pleated or wavy			305
	NOTE: Pleats shall be scored when they exceed 1/4 inch in length and 1/16 inch in depth of fold.			
	- Seam puckered (score only when on major portion of seam)			306
	- Any part of vest caught in unrelated operation or stitching		207	

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

Examine	Defect	Classification Major	Minor A	Minor B
Seams and stitching (cont'd)	- End of stitching when not caught in other seams or stitching backtacked less than 1/4 inch			307
	- Thread breaks (all stitch types) stitched less than 1/2 inch beyond each end of break			308
	- Ends of a continuous line of stitching not overlapped or overlapped less than 1/2 inch			309
	- Ends of stitching on label overlapped with less than three stitches			310
	Open seams:			
	- Up to 1/2 inch inclusive			311
	- More than 1/2 inch		208	
	NOTE: A seam shall be classified as an open seam when one or more stitches joining a seam are broken, or when two or more consecutive skipped or runoff stitches occur.			
	Raw edges:			
	- On outside:			
	- up to 1/2 inch inclusive			312
	- more than 1/2 inch		209	
	- On inside, more than 1 inch			313
	NOTE: Raw edges not securely caught in stitching shall be classified as open seams.			
	Gage of stitching and seam allowance:			
	- Irregular, i.e., unevenly gaged, or corresponding stitchings not uniformly gaged (to be scored only when condition exists on more than 1/2 the length of the seam)			314

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

Examine	Defect	Classification Major	Minor A	Minor B
Seams and stitching (cont'd)	- Width not as specified or not within range of gage specified or varies more than 1/16 inch when no range is specified			315
	- Seam allowance not as specified or varies more than 1/8 inch			316
	Run-offs:			
	Edge-stitching			
	- 1/4 to 1/2 inch inclusive			317
	- more than 1/2 inch		210	
	Seam or stitch types:			
	- Not specified seam or stitch type		211	
	- Any line of stitching omitted:			
	- affecting serviceability seriously	112		
	- affecting serviceability but not seriously		212	
	Height of WW stitching less than specified by more than 1/8 inch	113		
	Height of boxstitching less than specified by more than 1/16 inch	114		
	Stitch tension:			
	- Loose tension, resulting in a loose seam:			
	- up to 1/2 inch inclusive			318
	- more than 1/2 inch		213	
	- Tight tension (stitches break when normal strain is applied in the direction of the seam or stitching)	115		
	Stitches per inch:			
	All seams:			
	- less than the minimum		214	
	- more than the maximum			319

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

Examine	Defect	Classification Major	Minor A	Minor B
Seams and stitching (cont'd)	NOTE: Variation in the number of stitches per inch caused by operator speeding up the machine and pulling the fabric in order to sew over heavy places, or in turning corners shall be classified as follows: (a) within the minor B defect classification - no defect (b) within the minor A defect classification - Minor B defect			
Cleanness	Noticeable grease or oil stains			320
	Thread ends not trimmed throughout			321
Hardware: General	Broken, damaged, or malformed; corroded areas; burrs or sharp edges	116		
	Finish omitted or not as specified		215	
	Size or type not as specified	117		
	Not assembled as specified, improperly set or reversed, failing to serve intended purpose		216	
Hems	Less than specified width on hems		217	
Pockets and flaps	Edges of pockets pleated or twisted in stitching		218	
	Raw edge of pocket or flap hems not turned in		219	
	Pocket flap tight, causing fullness, twisting, or curling on pocket flap		220	
	Flap attached crookedly, i.e., distance between sides or pocket and underside of opened flap vary by more than 1/4 inch		221	
	Pocket or flap poorly shaped		222	
	Pocket not constructed or positioned on vest as specified	118		
	Flap not covering front or back edge of pocket by 3/16 inch or more		223	

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

Examine	Defect	Classification Major	Minor A	Minor B
Pockets and flaps (cont'd)	Pocket flaps not uniform in width and length from pocket to pocket by more than 1/8 inch			322
	Cut lengths of hook and loop for pockets less than specified			323
	Pocket and flap hook and loop tape out of alignment or not able to be fastened properly		224	
Bartacks	One or more bartacks omitted		225	
	Any bartack not as specified or not in specified location			324
	Loose, incomplete or broken stitching		226	
	Not specified size		227	
Reinforcements	Omitted or mislocated		228	
Slide fastener	Slide fastener not specified type or size	119		
	Any part of slide fastener assembly omitted, bent, broken, cracked or otherwise defective, affecting function	120		
	Top ends of tape not turned in and caught in the stitching joining slide fastener to vest		229	
	Shade of tape not as specified		230	
	Not functioning properly, failing to effect a secure closure or to open freely	121		
	NOTE: The slide fastener shall be fully closed and opened to determine if fastener operates smoothly and provides a secure closure.			
	Not specified type or size	122		
	Fastener tape cut or torn	123		
	Fails to interlock chain		231	

