TECHNICAL MANUAL

UNIT MAINTENANCE MANUAL
FOR
EXTRACTION LINE PANEL
(INCLUDING STOWING PROCEDURES)

NSN 1670-01-183-2678

***This manual supersedes TM 10-1670-286-20 dated 1April 1986 including all changes.**

HEADQUARTERS, DEPARTMENT OF THE ARMY

15 March 2001

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TM 10–1670–286–20
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CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 13 July 2001

Unit Maintenance Manual
For

EXTRACTION LINE PANEL (INCLUDING STOWING PROCEDURES) NSN 1670–01–183–2678

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TM 10–1670–286–20
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By Order of the Secretary of the Army:

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Chief of Staff

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0119112

DISTRIBUTION:
To be distributed in accordance with initial distribution (IDN 252519), requirements for TM 10−1670−286−20.

WARNING

Due to flammable properties and nylon damaging substances, cleaning solvents other than tetrachloroethylene will not be used in the spot cleaning of Airdrop equipment. Tetrachloroethylene will be used in areas where substantial ventilation is available. Repeated or prolonged inhalation of the solvent vapors can be detrimental to health. In addition, avoid prolonged or repeated contact of the solvent fluid with areas of the skin. Tetrachloroethylene must not be taken internally.

For First Aid Treatment, refer to FM 21-11.

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LIST OF EFFECTIVE PAGES/WORK PACKAGES

Date of issue for original is:

Original….0….15 March 2001
Change ....1….13 July 2001

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 23 AND TOTAL NUMBER OF WORK PACKAGES IS 22 CONSISTING OF THE FOLLOWING:

Page/WP No.	*Change No.	Page/WP No.	*Change No.
Title	0	WP 0013 00 (1 pg)	0
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***ARMY TM 10-1670-286-20**
AIR FORCE T.O. 13C5-2-41

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 15 March 2001

Technical Manual

UNIT MAINTENANCE MANUAL

FOR

EXTRACTION LINE PANEL (INCLUDING STOWING PROCEDURES)

NSN 1670-01-183-2678

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

ARMY

You can help improve this manual. If you find any mistakes, or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual, directly to: Commander, U.S. Army Soldier and Biological Chemical Command, ATTN: AMSSB-RIM-E(N), Kansas Street, Natick, MA 01760-5052. You may also submit your recommended changes by E-mail directly to <amssb-rim-e@natick.army.mil>. A reply will be furnished directly to you. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

AIR FORCE

Reports by U.S. Air Force units should be submitted on AFTO Form 22, Technical Order Publication Improvement Report, and forwarded to the address prescribed above for the Army. An information copy of the prepared AFTO Form 22 shall be furnished to SAAMA/MMSTR, Kelly AFB, and TX 78241-5000.

*This manual supersedes TM 10-1670-286-20 dated 1April 1986, including all changes.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

REFERENCES

HOW TO USE THIS MANUAL

This manual contains General Information, Operating Instructions, Operator Preventive Maintenance Checks and Services (PMCS), Troubleshooting, and Maintenance/Repair Instructions for the Extraction Line Panel (including Stowing Procedures).

Chapter 1 contains introductory information on the Extraction Line Panel and its associated equipment. Chapter 2 includes instructions, preventive maintenance and services. Chapter 3 concludes with Extraction Line Procedures for the C-17 Globemaster III, maintenance procedures and allocations, references and other supporting information.

Manual Organization and Page Numbering System. The Manual is divided into three major chapters that detail the topics mentioned above. Within each chapter are work packages covering a wide range of topics. Each work package is numbered sequentially starting at page 1. The work package has its own page-numbering scheme and is independent of the page numbering used by other work packages. Each page of a work package has a page number of the form XXXX YY-ZZ where XXXX is the work package number (e.g. 0010 is work package 10) and YY is the revision number for that work package and ZZ represents the number of the page within that work package. A page number such as 0010 00-1/2 blank means that 1 page contains information but page 2 of that work package has been intentionally left blank.

Finding Information. The Table of Contents permits the reader to find information in the manual quickly. The reader should start here first when looking for a specific topic. The Table of Contents lists the topics contained within each chapter and the Work Package Sequence Number where it can be found.

Example: If the reader were looking for instructions on “Stowing 60 FT Extraction Line”, which is a Unit Maintenance topic, the Table of Contents indicates that Unit Maintenance information can be found in Chapter 2. Scanning down the listings for Chapter 2, “Stowing 60 FT Extraction Line” information can be found in WP 0005 00 (Work Package 05).

An Alphabetical Index can be found at the back of the manual, and lists specific topics with the corresponding work packages.

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CHAPTER 1

INTRODUCTION

OF

EXTRACTION LINE PANEL

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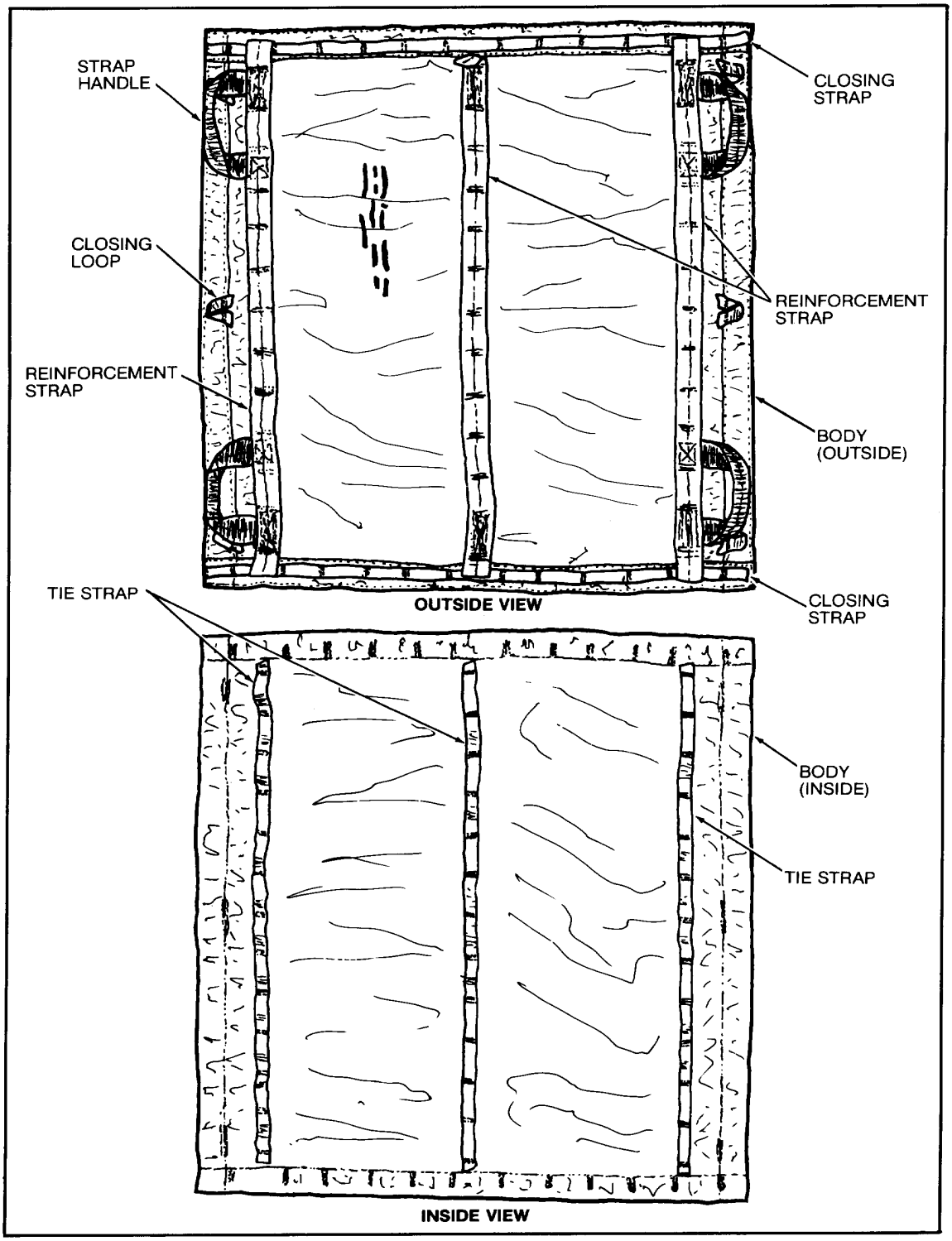

Figure 1. Extraction Line Panel.

SCOPE (Refer to figure 1).

Type of Manual: Unit Maintenance Manual.

Equipment Name: Extraction Line Panel

Purpose of Equipment: A universal panel used for storage and deployment of extraction lines and suspension slings. When two Extraction Line Panels are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management Systems (TAMMS).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Training. All personnel who use or perform such functions as packing, maintenance or storage of Extraction Line Panel must receive thorough training on destruction procedures. Upon completion of training personnel must be capable of performing destruction without reference to any publication.

Natural Surroundings. Accessible vital parts may be removed and scattered through dense foliage, buried in dirt or sand or thrown into a lake, stream or other body of water.

Mechanical. Demolish by using shears, fabric cutters, awls, files, knives, screwdrivers, pack hooks, or other similar devices to cut, rip, tear, or slash fabric, lines loops, straps, and tapes.

Burning. Loosely pile assembly fabric, lines loops, straps and tapes. Burn, using gasoline, cleaning solvent, oil, grease, paraffin, beeswax, rubber wood, or other flammable materials as a fire starter.

PREPARATION FOR STORAGE OR SHIPMENT.

To prepare the Extraction Line Panel for storage or shipment, refer WP 0018 00.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR's).

If the Extraction Line Panel mentioned in this technical manual can be improved, let us know. Please, complete a Standard Form 368 (Quality Deficiency Report) indicating your recommendations. Mail it to: Commander, U.S. Army Soldier and Biological Chemical Command, ATTN: AMSSB-RIM-E(N), Kansas Street, Natick, MA 10760-5052. A reply will be furnished directly to you.

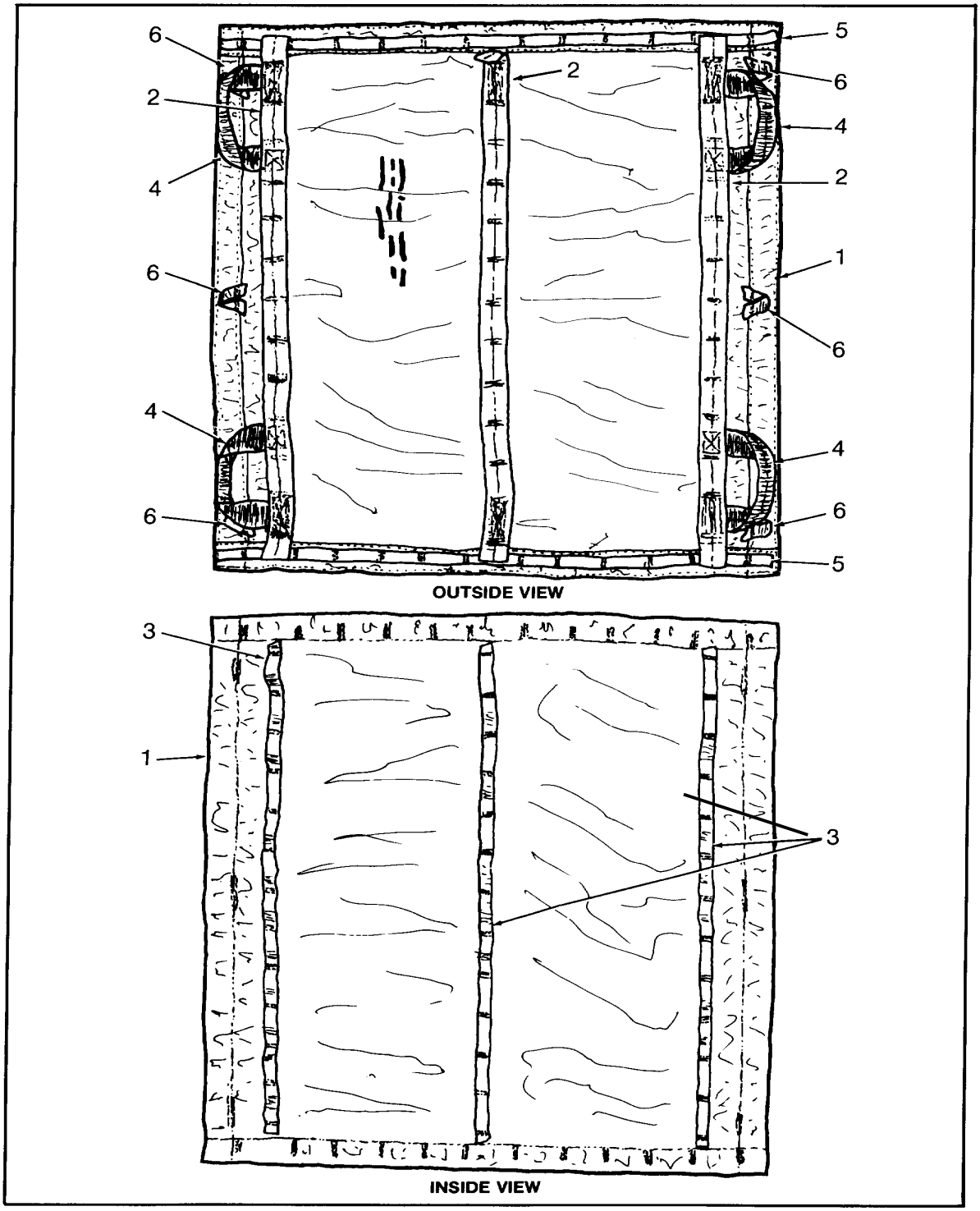

Figure 2. Location and Description of Major Components.

NOMENCLATURE CROSS-REFERENCE LIST.

Common Name	*Official Nomenclature*
Extraction Line Bag Stow Loop	Extraction Line Panel Tie Strap
Bridle Attaching Loop or Bag Closing Loop	Reinforcement Strap Loop

Section II. EQUIPMENT DESCRIPTION AND DATE

EQUIPMENT CHARACTERISTICS. Universal panel that stows extraction lines and suspension slings for deployment. One or two panels are required depending upon their application.

CAPABILITIES AND FEATURES

a. Accommodates extraction line and suspension slings.

b. Portable.

c. Used with all approved extraction line for C-130, C-141, C-5 and C-17 Aircraft.

d. Various applications.

(1) One panel (half bag) when stowed for low velocity airdrops.

(2) Two panels (full bag) when stowed for low velocity airdrops.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (figure 2).

BODY (1). Forms the panel body and is constructed of nylon duck cloth. Strap and closing loops are stitched to it.

REINFORCEMENT STRAP (2). Three reinforcement straps are used. One is located in the center and outside on the body, and one each is located 3 ½-inches from each side, on the outside of the body.

TIE STRAP (3). Three tie straps are used. One is located in the center and inside of the body, and one each is located 3 ½-inches from each side, on the inside of the body.

STRAP HANDLE (4). Four strap handles are used to carry the panel. Two are located at each side, on the outside of the body 3 ½-inches from each end.

CLOSING STRAP (5). Two closing straps are used, one at each end of the body on the outside.

CLOSING LOOP (6). Six closing loops are used. Three are located at each side on the outside of the body. One on each side is located 3 ½-inches from the forward end. One on each side is located 20 ½-inches from either end. One on each side is located 4-inches from the aft end.

DIFFERENCES BETWEEN MODLES

No model differences exist for the Extraction Line Panel.

EQUIPMENT DATA

The equipment data summarizes the specific capabilities and limitations of the equipment and other critical data needed by organizational maintenance personnel for maintenance of the Extraction Line Panel.

Table 1. Equipment Data

Panel:	
Weight	2 pounds (0.908 kg)
Length	41 inches (104.04 cm)
Width	38 inches (96.52 cm)
Body:	
Length	41 inches (104.04 cm)
Width	38 inches (96.52 cm)
Material	Cloth, duck, nylon, 12.5 oz., OD
Reinforcement Strap:	3 each
Reinforcement Strap Loop	6 each
Material	Webbing, textile, nylon, type VIII, OD
Strap Handle	4 each
Material	Webbing, textile, nylon, type VII, OD
Closing Strap	2 each
Closing Strap Loop	2 rows of 11 each
Material	Webbing, textile, tubular, nylon, ¾ inch
Body (Inside):	
Tie Strap	3 each
Tie Strap Loop	3 rows of 12 each
Material	Webbing, textile, tubular, ¾ inch, NAT.

SAFETY, CARE, AND HANDLING

The Extraction Line Panel will be handled with care when in the stowed configuration to prevent stows from becoming entangled within the bag.

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CHAPTER 2

UNIT MAINTENANCE INSTRUCTIONS

FOR

EXTRACTION LINE PANEL

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REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. No special tools, TMDE, or support equipment is used in the Extraction Line Panel.

REPAIR PARTS. No repair parts are authorized.

SERVICE UPON RECEIPT

Upon receipt of a Extraction Line Panel, it will be given a Technical/Rigger type inspection to ascertain the following:

Assembly Completeness. Insure that the applicable assembly is complete and no parts are missing.

Insure that no stitch formation or sewn seam has been omitted.

Inspect each item for faded, illegible, obliterated, or missing identification markings, which are part number, manufacture's name and date of manufacture.

Inspect each assemble for the presence of dirt, or similar type foreign material, also check for evidence of mildew, moisture, oil, grease, pitch, resin, or contamination by salt water.

Inspect for breaks, burns, cuts, fray, holes, snags, tears, incorrect weaving, and sharp edges formed from searing, loose, missing, or broken stitching, weak spots and deterioration.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) PROCEDURES

Table 1 provides a logical arrangement of maintenance checks and services. The purpose of PMCS is to assure you that the Extraction Line Panel is operational.

PMCS will be performed before equipment is packed for use and after use, or at any time deemed necessary by the airdrop equipment maintenance officer.

PMCS column entries in Table 1.

The item number column shall be used to identify the item shown in figure 2 and required for the "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet when recording the results of PMCS.

Interval. This column identifies the required PMCS interval.

Item to be inspected. Contains the common name of the item to be inspected.

Procedures. Provides a brief description of the procedure by which the check is to be performed. Record all defects discovered during the inspection.

Inspection Function Requirement. Normally, airdrop equipment maintenance personnel at a packing, rigging or repair activity would perform a technical/Rigger-type inspection. The item will be placed in proper layout on packing table or suitable sized area. Should defect be discovered at any point during the inspection, the inspection will be terminated and the applicable item will be processed and forwarded for cleaning and replacement.

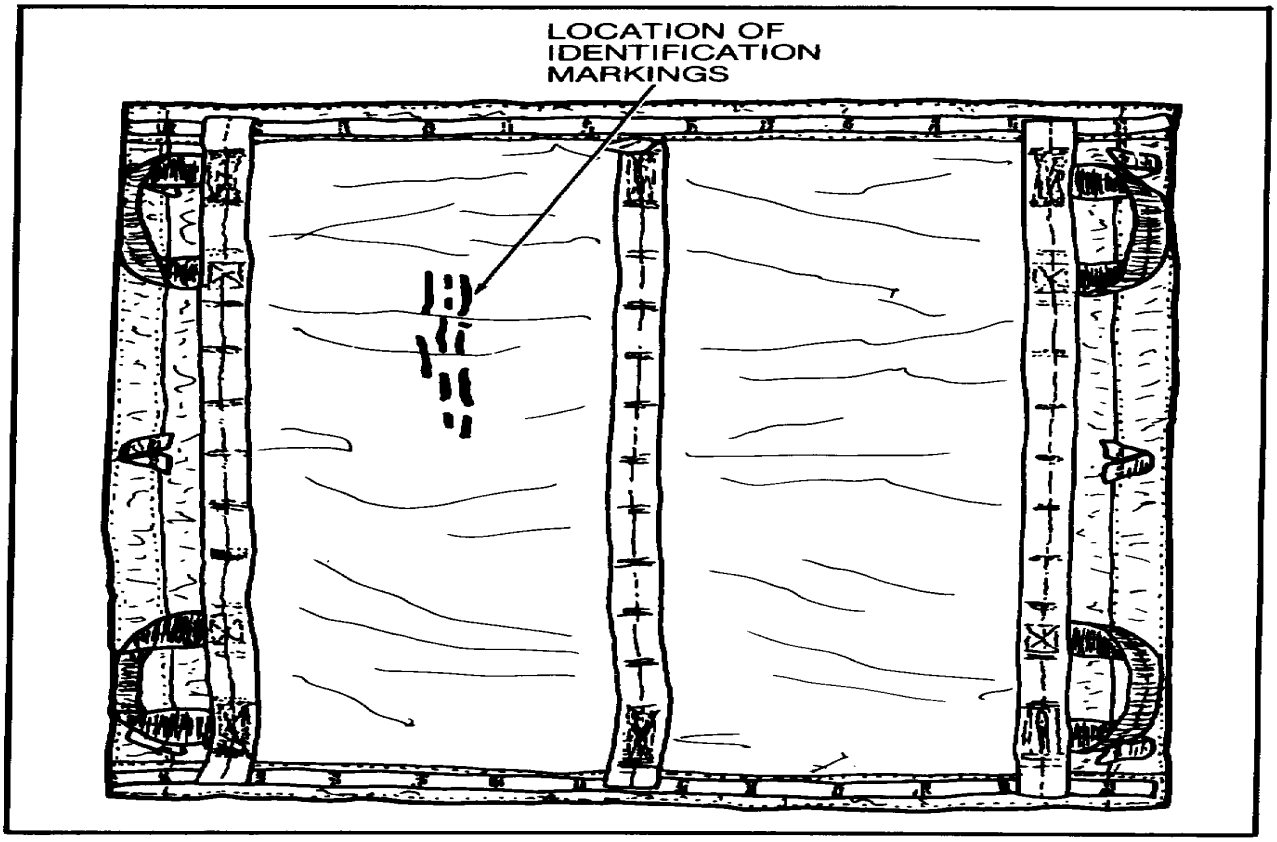

Figure 1. Location of Identification Markings (Outside View of Panel).

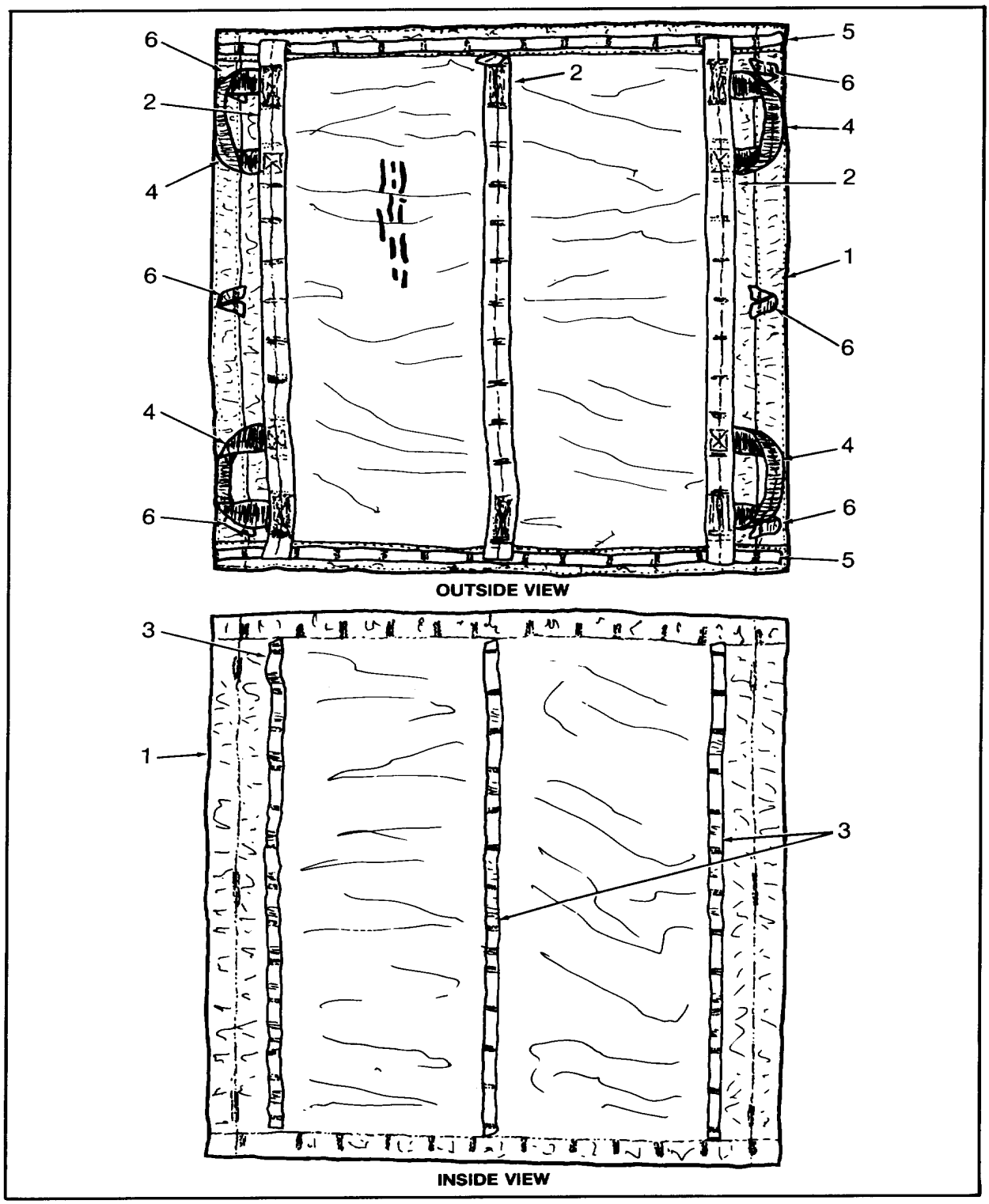

Figure 2. Preventive Maintenance Checks and Services Items.

Table 1. Unit Preventive Maintenance Checks and Services
B-Before use D-During use A-After use

ITEM NO.	INTERVAL B	INTERVAL D	INTERVAL A	ITEMS TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE SERVICED AS NECESSARY
1	X		X	Body	Check for cuts, burns, abrasions, broken or missing stitches. If any defects are found, replace Extraction Line Panel. Check for foreign substance. If any foreign substance is found, clean as directed in WP 0003 00. Check for illegible or missing identification markings (Figure 1) which are part number, manufacture's name and date of manufacture. Stencil or mark identification markings as required in WP 0004 00.
2	X		X	Reinforcement Strap	Check the three reinforcement straps for cuts, burns abrasions, broken or missing stitches and from loops at each end of each strap. If any defects are found, replace Extraction Line Panel. Check for foreign substance. If any foreign substance is found, clean as directed in WP 0003 00.
3	X		X	Tie Strap	Check the three tie straps for cuts, burns, abrasions, broken or missing stitches and torn loops. There are twelve loops in each tie strap. If any defects are found, replace Extraction Line Panel. Check for foreign substance. If any foreign substance is found, clean as directed in WP 0003 00.
4	X		X	Strap Handle	Check the four strap handles for cuts, burns, abrasions, broken or missing stitches. If any defects are found, replace Extraction Line Panel. Check for foreign substance. If any foreign substance is found, clean as directed in WP 0003 00.
5	X		X	Closing Strap	Check the two closing straps for cuts, burns, abrasions, broken or missing stitching and torn loops. There are twenty-four loops in each closing straps. If any defects are found, replace Extraction Line Panel. Check for foreign substance. If any foreign substance is found, clean as directed in WP 0003 00.
6	X		X	Closing Loop	Check the six closing loops for cuts, tears, burns, abrasions, broken or missing stitching. If any defects are found, replace Extraction Line Panel. Check for foreign substance. If any foreign substance is found, clean as directed in WP 0003 00.

EXTRACTION LINE PANEL **0002 00**
UNIT MAINTENANCE INSTRUCTIONS FOR EXTRACTION LINE PANEL

THIS SECTION COVERS:
Inspection Extraction Line

INITIAL SETUP

Equipment Condition

Layout on packing table or other suitable area.

Personnel Required

92R (10) Parachute Rigger

INSPECTION

Inspect Extraction Line Panel (Table 1).

END OF WORK PACKAGE

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EXRACTION LINE PANEL **0003 00**
SERVICE AND REPAIR FOR EXTRACTION LINE PANEL

THIS TASK COVERS:
Cleaning, Drying, Restitching, Darning.

INITIAL SETUP

Materials

Brush, Scrub, Household - Item 2, Appendix C
Dishwashing Compound – Item 5, Appendix C
Rag, Wiping – Item 11, Appendix C
Thread, Nylon, Size E – Item 15, Appendix C
Thread, Nylon, Size 3 – Item 19, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

Layout on packing table or other suitable area.

CLEANING

NOTE

Cleaning should be held to a minimum and performed only when it is necessary to eliminate a possible malfunction or material deterioration.

Brushing.

Gently brush with a soft bristle brush.

SPOT CLEANING

WARNING

Due to flammable properties and nylon damaging substances, cleaning solvents other than tetrachloroethylene will not be used in the spot cleaning of Airdrop equipment. Tetrachloroethylene will only be used in areas where substantial ventilation is available. Repeated or prolonged inhalation of the solvent vapors can be harmful to health. In addition, avoid prolonged or repeated contact of the solvent fluid with areas of the skin. Tetrachloroethylene must not be taken internally.

CAUTION

If, during cleaning, there exist a possibility that the substance to be removed contains acid or some other equally destructive ingredient, the item will be evacuated to a direct support maintenance activity for determination as to the nature of the substance and item disposition. If the substance cannot be identified the applicable item will be condemned.

a. Tetrachloroethylene.

(1) Spot clean by rubbing the soiled area with a clean cloth dampened with Tetrachloroethylene.

(2) Rinse the cleaned area by repeating the rubbing process with the clean portion of the cloth dampened with the cleaning solvent.

(3) Do not wring out the rinsed area if an excess amount of cleaning solvent is applied. Allow the item to dry thoroughly.

b. Dishwashing compound.

(1) Add one-half cup of hand dishwashing compound dissolved in one gallon of warm water.

(2) Rinse the cleaning area with fresh clear water and allow to dry thoroughly.

(3) Do not wring out the material, which has been cleaned and rinsed.

DRYING

1. Suspend or elevate in a well-ventilated room or in a heated drying room.

2. Using electrical circulating fans may reduce drying time.

3. When heat is used, the heat temperature shall not exceed 160 °F (73 °C). The preferred temperature is 140° F (60 °C).

4. Fabric items will not be dried in direct sunlight or by laying an item out on the ground, except in an emergency.

RESTITCHING

1. Use contrasting color thread to original thread and fabric to be restitched.

NOTE

A thread color matching original thread and fabric may be used when contrasting thread is not available providing the thread is size 3.

2. Restitching shall be directly over original stitching following the original stitch pattern as closely as possible.

3. Restitch Extraction Line Panel with size 3 nylon thread.

4. Lock each end of restitching by at least 2 inches.

DARNING

NOTE

Each Extraction Line Panel may be darned an unlimited number of times using instructions below.

1. Darn a hole or tear in Extraction Line Panel, which does not exceed ¾-inch in length or diameter.

2. Use authorized marking aid of contrast color and mark a square around damage area. Insure marking is at least ¼-inch back from each edge of damaged area. Mark with warp and fill of material.

3. Darn damaged area with size E nylon thread using darning machine. Darn area by sewing material in a back and forth manner, allowing stitching to run with warp or fill of material.

4. Turn material and stitch back and forth across stitching made in above paragraph until hole or tear is completely darned.

5. Restencil mark original information data as applicable (see WP 0004 00).

END OF WORK PACKAGE

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EXTRACTION LINE PANEL **0004 00**
MARKING AND RESTENCILING EXTRACTION LINE PANEL

THIS SECTION COVERS:
Marking, Restenciling.

INITIAL SETUP

Materials

Brush, Stenciling-Item 3, Appendix C
Ink, Marking-Item 7, Appendix C
Marker, Felt Tip, Black-Item 8, Appendix C
Pen, Ballpoint-Item 10, Appendix C
Stencil Board Oiled-Item 12, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

Layout on packing table or other suitable area.

MARKING

NOTE

Stenciling should be used whenever possible. A ballpoint pen or felt tip marker should be used only where stenciling is not possible, or when stenciling devices are not available. Any type ballpoint pen using black or blue ink may be used for marking on labels only.

Original stenciling data or marking that becomes faded, illegible, obliterated, or are removed as a result of performing a repair procedure will be remarked with a ballpoint pen, felt tip marker, or restenciled. All marking or restenciling will be done on or as near as possible to the original location and should conform to the original lettering type and size.

Using marking devices such as ballpoint pen or felt tip marker, mark on or as near as possible to original location and conform to original lettering type and size.

RESTENCILING**.**

1. Cut oiled stencil board to original lettering type and size of data to be restenciled.

2. Place cut stencil board over or near as possible to original marking to be restenciled.

3. Place additional sheet of stencil board beneath the area to be stenciled to prevent the marking ink from penetrating to other areas.

4. Hold stencil board in place and using stenciling brush filled with parachute marking ink restencil original marking.

END OF WORK PACKAGE

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EXTRACTION LINE PANEL **0005 00**
STOWING 60-FOOT ONE LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Extraction Line Panel – NSN 1670-01-183-2678
Extraction Line, 60 Foot, One Loop – NSN 1670-01-064-4452
Band, Rubber, Retainer – Item 1, Appendix C
Cloth, Muslin-Cotton, Type III – Item 4, Appendix C
Paper, Kraft – Item 9, Appendix C
Webbing, Cotton, Type I – Item 16, Appendix C
Webbing, Tubular, ½-Inch Wide – Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-2	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, counterclockwise, Top and Bottom indicate the direction, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end.

When "two Extraction Line Panels" are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

Either end of the Extraction Line for the 60-Foot One Loop may be the load-attaching end.

1. Layout.

   a. Position Extraction Line Panel on pack table or suitable surface with stow loops facing up and running lengthwise (figure 1).

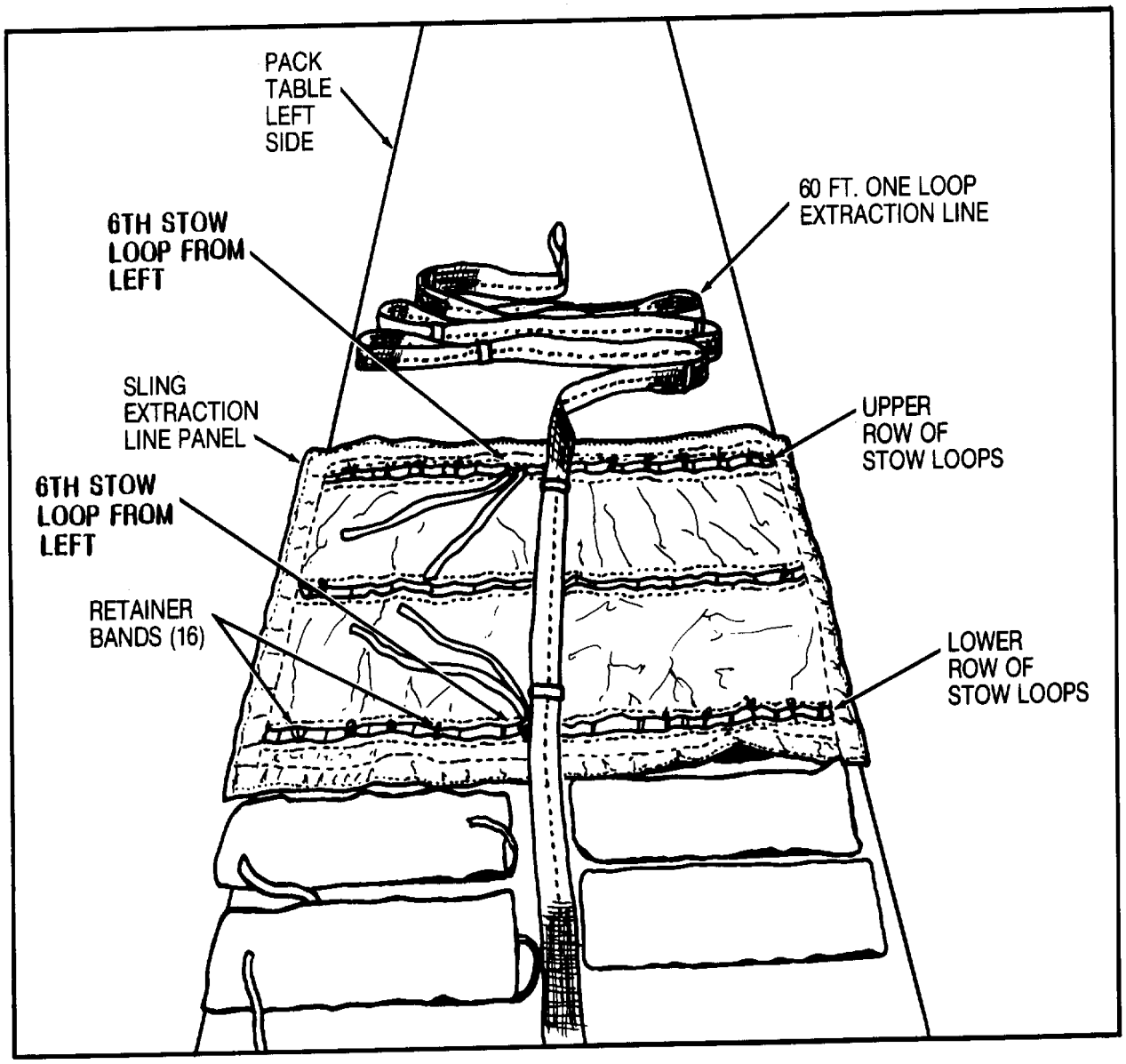

Figure 1. Layout for Extraction Line Panel and 60-FT. One Loop Extraction Line.

b. Install 16 retainer bands 8 on upper and 8 on lower row of stow loops.

c. Cut two 36-inch lengths of ½-inches wide tubular nylon webbing. Fold each length in half and girth-hitch one to 6th stow loop from the left of upper and lower row of stow loops.

d. Cut four 6 x 16 inch pieces of cotton muslin cloth and four 36-inch lengths of ¼-inch wide type I, cotton webbing and position at upper end of panel.

e. Place 60-foot, one loop extraction line on pack table. Locate and mark center point on extraction line.

f. Place extraction line lengthwise on panel with center mark aligned with center row of stow loops.

