

**INCH-POUND**

MIL-B-43290J

22 November 1989

SUPERSEDING

MIL-B-43290H

7 December 1987

**MILITARY SPECIFICATION****BAG, FLYER'S HELMET**

This specification is approved for use by all Departments and Agencies of the Department of Defense.

**1. SCOPE**

1.1 Scope. This document covers one type of flyer's helmet carrying bag.

**2. APPLICABLE DOCUMENTS****2.1 Government documents.**

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents 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-203	- Paper, Kraft, Untreated
V-F-106	- Fastener, Slide, Interlocking
V-T-285	- Thread, Polyester

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8415

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

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- DDD-L-20 - Label: For Clothing, Equipage, and Tentage,  
(General Use)
- PPP-B-636 - Boxes, Shipping, Fiberboard

## MILITARY

- MIL-F-10884 - Fasteners, Snap
- MIL-F-21840 - Fastener Tapes, Hook and Loop, Synthetic
- MIL-L-35078 - Loads, Unit: Preparation of Semiperishable  
Subsistence Items; Clothing, Personal Equipment  
and Equipage; General Specification For
- MIL-B-41826 - Batting, Synthetic Fibers: Polyester, (Unquilted and  
Quilted)
- MIL-C-43128 - Cloth, Plain Weave, Nylon: Water Repellent, OG-106
- MIL-W-43668 - Webbing, Textile, Textured or Multifilament Nylon
- MIL-S-43770/1 - Snap Hooks, Wire Body, Fixed Loop Eye, Flat Spring  
Closure, With Retainer

## 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-731 - Quality of Wood Members for Containers and Pallets

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

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 DODISS are the issues of the documents cited in the solicitation (see 6.2).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

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## THE COLOR ASSOCIATION OF THE UNITED STATES

## Standard Color Card of America

## Department of Defense Standard Color Card for Sewing Threads

## Quartermaster Standard Shades for Slide Fastener Tapes

(Color cards may be available from the Color Association of the United States, 343 Lexington Avenue, New York, NY 10016-0927. If color cards are not available from the Color Association, individual color samples may be obtained from the contracting activity or as directed by the contracting activity.)

(Non-Government standards and other publications are normally available from organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

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

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

3.3 Material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this document.

3.3.1 Cloth, nylon. The nylon cloth for the outer and inner panel, outer pockets, protector flap, grip handle reinforcements, and grip handle panels shall conform to MIL-C-43128, shade Olive Green 106, except that the seam efficiency shall be no lower than 50 percent.

3.3.2 Batting, polyester. The material for the bag liner and grip handle pads shall be quilted polyester batting, conforming to type VIII, class 8, cover A, style 6 of MIL-B-41826, except the cloth outer covering is required on one side of the batting only, and the straight line quilting stitching shall be 6 inches apart in lieu of 3 inches. The requirements for colorfastness shall not apply to nylon outer covering.

3.3.3 Fastener, nylon tape. The nylon tape fastener for closure of pockets shall be 5/8-inch in width, shade Olive Green 106 conforming to type II, class 1 of MIL-F-21840, except that the requirements for colorfastness shall not apply.

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3.3.4 Fastener, slide, interlocking. The slide fastener shall be type I, style 2, size MHS, individual element brass or continuous element monofilament coil or ladder configuration chain conforming to V-F-106 requirements. The length of the chain shall be as required for the bag opening. The color of the tape shall be Olive Drab Shade S, Cable No. 66519, and shall be water repellent treated and mildew resistant treated according to V-F-106 requirements. The closed bottom stop shall be a staple type, the slider identification marked, and the pull shall have an opening large enough to accommodate a dyed Olive Drab 7 thong according to V-F-106 requirements, except that the finished length shall be 2-1/2 to 3-1/2 inches long. For continuous element monofilament chain application, the color of the chain, slider, pull, and stop shall approximately match the dyed tape shade.

3.3.4.1 Continuous chain application. As an alternate to using preassembled slide fasteners, a continuous chain application may be utilized as part of the manufacturing method. The method requires that either the double or single chain tape and tape extensions, where applicable, be securely stitched with the required seam and without any puckering, waviness, or curling to the chain. The slider shall be indexed into position to provide for a smooth running chain disengagement with its mouth squarely against the bottom staple stop and smooth running chain engagement with its throat evenly against the top stop or turned chain portion and with no excess chain elements showing. If a continuous element monofilament chain in a coil or ladder configuration is used, sewn top stops, without gapping, are acceptable.

3.3.4.2 Colorfastness of tape. The slide fastener tape shall show colorfastness to laundering and weathering equal to or better than the standard sample. When no standard sample is available, the tape shall show good fastness to laundering and weathering.