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

Examine	Defect	Classification Major	Minor A	Minor B
Label	Omitted, illegible or misplaced		232	
	Not type and class specified	124		
	Not positioned as specified			325
	Not stitched on all four sides			326
	Label stitching through the printing		233	
Operator's manual	Omitted			327

4.4.4 End item fit examination. The end items shall be examined for the defects listed in table IV. The lot size shall be expressed in units of vests. The sample unit shall be one vest. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 1.5.

TABLE IV. End item fit defects

Examine	Defect	Classification Major	Minor
	NOTE: The vest fit examination shall be performed with the components for which the vest is designed. The inspector shall insert the components into their designated pockets without effort and the pocket flaps shall be closed to ensure a proper fit.		
Fit of components into vest pockets	Pockets too small or large, i.e., components fail to fit properly within the pocket	101	
	Pocket flaps too small or large, i.e., fail to close properly after components are inserted into pocket	102	
	Fastener tape fails to effect a smooth and secure closure		201

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

Examine	Defect
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application
Materials	Any component missing, damaged, or not as specified
Workmanship	Inadequate application of components, such as: incomplete sealing or closure of flap, improper taping, loose strapping, or inadequate stapling Bulged or distorted container
Contents	Number per container is more or less than required

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

Examine	Defect
Finished dimensions	Length, width, or height exceeds specified maximum requirements
Palletization	Pallet pattern not as specified Load not bonded 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. Preservation shall be level A.

5.1.1 Packaging of vest. The packaging of the vest must meet the current regulations for the domestic and international transportation of hazardous goods.

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5.1.2 Vests, type I. Each vest shall be zippered, belt buckled, snap link buckled to both chest rescue lift harness loops and the leg rescue lift straps buckled to the dee-rings. Each vest shall be folded to measure approximately 16 by 10 inches. Each vest shall be unit packed in a plastic bag conforming to A-A-50083.

5.1.3 Vests, with components, type II. Components, preserved as specified in table V, shall be placed in the pockets of vest as specified in figure 1. The life preserver shall not be attached to the vest. Each vest shall be zippered, belt buckled and snap link buckled to both chest rescue lift harness loops and the leg rescue lift straps buckled to the Dee-rings. Each vest shall be folded to measure approximately 18 by 10 inches. Each vest shall be unit packed in a plastic bag conforming to A-A-50083.

TABLE V. Preservation of components

Nomenclature	Applicable document	Preservation
Mirror, emergency signaling, type I	MIL-M-18371	5.1.3.1
Compass, magnetic, unmounted	MIL-C-10436	5.1.3.2
Light marker, distress, type I, class 2, SDU-5/E	MIL-L-38217	5.1.3.3
Flashguard	MIL-S-81941	5.1.3.3
Paper, chemical agent detector	MIL-P-51409	5.1.3.4
Detector kit, chemical agent, M256	MIL-D-51490	5.1.3.4
Operator's manual	3.3.14	5.1.3.5
Sea marker packet, fluorescein	MIL-S-17980	None
Life preserver, underarm, LPU-10/P, pneumatic	MIL-L-38484 1/	5.1.3.6
Signal, smoke and illumination, MK24	----	5.1.3.7
Signal kit, personnel distress/P25S-5A	MIL-S-83352	Level A 2/
Packet, basic, type I	MIL-P-44407	Level A 2/
Packet, medical, type II	MIL-P-44407	Level A 2/
Packet, first aid dressing and water storage bag, type III	MIL-P-44407	Level A 2/
Packet, combat casualty, blanket, type IV	MIL-P-44407	Level A 2/

1/ With modifications specified in 3.3.20.1.

2/ Level A preservation is that specified in the applicable document.

5.1.3.1 Mirror. The mirror shall be unit packed in a plastic bag, 0.003 inch thick, conforming to type I or type II, style 1 of PPP-B-26.

5.1.3.2 Compass. The compass shall be unit packed in a plastic bag, 0.003 inch thick, conforming to type I or type II, style 1 of PPP-B-26.