2. Stow extraction line.

a. Separate extraction line plies and wrap each ply with piece of 6 x 16-inch cotton muslin cloth position over upper and lower row of stow loops (figure 2).

b. Secure wrapped plies together at each end with two turns of single ¼-inch wide type I cotton webbing. Tie with surgeon's knot and locking knot.

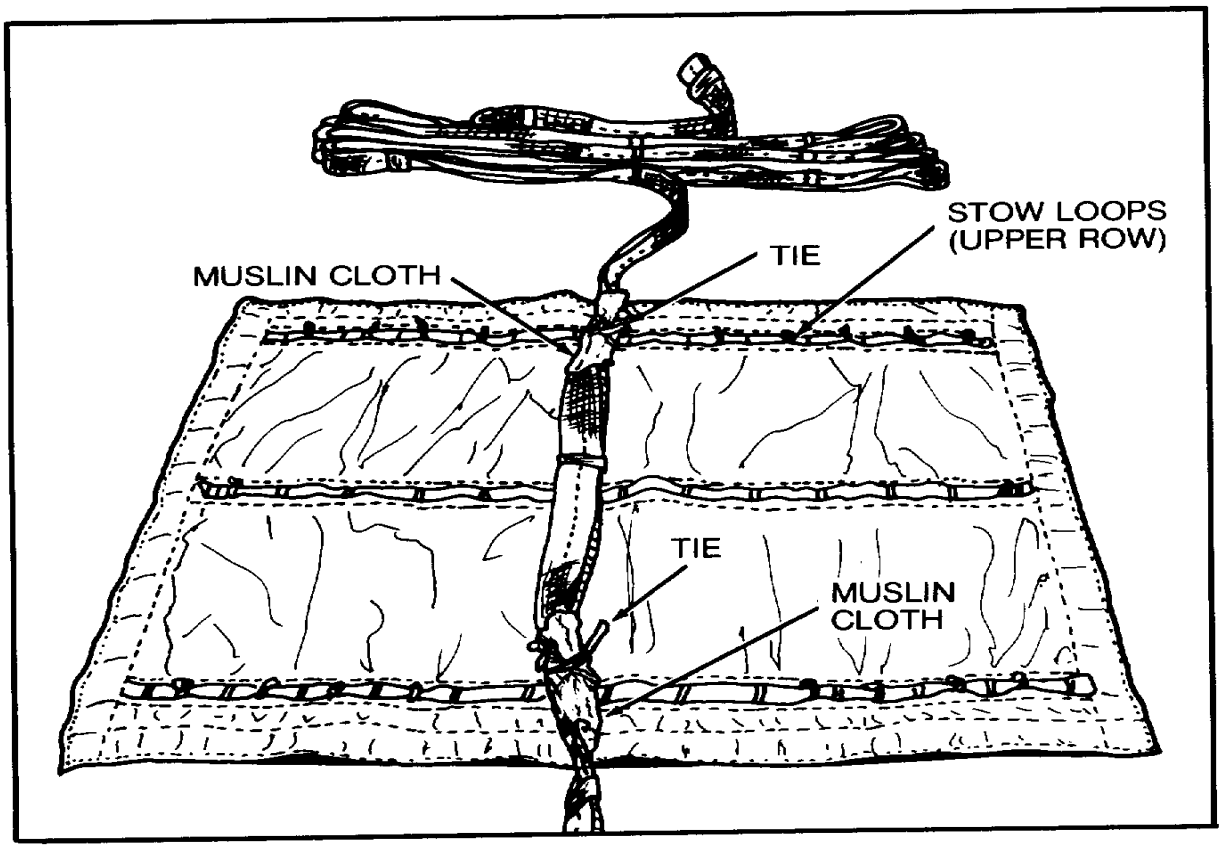

Figure 2. Wrapped Plies of Extraction Line Secured.

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Pass running ends of 36-inch length of ½-inch wide tubular nylon webbing previously installed on panel up between wrapped plies of extraction line, pass each running end in opposite direction, down and under stow loop and back to top extraction line. Secure ties with surgeon's knot, locking knot, and overhand knot in running ends.

d. Starting at center of panel, stow lower half of extraction line on right side of panel (figure 3). S-fold/stow extraction line lengthwise on panel and secure each stow with retainer bands. Continue stowing extraction line until approximately one foot of extraction line extends from lower right corner of panel.

e. Starting at center of panel, stow upper half of extraction line on left side of panel. S-fold/stow extraction line lengthwise on panel and secure with a retainer band continue stowing extraction line until approximately one foot of extraction line exceeds from upper left corner of panel.

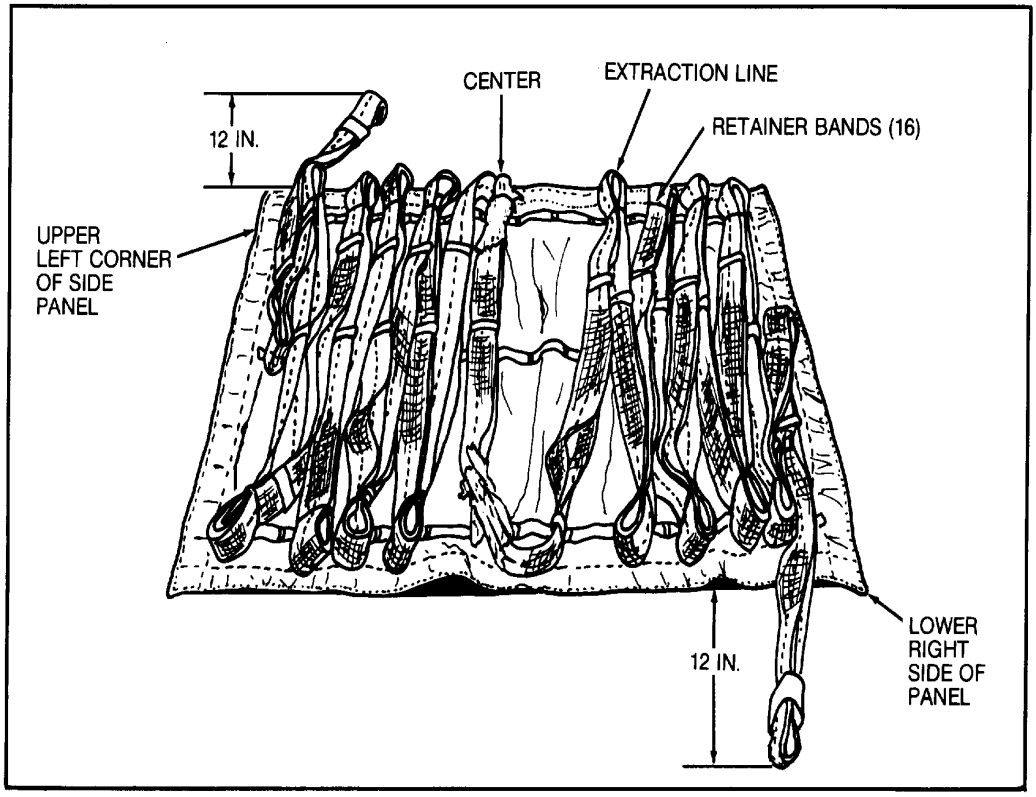

Figure 3. Stowing 60 FT. One Loop Extraction Line.

3. Fold panel, lace ends and install ties.

a. Cut 16 x 36-inch piece of Kraft paper and use as line separator. Place line separator on top of right half of stowed extraction line (figure 4).

b. Fold left of panel over line separator forming half bag (figure 5).

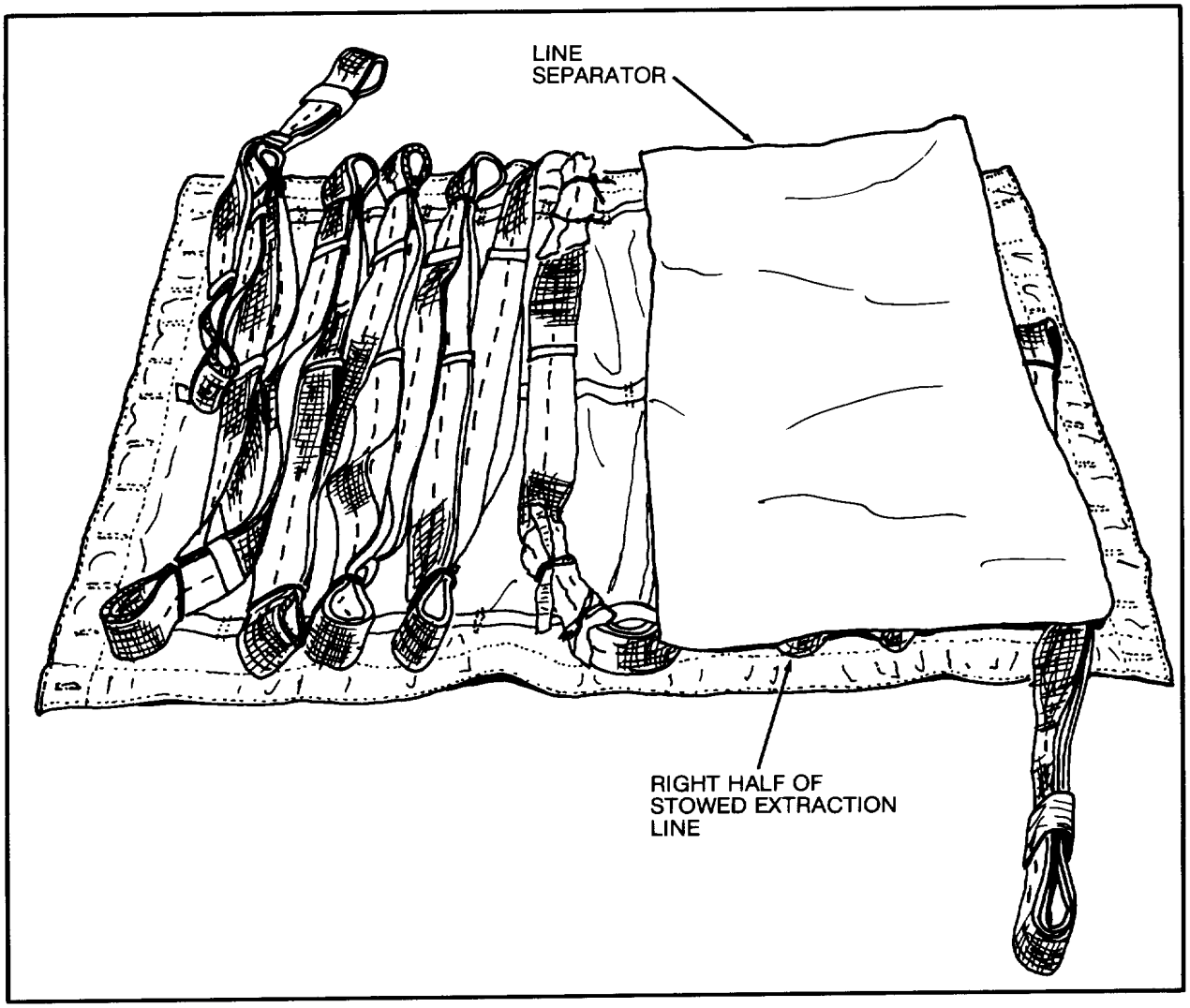

Figure 4. Line Separator Placed on Top of the Right Half of Stowed Extraction Line.

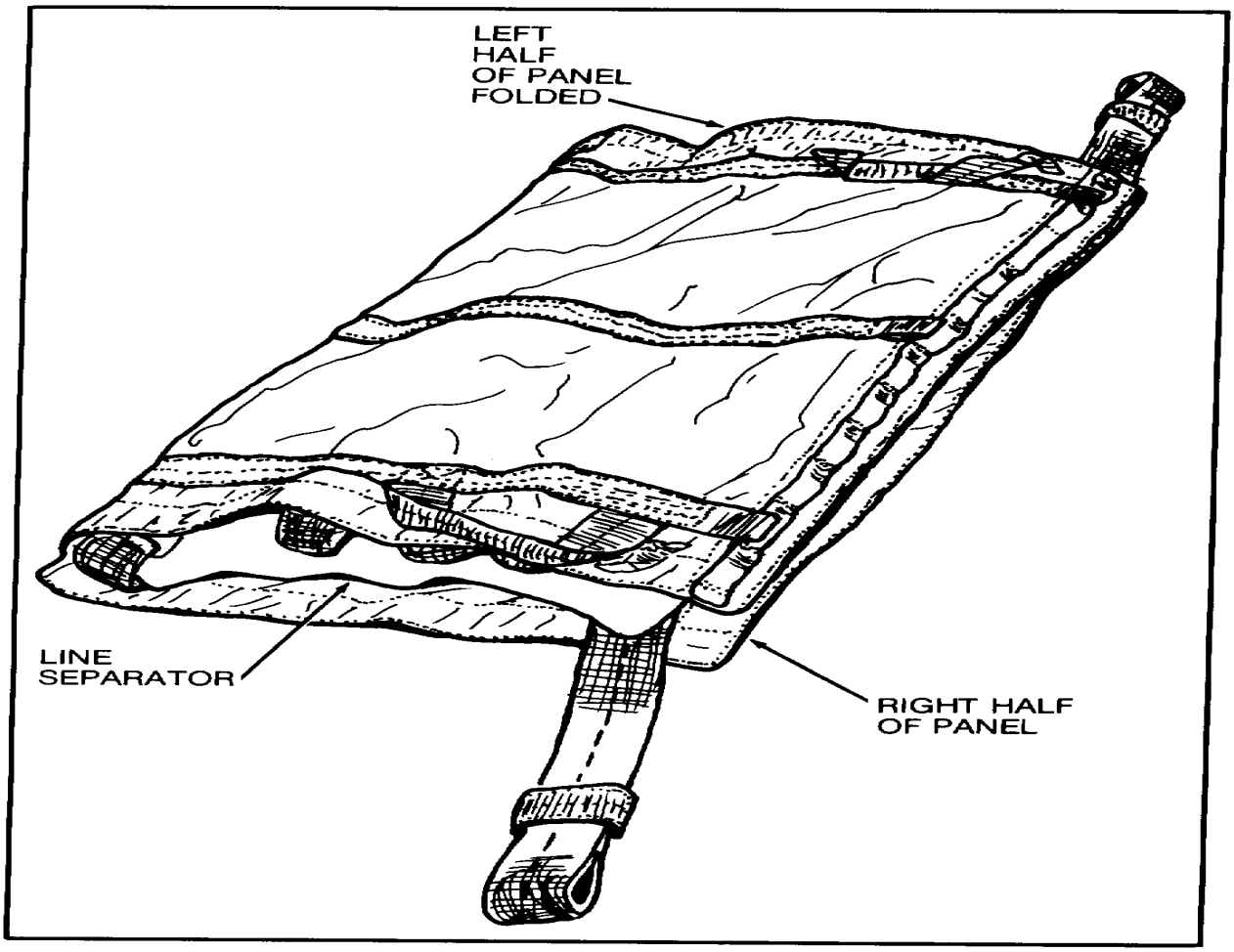

Figure 5. Left Half of Panel Folded Over Right Half.

c. Cut 95-inch length of ½-inch wide tubular nylon webbing and use as bag closing tie. Secure one end of half bag closing tie to the top and bottom lacing loops on upper corner of panel with three alternating half hitches and overhand knot in running end (figure 6).

d. Using running end of half bag closing tie, forming half hitches, lace panel closed with top edge overlapping bottom edge. Secure the running end of bag closing tie to last lacing loop with three alternating half hitches and overhand knot in running end.

e. Fold and secure running ends of extraction line to strap handles on top and bottom of half bag with ¼ inch wide type I cotton webbing.

f. Attach tag to completed Extraction Line Bag showing date stowed, who stowed extraction line, length and loop of extraction line.

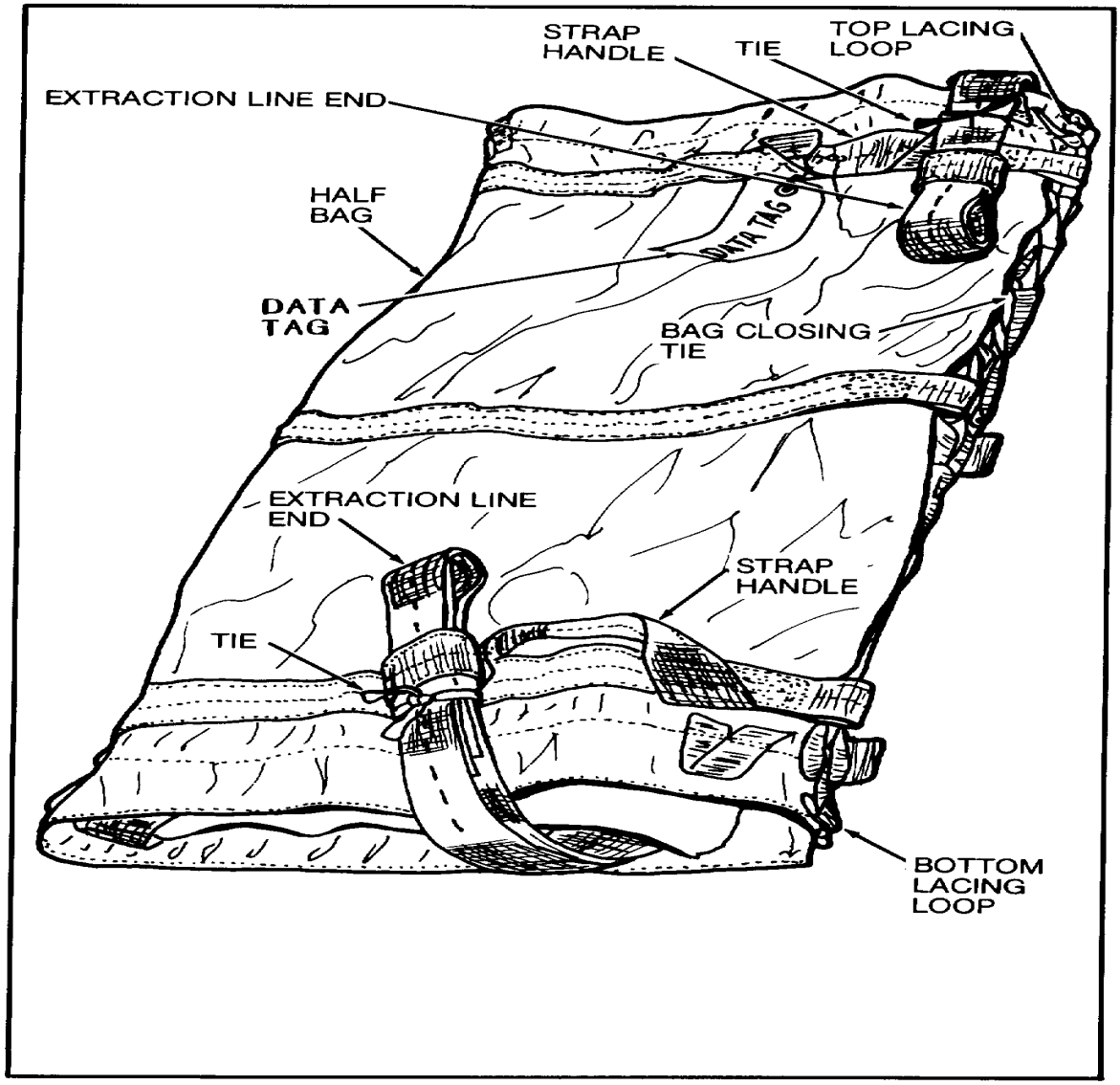

Figure 6. Half Bag Ends Laced and Ties Installed.

END OF WORK PACKAGE

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EXTRACTION LINE PANEL **0006 00**
STOWING 60-FOOT THREE LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife – NSN 5110-00-162-2205

Material/Parts

(2) Extraction Line Panel – NSN 1670-01-183-2678
Extraction Line, 60-FT Three Loop – NSN 1670-01-062-6313
Band, Rubber, Retainer – Item 1, Appendix C
Cloth, Muslin-Cotton – Item 4, Appendix C
Webbing, Cotton, Type I – Item 16, Appendix C
Webbing, Nylon, Tubular, ½-Inch – Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All Equipment shall be serviceable and ready for use.

References

WP 0002 00-2	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate the directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end.

When "two Extraction Line Panels" are laced together, the item then takes the noun nomenclature of <u>Extraction Line bag.</u>

Load attaching end of the Extraction Line Bag is laced closed with ½-inch tubular nylon webbing.

1. Layout.

a. Position two Extraction Line Panels on pack table or suitable surface with stow loops facing up and running lengthwise.

EXTRACTION LINE PANEL **0006 00**
STOWING 60-FOOT THREE LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

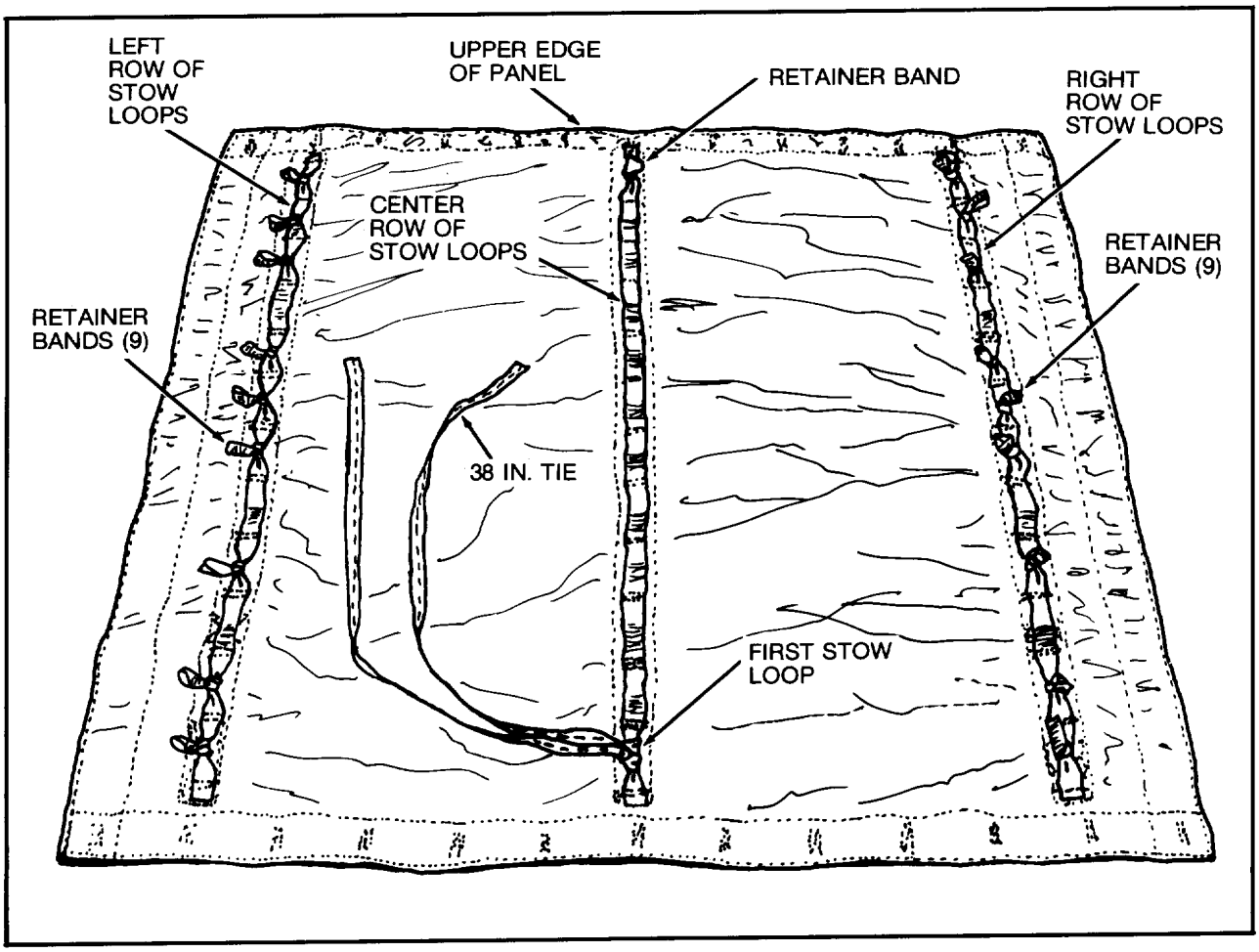

Figure 1. Bottom Panel Layout for Stowing 60-FT. Three Loop Extraction Line.

b. Install nine retainer bands at even spacing to left row of stow loops, nine to right row of stow loops and one to center row at upper edge of panel (figure 1).

c. Lay top panel aside for later use.

d. Cut one 38-inch length of ½-inch tubular nylon webbing fold in half and girth-hitch to first stow loop, center row at lower edge of bottom panel.

e. Cut two 8 x 6-inch pieces of cotton muslin cloth and two 36-inch lengths of ¼-inch wide type I cotton webbing position at lower end of bottom panel.

f. Place 60-foot, three-loop extraction line at upper end of pack table.

g. Measure and mark a point on extraction line 5-feet from one end (this will be the load-attaching end).

h. Route marked end of extraction line from upper end of panel to the lower end, along center row of stow loops, align 5-foot mark with lower edge of panel.

2. Stow extraction line.

a. Separate extraction line into two groups of three plies each and wrap each group with piece of 8 x 16 inch cotton muslin cloth at a point immediately above 5-foot mark on extraction line (figure 2).

b. Secure wrapped plies together at each end with two turns of single ¼-inch wide type I cotton webbing tie with surgeon's knot and locking knot.

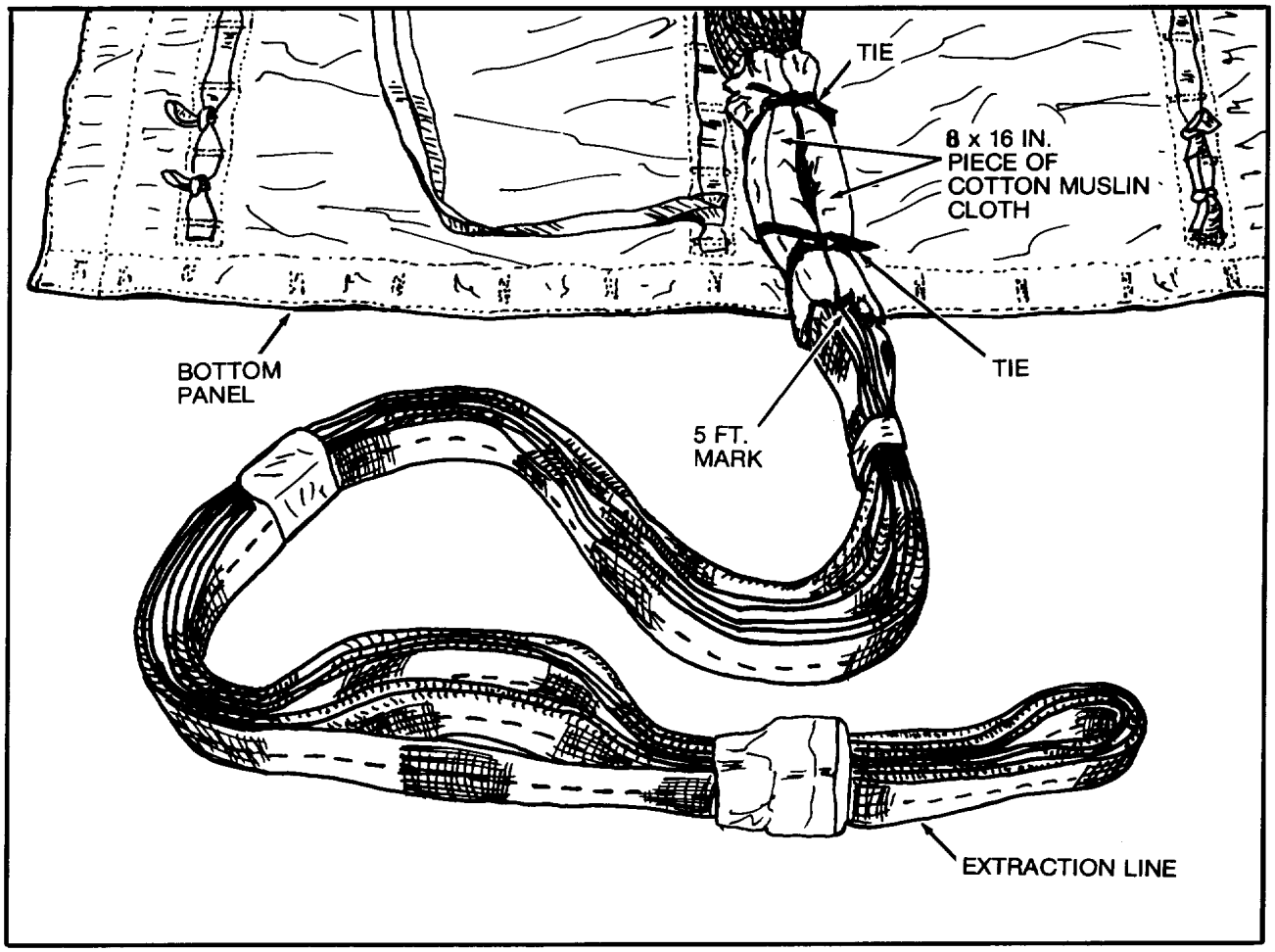

Figure 2. Extraction Line Separated into Two Groups of Three Plies and Wrapped with Cloth.

CAUTION

The extraction line must be firmly secured to the Panel to prevent slippage and damage during deployment.

c. Pass running ends of 36-inch length of ½-inch tubular nylon webbing previously installed on the panel between wrapped plies, pass each running end in opposite directions, down and under stow loop back to top of extraction line. Secure running ends on top of extraction line with surgeon's knot, locking knot and overhand knot in running ends (figure 3).

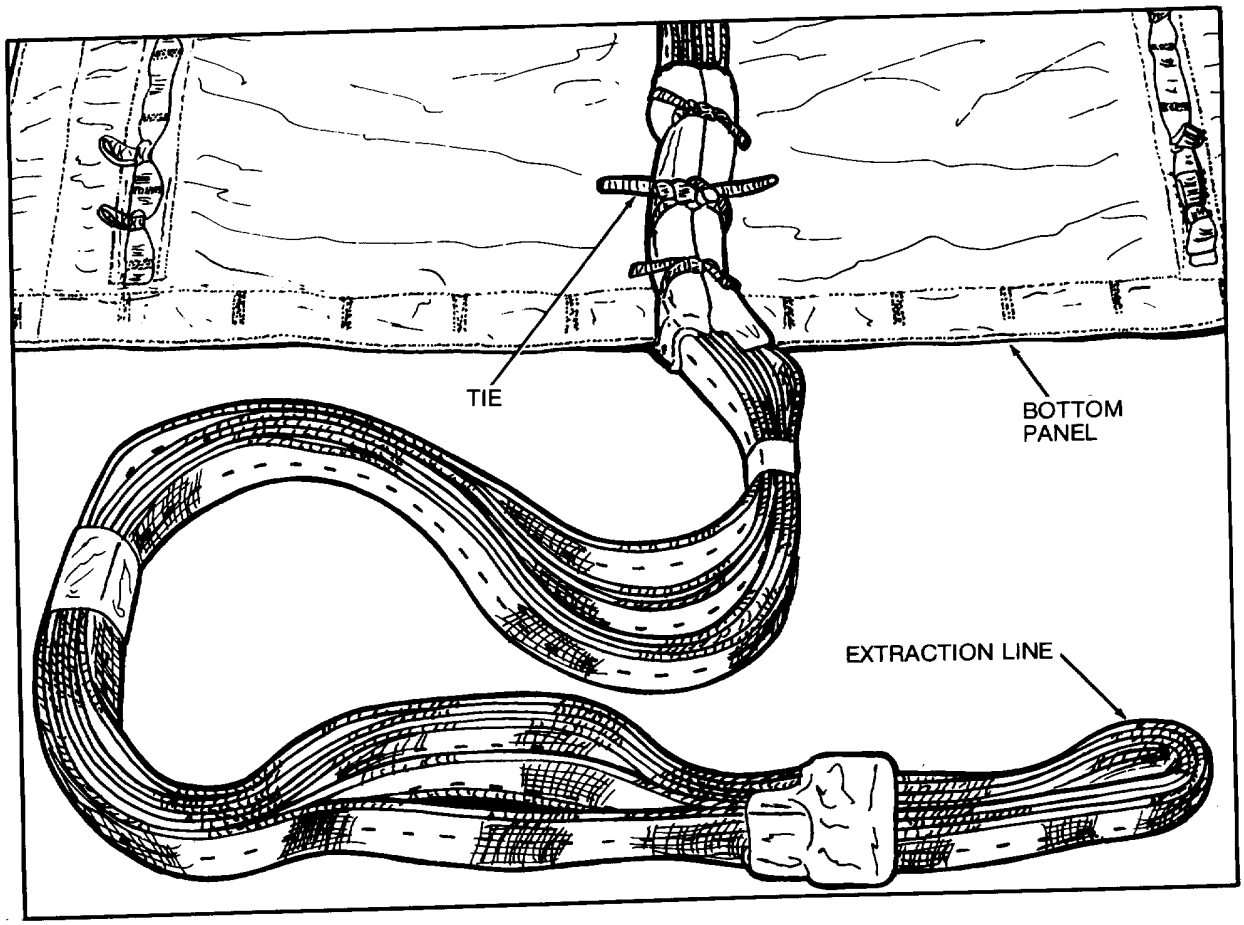

Figure 3. Extraction Line Secured to Bottom Panel.

NOTE

Ensure that the extraction line stows are evenly distributed, and do not extend beyond the left and right edge of the panel. Do not secure ties until S-folds are complete.

d. Beginning at lower left corner of bottom panel, make S-fold/stow of extraction line and secure with previously installed retainer band (figure 4).

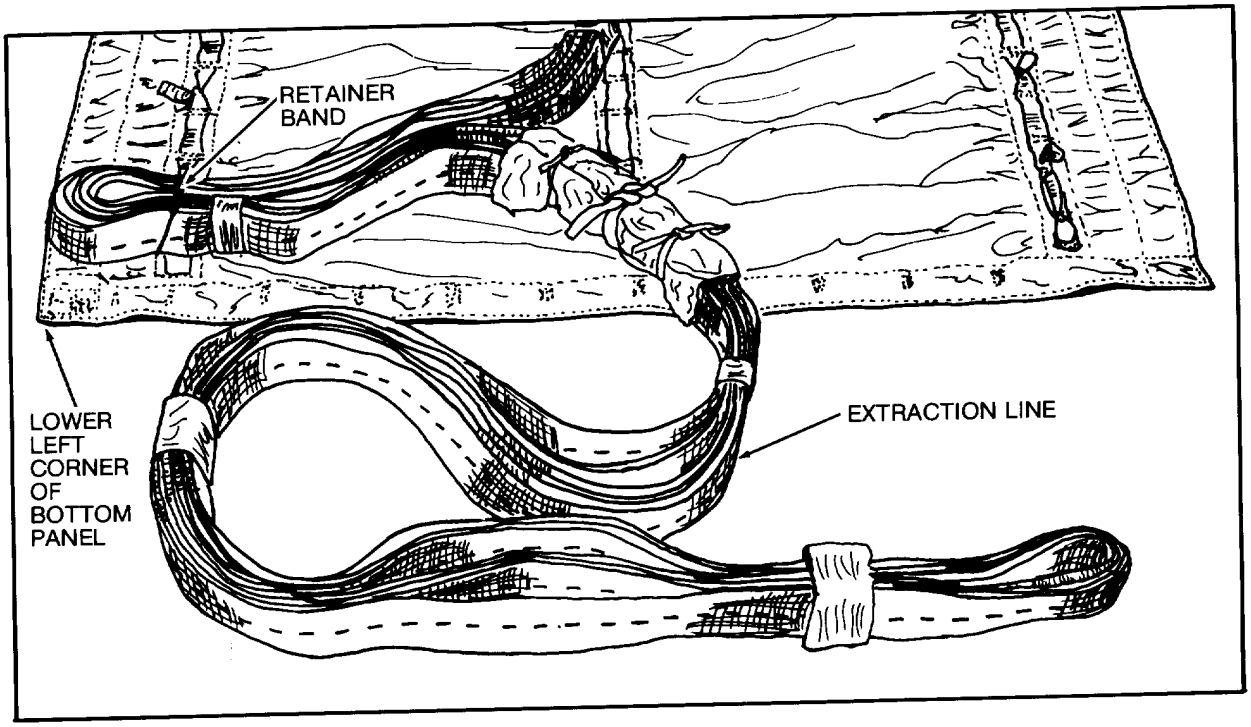

Figure 4. S-Fold of Extraction Line.

e. Working from left to right, stow and secure extraction line to panel. Make and secure last stow to center stow at edge of panel. Approximately 1 foot of extraction line should extend from upper edge after last stow is made (figure 5).