3.3.5 Fastener, snap. The snap fasteners for closing the outer pockets shall be style 2A, finish 2 of MIL-F-10884. The eyelet shall be size 2 and the button shall be size 1.

3.3.6 Thread, polyester. The thread for all stitching shall be polyester conforming to type I, class 1, subclass B of V-T-285. The thread sizes shall be as specified in table II. As an option, subclass A may be used for stitching on the liner. The thread shall be dyed Olive Drab, S-1, C.A. 66022 and shall show fastness to weathering and laundering equal to or better than the standard sample (see 6.4).

3.3.7 Identification label. The bag shall have an identification label measuring not less than 2 by 3 inches conforming to type VI, class 5 of DDD-L-20.

3.3.8 Webbing, nylon, 1-inch. The nylon webbing for attaching the snap hook shall conform to type III, 1-inch wide, color Olive Drab 7 of MIL-W-43668.

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3.3.9 Snap hook, 1-inch. The snap hook shall be size 1-inch conforming to M43770/1 - SWZE3 of MIL-S-43770/1.

3.4 Design. The bag shall consist of an outer panel with a liner. The bag shall have two inner pockets, one at each end of the liner, and two outer pockets on the front of the bag. The bag shall have matching grip handles on the front and back, with a slide fastener for closing the bag, and nylon tape fastener and snap fasteners for closing the outer pockets.

3.5 Patterns. Standard patterns for use in cutting working patterns will be furnished by the Government. Unless otherwise specified, the working patterns shall be identical to the Government standard patterns which shall not be altered in any way. The patterns provide seam allowances for all seams unless otherwise indicated in table II.

3.6 List of pattern parts. The pattern parts and applicable material for cutting the bag parts shall be as specified in table I.

TABLE I. List of pattern parts

Material	Nomenclature of parts	Cut parts
Cloth, nylon	Panel, outer	1
	Panel, outer pockets	1
	Flap, protector, outer pockets	1
	Panel, grip handle	2
	Reinforcement, grip handle	2
	Pocket, inner	2
Batting, polyester, quilted	Panel, bag liner	1
	Pad, grip handle	2

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

3.7.1 Stitches, seams, and stitching. All stitches, seams, and stitching shall conform to FED-STD-751. The type of seam, stitching, and stitches per inch shall be as specified in table II. Seam allowances shall be maintained with seams sewn so that no raw edges, run-offs, twists, pleats, puckers, or open seams occur.

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3.7.1.1 Type 301 stitching. Ends of all stitching shall be backstitched or overstitched  $1/2$ -inch minimum. Thread tension shall be maintained so that there will be no loose stitching resulting in loose bobbin or top thread, or excessively tight stitching resulting in puckering of the materials sewn. The lock shall be embedded in the materials sewn.

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

a. When thread breaks or bobbin run-outs occur during sewing, the stitching shall be repaired by restarting the stitching a minimum of 1-inch back of the end of the stitching. 1/

b. Thread breaks or two or more consecutive skipped or run-off stitches noted during inspection of the item (in-process or end item) shall be repaired by overstitching. The stitching shall start a minimum of 1-inch in back of the defective area, continue over the defective area, and continue a minimum of 1-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.

3.7.1.2 Types 401, 502, 503, 504, 505, 515, 516, and 519 stitching. Thread tension shall be maintained so that there will be no loose stitching. All repairs shall be in accordance with 3.7.1.1.1.a and 3.7.1.1.1.b, except substitute  $3/4$ -inch for 1-inch wherever 1-inch appears. Type 301 stitching may be used for repairing type 401 stitching.

3.7.1.3 Bartacks. Unless otherwise specified, bartacks shall be  $3/4 + 1/16$  inch in length,  $1/8 + 1/32$  inch in width, and shall contain 42 stitches. Bartacks shall be free from thread breaks and loose stitching.

3.7.1.4 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.

3.7.1.5 Lubrication of thread. There shall be no lubrication of the thread by any means, prior to or during sewing (see 4.4.1.1).

3.7.1.6 Thread ends. All thread ends shall be trimmed to a length of not more than  $1/4$ -inch.

3.7.2 Setting of snap fasteners. A hole shall be prepunched to receive the button and eyelet components of the snap fasteners. The hole shall be smaller than the outside diameter of the button and eyelet barrels so that the barrel must be forced through the hole. The hole shall not be punched in the setting operation with the button or eyelet barrel. The fasteners shall be securely clinched without cutting the adjacent materials, and no more than two splits shall occur in the button or eyelet barrels.

3.7.3 Splicing of fastener tape. In fabricating the bag, both the hook and loop fastener tapes may be spliced one time. Splicing shall be accomplished by overlapping the ends approximately 1/2-inch or by butting the ends.