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5.1.3.3 Light marker. The battery shall be placed in the light and screwed in part way to secure it but not to engage power. The flashguard shall be fitted over the light. The entire assembly shall be unit packed in a plastic bag, 0.003 inch thick, conforming to type I or type II, style 1 of PPP-B-26.

5.1.3.4 Paper and detector kit. The paper and detector kit shall be unit packed together in a plastic bag, 0.003 inch thick, conforming to type I or type II, style 1 of PPP-B-26.

5.1.3.5 Operator's manual. The operator's manual shall be unit packed in a plastic bag, 0.003 inch thick, conforming to type I or type II, style 1 of PPP-B-26.

5.1.3.6 Life preserver. The two containers shall be detached from the harness and the belt removed (see 3.3.20.1).

5.1.3.7 Signals. Each signal shall be unit packed in a plastic bag, 0.003 inch thick, conforming to type I or type II, style 1 of PPP-B-26.

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

5.2.1 Level A packing.

5.2.1.1 Vests, type I. Ten vests of one type and size only, preserved as specified in 5.1, shall be packed in a shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside dimensions of the shipping container shall approximate 20 inches in length, 16 inches in width, and 7 inches in depth. Each shipping container shall be closed, waterproofed and reinforced in accordance with the appendix of PPP-B-636. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for type and class of load specified (see 6.2). Strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.2.1.2 Vests, with components, type II. Each vest with components and life preserver, preserved as specified in 5.1, shall be packed in a shipping container conforming to style RSC, grade V2s of PPP-B-636. The inside dimensions of the shipping container shall approximate 18 inches in length, 10 inches in width and 6-1/2 inches in depth. Each shipping container shall be closed, waterproofed and reinforced in accordance with the appendix of PPP-B-636. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.2). Strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.2.2 Level B packing.

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5.2.2.1 Vests, type I. Ten vests of one type and size only, preserved as specified in 5.1, shall be packed in a shipping container conforming to style RSC-L, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. Inside dimensions of the shipping container shall approximate 20 inches in length, 16 inches in width and 7 inches in depth. Each fiberboard shipping container shall be closed, waterproofed and reinforced in accordance with the appendix of PPP-B-636.

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

5.2.2.2 Vests, with components, type II. Each vest with components and life preserver, preserved as specified in 5.1, shall be packed in a shipping container conforming to style RSC-L, grade V3c of PPP-B-636. Inside dimensions of the shipping container shall approximate 18 inches in length, 10 inches in width and 6-1/2 inches in depth. Each fiberboard shipping container shall be closed, waterproofed and reinforced in accordance with the appendix of PPP-B-636.

5.2.3 Commercial packing.

5.2.3.1 Vests, when procured separately (see 6.2). Vests, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

5.3 Palletization. When specified (see 6.2), vests packed as specified in 5.2.2 or 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet type shall be type I (4-way entry), type IV or type V of MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D, or film bonding means F or G. Pallet pattern for the vest with components shall be number 26 and for vests procured separately shall be number 35 in accordance with the appendix of MIL-STD-147.

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

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The survival vest is intended as a survival aid for aircrew personnel to be used in both combat and non-combat missions. The vest is intended to carry survival items and aid in emergency recovery operations.

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6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.
b. Special provisions for verification inspection of Life Support Clothing and Equipment (see 1.1).
c. Type and size required (see 1.2).
d. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
e. When first article is required (see 3.1, 4.3, and 6.3).
f. Any waiver that is allowed for the vest component age requirement (see 3.4).
g. Levels of packing (see 5.2).
h. Type and class of unit load (see 5.2.1).
i. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1.1).
j. When palletization is required (see 5.4).

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

6.4 Source of supply for "V" ring. The "V" ring specified in 3.3.16 is AF Part No. 54A90B2 is available from U.S. Forgecraft Corporation, P.O. Box 387, Fort Smith, Arkansas 72902.

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

6.6 Subject term (key word) listing.

Emergency recovery
Life Support Clothing and Equipment
LSC&E
SARVIP System

Custodian:

Army - GL

Review activities:

Army - MD
DLA - CT

Preparing activity:

Army - GL

(Project 8470-0139)