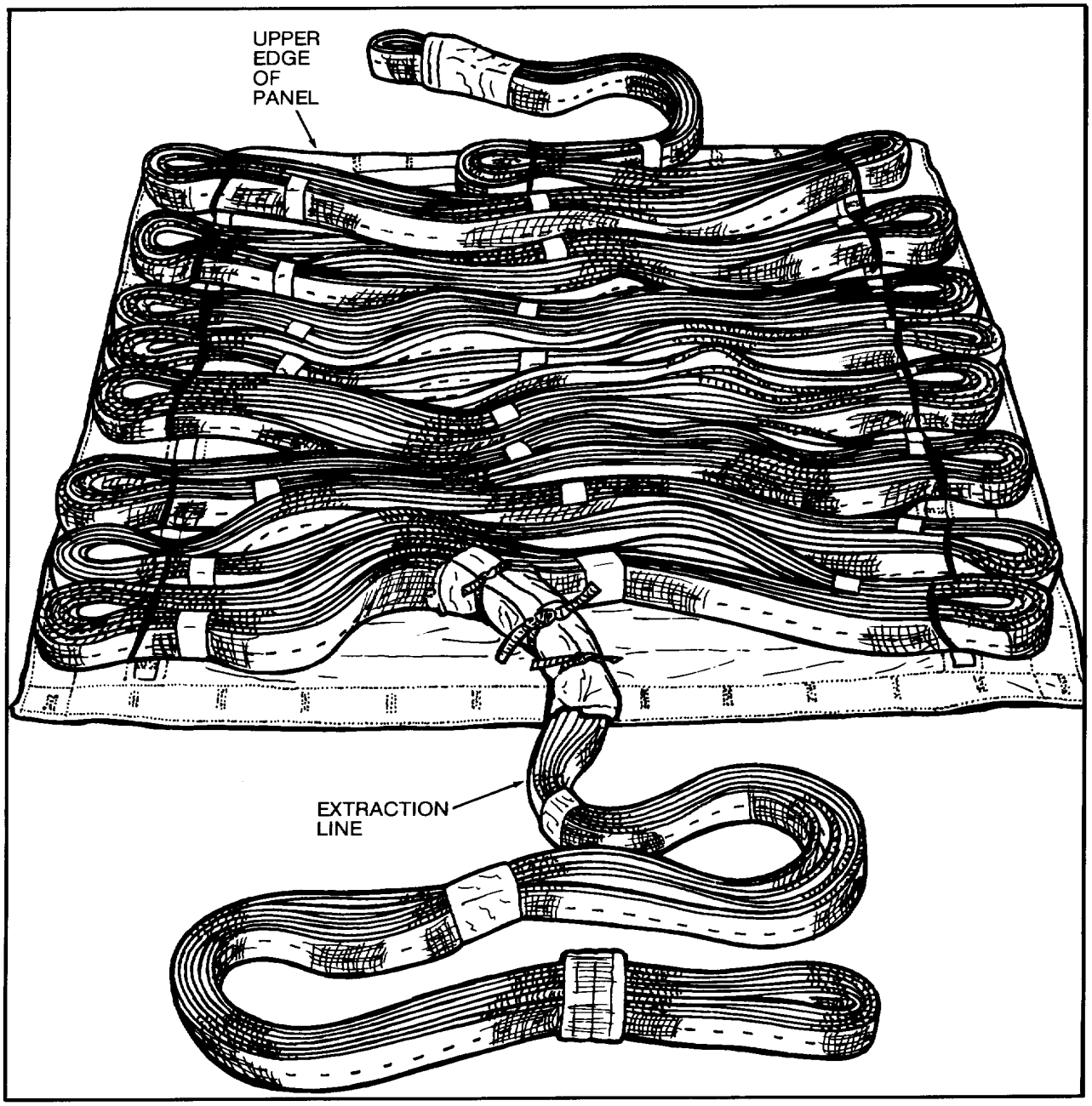

Figure 5. Extraction Line Stowed.

3. Closing Extraction Line Bag.

a. Place top panel on bottom panel and align edges.

b. Cut one 95-inch length of ½-inch wide tubular nylon webbing. Cut one 95-inch and six 10-inch lengths of ¼-inch type I cotton webbing to be used as bag closing ties.

c. Beginning at lower left corner of panels, secure one end of 95-inch nylon webbing bag-closing tie to lacing loops located on outside edge of top and bottom panels with three alternating half-hitches and an overhand knot in running end (figure 6).

d. Using running end of attached 95-inch ½-inch nylon webbing bag-closing tie, lace lower end of panels closed, working from bottom to top, from left to right, forming half hitches between closing loops. Secure end of closing tie with three alternating half hitches and overhand knot in running end. Trim off excess.

e. Secure top and bottom closing loops together on left and right sides with six 10-inch ¼-cotton webbing bag closing ties. Secure ties with surgeon's knot and locking knot.

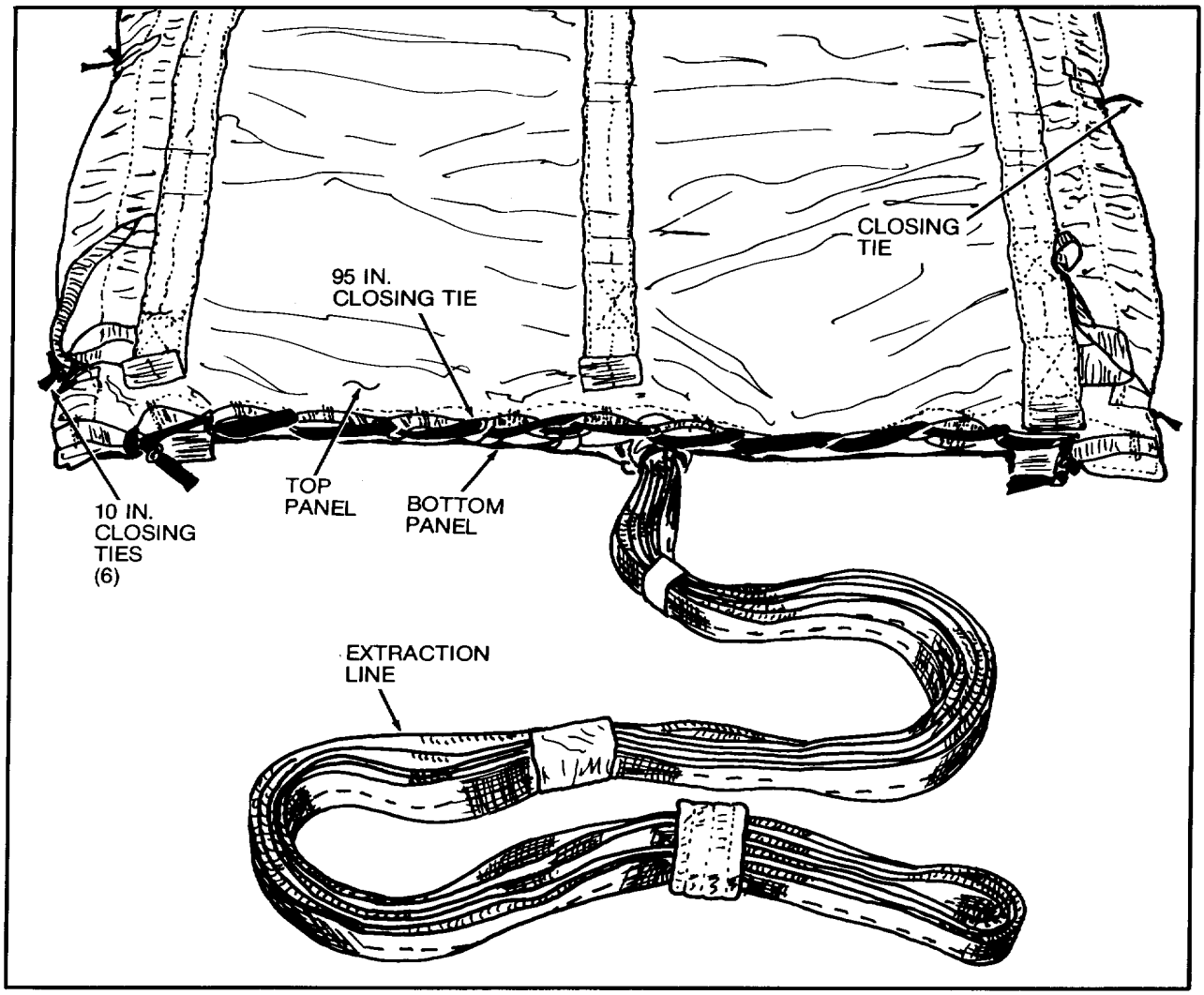

Figure 6. Extraction Line Bag Closed.

NOTE

Temporary handling tie is for handling and transport only. Remove aboard aircraft.

f. Beginning at upper top center bridle attaching loops, pass one of remaining 95-inch closing tie (temporary handling tie) through top center, bottom right, top right, bottom center, top left, bottom left and back through top center loops. Remove slack from tie and secure ends with surgeon's knot and locking knot (figure 7).

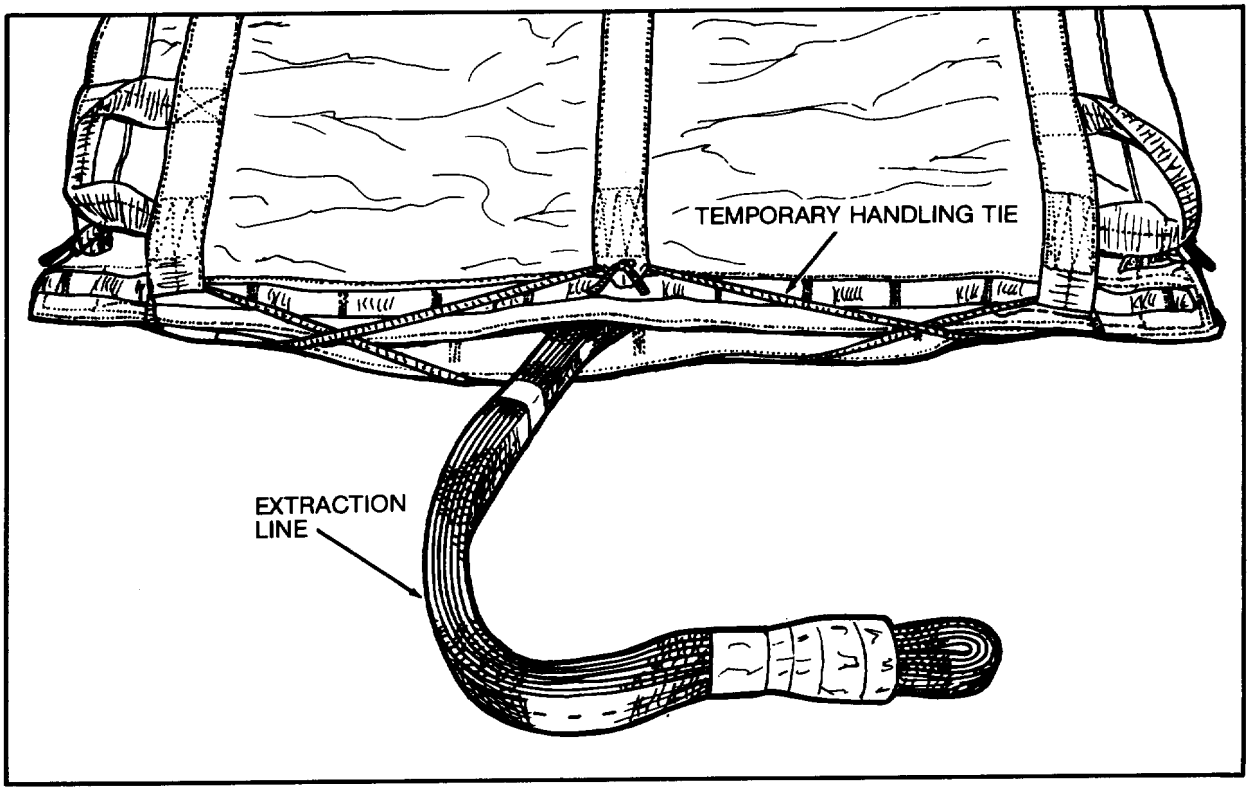

Figure 7. Handling Tie Installed.

g. Fold and secure running ends of extraction line to carrying handles using ¼-inch wide type I cotton webbing (figure 8).

h. Attach tag to completed Extraction Line Bag showing date stowed, who stowed extraction line, length and loop of extraction line.

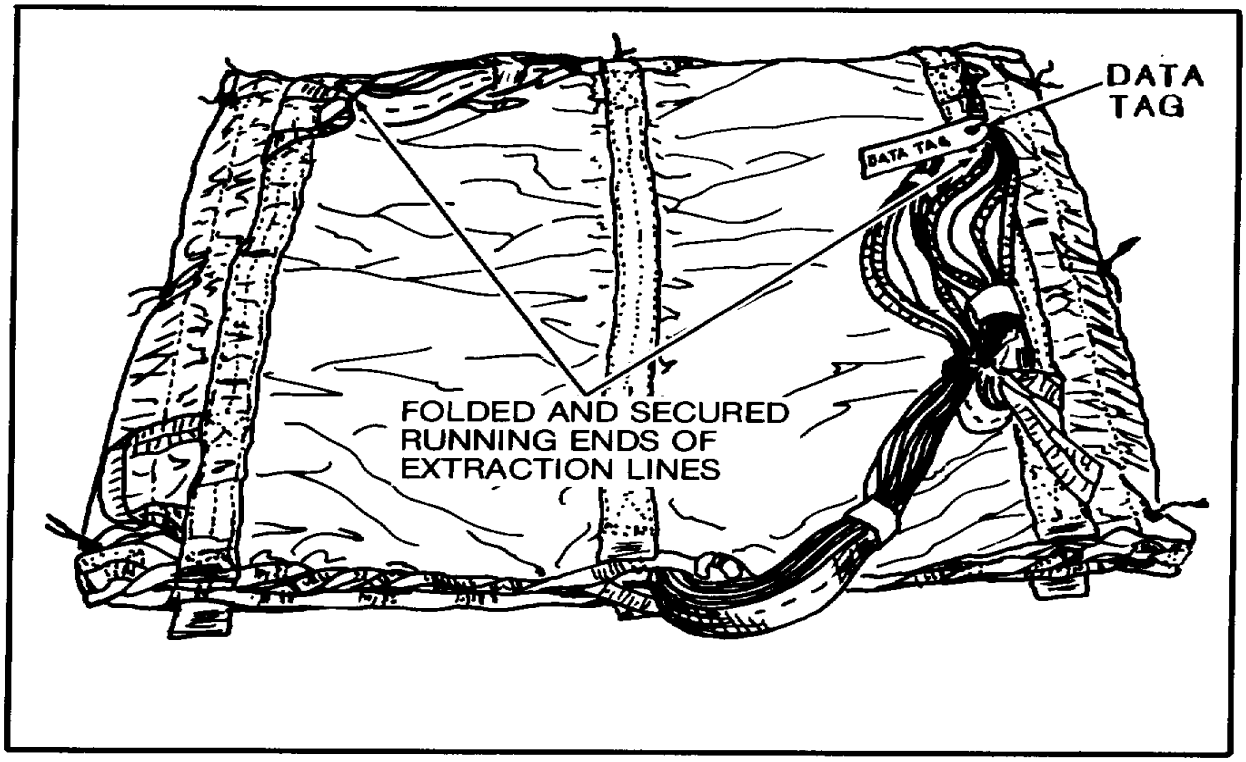

Figure 8. Extraction Line Running Ends Secured to Panel.

END OF WORK PACKAGE

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EXTRACTION LINE PANEL **0007 00**
STOWING 60 FOOT SIX LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife – NSN 5110-00-162-2205

Materials/Parts

(2) Extraction Line Panels – NSN 1670-01-183-2678
Extraction Line, 60-FT Six Loop – NSN 1670-01-064-4454
Cloth, Muslin-Cotton – Item 4, Appendix C
Webbing, Cotton, Type I, ¼-Inch Wide – Item 16, Appendix C
Webbing, Nylon, Tubular, ½-Inch Wide – Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment condition

All Equipment shall be serviceable and ready for use.

References

WP 0002 00-2	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate the direction, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end.

When "two Extraction Line Panels" are laced together, the item then takes the noun nomenclature of <u>Extraction Line Bag.</u>

Load attaching end of the Extraction Line Bag is laced closed with ½ inch tubular nylon webbing.

1. Layout.

a. Position two Extraction Line Panels on pack table or suitable surface with stow loops facing up and running lengthwise.

b. Cut seventeen 24-inch lengths of ¼-inch wide type I cotton webbing, fold in half and girth-hitch at even spacing 8 each of ties to left and 8 each to right row of stow loops of bottom panel. Girth-hitch remaining tie to center stow loop at upper edge of panel (figure 1).

c. Lay top panel aside for later use.

d. Cut 38-inch length of ½-inch tubular nylon webbing, fold in half and girth-hitch to first stow loop, center row at lower edge of panel.

e. Cut two 8 x 16-inch pieces of cotton muslin cloth and two 36-inch lengths of ¼-inch wide type I cotton webbing, position at the lower end of the bottom panel.

f. Place a 60-foot, six-loop extraction line at upper end of pack table.

g. Measure and mark point on extraction line 5-feet from one end (this will be load attaching end).

h. Route marking end of extraction line from upper end of panel to lower end, along center row of stow loops, align 5-foot mark with lower edge of panel.

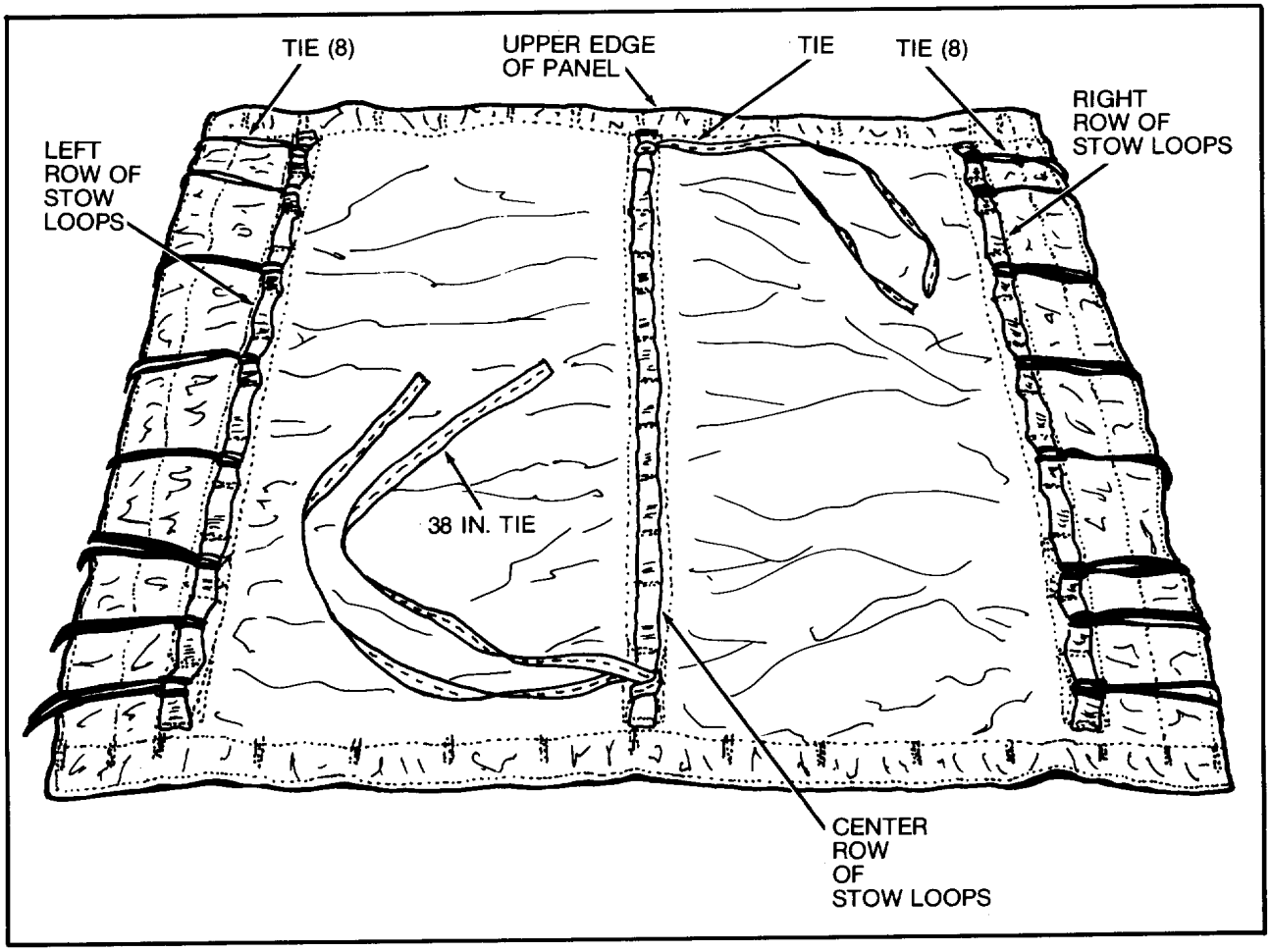

Figure 1. Bottom Panel Layout for Stowing 60-FT Six Loop Extraction Line.

2. Stow extraction line.

a. Separate extraction line into two groups of six plies each and wrap each group with piece of 8 x 16-inch cotton muslin cloth at point immediately above 5-foot mark on extraction line.

b. Secure wrapped plies together at each end with two turns of single ¼-inch wide type I cotton webbing tie with surgeon's knot and locking knot (figure 2).

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Pass running ends of 36-inch length of ½-inch tubular nylon webbing previously installed on panel between wrapped plies, pass each running end in opposite directions, down and under stow loop and back to top of extraction line. Secure running ends on top of extraction line with surgeon's knot, locking knot, and overhand knot on running ends (figure 3).

NOTE

Ensure that the extraction line stows are evenly distributed and do not extend beyond the left and right edge of the panel. Do not secure ties until S-Folds are completed.

d. Beginning at lower left corner of bottom panel, make first S-fold/stow of the extraction line and secure with a previously installed, stow tie (figure 4).

e. Working from left to right, stow and secure the extraction line to panel. Make and secure last stow to center stow loop at upper edge of panel. Approximately 5-feet of extraction line should extend from upper edge after last stow is made (figure 5).

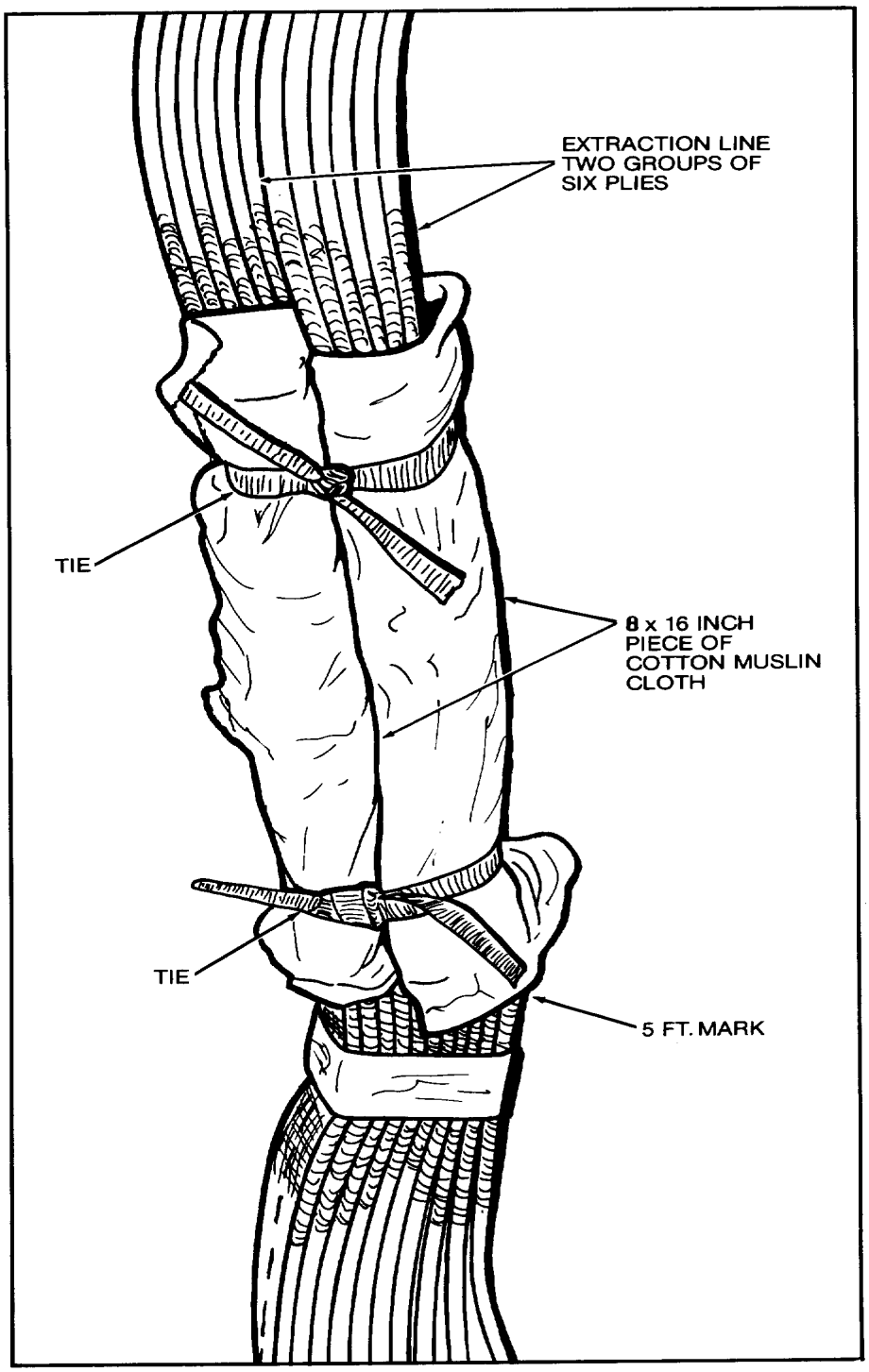

Figure 2. Extraction Line Separated into Two Group of Six Plies and Wrapped with Cloth.

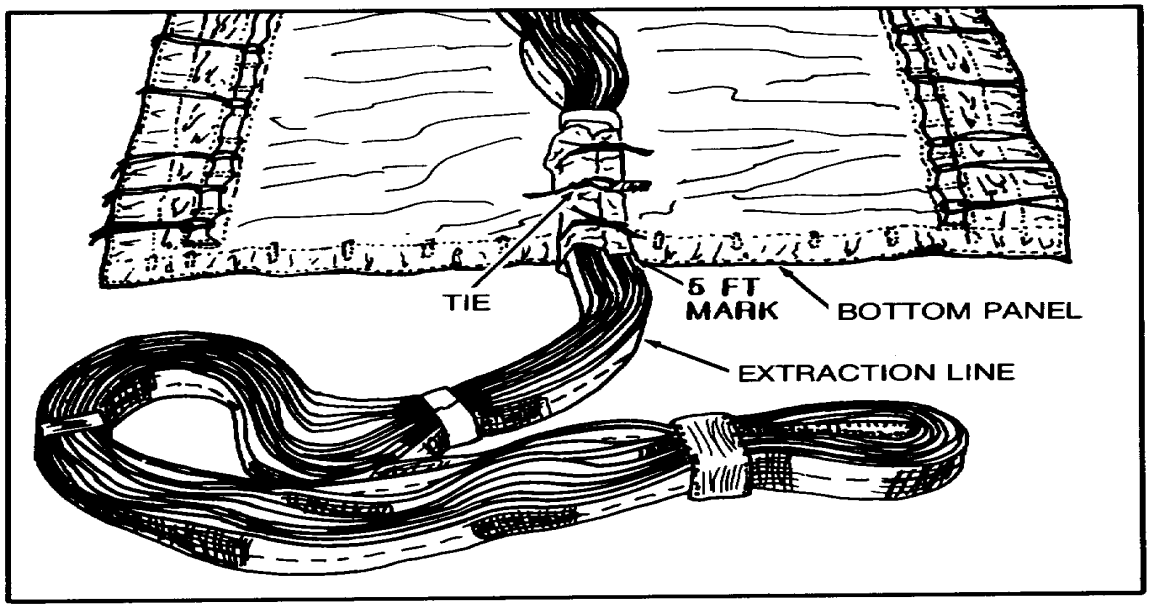

Figure 3. Extraction Line Secured to Bottom Panel.

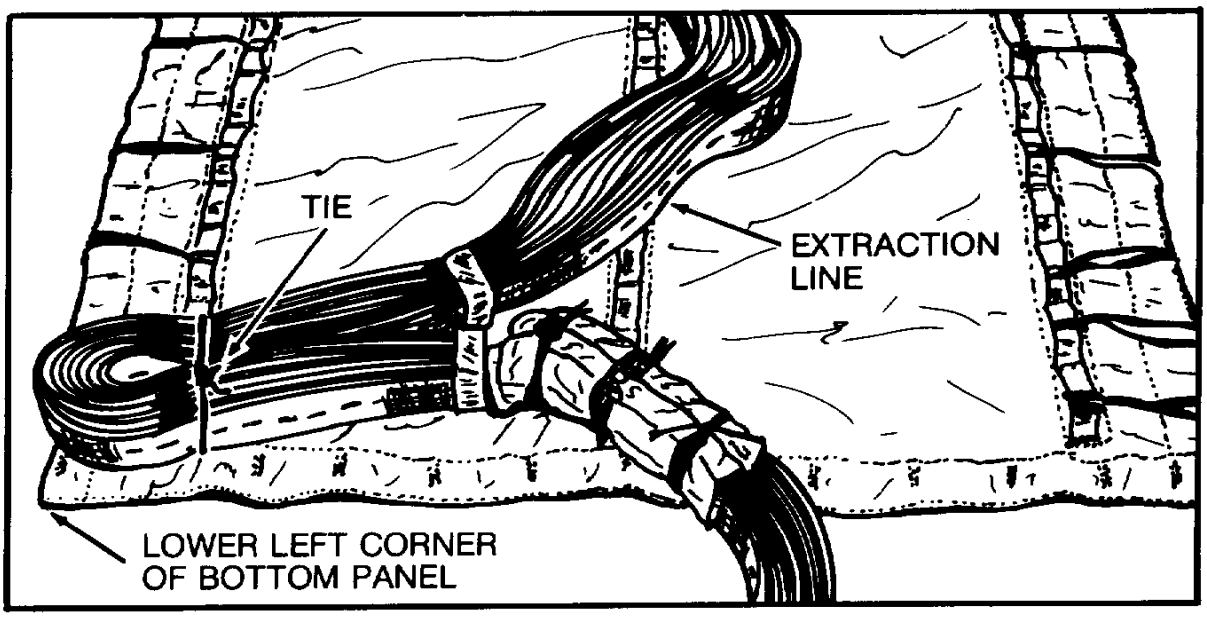

Figure 4. S-Fold of Extraction Line.

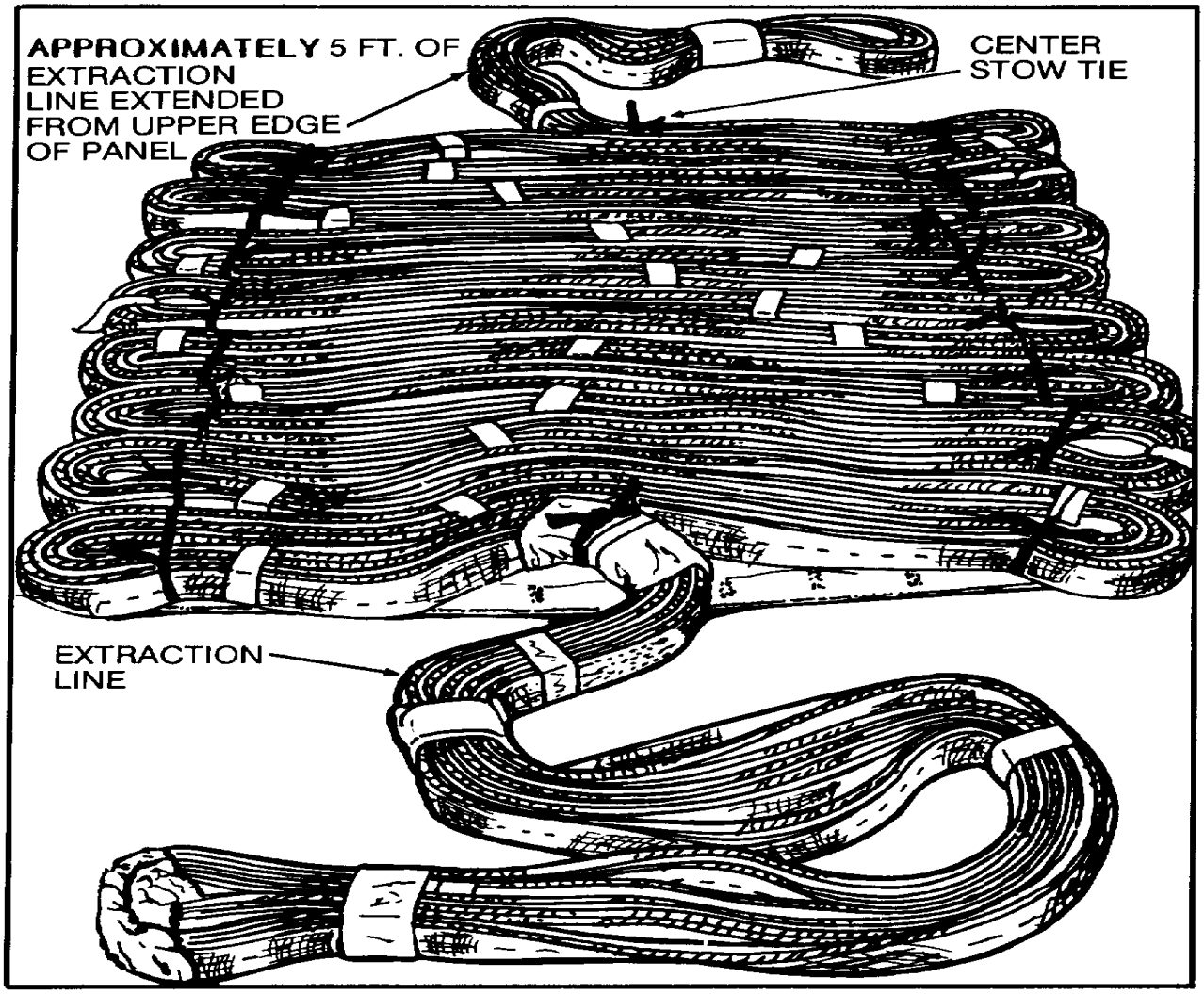

Figure 5. Extraction Line Stowed.

3. Close Extraction Line Bag.

a. Place top panel on bottom panel and align edges.

NOTE

Insure that the extraction line stows do not shift out of position.

b. Cut one 95-inch length of ½-inch wide tubular nylon webbing. Cut one 95-inch and six 10-inch lengths of ¼-inch wide type I cotton webbing to be used as bag closing ties.

c. Beginning at lower left corner of panels, secure one end of 95-inch nylon webbing bag closing tie to lacing loops located on outside edge of top and bottom panels with three alternating half-hitches and over hand knot in running end (figure 6).

d. Using running end of attached 95-inch nylon webbing bag closing tie, lace lower end of panels closed, working from bottom to top, from left to right, forming half hitches between closing loops. Secure end of closing tie with three alternating half-hitches and overhand knot in running end. Trim off excess.

e. Secure top and bottom closing loops together on left and right sides with six 10-inch cotton webbing bag closing ties. Secure surgeon's knot and locking knot.

NOTE

This tie for handling and transport only. Remove aboard aircraft.

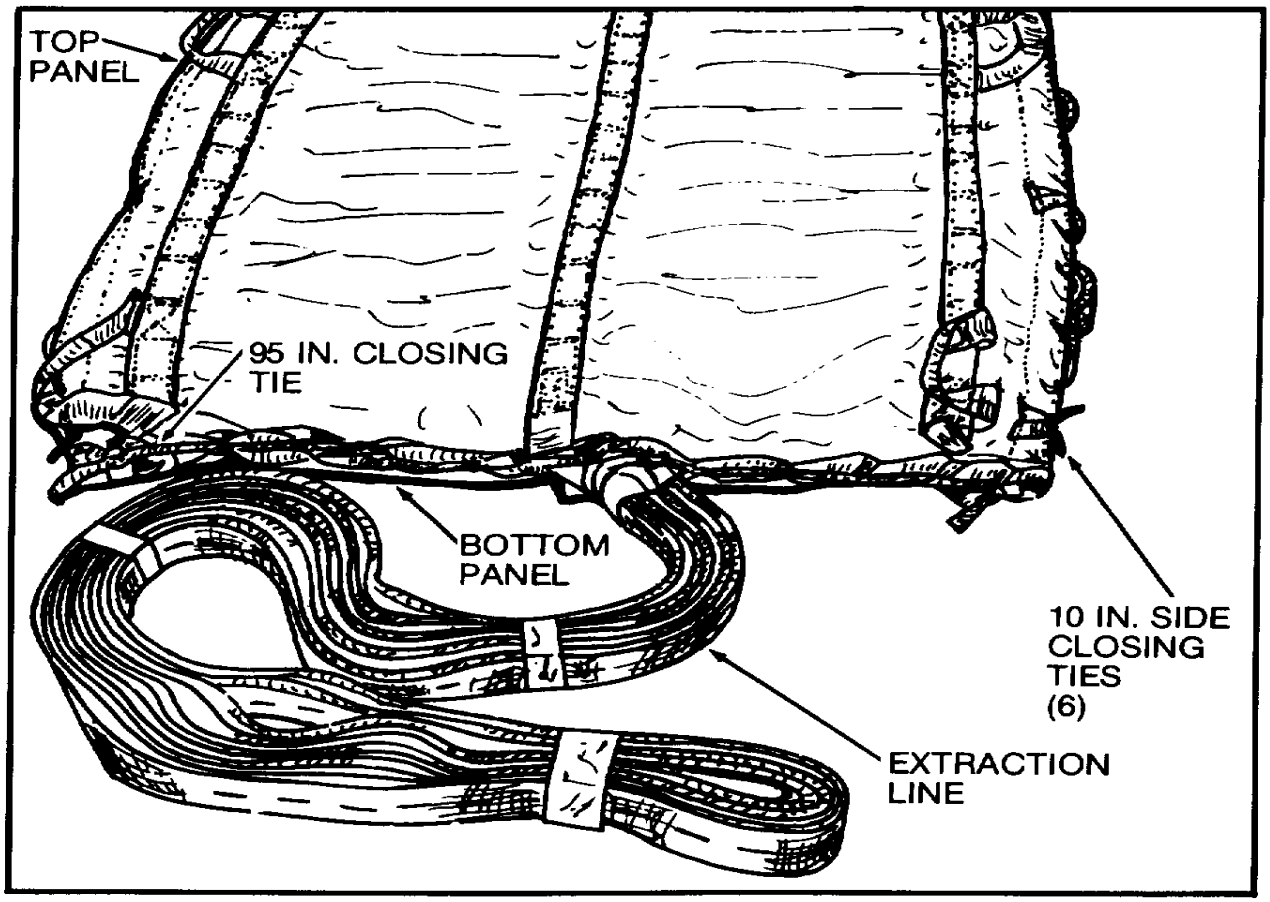

Figure 6. Extraction Line Bag Closed.

f. Beginning at upper top center bridle attaching loops, pass one end of 95-inch cotton webbing bag closing tie (temporary tie) through top center, bottom right, top right, bottom center, top left, bottom left, and back through top center loops. Remove slack from tie and secure ends with surgeon's knot and locking knot (figure 7).