3.8 Repairs. Repairing of the bag by mending, darning, or patching is not permitted.

3.9 Manufacturing operations requirements. The bag shall be made in accordance with all operations listed in table II. The contractor is not required to follow the exact sequence of operations.



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NO.	TABLE II. MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	<p><u>Cutting.</u></p> <p>The bag components shall be cut in strict accordance with furnished pattern, which show marks and notches for proper assembly.</p>						
2.	<p><u>Replacement of defective or damaged parts.</u></p> <p>During the spreading, cutting, and manufacturing process, components having material defects or damages that are classified as defects in 4.4.3 shall be removed from production and replaced with non-defective and properly matched components.</p>						
3.	<p><u>Make inner pockets.</u></p> <p>a. Overedge side and bottom edges of inner pockets, except selvage edges. As an option, the top edge may be overedged. Stitch gage shall be 3/16 to 1/4 inch.</p> <p>b. Fold top edge of pockets under twice 3/8 + 1/16 inch and single stitch 1/8 + 1/16 inch from inner folded edge.</p>	502 503 504 or 505  301	EFd-1    EFb-1	6-12    8-12	AA    B	AA    B	
4.	<p><u>Attach inner pockets and identification label to bag liner panel to form liner.</u></p> <p>a. As an option, overedge across top edge of liner panel with 3/16 to 1/4 inch stitch gage.</p>	502 503 504 or 505	EFd-1	6-12	AA	AA	



NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	DOBBIN/ LOOPER	COVER
4.	<p>Attach inner pockets and identification label to bag liner panel to form liner. (cont'd)</p> <p>b. Position inner pockets on the liner panel in the locations shown on the pattern, + 3/16 inch. Turn sides and bottom edges under <math>1/2 + 1/8</math> inch, and stitch with single row of stitching along sides and bottom. Stitch margin shall be <math>1/8 + 1/16</math> inch.</p> <p>c. Position top edge of identification label 2-1/2 to 3-1/2 inches from top edge (straight edge) of liner panel on same side as panel pockets are attached and with the label centered, + 3/4 inch between pockets. Stitch to liner panel around all four sides of the label with stitch margin <math>1/16</math> to <math>1/8</math> inch. Label shall read from top edge of liner to bottom.</p> <p>d. With pockets on inside surface, align side edges of liner within <math>1/8</math> inch, and seam with row of stitching <math>3/8 + 1/16</math> inch from the side edges.</p> <p>e. With pockets on inside surface, position side joining seam in approximate center of liner so pockets are at ends of liner (see figure 1) and with bottom edges (curved) evenly aligned within <math>1/8</math> inch. Seam along bottom edge in the same manner as specified in operation 4d.</p>	301 or 401	Lsd-1 Lsd-1	8-12 8-12	B B	B AA	
		301		8-12	B	B	
		301 or 401	SSa-1	8-12	B B	B AA	
5.	<p>Overedge top edge of outer panel.</p> <p>Overedge raw top edge of outer panel using 3/16 to 1/4 inch stitch gage. (Selvage edges need not be overedged).</p>	502 or 503	EFd-1	8-12	AA	AA	