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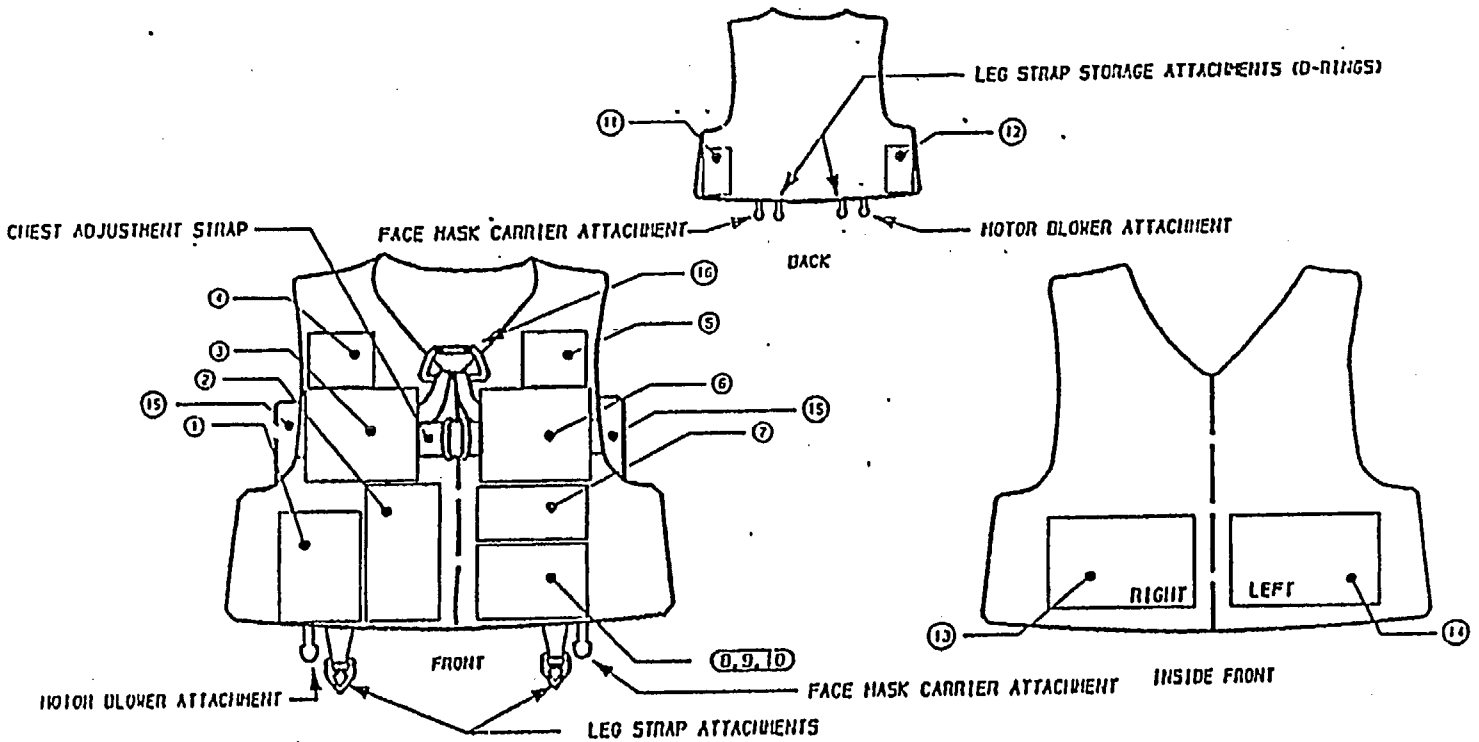

FIGURE 1. COMPONENTS FOR VEST, AIRCREW, SURVIVAL

1. SIGNAL, SMOKE & ILLUMINATION
2. RADIO SET, AN/PRC-90
3. SURVIVAL PACKET, TYPE I
4. COMPASS, MAGNETIC, UNMOUNTED LENSATIC
5. MIRROR, EMERGENCY SIGNALING
6. SURVIVAL PACKET, TYPE II
7. LIGHT MARKER, DISTRESS, SDU-5/E AND FLASHGUARD
8. PAPER, CHEMICAL AGENT DETECTOR & DETECTOR KIT
9. OPERATORS MANUAL
10. SIGNAL KIT, PERSONNEL DISTRESS
11. SEA DYE MARKER, FLUORESCEIN
12. SPARE POCKET
13. SURVIVAL PACKET, TYPE III
14. SURVIVAL PACKET, TYPE IV
15. LIFE PRESERVER, UNDERARM LPU-10/P
16. PITON

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I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-V-44416(GL)	2. DOCUMENT DATE (YYMMDD) 1991 February 28

3. DOCUMENT TITLE VEST, AIRCREW, SURVIVAL

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7. DATE SUBMITTED (YYMMDD)

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c. ADDRESS (Include Zip Code) Commander, U.S. Army Natick RD&E Center ATTN: STRNC-IRT Natick, MA 01760-5019	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	

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