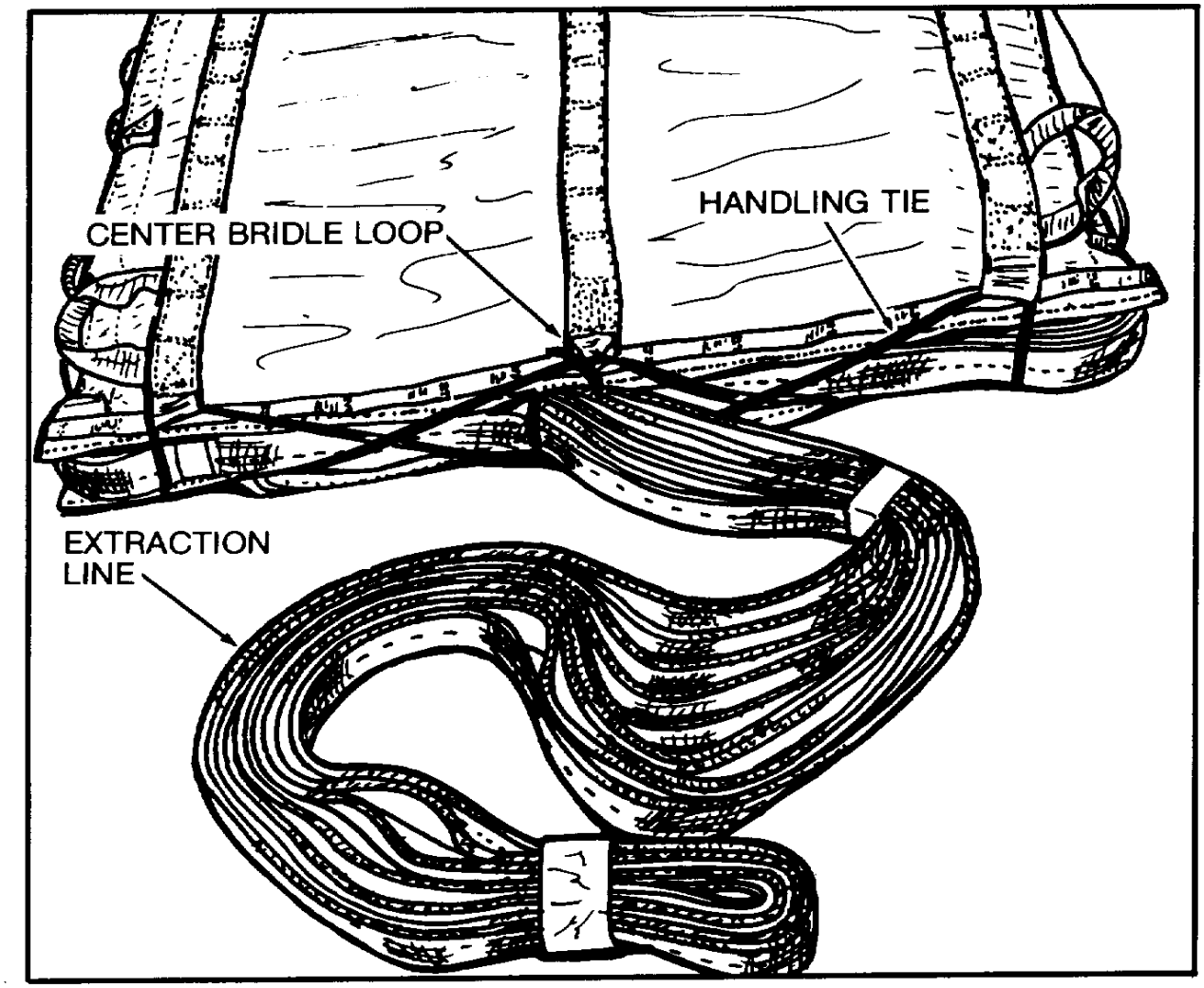

Figure 7. Handling Tie Installed.

g. Fold and secure running ends of extraction line to carrying handles using ¼-inch wide type I webbing (figure 8).

h. Attach tag to completed Extraction Line Bag showing date stowed, who stowed extraction line, length and loop of extraction line.

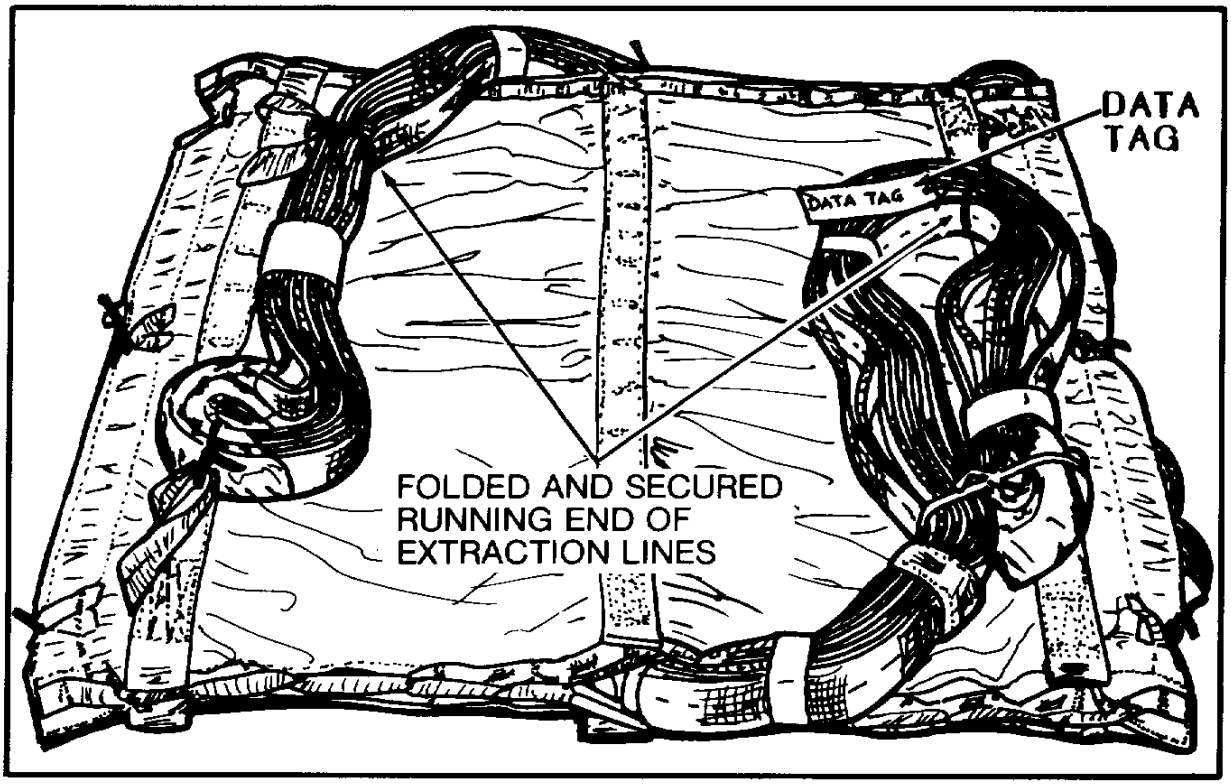

Figure 8. Extraction Line Running Ends Secured to Panel.

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EXTRACTION LINE PANEL **0008 00**
STOWING 120-FOOT SIX LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife – NSN 5110-00-162-2205

Materials/Parts

(2) Extraction Line Panel – NSN 1670-01-183-2678
Extraction Line, 120 FT Six Loop – NSN 1670-01-062-6312
Cloth, Muslin-Cotton – Item 4, Appendix C
Paper, Kraft – Item 9, Appendix C
Webbing, Cotton, Type I, ¼-Inch Wide – Item 16, Appendix C
Webbing, Nylon, Tubular, ½-Inch Wide – Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-2	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line

STOWING.

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate the directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end.

When "two Extraction Line Panels" are laced together, the item then takes on the noun nomenclature of Extraction Line Bag.

Load attaching end of the Extraction Line Bag is laced closed with ½-inch tubular nylon webbing.

1. Layout.

a. Position two Extraction Line Panels on pack table or suitable surface with stow loops facing up and lengthwise (figure 1).

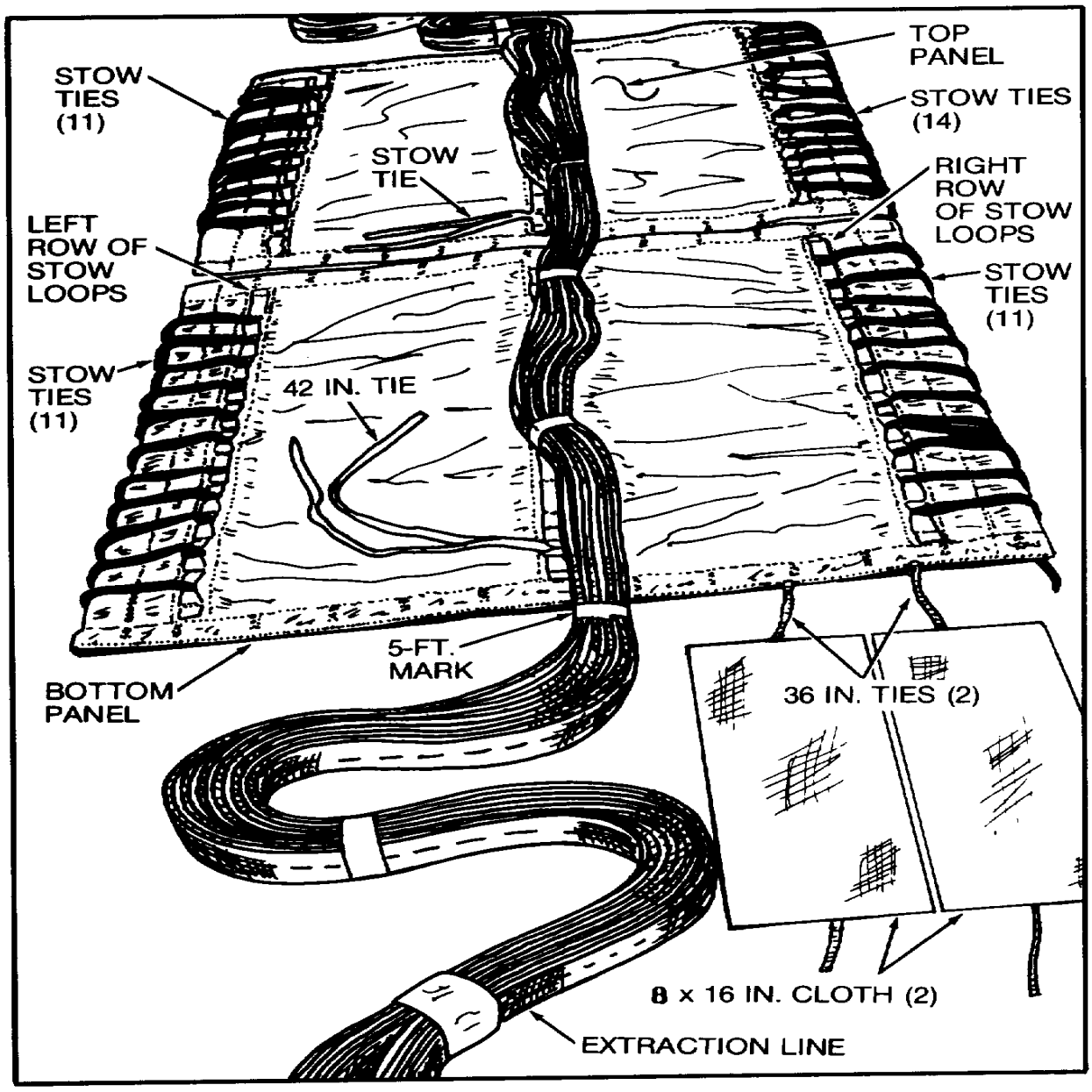

Figure 1. Panel Layout for Stowing 120 FT Six Loop Extraction Line.

b. Cut forty-eight 24-inch lengths of ¼-inch wide type I cotton webbing fold in half and girth-hitch 11 stow ties to left and right row of stow loops on top and bottom panels. Install an additional stow tie to 1st, 6th and 12th stow loop on right of stow loop of top panel. Girth-hitch remaining stow tie to lower center stow loop of top panel.

c. Lay the top panel aside for later use.

d. Cut one 42-inch length of ½-inch tubular nylon webbing, fold in half and girth-hitch to 1st, stow loop, center row at lower edge of bottom panel.

e. Cut two 8 x 16-inch pieces of cotton muslin cloth and two 36-inch lengths of ¼-inch type I cotton webbing, position at lower edge of bottom panel.

f. Cut and lay aside 36 x 38-inch sheet of kraft paper for use as line separator.

g. Place 120 foot, six-loop extraction line on upper end of pack table or suitable surface.

h. Measure and mark point on extraction line 5-feet from one end (this will be load attaching end).

i. Route marked end of extraction line from upper end of panel to lower end along center row of stow loops.

2. Stow extraction line.

a. Separate extraction lines plies into two groups of six each and wrap each group with piece of 8 x 16-inch cotton muslin cloth at point immediately above 5-foot mark on extraction line (figure 2).

b. Secure wrapped plies together at each end with two turns of single ¼-inch wide type I cotton webbing tie with surgeon's knot and locking knot.

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Pass running ends of 42-inch length of ½-inch tubular nylon webbing extraction line, pass each running end in opposite directions, down and under stow loop and back to top of extraction line. Secure running ends on top of extraction line with surgeon's knot, locking knot, and overhand knot on running ends (figure 3).

NOTE

Ensure that the extraction line stows are evenly distributed and do not extend beyond the left and right edge of the panel. Do not secure ties until S-folds are completed.

d. Beginning at lower left corner of bottom panel, make first S-fold/stow of extraction line and secure with stow ties previously installed (figure 4).

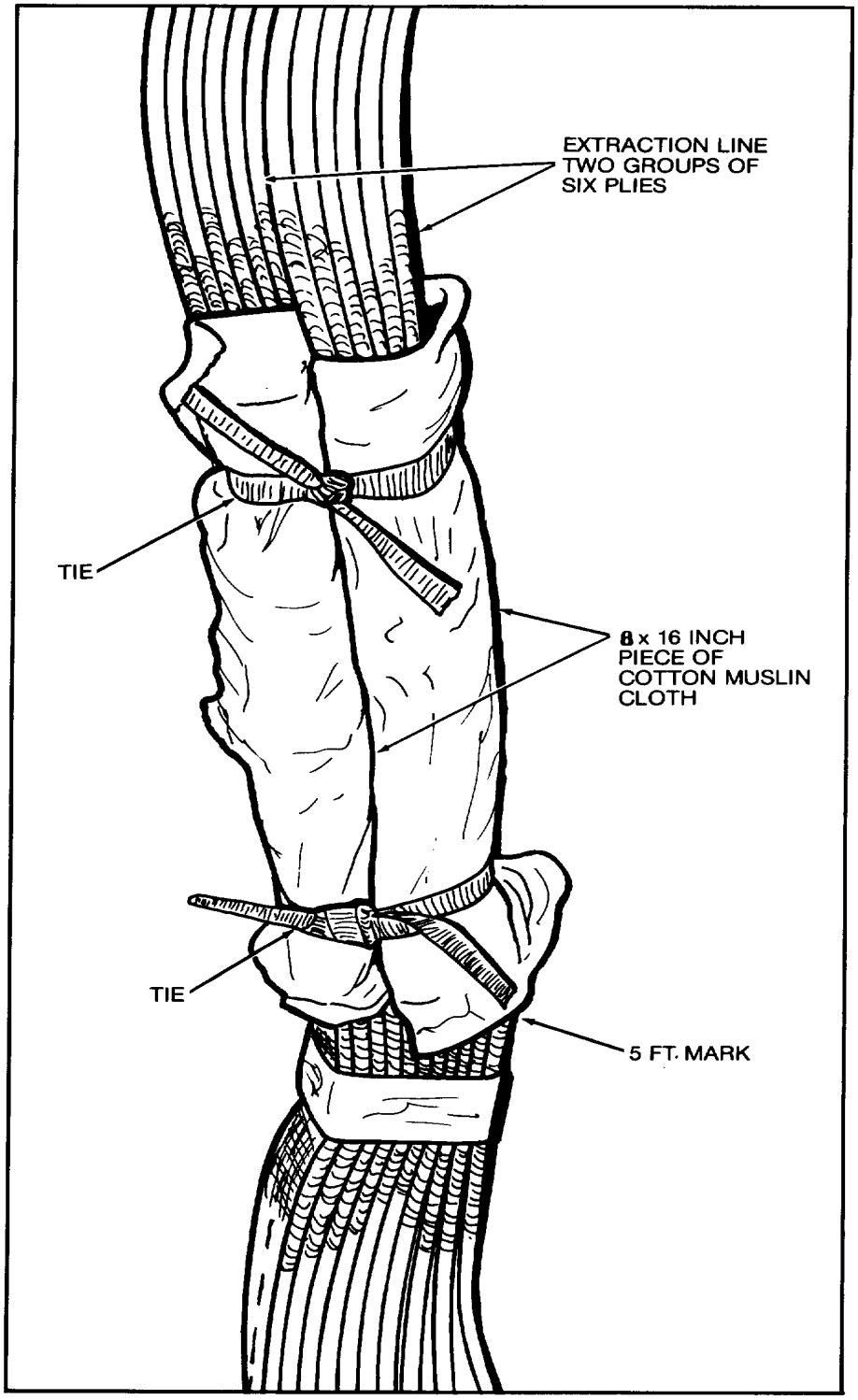

Figure 2. Extraction Line Separated into Two Groups of Six Plies and Wrapped with Cloth.

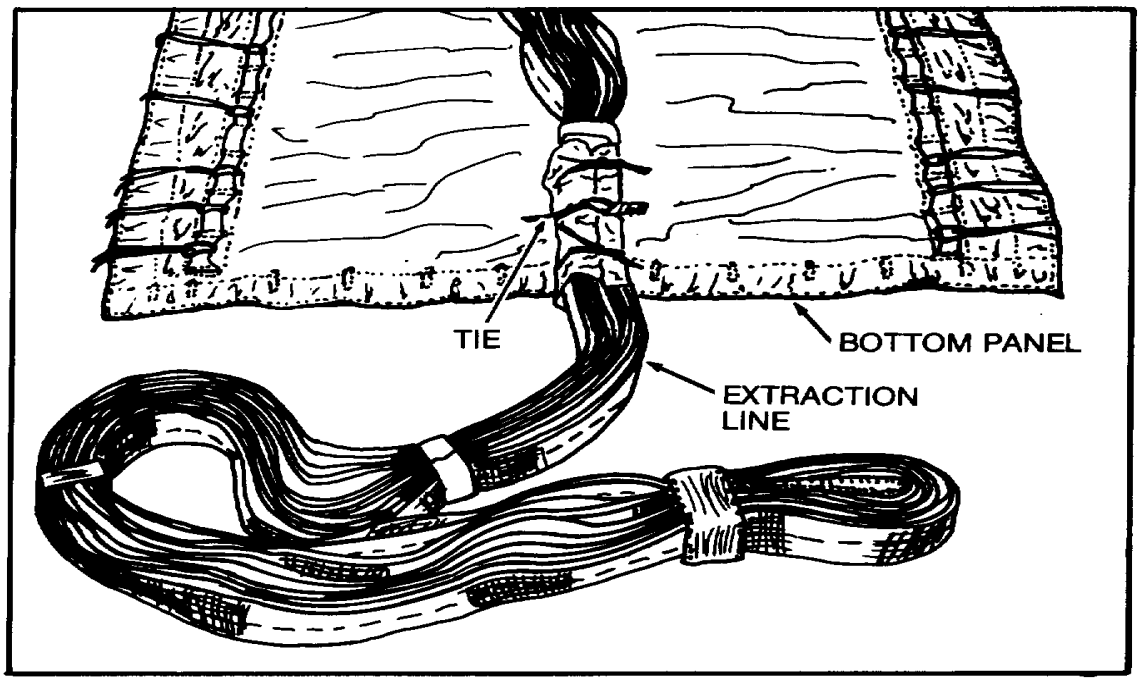

Figure 3. Extraction Line Secured to Bottom Panel.

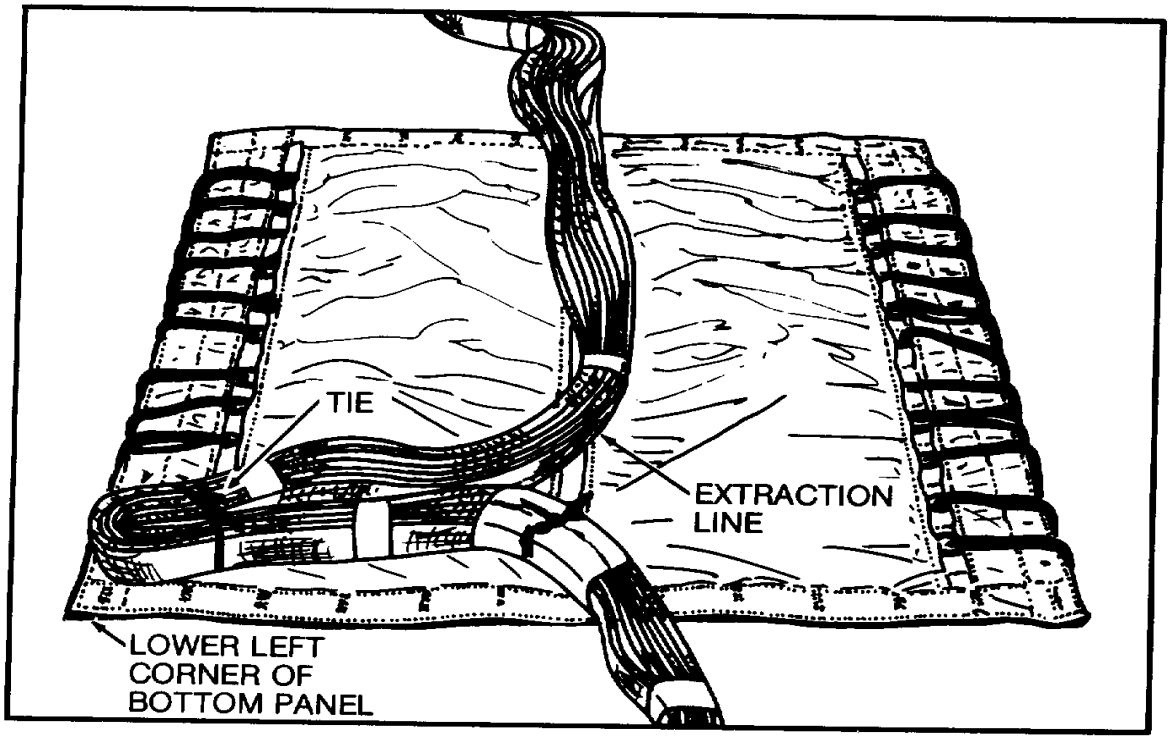

Figure 4. S-Fold of Extraction Line.

e. Working from left to right, stow and secure extraction line on bottom panel (9 stows on left and 8 on right) with extraction line routed from bottom panel at upper right corner. Secure extraction line at 9th stow loop (right row) with previously installed stow tie. Secure ties with surgeon's knot and locking knot (figure 5).

f. Place top panel back on pack table with stow loops facing up and stow loops running lengthwise with table. Position top panel at upper end of bottom panel.

g. Make half-twist clockwise in extraction line route along right side and upper edge of top panel. Secure extraction line to top panel with previously installed ¼-inch wide type I cotton webbing at 1st, 6th, and 12th stow loops (right row). Secure ties with surgeon's knot and locking knot. Make first stow in upper left corner of top panel. Secure first stow with previously installed stow tie.

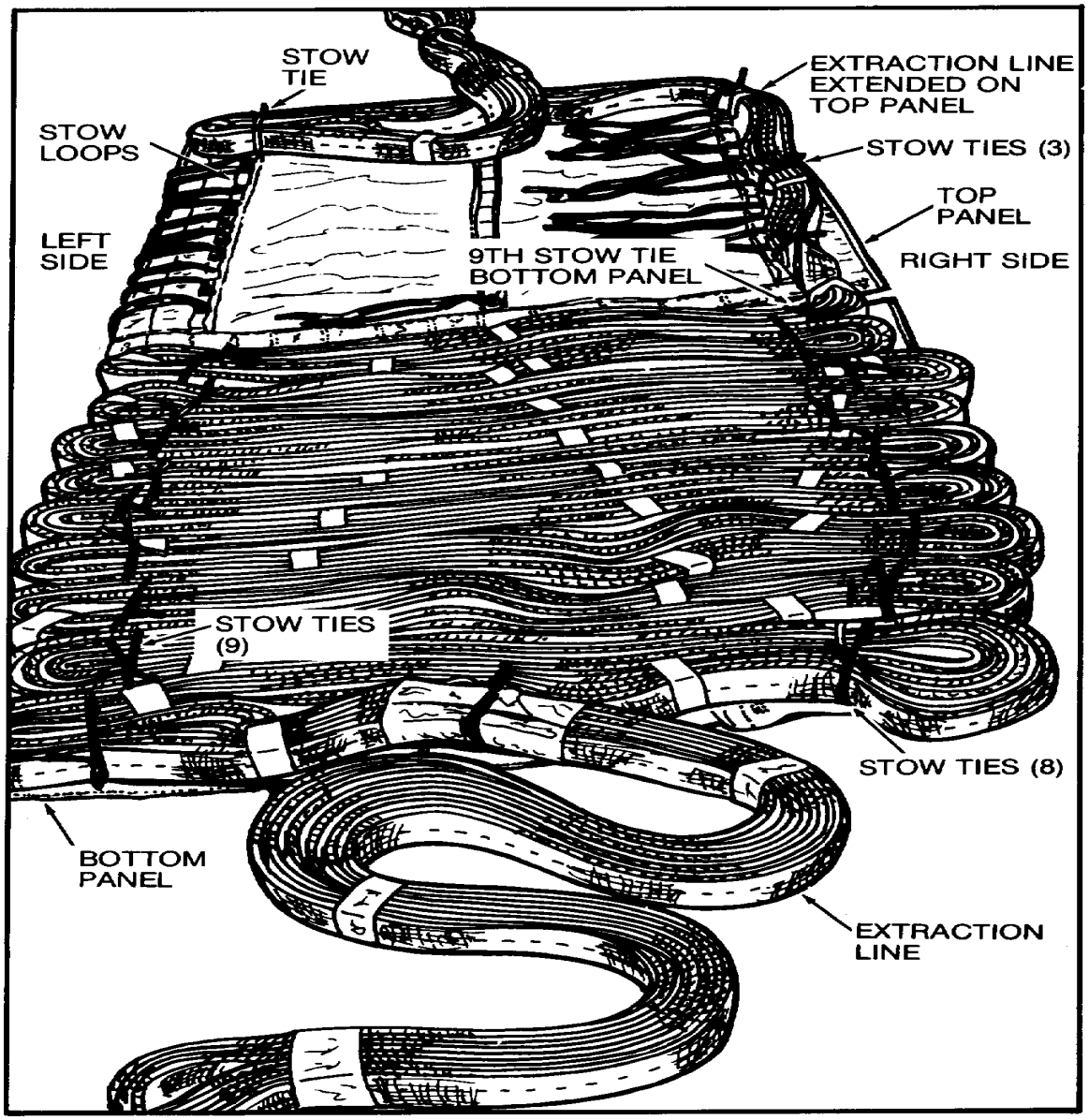

Figure 5. Extraction Line Stowed on Bottom Panel and Extraction Line Extended to Top Panel.

h. Working form left to right, stow and secure remaining extraction line until approximately 14-feet extends from lower edge of top panel. Make and secure last stow to center stow loop at lower edge of upper panel. Secure last stow with ¼-inch wide type I cotton webbing (figure 6).

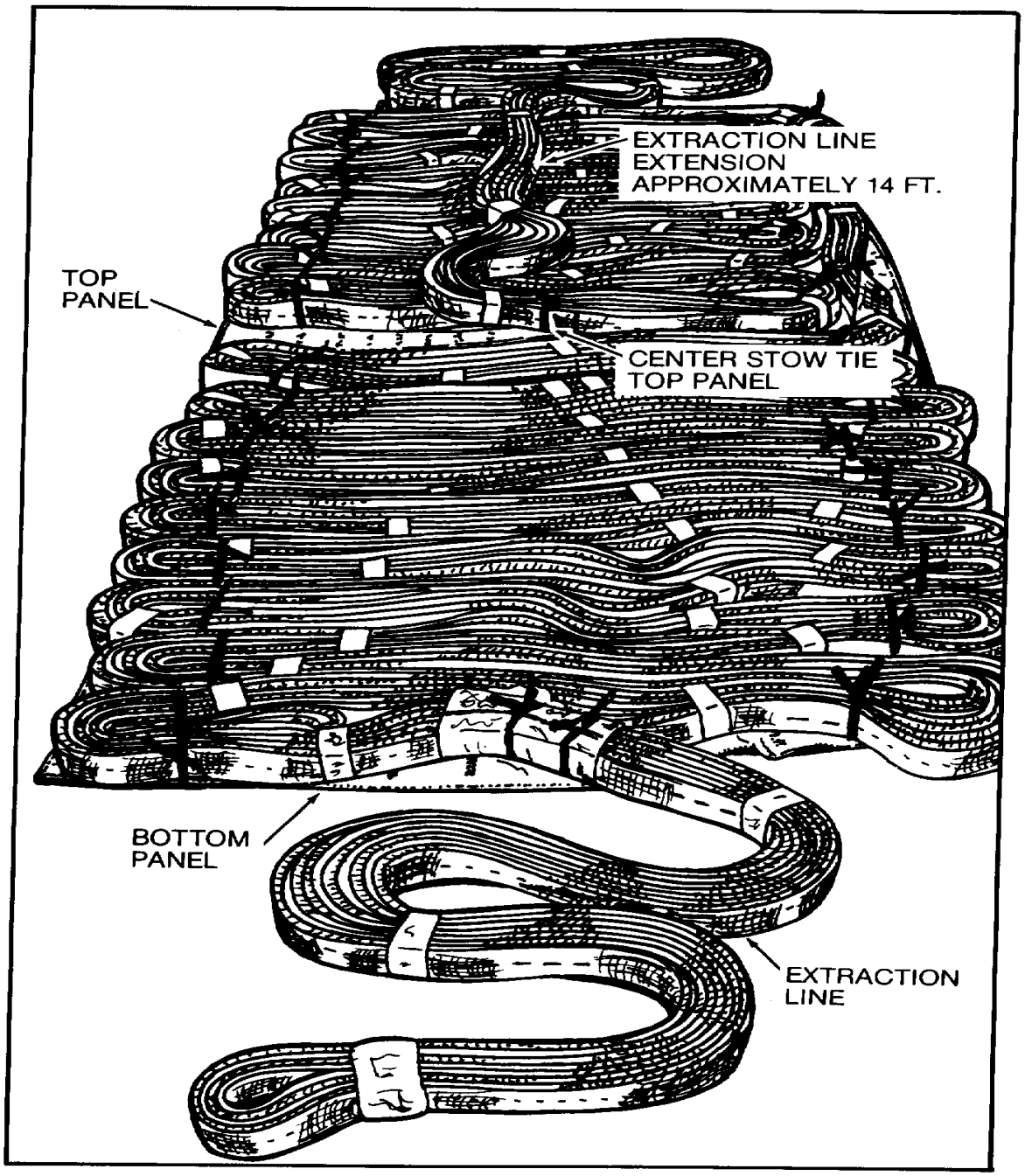

Figure 6. Extraction Line Stowed.

3. Close Extraction Line Bag.

a. Place 36 x 38-inch sheet of kraft paper (line separator) top stowed extraction line of bottom panel.

b. Fold top panel over and onto bottom panel and line separator; align with upper edge of bottom panel. Insure that approximately 14 feet of running end (parachute attaching end) extends from upper center (figure 7).

NOTE

Insure that the extraction line stows do not shift out of position.

c. Cut one 95-inch length of ½-inch wide tubular nylon webbing. Cut one 95-inch and six 10-inch lengths of ¼-inch wide type I cotton webbing to be used as closing ties.

d. Beginning at lower left corner of panels, secure one end of 95-inch nylon webbing bag-closing tie to lacing loops located on outside edge of top and bottom panels with three alternating half-hitches and an overhand knot in running end.

e. Using running end of attached 95-inch nylon webbing bag-closing tie, lace lower end of panels closed, working from bottom to top, from left to right, forming half hitches between closing loops. Secure end of closing tie with three alternating half hitches and overhand knot in running end. Trim off excess.

f. Secure top and bottom closing loops together on left and right sides with six 10-inch bag closing ties. Secure ties with surgeon's knot and locking knot.

NOTE

This tie is for handling and transport only. Remove aboard aircraft.

g. Beginning at upper top center bridle attaching loops, pass one end of remaining 95-inch closing tie (temporary handling tie) through top center, bottom right, top right, bottom center, top left, bottom left and back through top center lops. Remove slack from tie and secure ends with surgeon's knot and locking knot.

h. Fold and secure running ends of extraction line to carrying handles using ¼-inch wide type I cotton webbing.

i. Attach tag to completed Extraction Line Bag showing date stowed, who stowed extraction line, length and loop of extraction line.

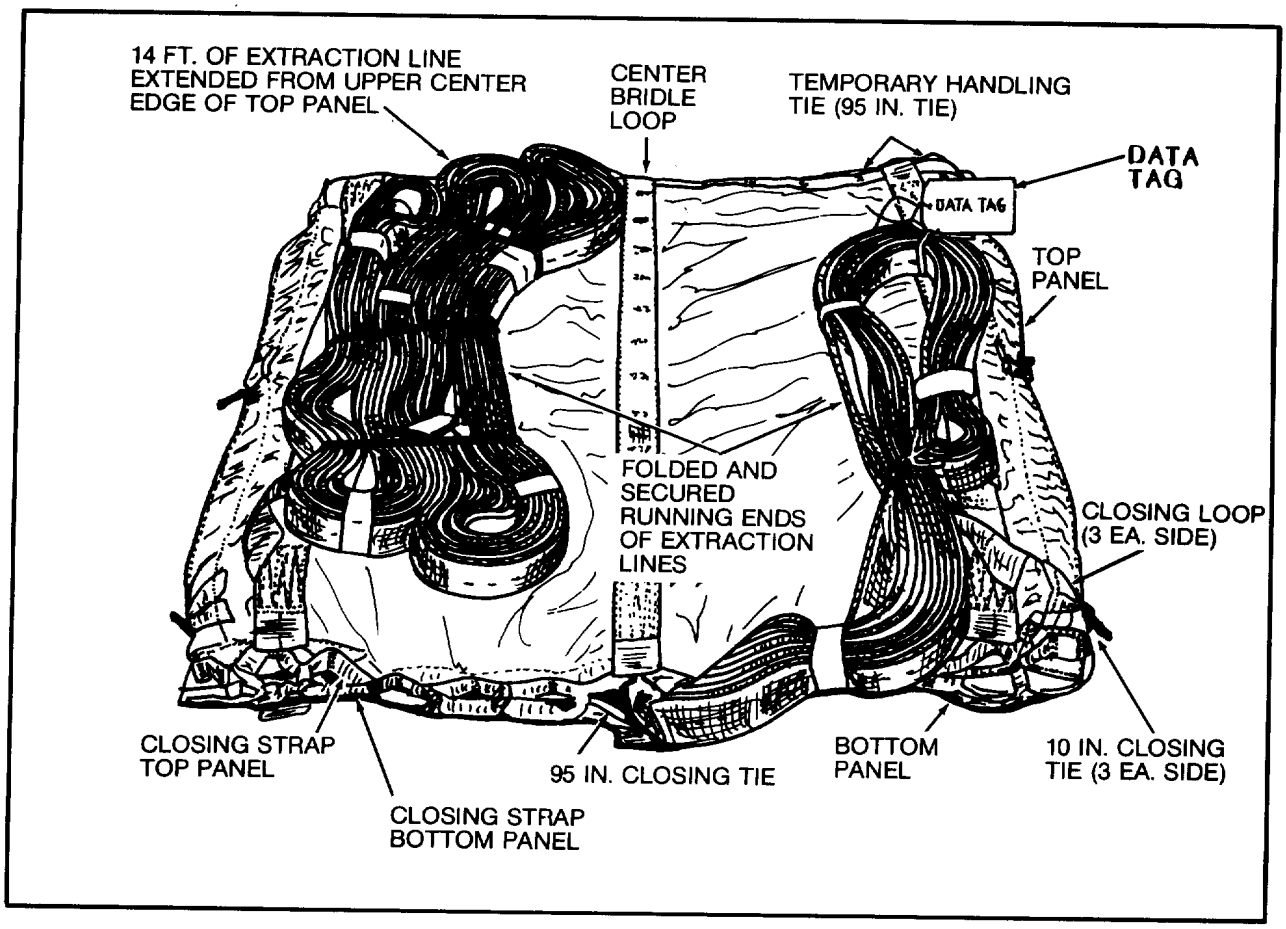

Figure 7. Extraction Line Bag Closed.