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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.	<p>Attach reinforcement for grip handle on front side (pocket) of outer panel.</p> <p>With the inside surface of the outer panel facing up, position the grip handle reinforcement for the front side (pocket) of the panel in the location shown on the pattern, <math>\pm 1/8</math> inch. Stitch reinforcement to panel with row of stitching around all four edges with stitch margin <math>1/8 + 1/16</math> inch.</p>	301	SSa-1	8-12	E	E	
7.	<p>Attach loop fastener tape to outer panel.</p> <p>With outer surface of outer panel facing up, stitch a length of 5/8-inch wide loop fastener tape across the width of the panel in the location shown on the pattern, <math>\pm 1/16</math> inch. Stitch tape to panel with row of stitching along each side edge with stitch margin <math>1/16</math> to <math>1/8</math> inch.</p> <p>NOTE: As an option, the loop fastener tape may be cut in two pieces of sufficient length to coincide with the hook fastener tape attached to the outer pockets. If used, stitch to panel as above, except stitching shall also go across the ends of the tape.</p>	301		8-12	E	E	
8.	<p>Make outer pockets.</p> <p>NOTE: The single panel is formed into two pockets by forming corners at the two corners and at the center of panel as specified below.</p> <p>a. Overedge all edges of pocket panel except selvage edges, using <math>3/16</math> to <math>1/4</math> inch stitch gage.</p>	502, or 503, or 504	EEd-1	8-12	AA	AA	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	SOBBIN/ LOOPER	COVER
8.	<p><u>Make outer pockets.</u> (cont'd)</p> <p>- or -</p> <p>In lieu of overedging the pocket panel, the side and bottom edges may be double folded under <math>3/8</math> + <math>1/16</math> inch and prestitched with a row of stitching located <math>1/8</math> + <math>1/16</math> from inner edge. If the above option is used, the pattern for the pocket panel shall be increased <math>3/8</math> inch along the sides and bottom edges.</p> <p>b. With inside surface of pocket panel facing up, turn top edge back <math>3/8</math> + <math>1/16</math> inch. Stitch a length of <math>5/8</math> inch wide hook fastener tape to the panel in two locations as shown on pattern, + <math>1/16</math> inch with stitching along sides and across ends of tape with stitch margin <math>1/16</math> to <math>1/8</math> inch.</p> <p>c. Form each corner at bottom of pockets by pattern-ing a triangle along the marks indicated on pattern. For the two outer corners, fold triangle towards center of pocket and stitch around triangle <math>1/16</math> to <math>1/8</math> inch from fold lines and edge of pocket. For the two inner corners, stitch only along the fold line required to form each corner.</p> <p><u>Attach outer pockets to outer panel.</u></p> <p>With the outer surface of the outer panel facing up, position the pocket(s) on the panel in the location shown on the pattern, + <math>1/8</math> inch with the side and bottom edges folded under <math>3/8</math> + <math>1/16</math> inch. (If the optional construction in</p>	301	EFb-1	8-12	E or B	E or B	
		301	EFa-1	8-12	E	E	
		301		8-12	E	E	
9.		301 or 401	LSd-1 LSd-1	8-12 8-12	E E	E B	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
9.	<p><u>Attach outer pockets to outer panel. (cont'd)</u></p> <p>operation 8a is used, omit requirement to fold edge under). Stitch pocket(s) to panel along the sides and bottom edges with stitch margin 1/16 to 1/8 inch and also with a row of stitching up the center of the pocket panel between the two pockets in location shown on pocket pattern.</p>						
10.	<p><u>Attach snap fasteners to outer panel.</u></p> <p>a. Attach male portion of snap fastener to outer panel in two places in locations shown on pattern, + 1/8 inch.</p> <p>b. Attach female portion of snap fastener to outer pockets through hook portion of fastener tape in location to correspond with male portion of snap fastener. When snap fastener is engaged, the hook and loop fastener tapes, when meshed together, shall lie flat with no gaps.</p>						
11.	<p><u>Make protector flap for outer pockets.</u></p> <p>Double fold the protector flap in lengthwise direction by butting the edges of the material in the center of the flap within 1/8 inch. Fold in half again lengthwise enclosing the edges. With the outer edges evenly aligned, stitch along the open side with single row of stitching 1/16 to 1/8 inch from the edge.</p>	301		8-12	E	E	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
12.	<p>Attach protector flap, outer pockets.</p> <p>a. With the unsewn edge of the protector flap as the top edge, position the top edge of the flap on the outer panel of the bag in location shown on pattern, + 1/16 inch. The flap shall be positioned centrally across the width of the outer panel with the ends extending an equal distance beyond the sides of the pockets, + 1/4 inch. Turn ends of flap under 1/4 to 3/8 inch and start at bottom of side edge of flap stitch up to top edge, along top edge and down side edge at opposite end of flap with stitch margin 1/16 to 1/8 inch.</p> <p>b. At center of protector flap, stitch vertically across width of flap with two adjacent rows of stitching or, as an option, secure with a vertical bartack.</p> <p><u>Join outer panel.</u></p> <p>a. With pockets on inside surface, align side edges of outer panel within 1/8 inch. Join side edges together by simultaneously seaming with one row of stitching 3/8 + 1/16 inch from edge and over-edge both raw edges together with 3/16 to 1/4 inch stitch gage.</p> <p style="text-align: center;">- or -</p> <p>The preceding operation may be performed in two separate operations, seaming first, then overedging the edges together.</p>	301		8-12	E	E	
13.		301 or bartack		8-12 42 stitches per bartack	E or B	E or B	
		515, or 516, or 519	SSa-1	8-12	Seaming row E Overedging row AA	B AA	
		301 or 401 or 502, 503, 504, or 505	SSa-1 SSa-1 SSa-2	8-12 8-12 8-12	E E AA	E B AA	

NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
13.	<p><u>Join outer panel.</u> (cont'd)</p> <p>b. With pockets on inside surface, position side joining seam in approximate center of the joined outer panel (see figure 1) and with bottom edges (curved) evenly align within 1/8-inch. Seam along bottom edge in the same manner as specified in operation 13a.</p>						
14.	<p><u>Attach reinforcement for grip handle on back side of outer panel.</u></p> <p>Position the grip handle reinforcement for the back side of the outer panel on the inside of the panel in the location shown on pattern, + 1/8 inch. Stitch reinforcement to panel with row of stitching around all four edges with stitch margin <math>1/8 + 1/16</math> inch.</p>	301	SSa-1	8-12	E	E	
15.	<p><u>Make grip handles.</u></p> <p>Center the grip handle batting pad on the grip handle panel within 1/8 inch. Fold panel in half lengthwise enclosing the pad. Turn in the panel edges <math>3/8 + 1/16</math> inch, and stitch 1/16 to 1/8 inch from outer side edge.</p> <p>NOTE: Liner may be prestitched to the panel prior to forming the grip handle using the same stitching requirements as above, except size B thread may be used.</p>	301		8-12	E	E	

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TABLE II. (cont'd)  
MANUFACTURING OPERATIONS REQUIREMENTS

NO.	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
				NEEDLE	DOBBIN/ LOOPER COVER
16.	301		8-12	E	E
<p><u>Attach grip handles.</u></p> <p>Position grip handles on outer panel in locations shown on pattern, <math>\pm 1/8</math> inch with ends turned under <math>3/8 + 1/8</math> inch. With the sewn edge facing towards center of panel, stitch handles to panel with a 3-point double "W" pattern <math>1 + 1/8</math> inch long and <math>3/4 + 1/16</math> inch wide. Stitch margin shall be <math>1/16</math> to <math>1/8</math> inch from sides and bottom edge of handles.</p> <p>- or -</p> <p>Stitch end of each handle to bag with two <math>3/4</math> inch long bartacks across the width of the handle. Position the first bartack <math>1/8 + 1/16</math> inch from end of handle and the second <math>5/8 + 1/16</math> inch from the first bartack.</p>					
17.	301		8-12	E	E
<p><u>Attach snap hook.</u></p> <p>a. Cut a length of 1-inch nylon webbing <math>3-1/4</math> inches <math>\pm 1/8</math> inch long. Fuse each end of webbing.</p> <p>b. Thread webbing through snap hook and align ends. Position snap hook and webbing on front side of bag in location shown on figure 1. Ends of webbing shall be even with top edge of pocket flap, <math>+ 1, - 1/8</math> inch and shall be centered in the middle of the bag within <math>1/4</math> inch. Open side of snap hook shall face toward the slide fastener. Stitch webbing to bag with a <math>1</math> by <math>3/4 + 1/16</math> inch box-x stitch pattern through the front side of the bag. Stitching shall be centered on webbing.</p> <p>- or -</p>					



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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
17.	<p><u>Attach snap hook.</u> (cont'd)</p> <p>Attach webbing with two 3/4 inch long bartacks across the width of the webbing with the first bartack located 3/16 + 1/16 inch from ends of webbing and the second bartack located 3/4 + 1/16 inch from the first.</p>	Bartack		42 stitches per bartack	E	E	
18.	<p><u>Join the assembled outer panel to bag liner.</u></p> <p>a. Turn the joined outer panel inside out. With liner right side out position on top of outer panel with bottom and side edges evenly aligned within 1/8 inch. Stitch the two components together for approximately 6 inches along the bottom edge with stitching centered between the side edges with stitch margin 3/8 + 1/16 inch.</p> <p>b. Turn the outer panel right side out enclosing the bag liner.</p> <p>c. Turn top edge of outer panel to the inside, along the fold line shown on the pattern, + 1/16 inch, and insert the top edge of the bag liner fully under the fold along the full length of the fold. Stitch through outer panel and bag liner around entire opening with stitch margin 1/16 to 1/8 inch from selvage or overedged edge of outer panel.</p>	301	SSa-1	6-8	E	E	
19.	<p><u>Attach slide fastener.</u></p> <p>a. Position slide fastener tape along inside of bag opening with the back of the scoops of the fastener chain 1/8 to 3/16 inch from the top folded edge of the bag.</p>	301	SSbc-1	8-12	E	E	

NATICK Form 903  
1 Dec 76

EDITION OF 1 OCT 76 WILL BE USED UNTIL EXHAUSTED.

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
19.	Attach slide fastener. (cont'd)	301	SSa-2	8-12	E	E	
20.	<p>b. Stitch around bag opening with two rows of stitching with 3/16 to 1/4 inch gage. The first row of stitching shall be located 1/16 to 1/8 inch from the top edge of the bag.</p> <p><u>Clean bag.</u></p> <p>a. Trim and remove all thread ends (see 3.7.1.6).</p> <p>b. Remove all spots and stains.</p> <p>c. Close the slide fastener.</p>						

3.11 Finished measurements. The finished bag measurements shall be as shown in table III.

TABLE III. Finished measurements

Location	Inches	Tolerances (inches)
Width <u>1/</u>	19-1/4	$\pm 1/2$
Length <u>2/</u>	20	$\pm 1/2$
Outer pockets (width at center of pocket)	9-1/2	$\pm 1/4$
Outer pockets (length at center of pocket)	14	$\pm 1/4$
Inner pockets (width at center of pocket)	6-3/4	$\pm 1/4$
Inner pockets (length at center of pocket)	10-1/4	$\pm 1/4$

1/ Measure across center of bag on back panel.