END OF WORK PACKAGE

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EXTRACTION LINE PANEL **0009 00**
STOWING 140-FOOT THREE LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife – NSN 5110-00-162-2205

Materials/Parts

(2) Extraction Line Panels – NSN 1670-01-183-2678
Extraction Line, 140-FT, Three Loop – NSN 1670-01-107-7651
Band, Rubber, Retainer – Item 1, Appendix C
Cloth, Muslin-Cotton – Item 4, Appendix C
Webbing, Cotton, Type I – Item 16, Appendix C
Webbing, Nylon, Tubular – Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-2	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end.

When "two Extraction Line Panels" are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

Load attaching end of the Extraction Line Bag is laced closed with ½-inch tubular nylon webbing.

1. Layout

a. Position two Extraction Line Panel on pack table or suitable surface with stow loops facing up and running lengthwise (figure 1).

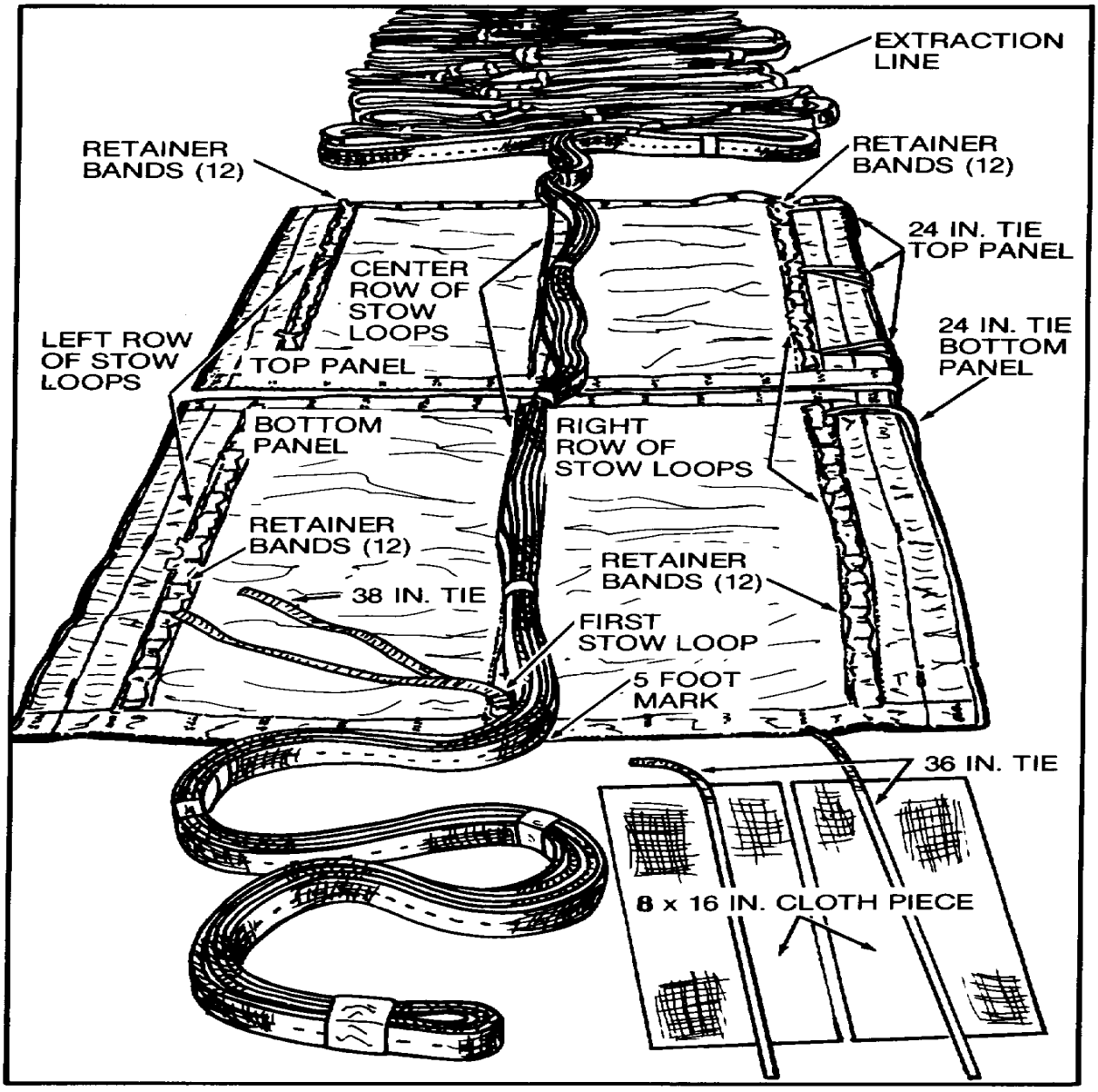

Figure 1. Two Panel Layout for Stowing 140-FT Three Loop Extraction Line.

b. Install 12 rubber retainer bands on left and right row of stow loops of both panels.

c. Cut four 24-inch lengths of ¼-inch wide type I cotton webbing, fold in half and girth-hitch one to 12th stow loop, right row of bottom panel, and one each to 1st, 6th, and 12th stow loop, right row of top panel.

d. Lay top panel aside for later use.

e. Cut one 38-inch length of ½-inch tubular nylon webbing, fold in half and girth-hitch to 1st, stow loop, center row at the lower edge of bottom panel.

f. Cut two 8 x 16-inch pieces of cotton muslin cloth and two 36-inch lengths of ¼-inch wide type I cotton webbing, position at lower end of bottom panel.

g. Cut and lay aside 36 x 38-inch sheet of kraft paper for use as line separator.

h. Place 40 foot 3 loop extraction line at upper end of pack table.

i. Measure and mark a point on extraction line 5 feet from one end (this will be the load attaching end).

j. Route marked end of extraction line from upper end of panel to lower and along center row of stow loops, align 5-foot mark with lower edge of panel.

2. Stow extraction line.

a. Separate extraction line plies into two groups of three each and wrap each group with piece of 8 x 16 inch cotton muslin cloth a point immediately above 5-foot mark on the extraction line (figure 2).

b. Secure wrapped plies together at each end with two turns of single ¼-inch wide type I cotton webbing. Tie with surgeon's knot and locking knot.

NOTE

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Pass running ends of 38-inch length of ½-inch tubular nylon webbing previously installed on panel, up between wrapped piles of extraction line, pass each running end in opposite directions, down and under stow loop and back to top of extraction line. Secure running ends on top of extraction line with surgeon's knot, locking knot, and an overhand knot on running ends (figure 3).

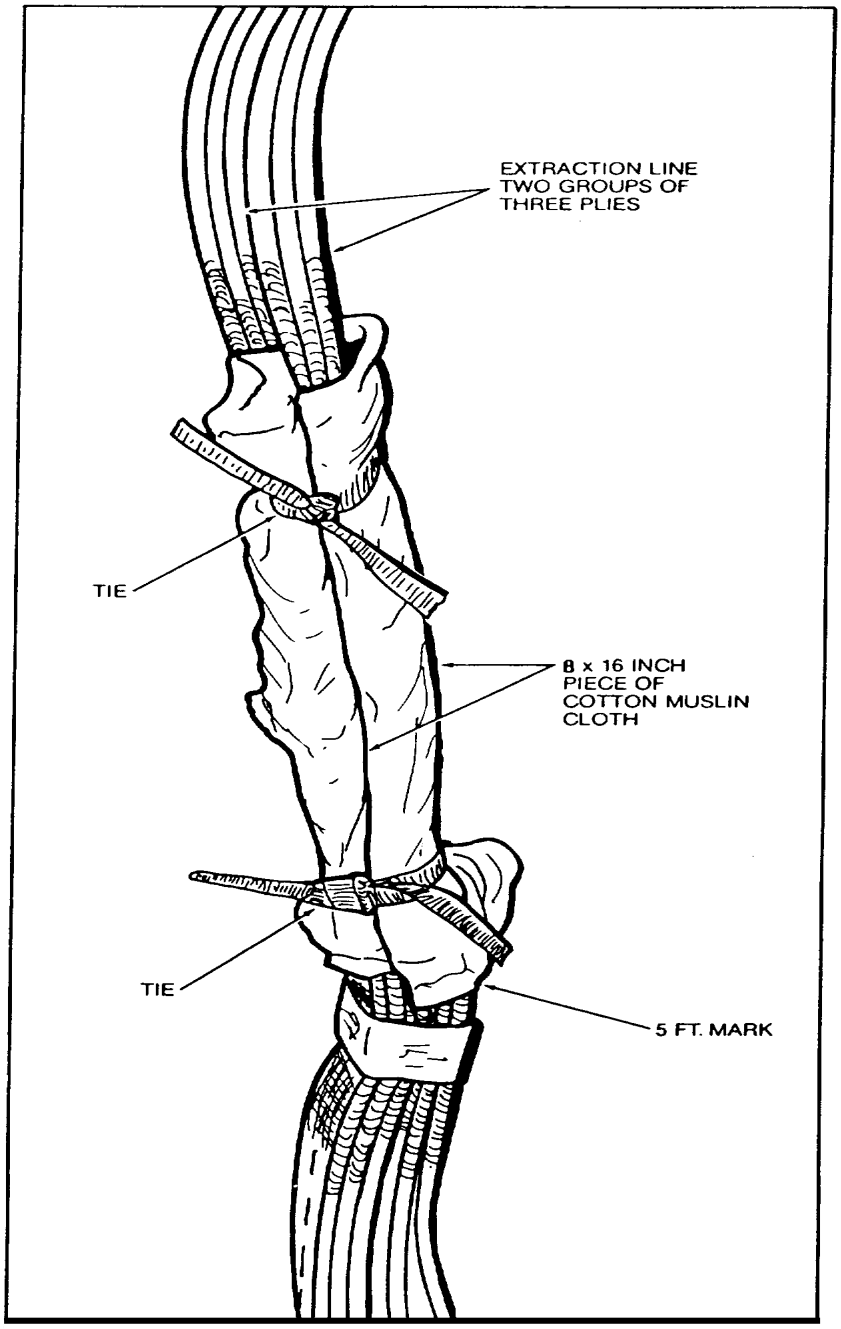

Figure 2. Extraction Line Separated into Two Groups of Three Plies and Wrapped with Cloth.

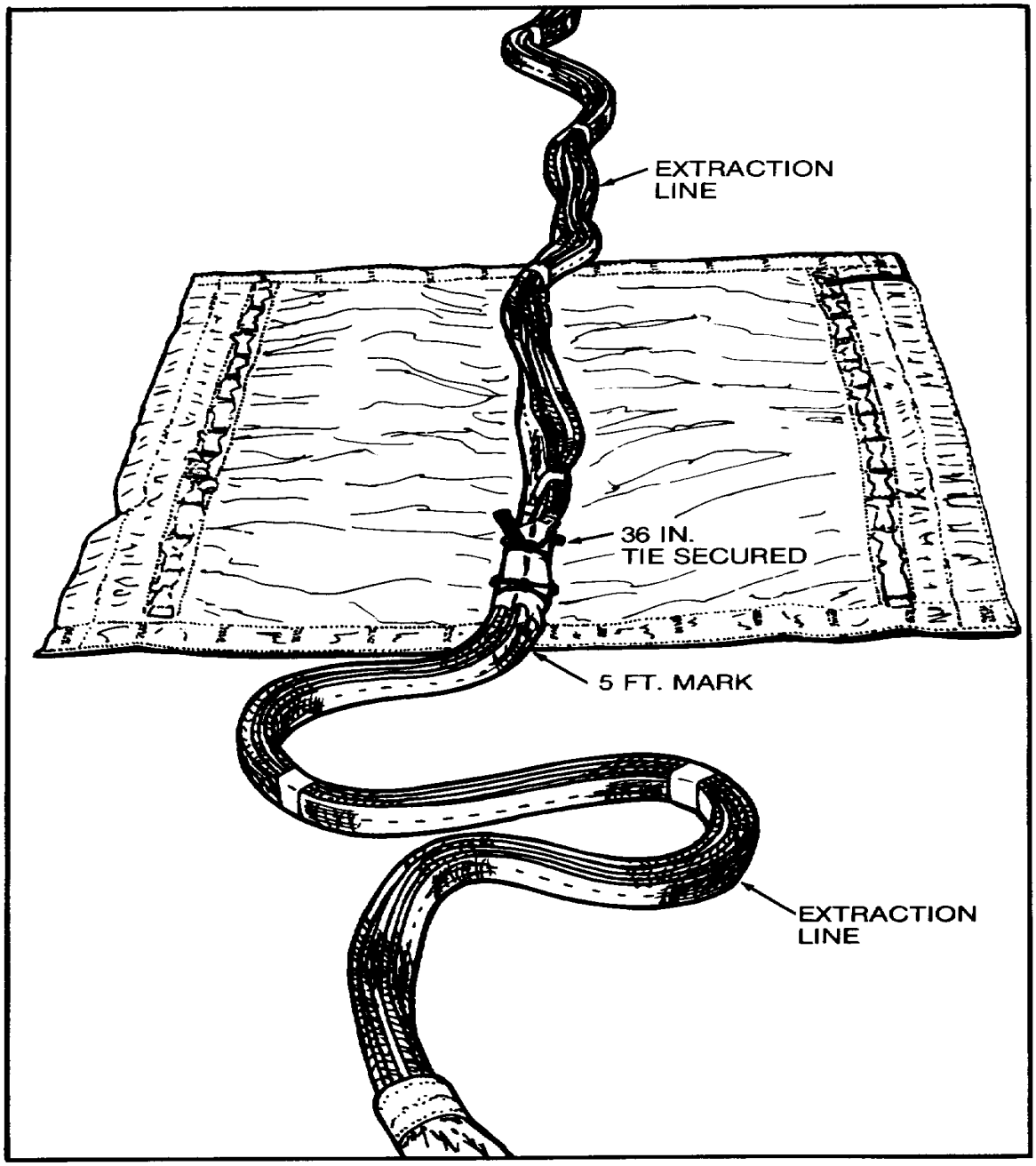

Figure 3. Extraction Line Secured to Bottom Panel.

d. Beginning at lower corner of bottom panel, make first S-fold/stow of extraction line and secure with rubber retainer band (figure 4).

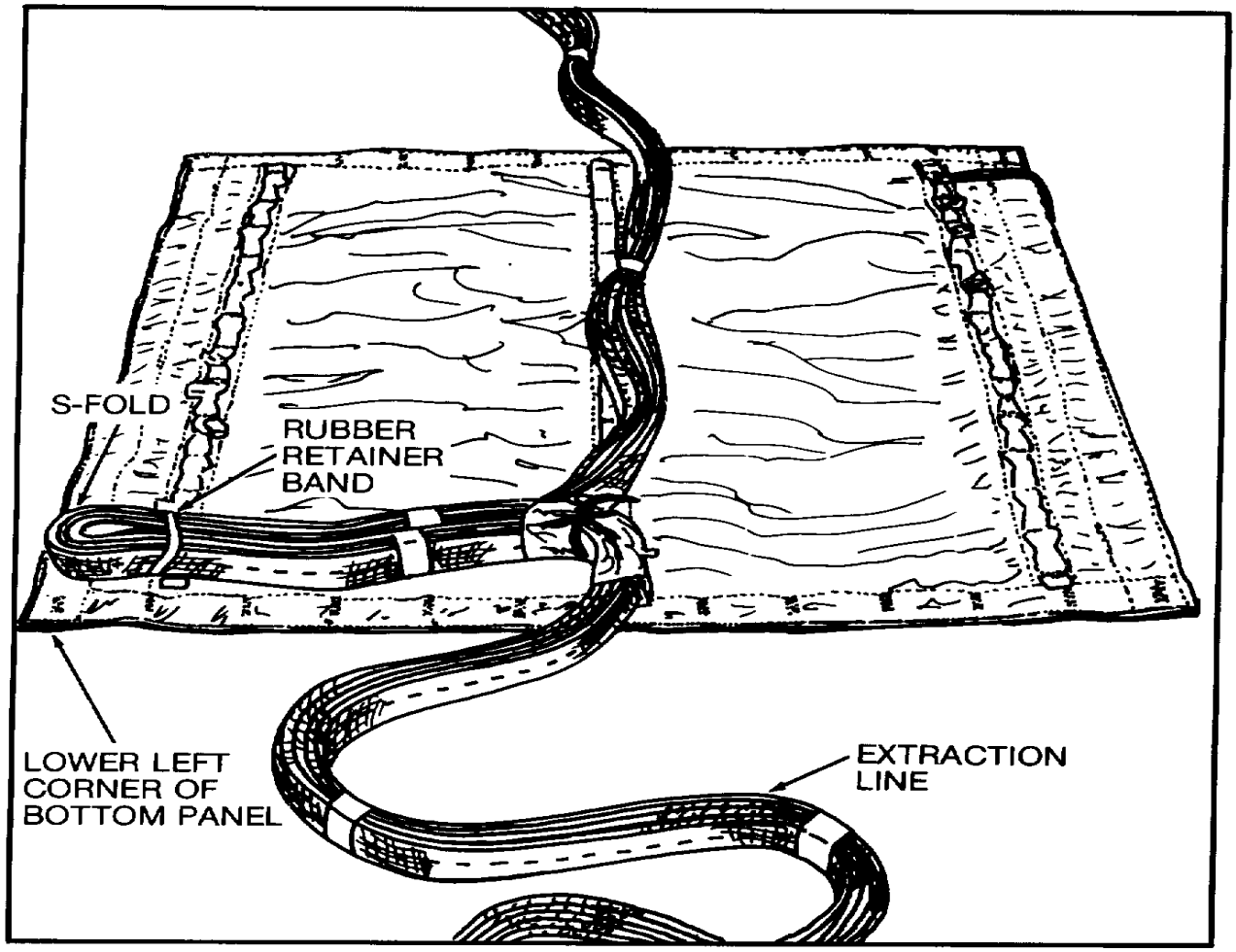

Figure 4. S-Fold of Extraction Line.

NOTE

The stows must not extend beyond the edge of the panel.

e. Working from left to right, stow and secure extraction line on bottom panel (12 stows on left and 11 on right) with extraction line routed from bottom panel at upper right corner. Secure extraction line at 12th stow loop (right row) with previously installed ¼-inch wide type I cotton webbing. Secure tie with surgeon's knot and locking knot (figure 5).

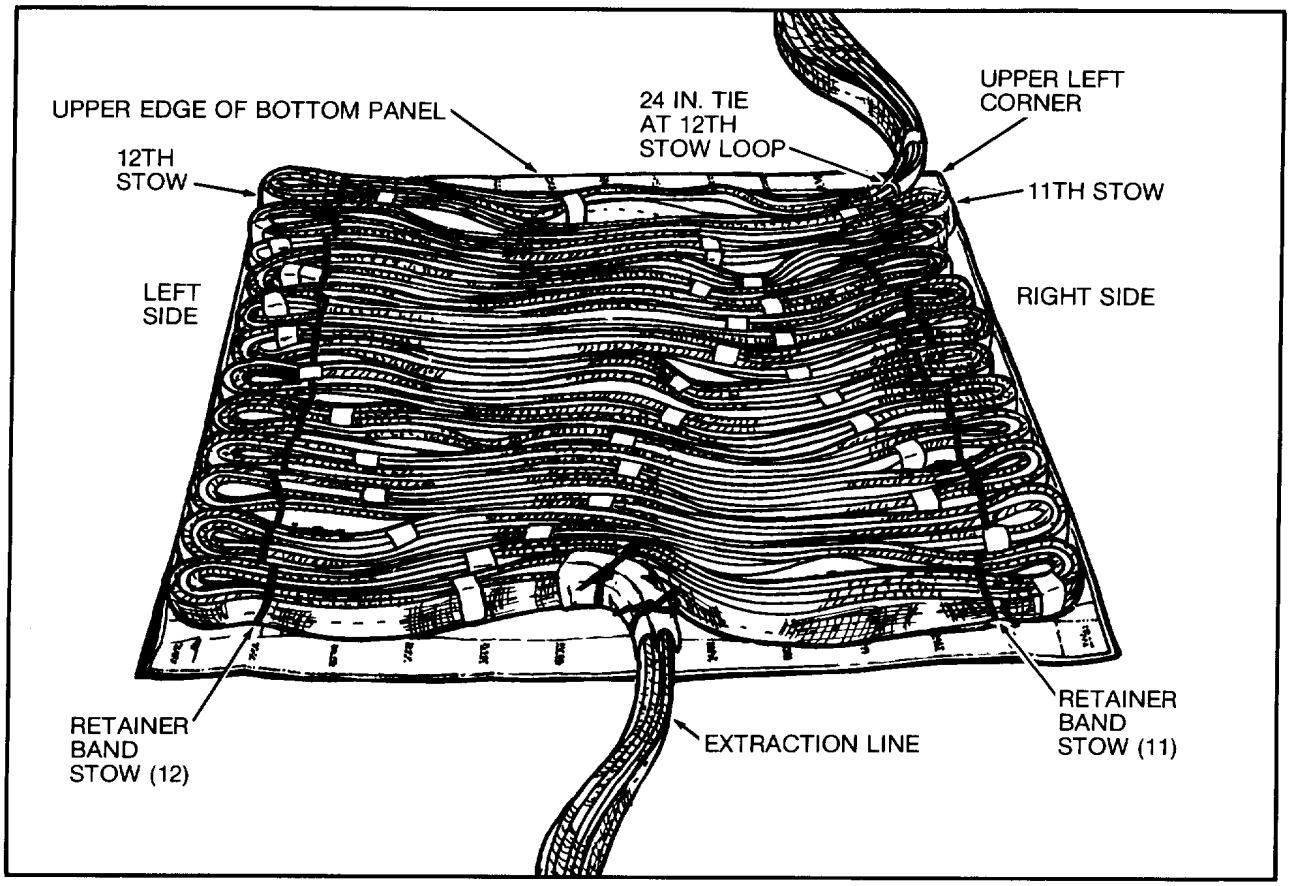

Figure 5. Extraction Line Stowed to Bottom Panel.

f. Place top panel back on pack table with stow loops facing up and stow loops running lengthwise with table. Position top panel at upper end of bottom panel (figure 6).

g. Make half-twist clockwise in extraction line and route along right side and upper edge of top panel. Secure extraction line to top panel with previously installed ¼-inch wide type I cotton webbing at 1st, 6th and 12th stow loops (right row). Secure ties with surgeon's knot and locking knot. Make first stow in upper left corner of the top panel. Secure with previously installed rubber retainer band.

h. Working from left to right, stow and secure remaining extraction line until approximately 1 foot extends from lower edge of top panel. Make and secure last stow to center stow loop at lower edge of upper panel. Secure last stow with rubber retainer band (figure 7).

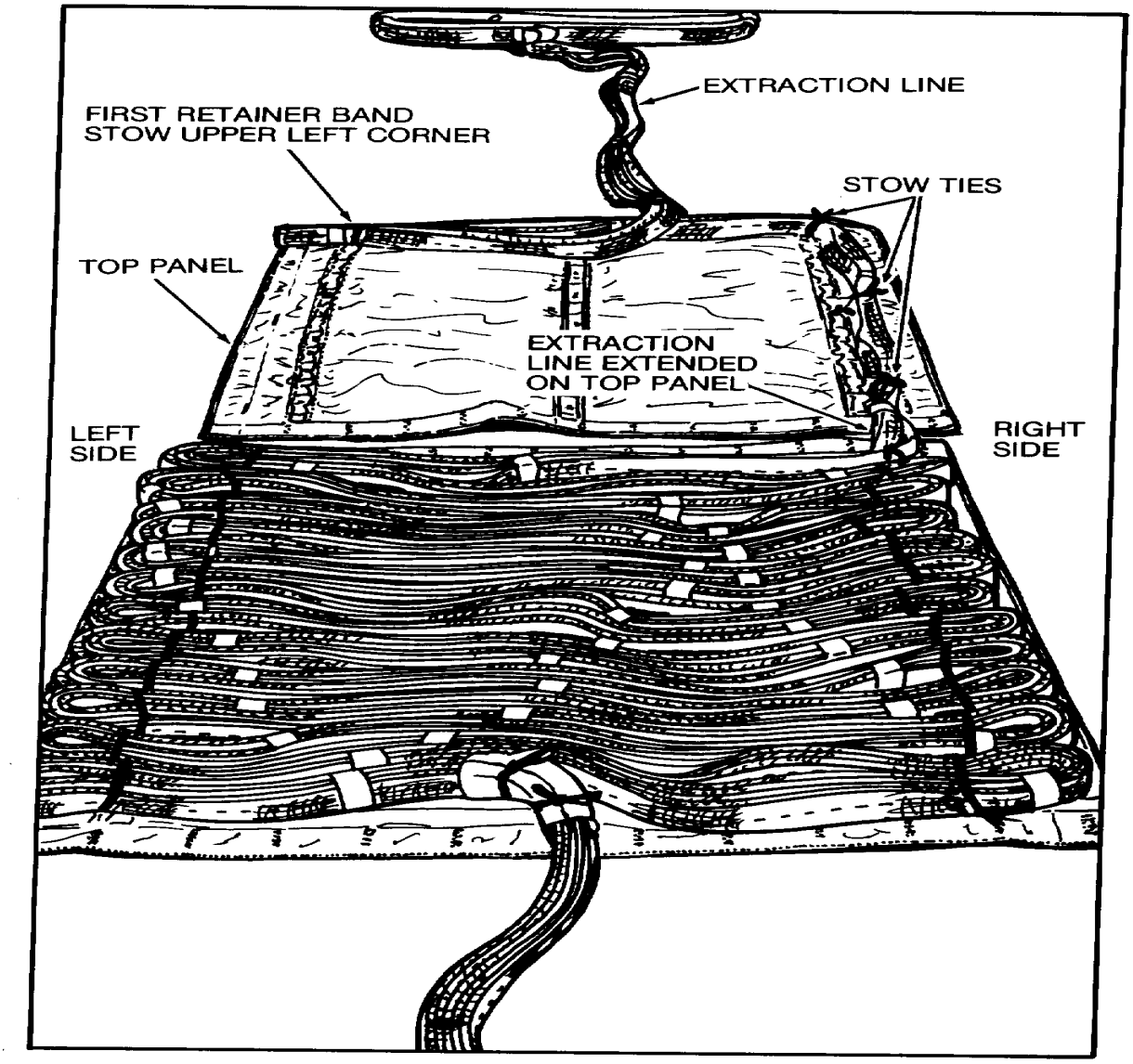

Figure 6. Extraction Line Extended to Top Panel with First Stow.

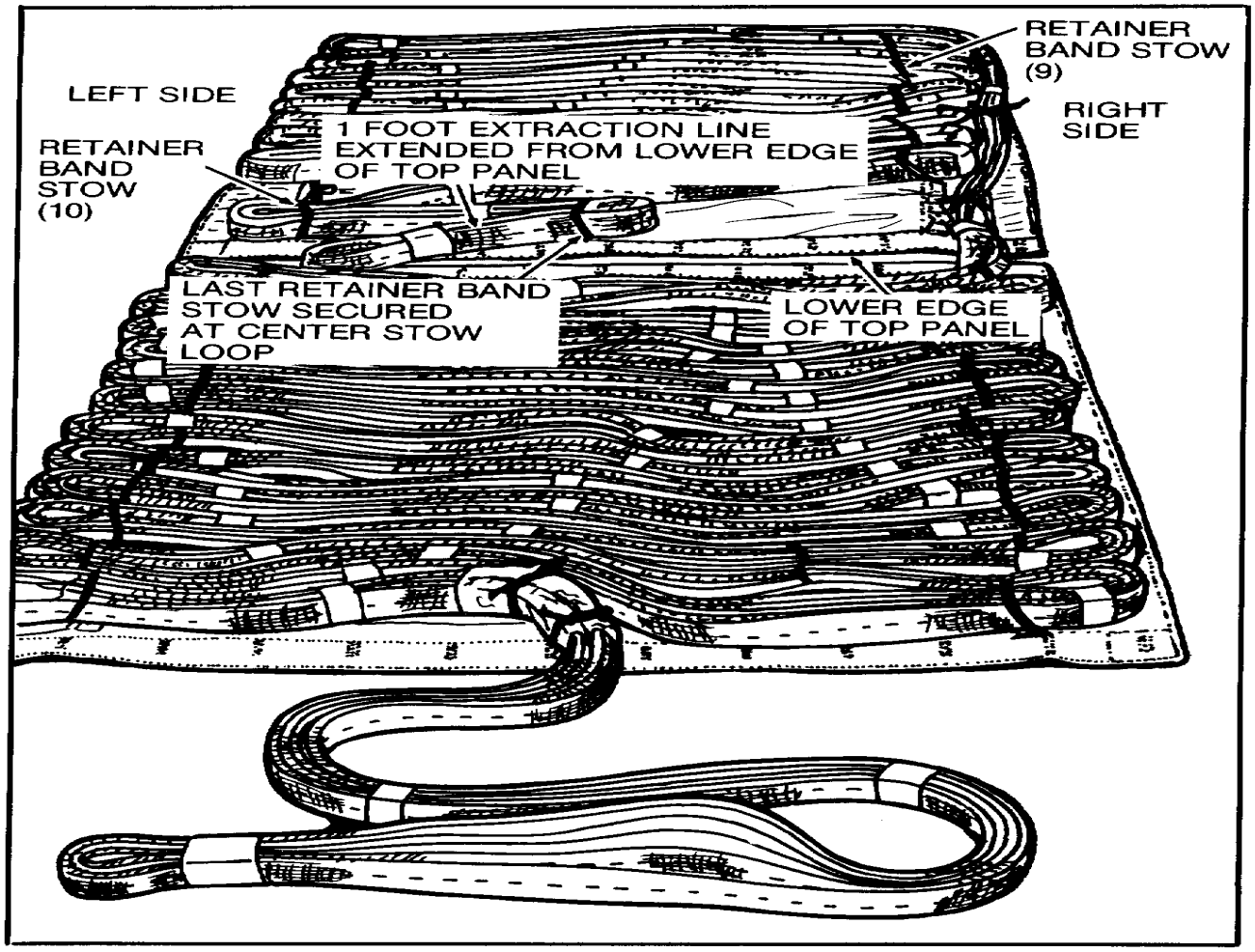

Figure 7. Extraction Line Stowed to Top Panel.

3. Close Extraction Line Bag.

a. Place 36 x 38-inch sheet of kraft paper (line separator) on top of stowed extraction line of bottom panel (figure 8).

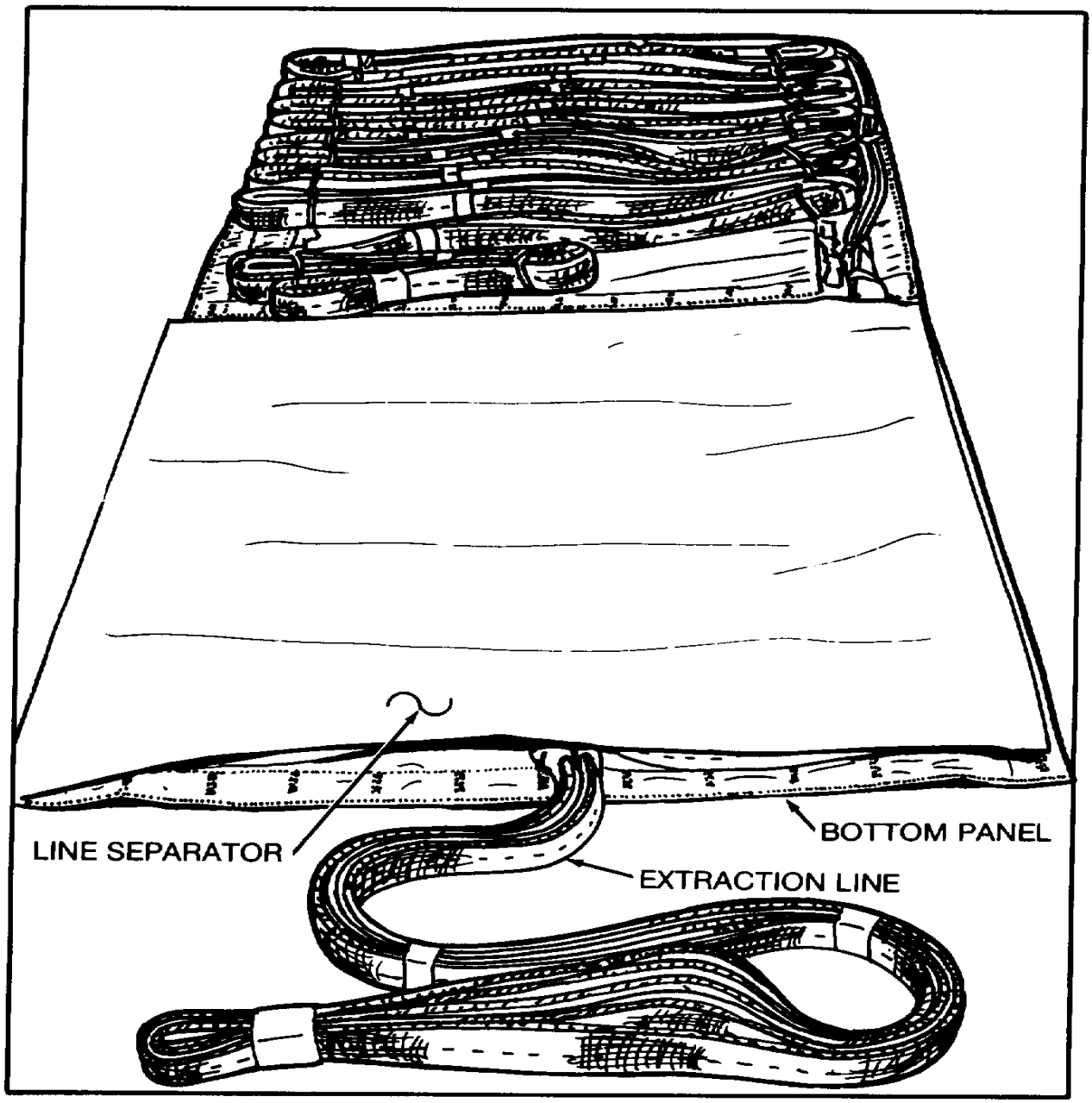

Figure 8. Line Separator in Place.

b. Fold top panel over and onto bottom panel and kraft paper (line separator). Align with upper edge of bottom panel. Insure that 1 foot running end (parachute attaching end) extends from upper center (figure 9).

NOTE

Insure that the extraction line stows do not shift out of position.

c. Cut one 95-inch length of ½-inch wide tubular nylon webbing. Cut one 95-inch and six 10 inch lengths of ¼-inch wide type I cotton webbing to be used as bag closing ties.

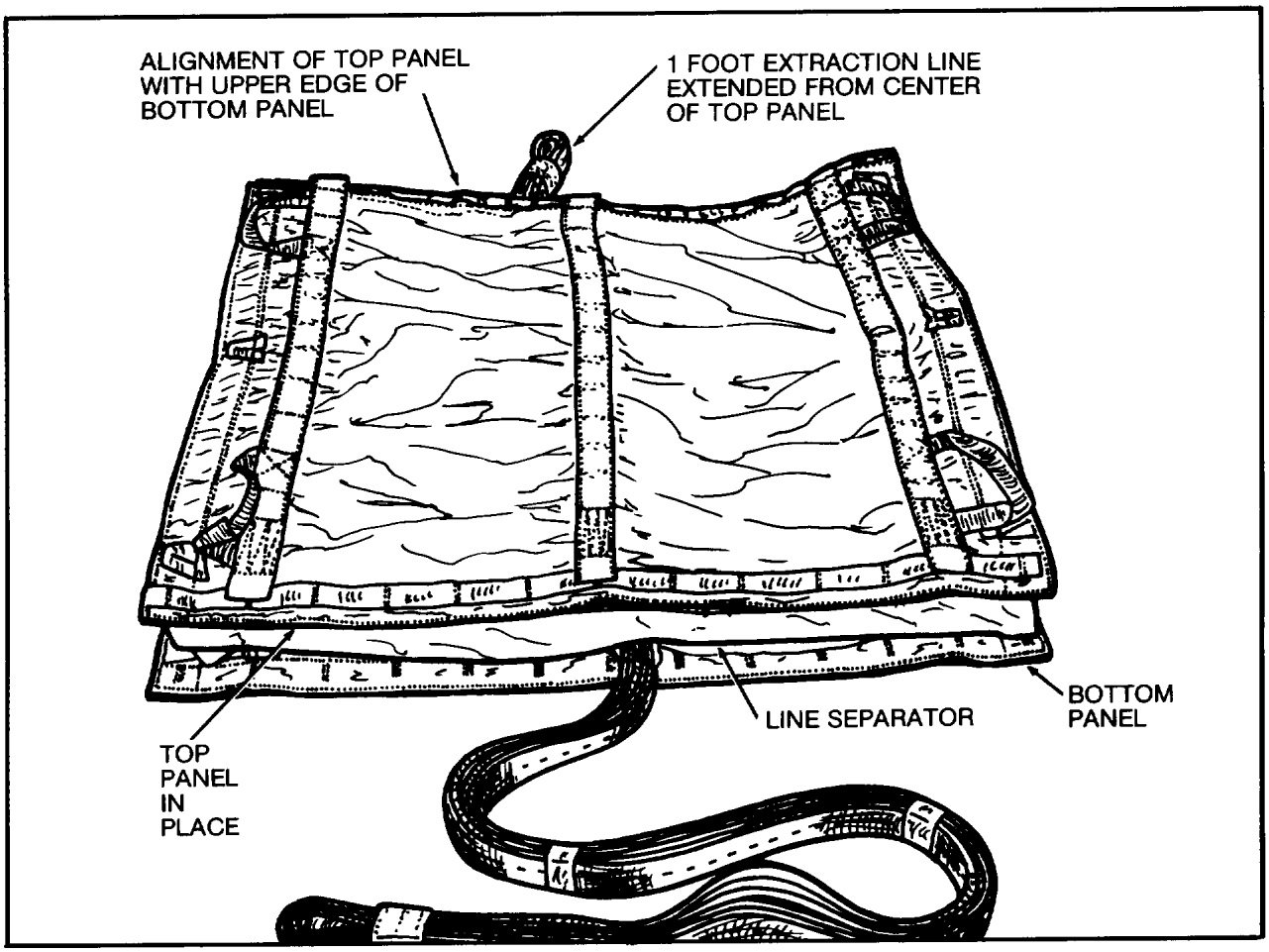

Figure 9. Top Panel in Place for Closing Extraction Line Bag.

d. Beginning at lower left corner of panels, secure one end of 95-inch nylon webbing closing tie to lacing loops located on outside edge of top and bottom panels with three alternating half-hitches and an overhand knot in running end (figure 10).

e. Using running end of attached 95-inch nylon webbing bag closing tie, lace lower end of panels closed, working from bottom to top, from left to right, forming half-hitches between closing loops. Secure end of closing tie with three alternating half-hitches and overhand knot in running end. Trim off excess.

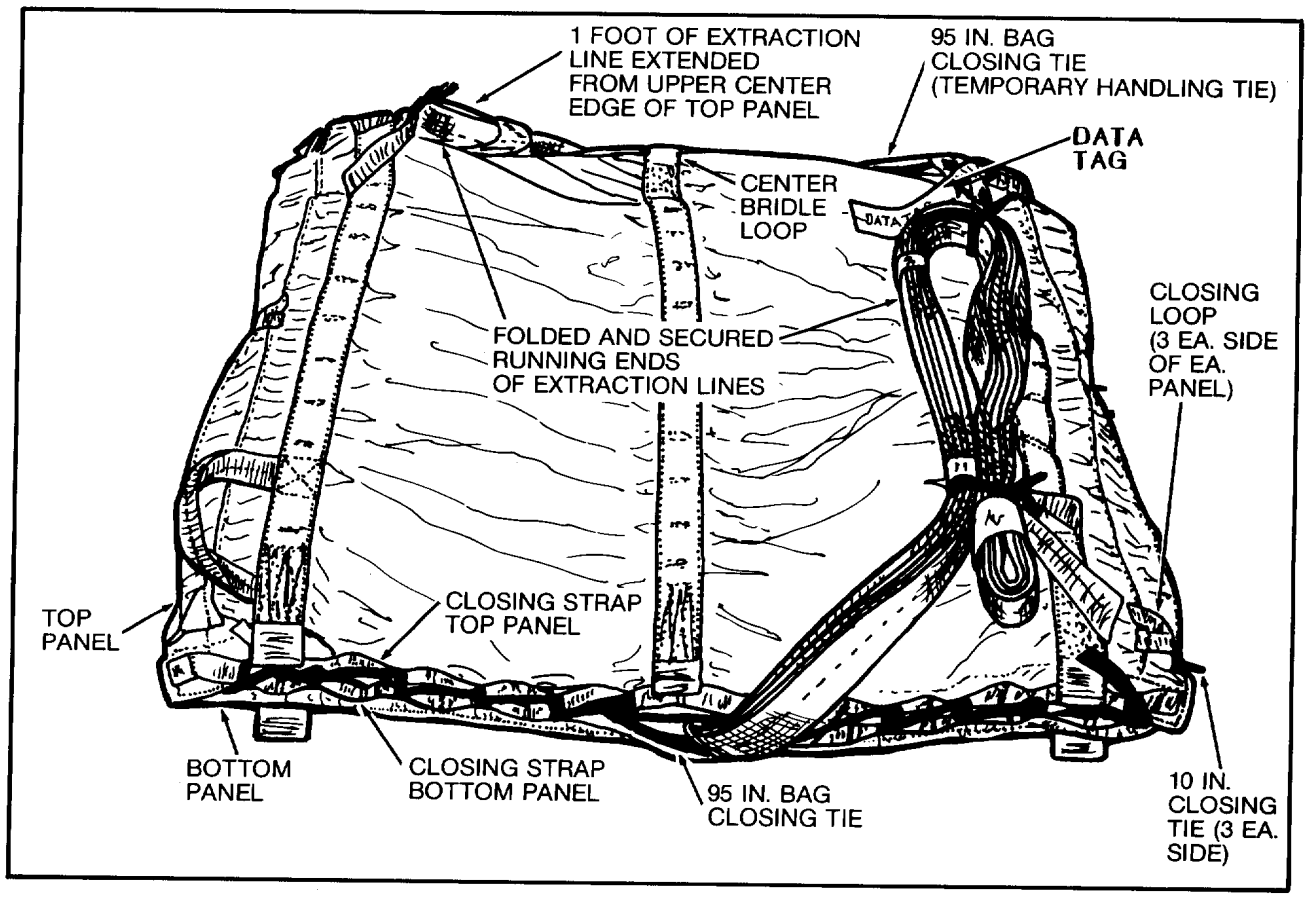

Figure 10. Extraction Line Bag Closed.

f. Secure top and bottom closing loops together on left and right sides with six 10-inch bag closing ties. Secure ties with surgeon's knot and locking knot.

NOTE

This tie is for handling and transport only. Remove aboard aircraft.

g. Beginning at upper top center bridle attaching loops, pass one end of remaining 95-inch closing tie (temporary handling tie) through top center, bottom right, top right, bottom center, top left, bottom left and back through top center loops. Remove slack from tie and secure ends with surgeon's knot and locking knot.

h. Fold and secure running ends of extraction line to carrying handles using ¼-inch type I cotton webbing.

i. Attach tag to complete Extraction Line Bag showing date stowed, who stowed extraction line, length and loop of extraction line (figure 10).

END OF WORK PACKAGE

EXTRACTION LINE PANEL **0010 00**
STOWING 160-FOOT ONE LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife – NSN 5110-00-162-2205

Materials/Parts

(2) Extraction Line Panels – NSN 1670-01-183-2678
Extraction Line, 160 FT, One Loop – NSN 1670-01-107-7652
Band, Rubber, Retainer – Item 1, Appendix C
Cloth, Muslin-Cotton – Item 4, Appendix C
Webbing, Cotton, Type I – Item 16, Appendix C
Webbing, Nylon, Tubular, ½-Inch – Item 17, Appendix C

Personnel Required

92 R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-2	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line

STOWING.

NOTE

Throughout this task the terms Right, left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end.

When "two Extraction Line Panels" are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

Load attaching end of the Extraction Line Bag is laced closed with ½ inch tubular webbing.

1. Layout.

   a. Position Extraction Line Panel on pack table or suitable surface with stow facing up and running lengthwise (figure 1).

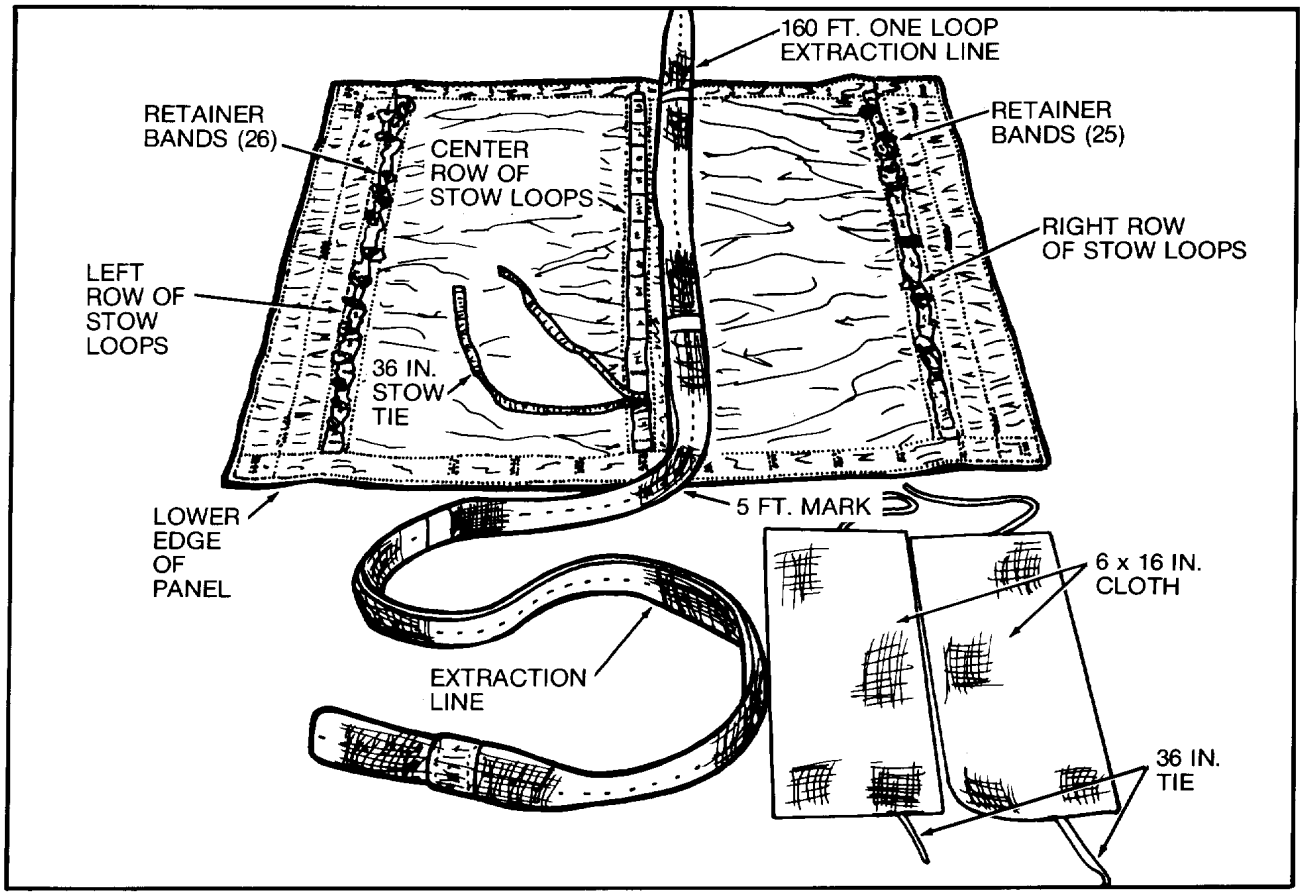

Figure 1. One Panel Layout for Stowing 160 FT One Loop Extraction Line.

b. Install 51 rubber retainer bands on left and right row of stow loops (26 on left row and 25 on right row).

c. Cut a 36-inch length of ½-inch wide tubular nylon webbing. Fold in half and girth-hitch to 1st stow loop, center row at lower edge of panel.

d. Cut two pieces of 6 x 16-inch cotton muslin cloth and two 36-inch lengths of ¼-inch wide type I cotton webbing. Position at lower end of panel.

e. Place 160 foot one loop extraction line at upper end of pack table.

f. Measure and mark point on extraction line 5 feet from one end (This will be the load attaching end).

g. Route marked end of extraction line from upper end to lower end along center row of stow loops, align 5 foot mark with lower edge of panel.

2. Stow extraction line.

a. Separate and wrap each ply of extraction line with two 6 x 16-inch pieces of cotton muslin cloth at point immediately above 5-foot mark on extraction line (figure 2).

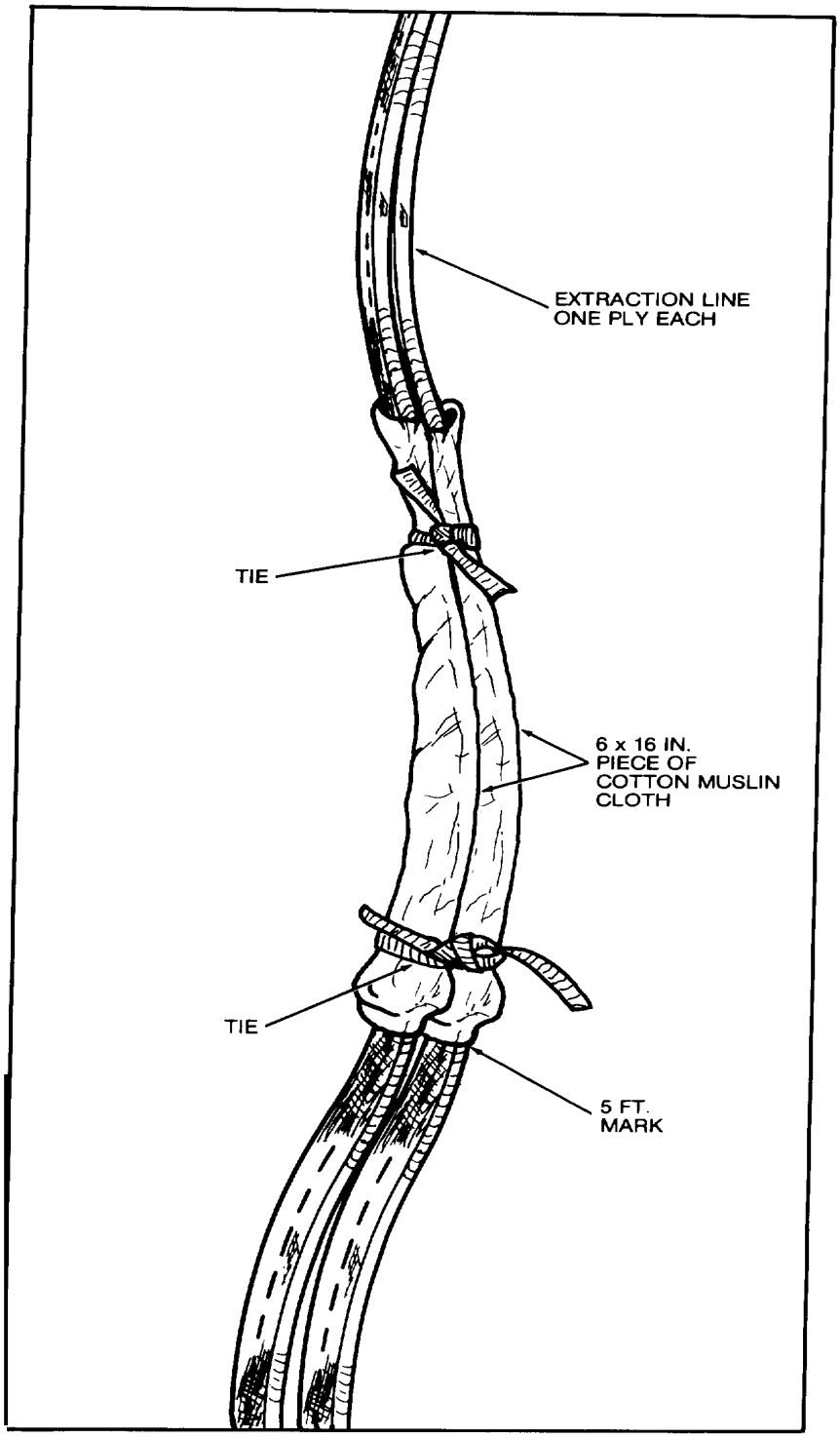

Figure 2. Extraction Line Separated and Each Ply Wrapped with Cloth.

b. Secure wrapped plies together at each end with two turns of single ¼-inch wide type I cotton webbing. Tie with surgeon's knot and locking knot.

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Pass running ends of 36-inch length of ½-inch tubular nylon webbing previously installed on panel up between wrapped plies of extraction line, pass each running end in opposite direction down and under stow loop and back to top of extraction line. Secure running ends on top of extraction line with surgeon's knot, locking knot, and overhand knot on running ends (figure 3).

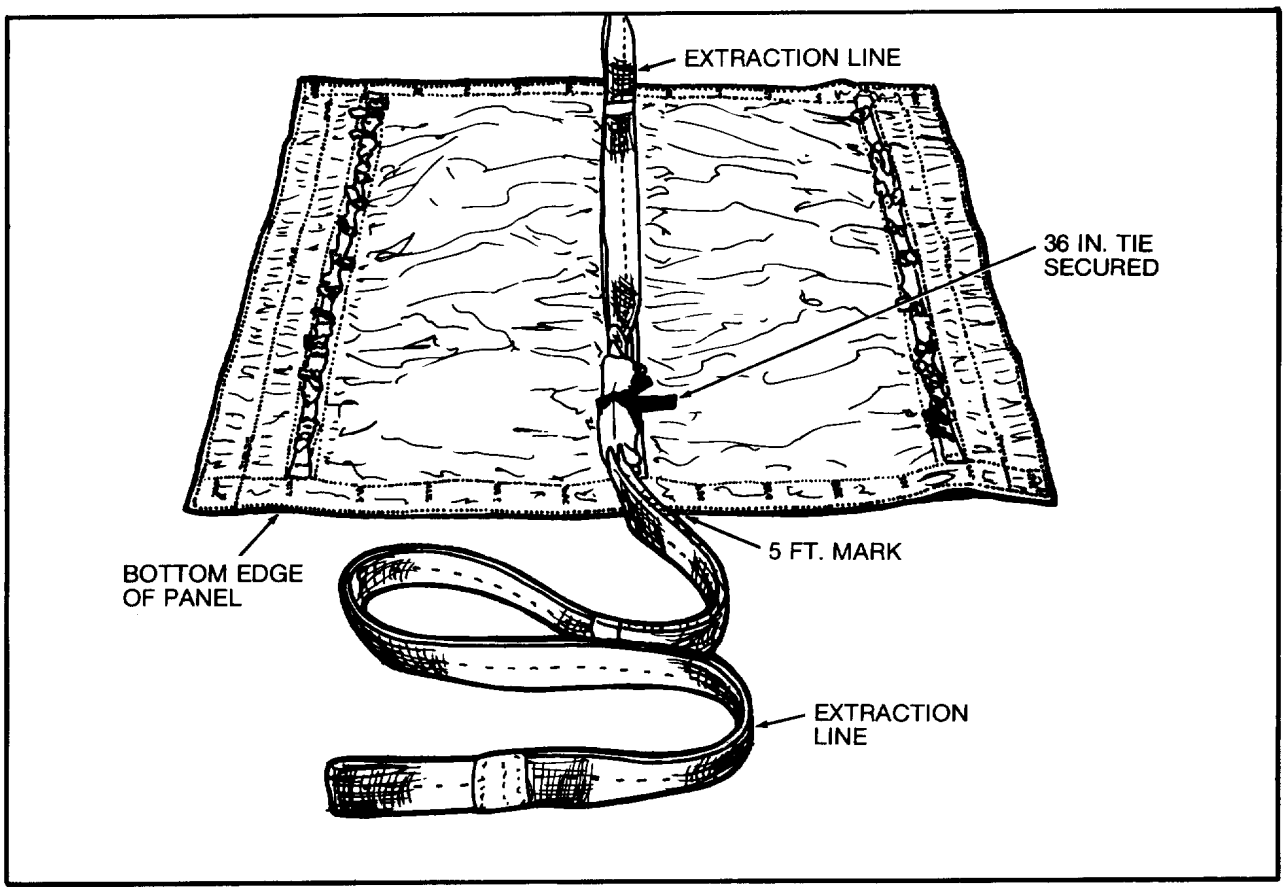

Figure 3. Extraction Line Secured to Bottom Panel.

d. Beginning at lower left corner of panel, make first of S-fold/stow extraction line and secure with rubber retainer band (figure 4).

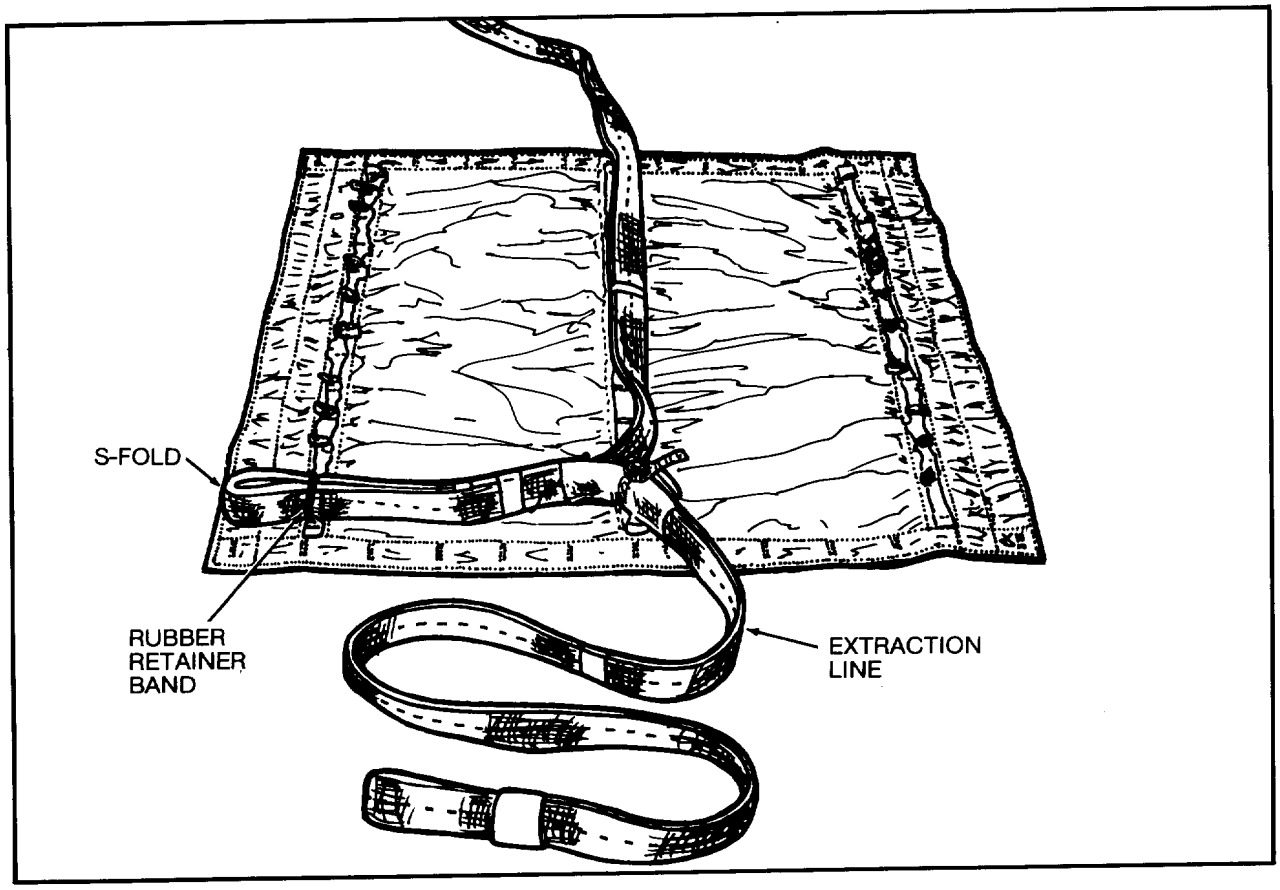

Figure 4. S-Fold of Extraction Line.

NOTE

The stows must not extend beyond the edge of the panel.

e. Working from left to right, stow and secure extraction line with approximately 1 foot extended from top center of panel (This is the parachute attaching end). Make and secure last stow to upper center stow loop with rubber retainer band (figure 5).

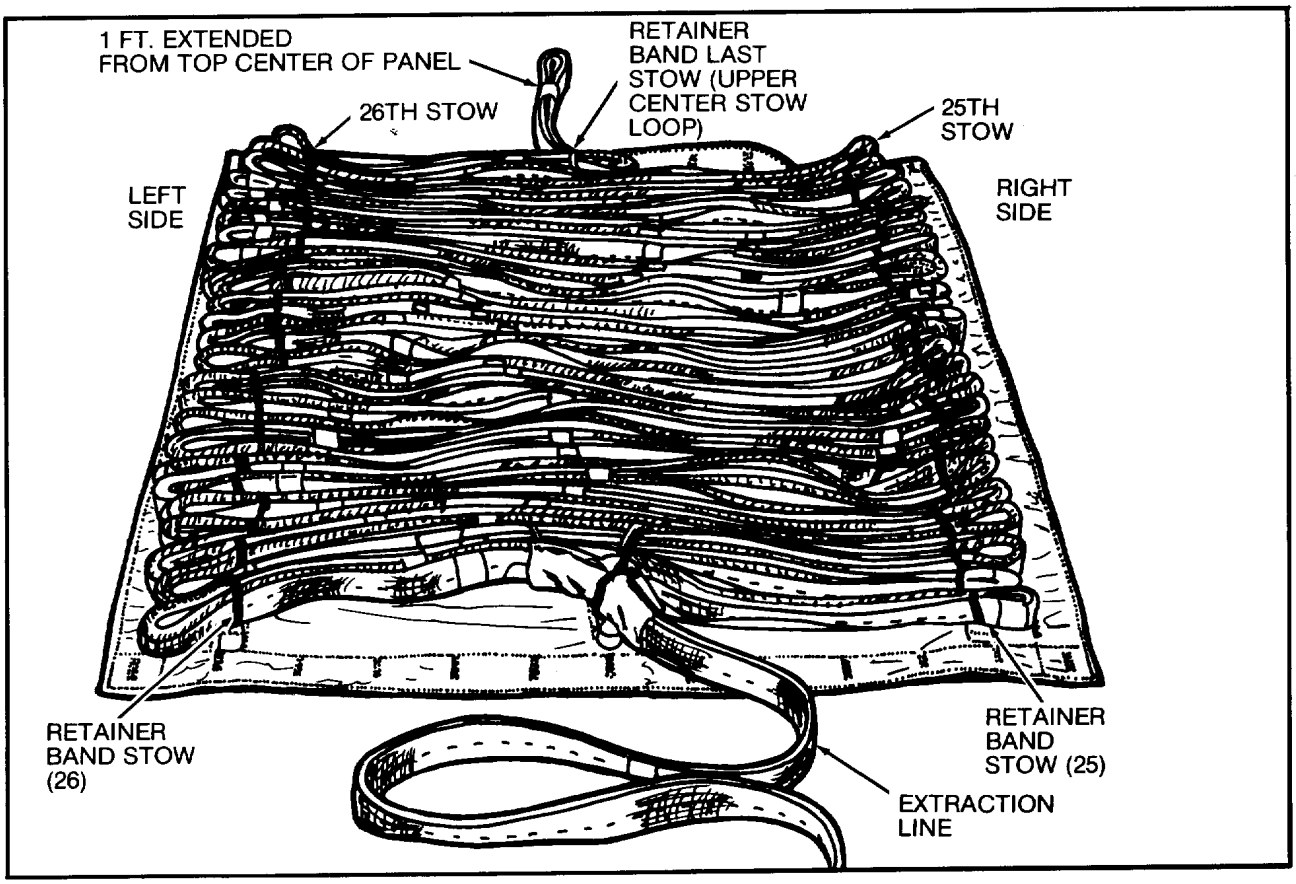

Figure 5. Extraction Line Stowed to Bottom Panel.

3. Close Extraction Line Bag.

   a. Place second Extraction Line Panel on stowed extraction line with closing loops facing up and align with bottom panel (figure 6).

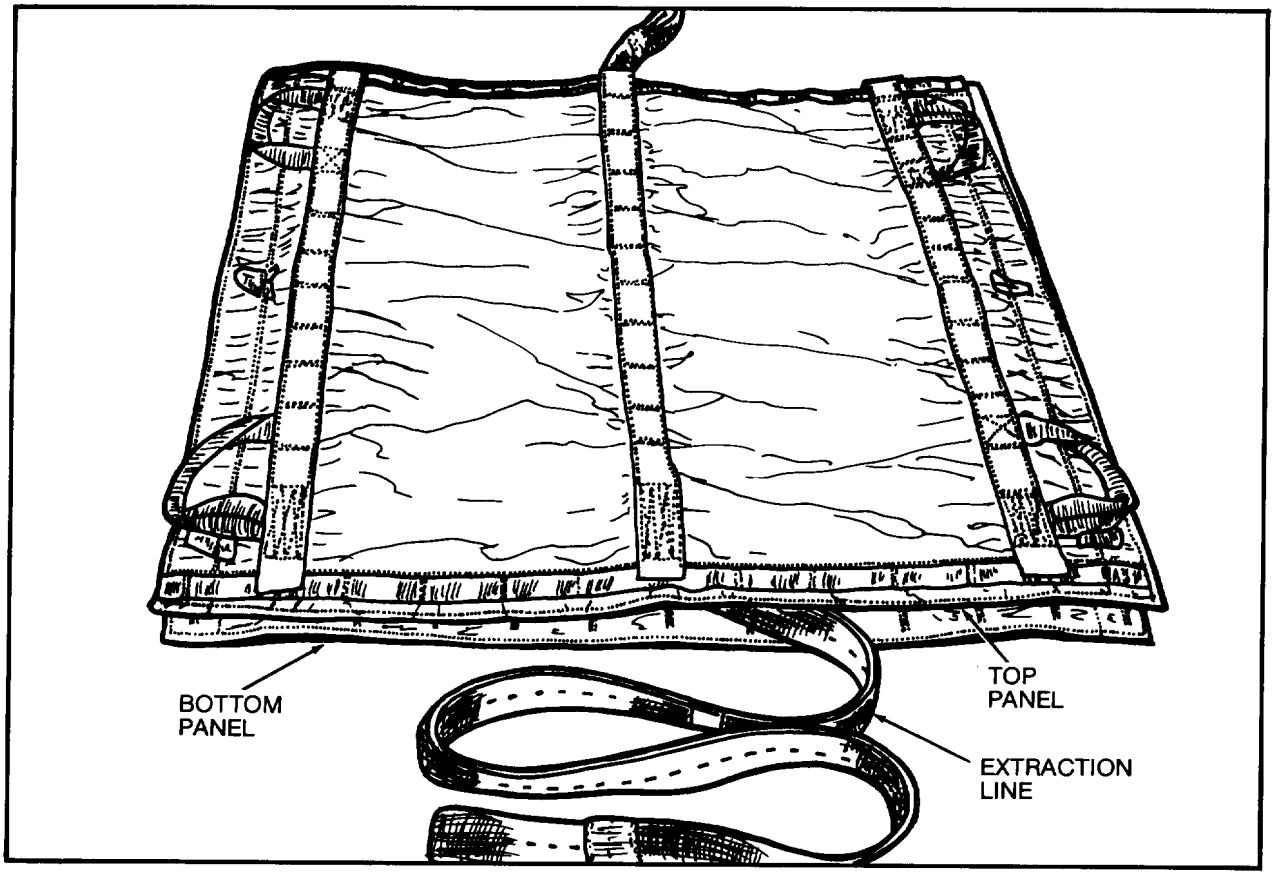

Figure 6. Top Panel in Place for Closing Extraction Line Bag

b. Cut one 95-inch length of ½-inch wide tubular nylon webbing. Cut one 95-inch length and six 10-inch lengths of ¼-inch wide type I cotton webbing to be used as bag closing ties.

c. Beginning at lower left corner of panel, secure one end of 95-inch nylon webbing bag closing tie to lacing loops located on outside corner of top and bottom panels with three alternating half-hitches and an overhand knot in the running end (figure 7).

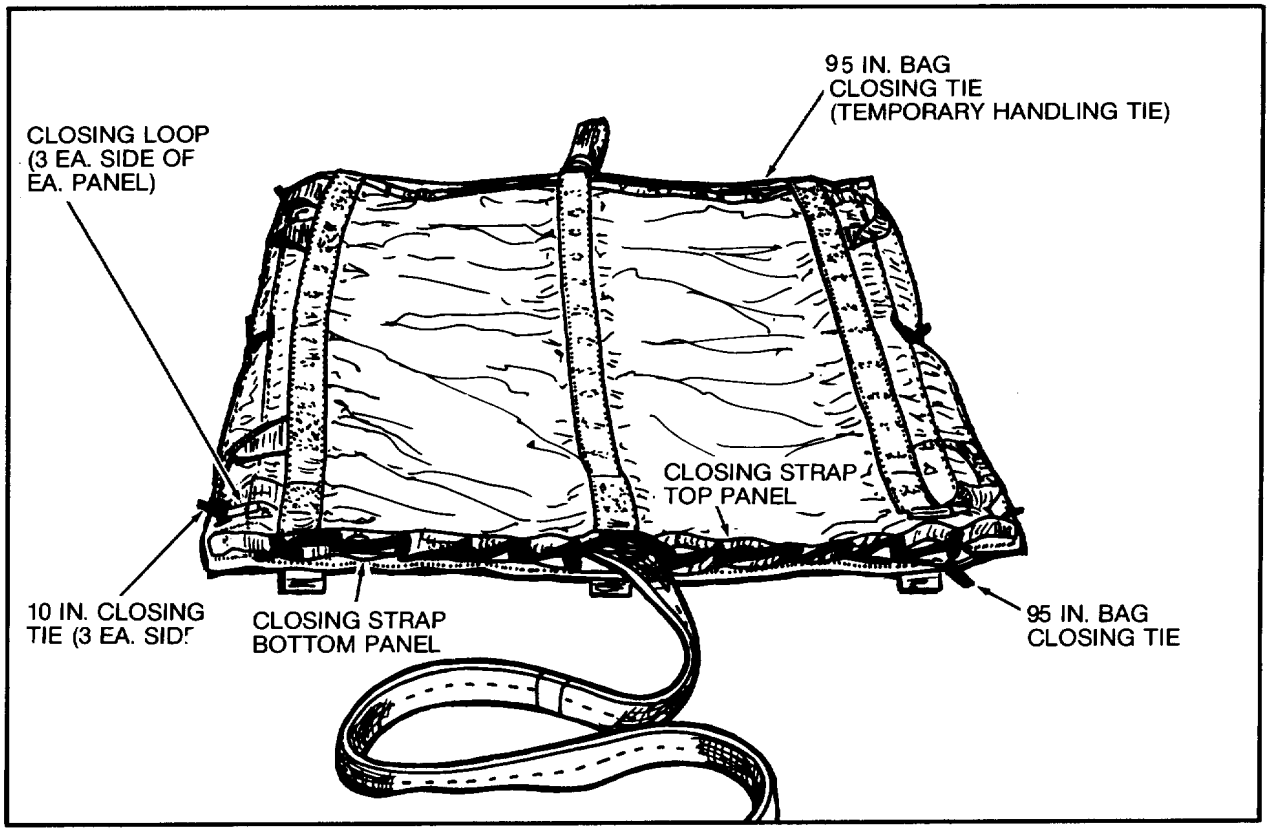

Figure 7. Extraction Line Bag Closed.

d. Using running end of 95-inch closing tie, lace lower end of panels closed, working from bottom to top, from left to right forming half hitches between closing loops. Secure running end of closing tie with three alternating half-hitches and an overhand knot in the running end. Trim off excess.

e. Secure top and bottom side closing loops together on left and right sides with six 10-inch bag closing ties. Secure ties with surgeon's knot and locking knot.

NOTE

This tie is for handling and transport only. Remove aboard aircraft.

f. Beginning at upper top center bridle attaching loops, pass one end of 95-inch closing tie (temporary handling tie) through top center, bottom right, top right, bottom center, top left, bottom left and back through top center loops. Remove slack from tie and secure ends with surgeon's knot and locking knot.

g. Fold and secure running ends of extraction line to carrying handles using ¼-inch wide type I cotton webbing (figure 8).

h. Attach tag to completed Extraction Line Bag showing date stowed, who stowed extraction line, length and loop of extraction line.