2/ Measure from center lower edge of bag to top edge of bag. (Do not include slide fastener.)

3.12 Workmanship. The end item shall conform to the quality of product established by this specification.

#### 4. QUALITY ASSURANCE PROVISIONS

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

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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 Certificate 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 6.2), it shall be examined for the defects specified in 4.4.3 and 4.4.4.

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

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

4.4.1.1 Component and material certification. A certificate of compliance may be acceptable as evidence that the thread conforms to the requirements specified in 3.7.1.5.

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. This inspection shall include verification that the working patterns conform to the Government patterns in all respects, and that holes punched for snap fasteners conform to 3.7.2. Whenever nonconformance is noted, corrections shall be made to the items affected and the lot in-process. 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 IV. The lot size shall be expressed in units of bags. The sample unit shall be one complete bag. The inspection level shall be II (see 6.5).

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TABLE IV. End item visual defects

Examine	Defect	Classification	
		Major	Minor
Cloth and quilted batting	Any hole (except exposed drill holes), cut, tear, or smash	101	
	Abrasion mark, open place, broken or missing yarn, or multiple floats	102	
	Exposed drill holes on nylon cloth		201
	Not cut in accordance with pattern with respect to material directional requirements		202
Nylon fastener tape	Hook tape crushed affecting closure		203
	More than one splice on hook or loop tape		204
Nylon webbing	Not firmly and tightly woven, or edges frayed or scalloped		205
	Ends not fused	103	
Hardware:			
General	Broken or malformed failing to serve intended purpose, finish omitted, corroded area, burr, or sharp edge	104	
Snap fastener (male and female)	Not functioning properly (i.e., fails to snap closed, to provide a secure closure, or to open freely)	105	
NOTE: The fasteners shall be snapped and unsnapped twice to determine whether parts of the fastener separate freely and also effect a secure closure.			
	Clinched excessively tight, cutting adjacent material	106	
	Clinched loosely, permitting either component to rotate freely:		
	- But not to the degree that any component can be expected to become detached during use		206
	- To the degree that components can be expected to become detached during use	107	
	Incorrect style	108	

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

Examine	Defect	Classification	
		Major	Minor
Snap fastener (male and female) (cont'd)	More than two splits in eyelet or button barrel		207
Slide fastener	Not functioning properly, failing to effect a secure closure or to open freely	109	
	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	110	
	Any portion of fastener broken, bent, missing, or not aligned	111	
	Slider jams or fails to interlock scoops	112	
	Thong omitted	113	
	Fastener tape cut or torn	114	
Snap hook	Not specified type or size		208
Seams and stitching	Open seam unless otherwise specified: - Up to and including 1/2-inch - Over 1/2-inch	115	209
	NOTE: A seam shall be classified as open when one or more stitches joining a seam are broken or when two or more consecutive skipped or run-off stitches occur.		
	Open seam on quilting stitching 2-inches or more in length		210
	Seam type or stitch type not as specified	116	
	Any seam excessively pleated or puckered		211
Stitches per inch	One or two stitches per inch less than minimum specified		212

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

Examine	Defect	Classification	
		Major	Minor
Stitches per inch (cont'd)	Three or more stitches per inch less than specified	117	
	One or more stitches in excess of maximum specified		213
NOTE: Defects for stitches per inch shall be scored only when condition exists on major portion of seam (i.e., more than half the length of the seam or stitch pattern).			
Stitching ends	Ends of stitching not secured as specified (except when caught in other stitching or turned under in a hem)		214
Thread breaks, skipped stitches or runoffs (on type 301 stitching)	Overstitched less than 1-inch in each direction beyond the defective stitching area		215
Thread breaks, skipped stitches (on overedge stitching)	Overstitched less than 3/4-inch in each direction beyond the defective stitching area		216
NOTE: On all types of stitching, thread breaks or two or more consecutive skipped or run-off stitches not over-stitched shall be classified as open seams.			
Stitch tension	Loose, resulting in loose needle or bobbin thread or excessively tight, resulting in excessive puckering of material		217
Rows of stitching	Any row omitted, except on double "W" stitch pattern:	118	
	On double "W" stitch pattern:		
	- One row omitted		218
	- Two or more rows omitted	119	
Bartack (if used)	Stitching loose, incomplete, or broken		219
	Bartack omitted	120	