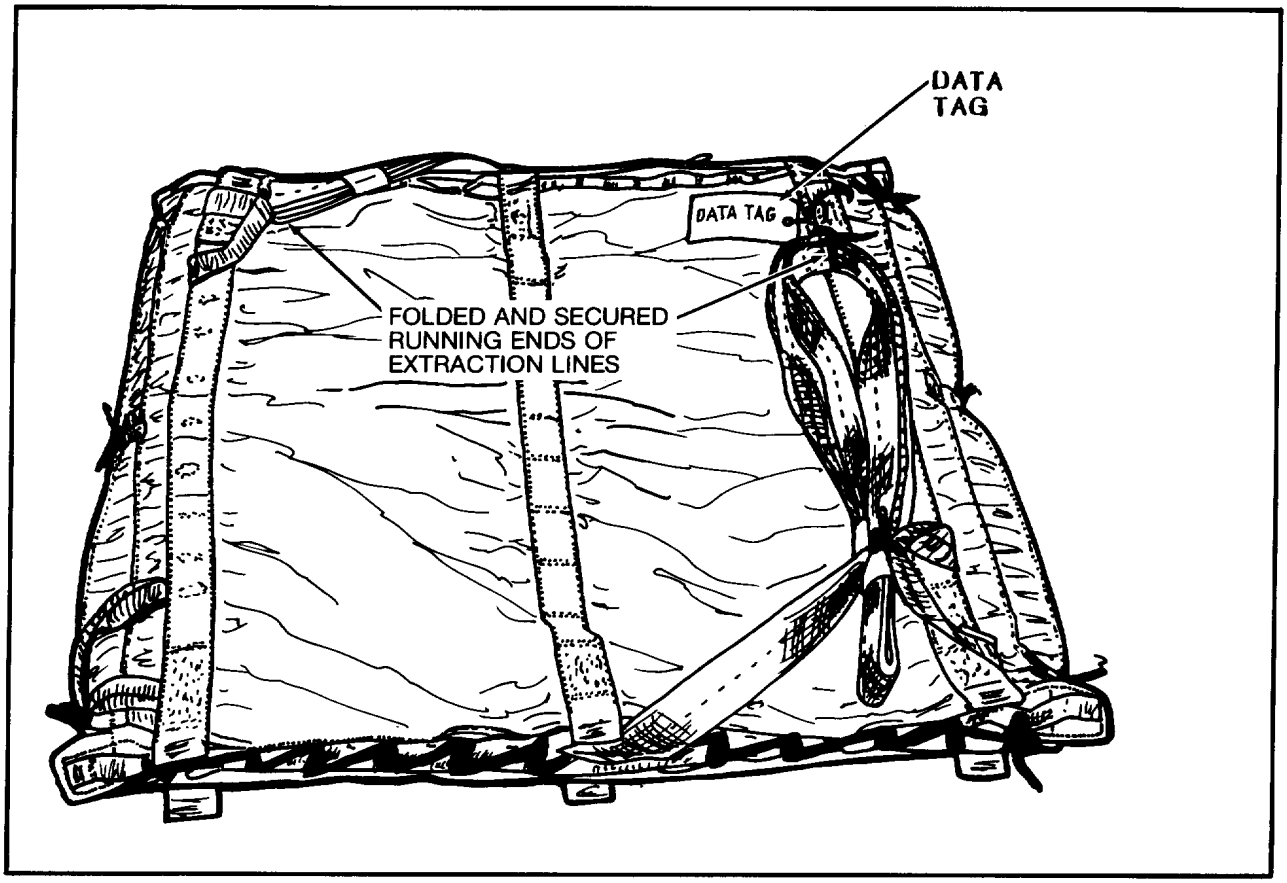

Figure 8. Extraction Line Running Ends Secured to Panel.

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CHAPTER 3

EXTRACTION LINE PROCEDURES

FOR

THE C-17 GLOBEMASTER III

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EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III EXTRACTION PARACHUTE DEPLOYMENT BAG **0011 00**

THIS SECTION COVERS:
Modification Procedures

INITIAL SETUP

Tools:

Shears - NSN 511-00-223-6370

Material/Parts:

Bag, Deployment, 15-Foot Extraction - NSN 1670-00-815-2727
Bag, Deployment, 22-Foot Extraction - NSN 1670-00-733-4883
Webbing, Nylon, Type VIII Item 13, Appendix C
Thread, Nylon, Size 3 Item 19, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

TM 10-1670-278-23&P	15-Ft Extraction Parachute
TM 10-1670-279-23&P	22-Ft Extraction Parachute
TM 10-1670-277-23&P	Deployment Bag Pendulum Line

MODIFICATION

1. Modifying the 15-FT and 22-FT Cargo Extraction Parachute Deployment Bag.

NOTE

Cut the deployment bridal loop well beyond the apex opening but not beyond the existing stitch pattern. Do not remove the apex opening reinforcement.

a. Remove the deployment bag bridle loop from the deployment bag and sear ends (figure 1).

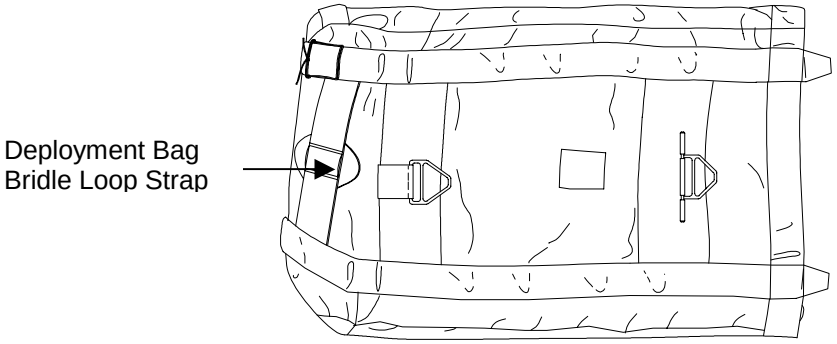

Figure 1. Deployment Bag Modification.

b. Cut two 24-inch lengths of type VIII nylon webbing (sear the cut ends).

c. Form a 4-inch roll in the center of each strap. Stitch around the roll and across the center of the roll with size 3 nylon thread (figure 2).

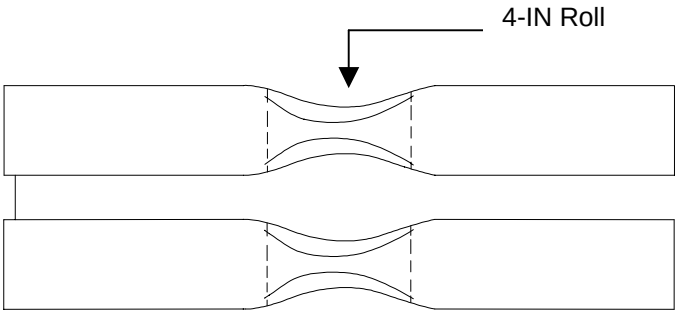

Figure 2. Bridle Straps Formed.

d. Where the type VIII reinforcement webbing intersects the 1½-inch reinforcement tape (located at the bottom end of the d-bag), measure up 5-inches and mark each side (figure 3).

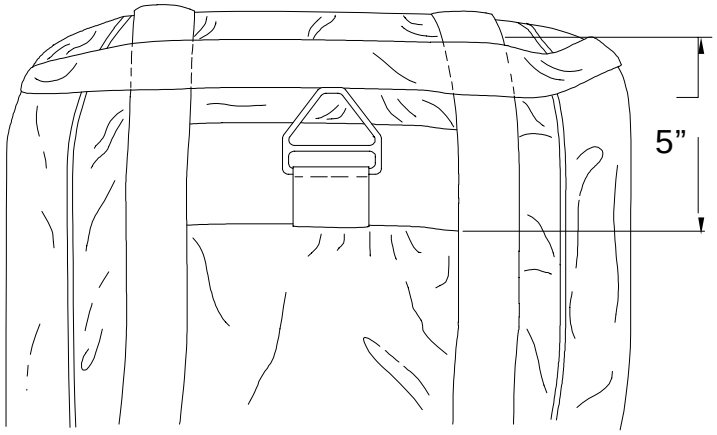

Figure 3. Deployment Bag Marked.

e. Place a bridle strap (sewn portion to the outside), on the pre-marked type VIII reinforcement webbing and sew one end of a bridle strap (on each side of the bag) with a 5-inch, four-point WW stitch formation with size 3 nylon thread.

f. Cross the bridle straps diagonally over the end of the bag. Sew the free ends of each bridle strap to the type VIII reinforcement webbing on the opposite side of the bag with a 5-inch, four-point WW stitch formation with size 3 nylon thread (figure 4).

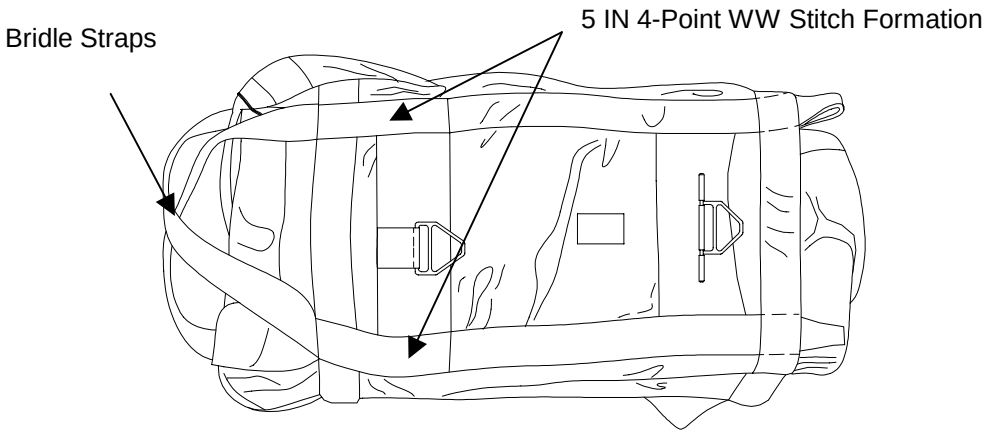

Figure 4. Bridle Straps Attached to Extraction Parachute Deployment Bag.

g. Re-attach the pendulum line to the deployment bag bridle straps utilizing the procedures in TM10-1670-277-23&P.

END OF WORK PACKAGE

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EXTRACTION LINE PARACHUTE PROCEDURES FOR C-17 GLOBEMASTER III **0012 00**
EXTRACTION PARACHUTE DEPLOYMENT BAG FIGURE EIGHT TIE

THIS SECTION COVERS:
Figure Eight Tie Procedures

INITIAL SETUP

Equipment Condition

Completely Packed Parachute

REFERENCES

TM 10-1670-277-23&P
TM 10-1670-278-23&P
TM 10-1670-279-23&P

FIGURE EIGHT TIE

NOTE

When the extraction parachute is used as an "extraction parachute", the breakcord tie will be one turn double, type I, ¼-inch cotton webbing. When the extraction parachute is used as a "drogue parachute," the breakcord tie will be one turn single, ½-inch tubular nylon.

1. Figure Eight Tie

   a. Cut one 60-inch length of ½-inch tubular nylon webbing and one 12-inch length (doubled) of ticket #8/7 cotton thread.

   b. Thread the end of a 60-inch length of ½-inch tubular nylon up through the bottom left and up through the top left bag-closing loop.

   c. Equalize the ends and thread both ends through the cutter knife between the blade and the reinforcing safety bar.

   d. Cross the ½-inch tubular nylon at the cutter knife and thread the bottom running end up through the bottom right bag-closing loop. Thread the top running end down through the top right bag-losing loop.

   e. Draw the figure eight as tight as possible and secure between the right bag-closing loops with a surgeon's knot, locking knot and an overhand knot in the running ends. Trim ends to 2-inches.

   f. Safety tie the cutter knife by passing the 12-inch length of one turn double ticket #8/7 cotton thread around the crossed ½-inch tubular nylon and through the holes above the reinforcing safety bar of the cutter knife. Secure with a surgeon's knot and locking knot (Figure 1).

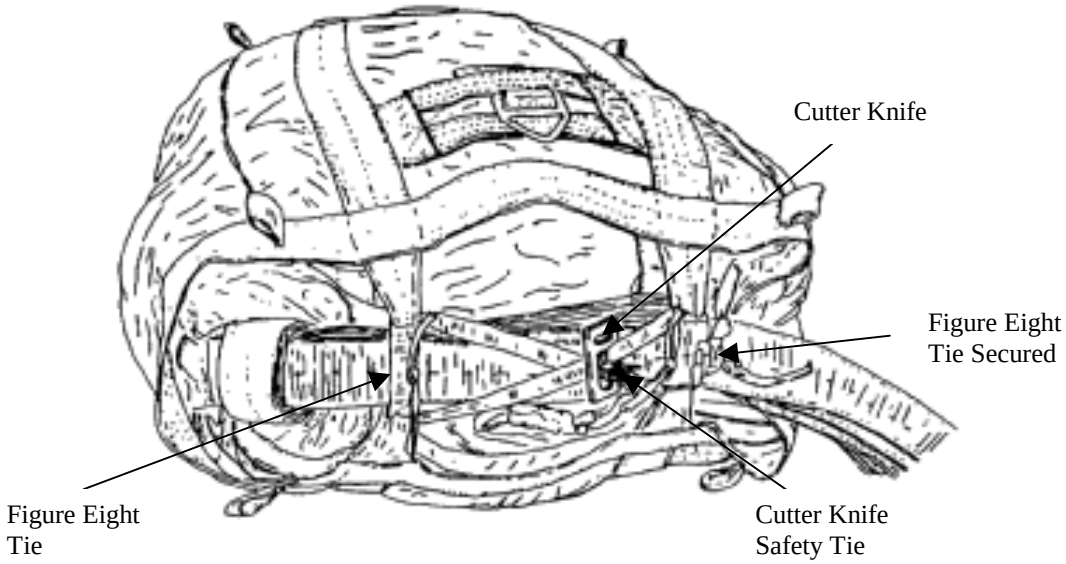

Figure 1. Safety Tie Completed.

END OF WORK PACKAGE

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0013 00**
PACKING EXTRACTION PARACHUTES FOR USE WITH C-17 GLOBEMASTER III

THIS SECTION COVERS:
Packing

INITIAL SETUP

Equipment Condition

Completely Packed Parachute

REFERENCES

TM 10-1670-277-23&P
TM 10-1670-278-23&P
TM 10-1670-279-23&P

PACKING

NOTE

When the extraction parachute is used as an "extraction parachute", the breakcord tie will be one turn double, type I, ¼-inch cotton webbing. When the extraction parachute is used as a "drogue parachute", the breakcord tie will be one turn single, ½-inch tubular nylon.

1. Packing the 15-foot cargo extraction parachute for use as a drogue parachute.

   a. Pack the 15-foot cargo extraction parachute as a drogue parachute IAW TM 10-1670-278-23&P and as follows:

      (1) Breakcord Tie. Cut a 103-inch length of ½-inch tubular nylon. Route the ½-inch tubular nylon through the canopy bridle loop and around both deployment bag bridle strap. Secure with a surgeons knot, locking knot, and an overhand knot in the running end.

2. Packing the 15-foot, 22-foot, and 28-foot cargo extraction parachute for use as an extraction parachute.

   b. Pack the 15, 22, and 28-foot cargo extraction parachute as extraction parachutes IAW TM 10-1670-277-23&P/TM 10-1670-278-23&P/TM 10-1670-279-23&P and as follows:

      (1) Breakcord Tie. Pass one turn double, type I, ¼-inch cotton webbing through the parachute bridle loop, and around both deployment bag bridle straps. Secure with a surgeon's knot and locking knot (temporary canopy breakcord tie).

END OF WORK PACKAGE

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EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0014 00**
STOWING 60-FOOT ONE LOOP EXTRACTION LINE

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife – NSN 5110-00-162-2205

Material/Parts

Extraction Line, 60-Foot, One Loop – NSN 1670-01-064-4452
Webbing, Cotton, Type I-Item 16, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All Equipment shall be serviceable and ready for use.

References

TM 10-1670-296-20&P	Extraction Line

STOWING

1. Stowing the 60-foot one loop extraction line.

   a. The 60-foot one loop extraction line is required for the C17 Globemaster III. However, the extraction line panel is no longer required.

   b. S-fold the 60-foot one loop extraction line and secure with type I, ¼-inch cotton webbing.

END WORK PACKAGE

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EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0015 00**
STOWING 160-FOOT ONE LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL WITH EXTRACTION BRIDLE ATTACHED

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife - NSN 5110-00-162-2205
Wrench Comb, 1 7/16-inch – NSN 5120-00-228-9519
Wrench Comb, 1 1/2-inch – NSN 5120-00-277-8834

Materials/Parts

Extraction Line Panels - NSN 1670-01-183-2678
Extraction Line, 160-FT, One Loop - NSN 1670-01-107-7652
Extraction Bridle - NSN 1670-01-035-6054
Parachute, 15-Foot Dia.– NSN 1670-01-0633715
Link, Connector, Parachute – NSN 1670-00-217-2421
Side Plates, 3 ¾-inch – NSN 1670-00-003-1953
Spacers, Lg - NSN 5365-00-007-3414
Bolts – NSN 5306-00-435-8994
Nuts – NSN 5310-00-232-5165
Webbing, Cotton, Type I - Item 15, Appendix C
Cloth, Cotton-Muslin, Type III - Item 4, Appendix C
Tape, Pressure Sensitive, Adhesive, 2-Inch-Wide, Item 17, Appendix C
Webbing, Nylon, Tubular, ½-Inch Wide, - Item 16, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-4	Extraction Line Panel
WP 0003	Service and Repair
WP 0012 00	Figure Eight Tie
TM 10-1670-296-20&P	Extraction Line
TM 10-1670-278-23&P	15-Ft Extraction Parachute
TM 10-1670-277-23&P	28-Ft Extraction Parachute

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end. When two Extraction Line Panels are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

1. Attach Extraction Bridle to Extraction Line Panels.

a. Place one Extraction Line Panel on packing table or suitable surface with stow loops facing up and running lengthwise (figure 1). Place second panel on top of first panel with stow loops facing down.

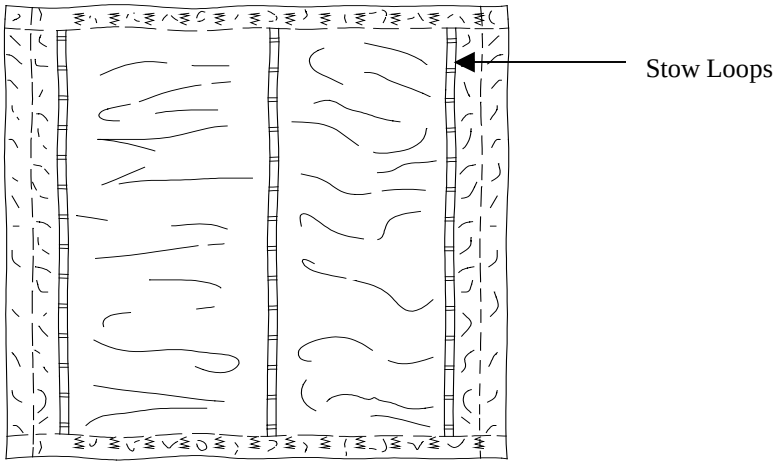

Figure 1. Extraction Line Panel with Stow Loops Facing Up.

b. Using nine connector links, attach six to the double end webs of extraction bridle to bridle attachment loops located on upper end of each panel. Attach three connector links to attaching webs of extraction bridle (figure 2).

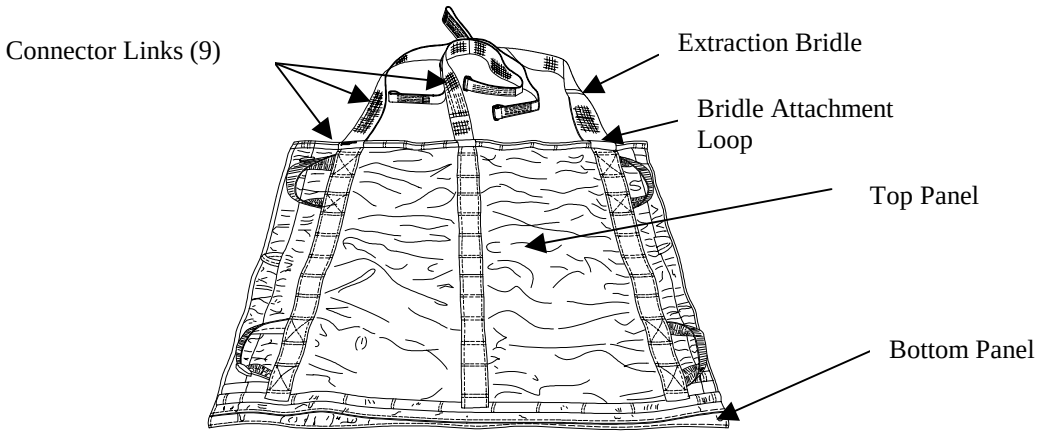

Figure 2. Extraction Bridle Attached to Two Extraction Line Panels.

2. Layout.

a. Position Extraction Line Panel on pack table or suitable surface with stow loops facing up and running lengthwise.

b. Cut one hundred and thirty two 16-inch lengths of type I, ¼-inch cotton webbing for use as extraction line stow loop ties. Girth-hitch 44 on the right, 44 in the center, and 44 on the left row of stow loops bottom panel (figure 3).

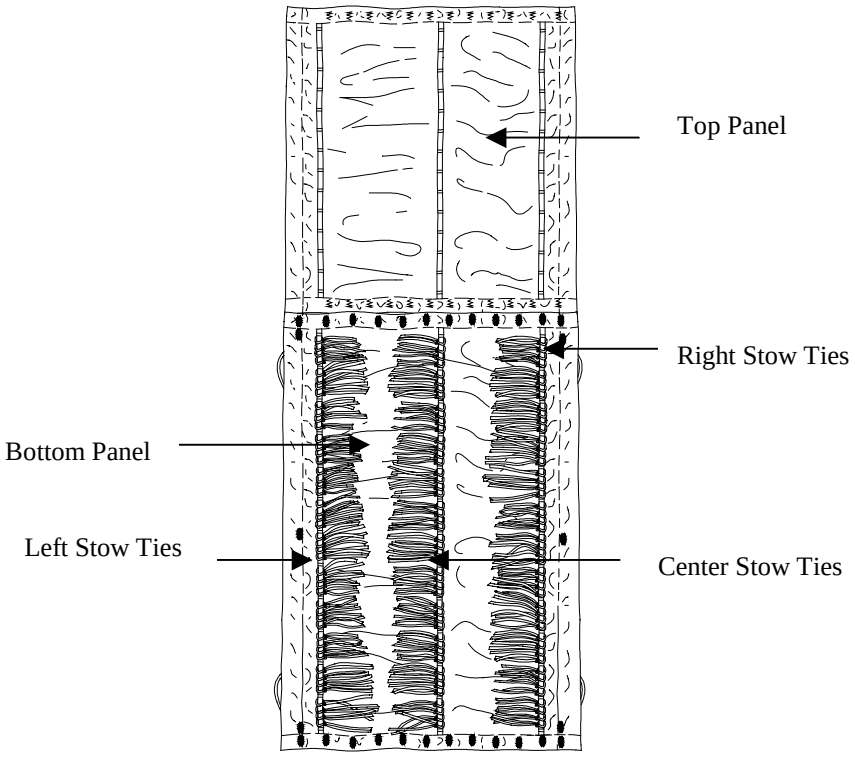

Figure 3. Two Panel Layout for Stowing 160-Foot One Loop Extraction Line.

c. Cut three 24-inch lengths of type I, ¼-inch cotton webbing. Girth hitch one length to stow loop 1, 6, and 12 on the right side of the bottom panel. Make an overhand knot three inches from the bottom of the stow loop (figure 4).

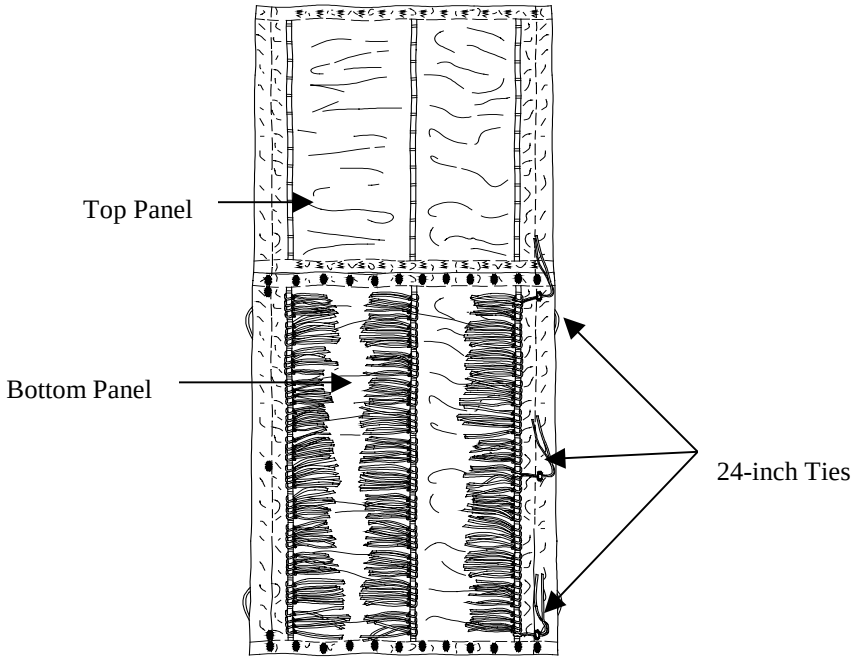

Figure 4. Installing 24-inch Ties at Stow Loops 1, 6 and 12

d. Cut four 6 x 16-inch lengths of cotton muslin cloth and four 36-inch lengths of type I, ¼-inch cotton webbing and position at upper end of the panel.

e. Place a 160-foot one-loop extraction line at upper end of pack table.

f. Measure and mark a point on the extraction line 3-feet from one end (parachute attaching point).

g. Route marked end of extraction line from the upper end to the lower end along right outer edge of bottom panel row of stow loops, align the 3-foot mark with lower right edge of panel.

3. Stow Extraction Line.

a. Separate extraction line plies and wrap each ply with a piece of 6 x 16-inch cotton muslin cloth.

b. Secure wrapped plies together at each end with two turns single type I, ¼-inch cotton webbing. Secure with a surgeon's knot and locking knot.

c. Pass running ends of the 24-inch type I, ¼-inch cotton webbing around both plies and secure with a surgeon's knot and locking knot (figure 5).

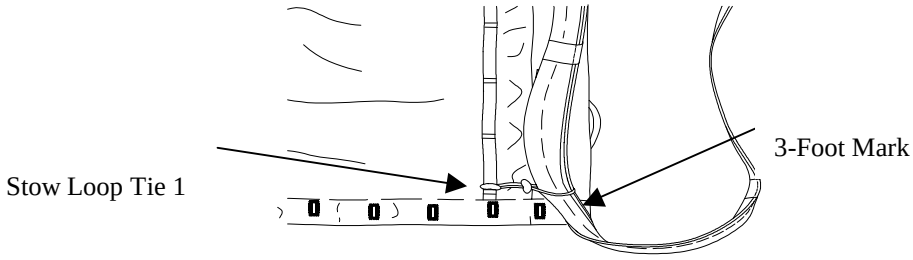

Figure 5. Installing 24-inch Ties.

d. Make a positive tie at the 6th, 12th, and center top stow loops.

e. Beginning at upper left corner of panel, make first S-fold/stow of the extraction line and secure with previously installed type I, ¼-inch cotton webbing ties (figure 6).

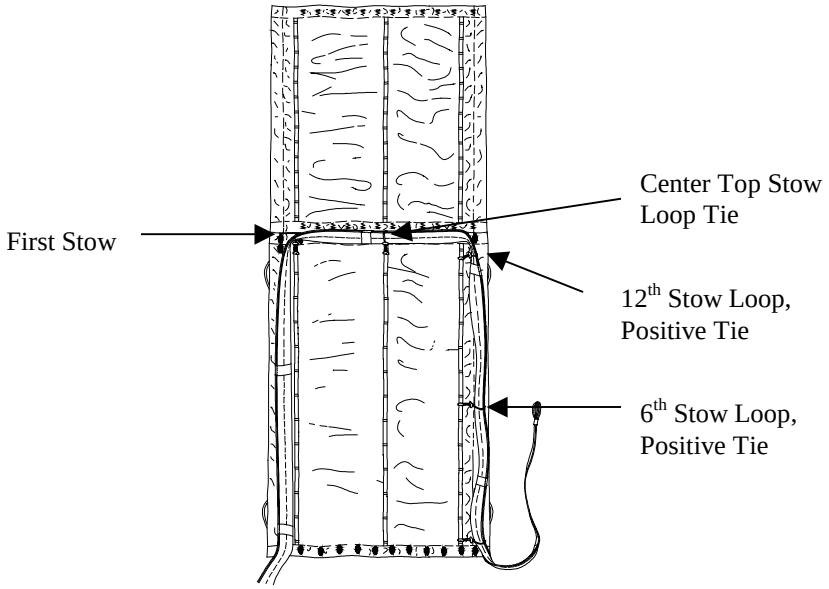

Figure 6. Positive Ties/First Stow.

f. Working from upper left to right, stow and secure extraction line with 22 stows on each side of panel making positive ties at the left, center, and right stow loop (figure 7).

NOTE

Stows must not extend beyond the edge of the panel.

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

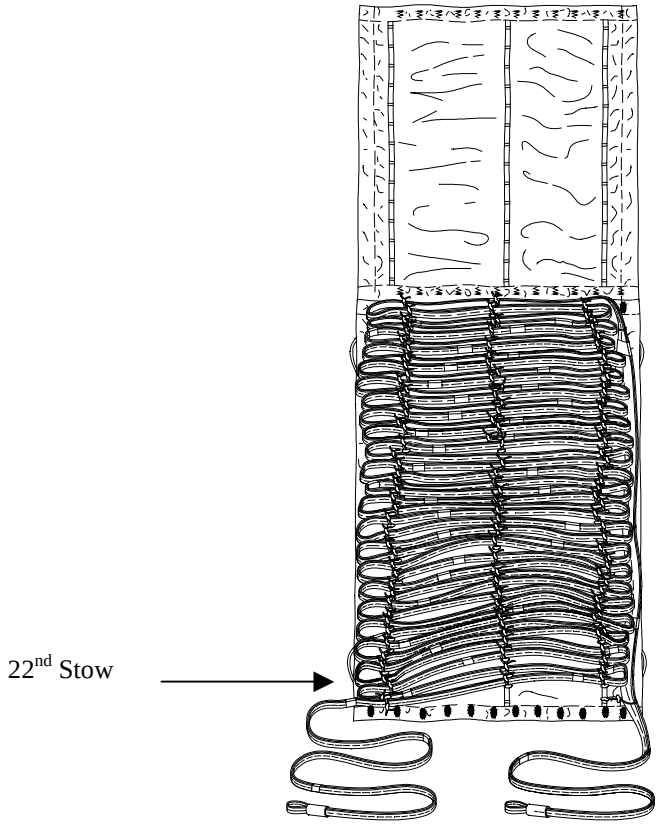

Figure 7. S-Fold and Secure Extraction Line.

g. Make sure that the running end of extraction line extends from the bottom left corner of the panel. Make a single securing tie with type I, ¼-inch cotton webbing leaving eight (8) feet of extraction line remaining. Trim and remove any unused ties (figure 8).

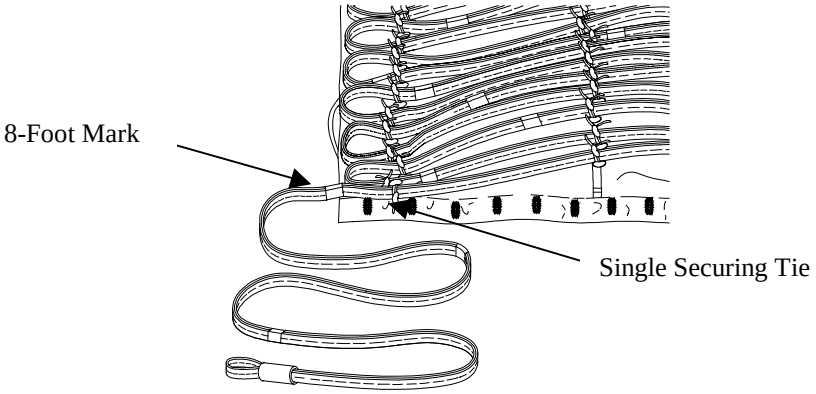

Figure 8. Final Extraction Line Tie.

4. Close Extraction Line Bag.

a. Place top Extraction Line Panel on stowed extraction line with closing loops facing up and align with bottom panel (figure 9).

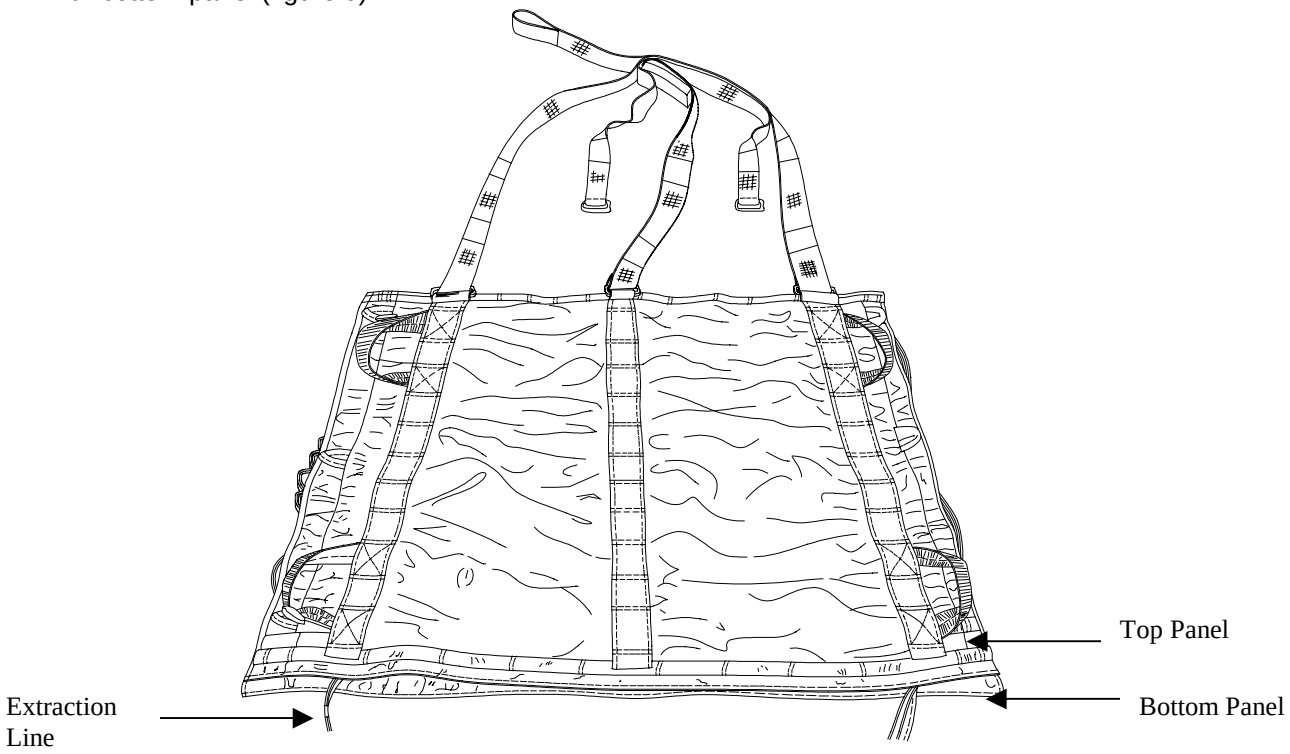

Figure 9. Top Panel in Place for Closing Extraction Line Bag.

b. Cut one 95-inch length of ½-inch tubular nylon. Cut one 95-inch length and six 10-inch lengths of type I, ¼-inch cotton webbing to be used as bag closing ties.

c. Beginning at the upper left corner of panels, secure one end of the 95-inch, ½-inch tubular nylon bag closing tie to the lacing loops located on the outside corner of the top and bottom panels with three alternation half hitches and an overhand knot in the running end.

d. Using the running end of the 95-inch closing tie, lace panels closed, working from bottom to top and left to right, forming half hitches between closing loops. Secure running end of bag closing tie with three alternating half hitches and an overhand knot in the running end. Trim excess (figure 10).

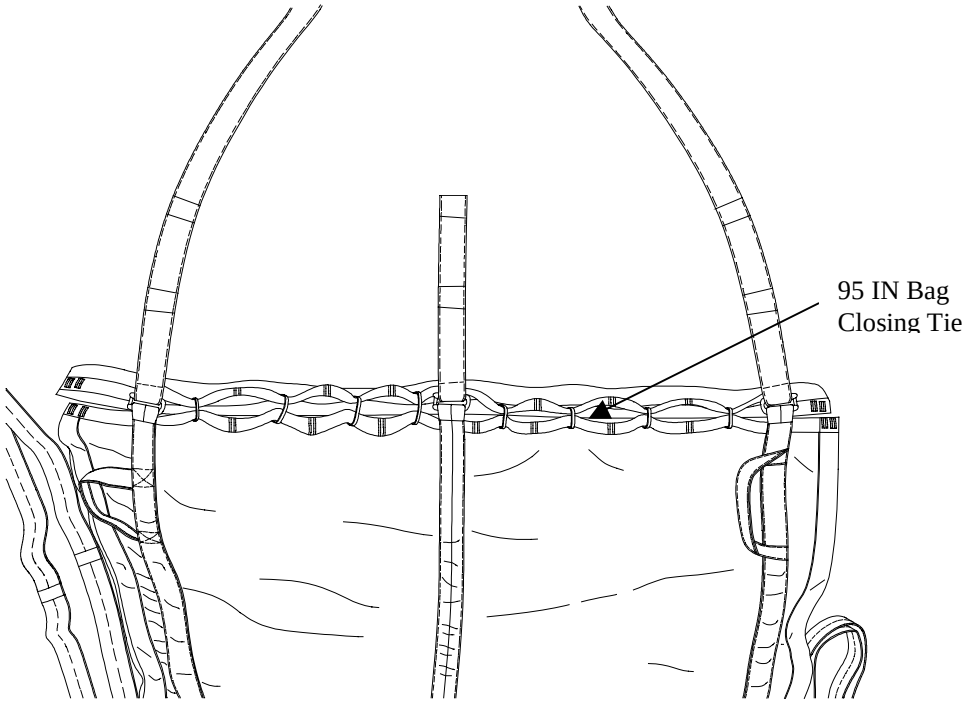

Figure 10. Extraction Line Bag Closed.

e. Using 10-inch lengths of type I, ¼-inch cotton webbing, secure both top and bottom side-closing loops together on the left and right sides. Secure ties with a surgeon's knot and locking knot.

f. Beginning at the upper top center bridle attaching loops, pass one end of a 95-inch type I, ¼-inch cotton webbing closing tie (temporary handling tie) through the top center, bottom right, top right, bottom center, top left, bottom left, and back through top center loops. Remove slack from tie and secure ends with a surgeon's knot and locking knot (figure 11).