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

Examine	Defect	Classification	
		Major	Minor
Raw edges	More than 1/4-inch when securely caught in stitching		220
	NOTE: Raw edges not securely caught in stitching shall be classified as open seams.		
Assembly - general	Bag liner not stitched to bag at bottom	121	
	Pad omitted from grip handle (check by feel)		221
	Snap hook attached with open side facing incorrect direction		222
Outer pocket(s)	Hook and loop tape reversed, (i.e., loop tape attached to pockets in lieu of bag front panel)		223
	Female snap fastener mislocated causing inability to secure fastener tape without excessive puckering of pocket at either end		224
Components and assembly	Any component caught in any unrelated operation of stitching (not otherwise classified herein)	122	
	Any component part omitted or not attached as specified (not otherwise classified herein)	123	
	Needle chews	124	
	Any mend, darn, patch, or other unauthorized repair	125	
Cleanness	Grease or oil stains clearly noticeable		225
	Thread ends not trimmed throughout as specified		226
Identification label	Omitted, incorrect, illegible, or not as specified		227

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4.4.4 End item dimensional examination. The end items shall be examined for the defects listed below. The lot size shall be expressed in units of bags. The sample unit shall be one complete bag. The inspection level shall be S-3 (see 6.5).

<u>Examine</u>	<u>Defect</u>
Overall finished dimensions of bag, outer pockets, and inner pockets	Any dimension exceeding tolerance specified in table III
Stitch margin or gage	Not within specified tolerance
Bartacks	Not within specified tolerance
Components	Size not within specified tolerance Location not within specified tolerance

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 (see 6.5).

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method or application
Materials	Any component missing, damaged, or not as specified
Workmanship	Inadequate application of components, such as: incomplete closure of flap, improper taping, loose strapping or inadequate stapling Bulged or distorted container
Content	Number of bundles per shipping container is more or less than required Number of bags per bundle is more or less than required 1/

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

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

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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 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 or Commercial as specified (see 6.2).

5.1.1 Level A preservation. Ten bags shall be evenly stacked, alternately reversed top to bottom, to form a compact bundle measuring approximately 22 inches in length, 19 inches in width, and 4-3/4 inches in depth. The bundle shall be securely crosstied with cotton tape or twine.

5.1.2 Commercial preservation. Each bag shall be preserved in accordance with ASTM D 3951.

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

5.2.1 Level A packing. Forty bags, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class weather-resistant, variety DW, grade V15c of PPP-B-636. Level A unit packs shall be packed flat, four in depth within a shipping container. Inside dimensions of each shipping container shall be approximately 22-1/2 inches in length, 19-1/2 inches in width, and 17-1/2 inches in depth. Approximate dimensions are furnished as a guide only. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to A-A-203. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced in accordance with the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.5. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.2). When unit loads are strapped, strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

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5.2.2 Level B packing. Forty bags, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. Level A unit packs shall be packed flat four in depth within a shipping container. Inside dimensions of each shipping container shall be approximately 22-1/2 inches in length, 19-1/2 inches in width, and 17-1/2 inches in depth. Approximate dimensions are furnished as a guide only. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to A-A-203. Each shipping container shall be closed in accordance with method II as specified in the appendix of the container specification, except that the inspection shall be in accordance with 4.4.5.

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

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

5.3 Palletization. When specified (see 6.2), bags packed as specified in 5.2.2 and 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet types shall be type I (4-way entry), type IV, or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III, or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D or film bonding means F or G. Pallet pattern shall be number 90 in accordance with the appendix of MIL-STD-147. Interlocking of loads shall be effected by reversing the pattern of each course.

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 bag is intended for use by aviation personnel and is designed to hold the flyer's helmet and auxiliary equipment.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. 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).

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- c. When a first article is required (see 3.1, 4.3, and 6.3).
- d. Levels of preservation and packing (see 5.1 and 5.2).
- e. Type and class of unit load required (see 5.2.1).
- f. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).
- g. When palletization is required (see 5.3).
- h. Acceptance criteria required (see 6.5).

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 Samples. For access to samples, address the contracting activity issuing the invitation for bids.

6.5 Acceptance criteria. The acceptance criteria below are recommended for use. The acceptance criteria as specified in the contract or purchase order shall be binding. Unless otherwise specified, the following acceptance criteria are in accordance with MIL-STD-105.

6.5.1 For end item visual examination. An acceptable quality level (AQL), expressed in terms of defects per hundred units, of 2.5 for major defects and 6.0 for total (major and minor combined) defects is recommended.

6.5.2 For end item dimensional examination. An AQL, expressed in terms of defects per hundred units, of 10.0 is recommended.

6.5.3 For packaging examination. An AQL, expressed in terms of defects per hundred units, of 2.5 is recommended.

6.5.4 For palletization examination. An AQL, expressed in terms of defects per hundred units, of 6.5 is recommended.

6.6 Subject term (key word) listing.

Case, aviator's  
Equipment, aviator's

6.7 Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

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Custodians:

Army - GL  
Air Force - 99

Review activities:

Army - MD  
Air Force - 11, 82  
DLA - CT

User activity:

Air Force - 45

Preparing activity:

Army - GL  
(Project 8415-0719)

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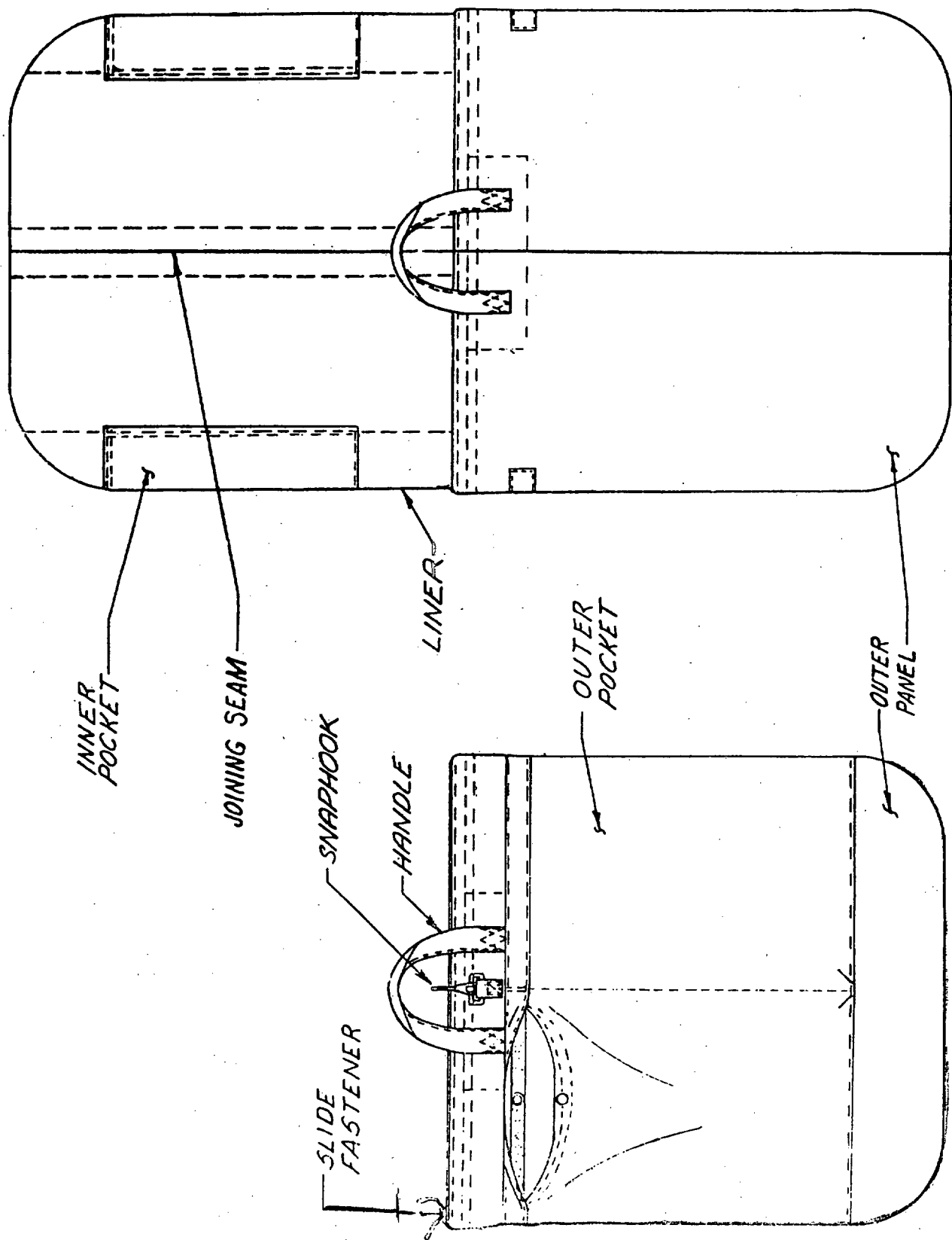


FIGURE 1. Bag, flyer's helmet.



**STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL***(See Instructions - Reverse Side)*

1. DOCUMENT NUMBER MIL-B-43290J		2. DOCUMENT TITLE Bag, Flyer's Helmet	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one) <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> 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)	