NOTE

Temporary handling tie is for handling and transport only. Remove aboard the aircraft.

g. Fold and secure running ends of extraction line to carrying handles using a suitable length of type I, ¼-inch cotton webbing.

h. Attach a data tag to completed Extraction Line Bag. Data tag will identify the person who stowed it, date stowed, length, and the number of loops.

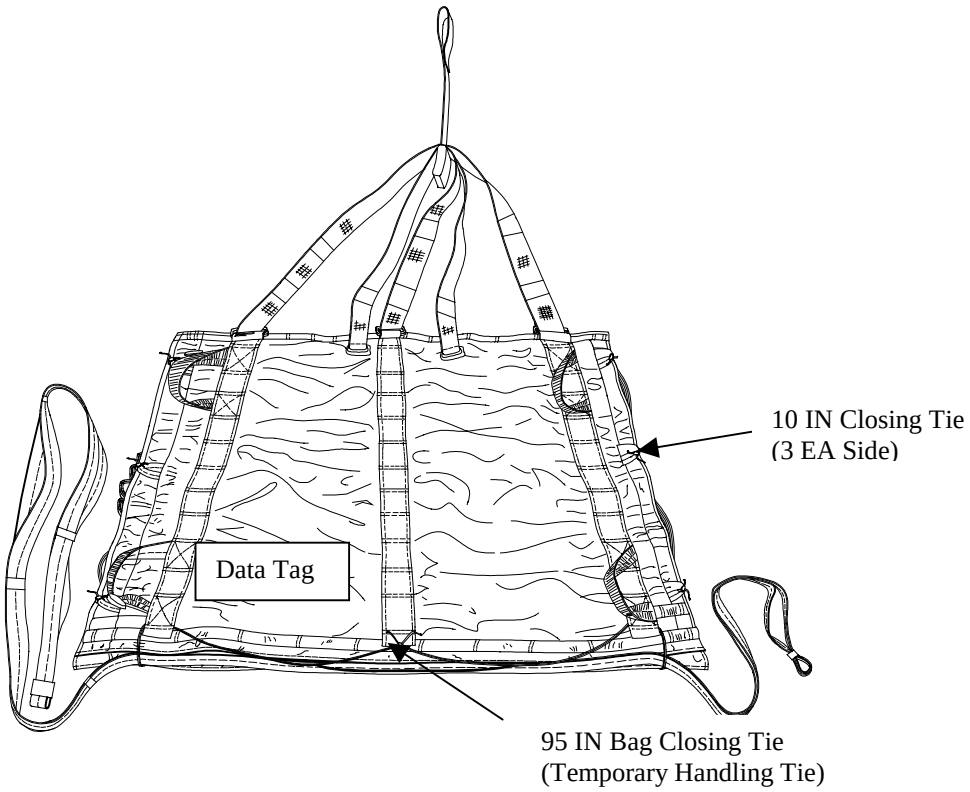

Figure 11. Temporary Handling Tie.

5. Secure Parachute.

a. Place a single 15-foot extraction parachute on top of Extraction Line Bag, centered, with parachute deployment bag V-rings side facing up.

b. Align parachute deployment bag bridle with edge of bridle end on Extraction Line Bag.

c. Cut four 36-inch lengths of type I, ¼-inch cotton webbing, fold in half, and girth-hitch a length to each bottom-securing loop on parachute deployment bag.

Pass the running ends of each tie through carrying handle of top Extraction Line Panel. Secure each tie to the bottom-carrying handle with alternating half hitches (figure 12).

6. Attach Extraction Bridle to Parachute Deployment Bag Bridle Straps.

a. Disassemble two of the previously installed connector links tied to parachute deployment bag bridle straps.

CAUTION

Insure that he connector links are not routed through the bridle loop of the parachute.

b. Using connector links, attach parachute attaching webs to parachute deployment bag bridle straps and reassemble connector links.

c. Fold the remaining bridle of the parachute-attaching web and tape it to center extraction bridle web (figure 12).

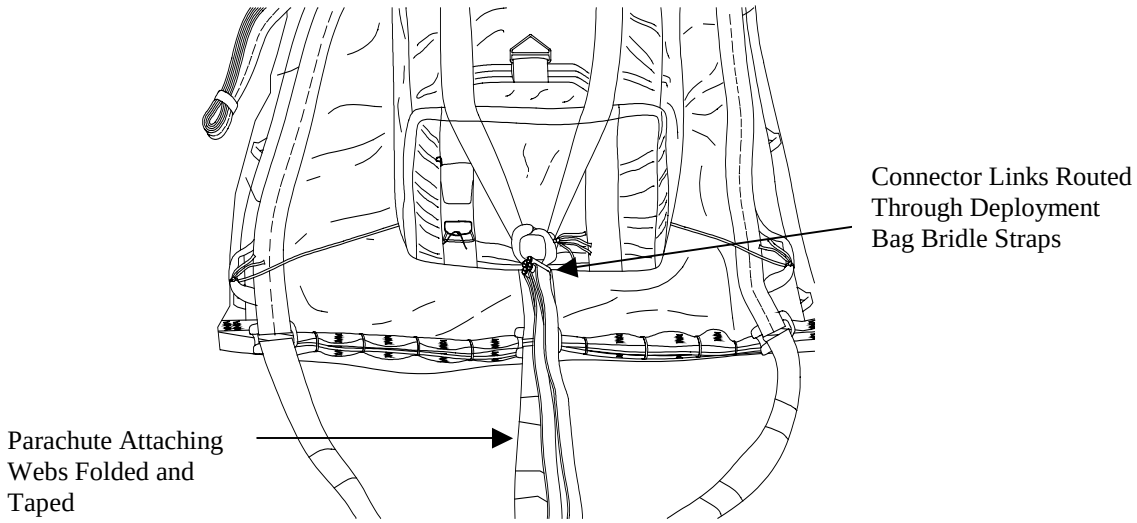

Figure 12. Breakcord and Bridle Attached to the Parachute.

7. Replace Breakcord Tie.

a. Remove the *temporary* canopy breakcord tie installed during packing of parachute.

b. Cut an 18-inch length of type I, ¼-inch cotton webbing for use in replacing canopy breakcord tie.

c. Pass the type I, ¼-inch cotton webbing one turn double, through canopy bridle loop, around deployment bag bridle loop straps and through both connector links. Secure tie with surgeon's knot and locking knot (figure 13).

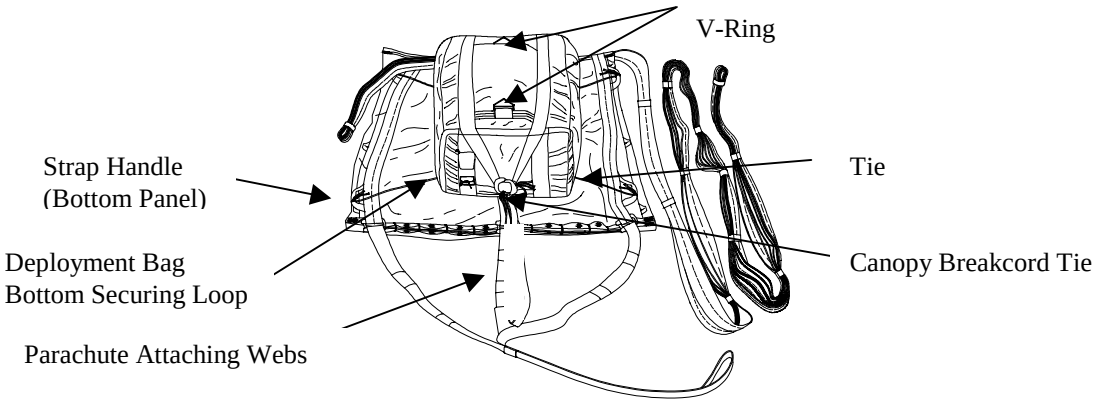

Figure 13. 15' Extraction Parachute Secured to Extraction Line Bag.

8. Install Lanyard and Safety Ties.

NOTE

Install Deployment Bag Figure Eight Safety Tie IAW WP 0012 00.

a. Cut a 60-inch length of ½-inch tubular nylon used as a parachute deployment bag, cutter knife lanyard.

CAUTION

The cutter knife lanyard must be adjusted to ensure that it is 2 inches shorter than the parachute adapter web, measured from the point where the adapter web exits the parachute deployment bag at the figure eight tie, to where the adapter web attaches to the two-point link.

b. Using a 3 ¾-inch two-point link, connect the parachute adapter web to the extraction line. Fold the ½-inch tubular nylon in half and girth-hitch through the cutter knife, extend lanyard and attach to the middle of the top plate of the two-point link.

c. Secure ends of tie with three alternating half hitches, and overhand knot in running ends. Trim off excess and tape (figure 14).

NOTE

When the 15-foot extraction parachute is rigged for sequential airdrop and not attached to the Tow Release Mechanism (TRM), safety tie the two-point link with type III nylon cord replacing the ½-inch tubular nylon.

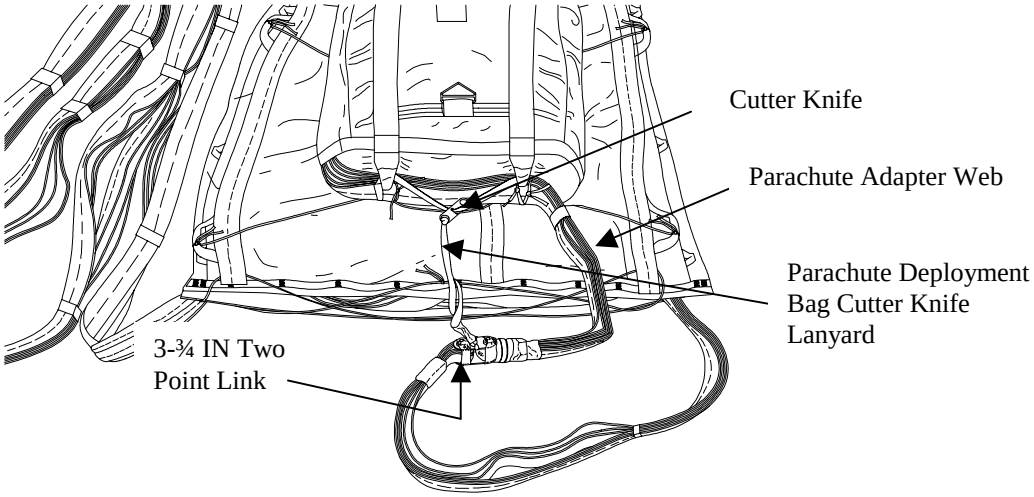

Figure 14. Extraction Parachute Attached to Extraction Line.

d. Tape the bolts of the 3 ¾-inch 2-point link using a suitable length of 2-inch pressure sensitive adhesive tape.

e. Cut two 24-inch lengths of ½-inch tubular nylon to be used as a two-point link break cord tie.

f. Safety the two-point link to the closing loops (centered between bag closing loops) with the two lengths of ½-inch tubular nylon. Pass one length around adapter web attaching bolt on the two-point link and through top left bag-closing loop. Pass the second length around the adapter web-attaching bolt on the two-point link and through top right bag closing loop. Secure with surgeons knot, locking knot, and an overhand knot in the running end (figure 15).

g. Cut a 24-inch length of type I, ¼-inch cotton webbing, double and secure extraction line to top right deployment bag tie loop with a surgeon's knot locking knot (figure 15).

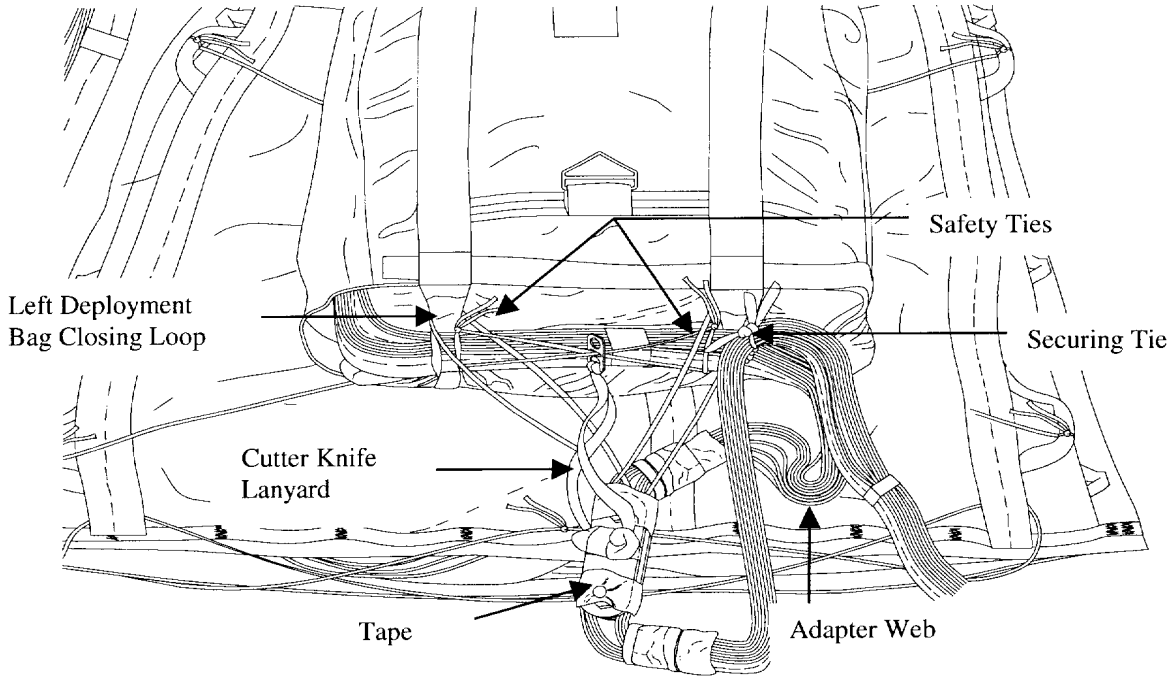

Figure 15. Safety Ties Installed.

END OF WORK PACKAGE

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0016 00**
STOWING THE 140-FOOT THREE LOOP EXTRACTION LINE TO THE EXTRACTION LINE PANEL WITH EXTRACTION LINE BRIDLE ATTACHED

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife - NSN 5110-00-162-2205
Wrench Comb, 1 7/16-Inch – NSN 5120-00-228-9519
Wrench Comb, 1 1/2-Inch – NSN 5120-00-277-8834

Materials Parts

Extraction Line Panels - NSN 1670-01-183-2678
Extraction Line, 140 Foot, Three Loop - NSN 1670-01-107-7651
Extraction Bridle - NSN 1670-01-335-6054
Parachute, 22-Foot Dia. – NSN 1670-01-063-3716
Link, Connector, Parachute – NSN 1670-00-217-2421
Side Plates, 3 ¾-Inch – NSN 1670-00-003-1953
Spacers, Lg – NSN 5365-00-007-3414
Bolts – NSN 5306-00-435-8994
Nuts – NSN 5310-00-232-5165
Cloth, Cotton-Muslin, Type III - Item 4, Appendix C
Webbing, Nylon, Tubular - Item 16, Appendix C
Kraft Paper, Item 9, Appendix C
Tape, Pressure Sensitive, Adhesive, 2-Inch-Wide, Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-4	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-296-20&P	Extraction Line
TM 10-1670-279-23&P	22-Ft Extraction Parachute

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0016 00**
STOWING THE 140-FOOT THREE LOOP EXTRACTION LINE TO THE EXTRACTION LINE PANEL WITH EXTRACTION BRIDLE ATTACHED

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end. When two Extraction Line Panels are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

1. Attach Extraction Bridle to the Extraction Line Panels.

a. Place one Extraction Line Panel on packing table or suitable surface with the stow loops facing up and running lengthwise (figure 1). Place second panel on top of first panel with the stow loops facing down.

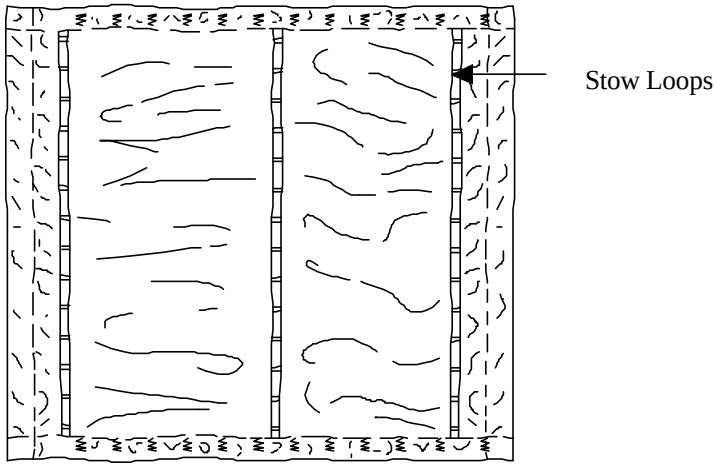

Figure 1. Extraction Line Panel with Stow Loops Facing Up.

b. Using nine connector links, attach six to the double end webs of extraction bridle to bridle attachment loops located on upper end of each panel. Attach three connector links to parachute attaching webs of extraction bridle (figure 2).

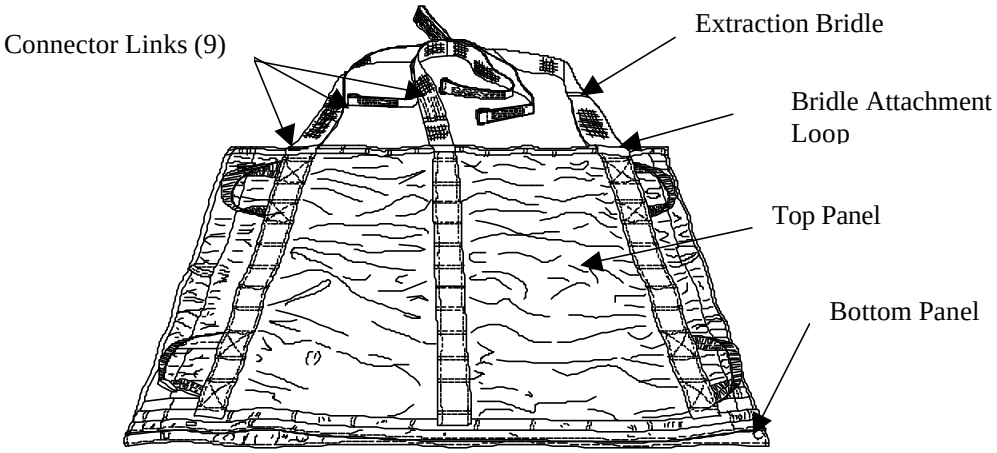

Figure 2. Extraction Bridle Attached to Two Extraction Line Panels.

2. Layout

a. Position Extraction Line Panels on a pack table or suitable surface with stow loops facing up and running lengthwise (figure 3).

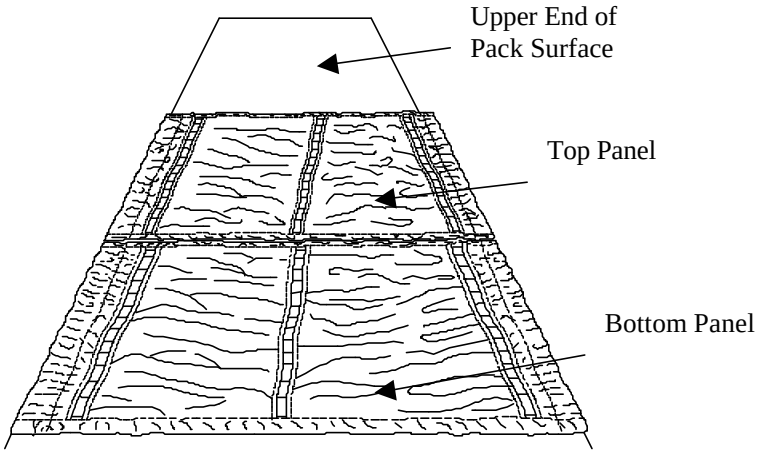

Figure 3. Layout of Two Panels for Stowing 140 Foot Three Loop Extraction Line.

b. Cut 116 eighteen-inch lengths of type I, ¼-inch cotton webbing for use as extraction line stow loop ties. Girth hitch 84 ties to the right, center and left stow loops of the bottom panel. Girth hitch 32 ties to top panel evenly spaced to the right center and left row of stow loops.

c. Cut six 24-inch lengths of type I, ¼-inch cotton webbing. Girth hitch 3 ties to the left and right stow loop rows of the bottom panel using stow loops 1, 6, and 12 on the right side of the bottom panel. Make an overhead knot 3-inches from the bottom of the stow loop (figure 4).

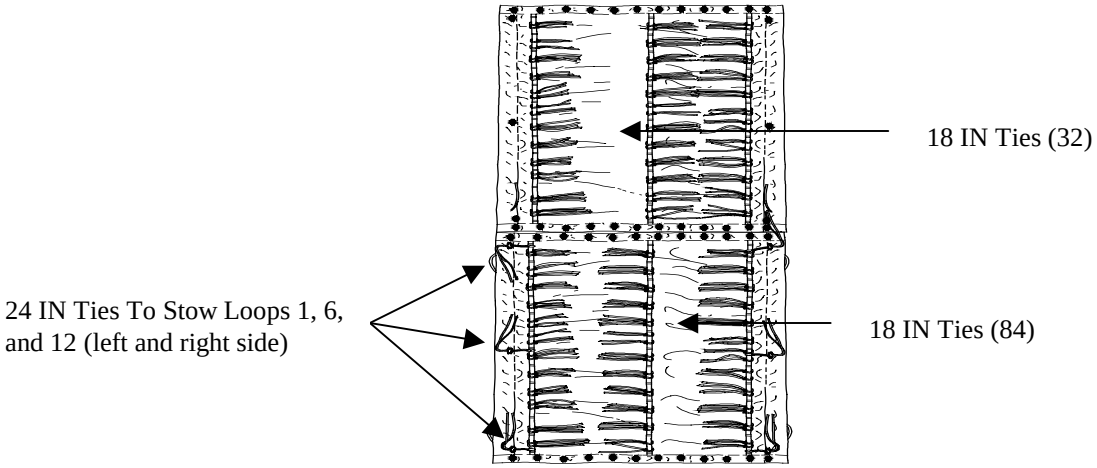

Figure 4. Extraction Line Bag with Ties Install.

d. Cut two 36 x 16-inch pieces of cotton muslin cloth and three 36-inch lengths of type I, ¼-inch cotton webbing and position at lower end of bottom panel.

e. Cut and lay aside a 36 x 38-inch sheet of kraft paper for use as a line separator.

f. Place a 140-foot three-loop extraction line at the upper end of the pack table.

g. Measure and mark a point on the extraction line 3-feet from one end (parachute attaching point).

h. Route marked end of extraction line from upper end of panel to lower end along right row of stow loops, align 3-foot mark with lower edge of panel.

3. Stow Extraction Line.

a. Wrap the extraction line with one piece of 36 x 16-inch cotton muslin cloth at a point immediately above the 3-foot mark on the extraction line. Ensure cotton muslin runs the entire length of the panel.

b. Secure wrapped extraction line in three places with two turns single type I, ¼-inch cotton webbing. Secure with a surgeon's knot and locking knot.

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Secure the extraction line on the right side of bottom panel using one turn type I, ¼-inch cotton webbing (previously installed), on stow loops 1, 6, and 12 on the right side (figure 5).

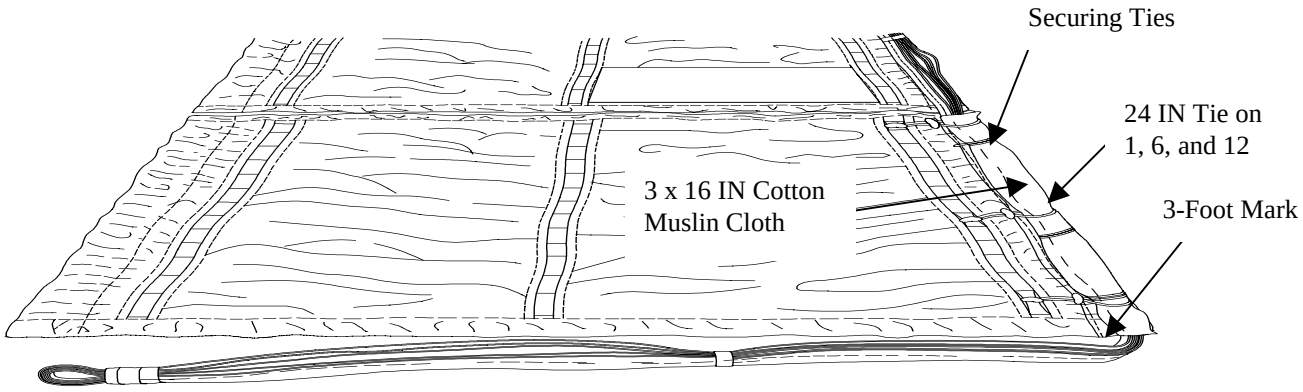

Figure 5. Extraction Line Secured to Bottom Panel.

d. Beginning at the upper left corner of bottom panel, make first S-fold/stow of extraction line and secure with previously installed type I, ¼-inch cotton webbing (figure 6).

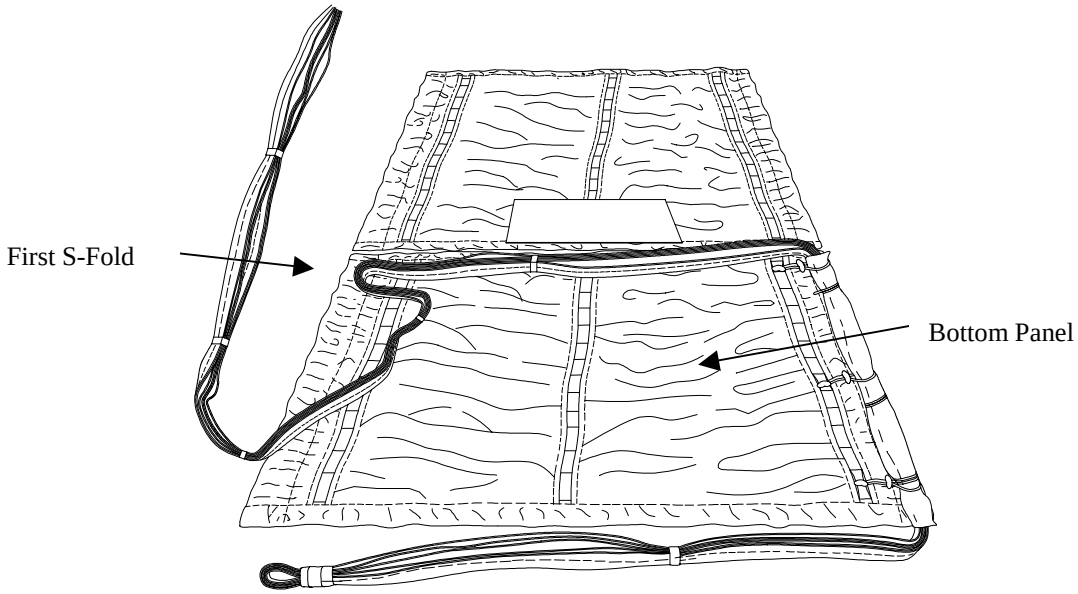

Figure 6. First S-Fold of Extraction Line.

NOTE

Stows must not extend beyond the edge of the panel.

e. Working from left to right, stow and secure extraction line on bottom panel (13 stows on the left and 13 on the right) with extraction line routed from bottom panel at lower left corner. Secure extraction line using type I, ¼-inch cotton webbing with a surgeon's knot and locking knot.
f. Run the extraction line up the left side of bottom panel. Wrap with second piece of cotton muslin cloth and secure in three places with two turns single, type I, ¼-inch cotton webbing, (same as the

right side). Ensure cotton muslin runs the entire length of the panel.

g. Secure the extraction line on the left side of bottom panel using one turn type I, ¼-inch cotton webbing (previously installed), on stow loops 1, 6, and 12 on the left side (figure 7).

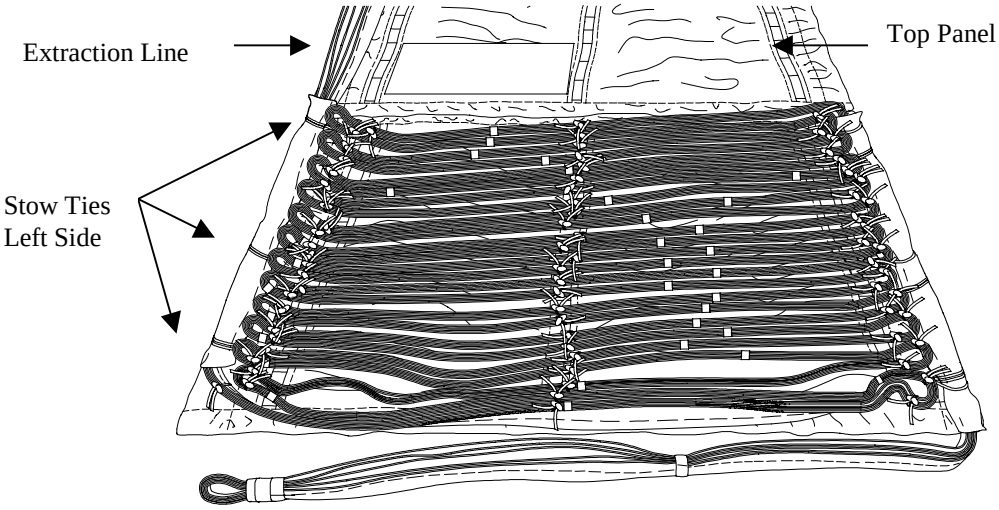

Figure 7. Extraction Line Stowed to Bottom Panel.

h. Route extraction line to the lower left side of the top panel. Make the first line tie on the bottom left corner of top panel. Make the second line tie on the bottom middle of the top panel and make the third line tie and the first regular stow on the bottom right corner of the top panel (figure 8).

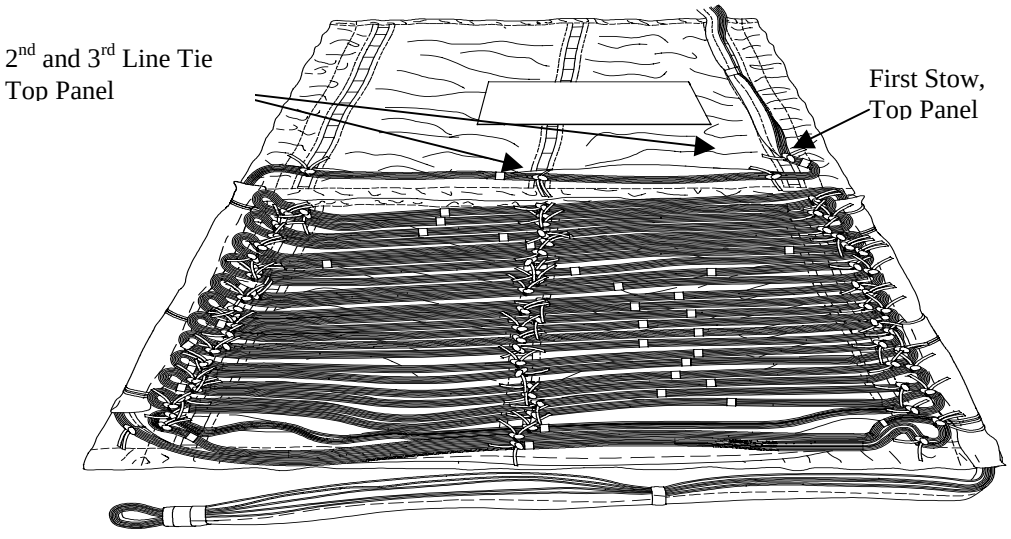

Figure 8. Extraction Line Tied to Top Panel with First Stow.

i. Working from left to right, stow and secure remaining extraction line. Make seven stows on the right side and five stows on the left side of the top panel. Make and secure extraction line stows with type I, ¼-inch cotton webbing making positive ties on the right, center and left stow loops.

j. Ensure that the running end of the extraction line extends approximately 16-18 feet from the top left corner of the top panel. Secure to 12th stow loop left side with one turn type I, ¼-inch cotton webbing (figure 9).

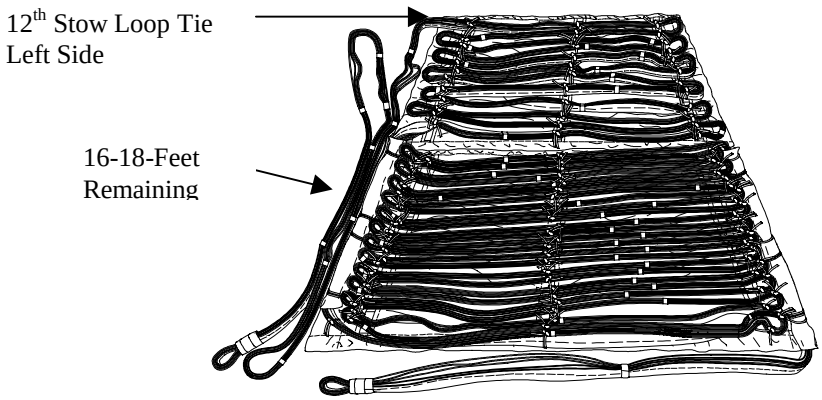

Figure 9. Extraction Line Stowed to Top Panel.

4. Close Extraction Line Bag.

a. Place a 36 x 38-inch sheet of kraft paper (line separator) on top of stowed extraction line of bottom panel (figure 10).

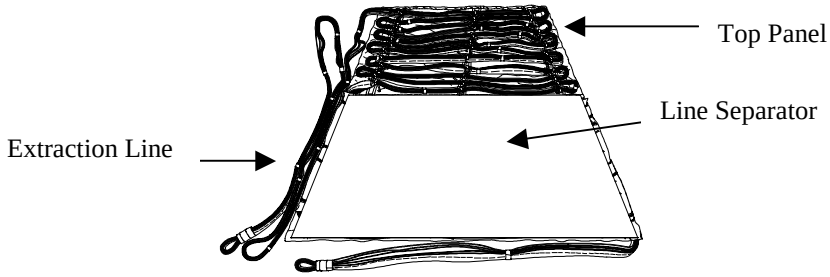

Figure 10. Line Separator in Place.

b. Fold top panel onto bottom panel and kraft paper (line separator). Align with upper edge of bottom panel.

NOTE

Insure extraction line stows do not shift out of position.

c. Cut one 95-inch length of ½-inch tubular nylon. Cut one 95-inch length and six 10-inch lengths of type I, ¼- inch cotton webbing to be used as bag closing ties.

d. Beginning at lower left corner of panels, secure one end of the 95-inch ½ inch tubular nylon bag closing tie to lacing loops located on outside corner of the top and bottom panels with three alternating half-hitches and an overhand knot in the running end.

e. Using running end of attached 95-inch closing tie, lace lower end of panels closed, working from bottom to top and left to right, forming half-hitches between closing loops. Secure end of closing tie with three alternating half hitches and an overhand knot in the running end. Trim excess (figure 11).

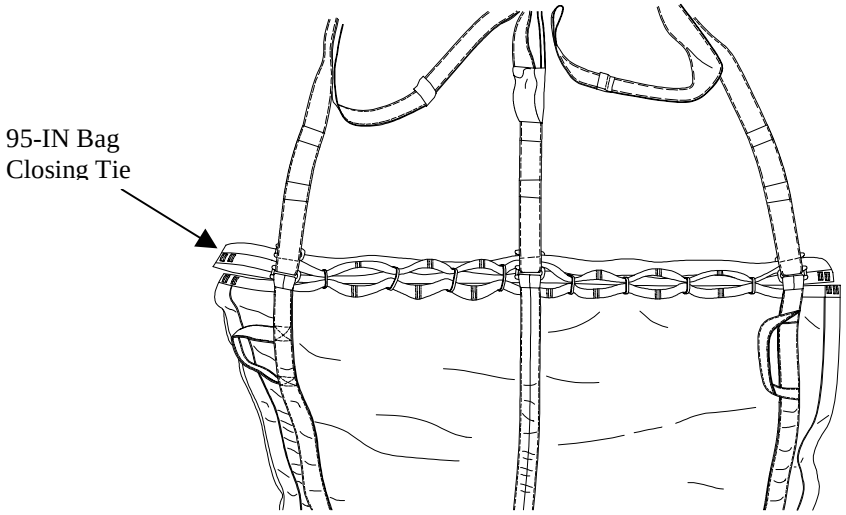

Figure 11. Extraction Line Bag Closed.

f. Secure top and bottom-closing loops together on left and right sides with six 10-inch bag closing ties. Secure ties with a surgeon's knot and locking knot.

g. Beginning at upper top center bridle attaching loops, pass one end of remaining 95-inch closing tie (temporary handling tie) through top center, bottom right, top right, bottom center, top left, bottom left and back through top center loops. Remove slack from tie and secure ends with a surgeon's knot and locking knot (figure 12).

NOTE

Temporary handling tie is for handling and transport only. Remove aboard the aircraft.

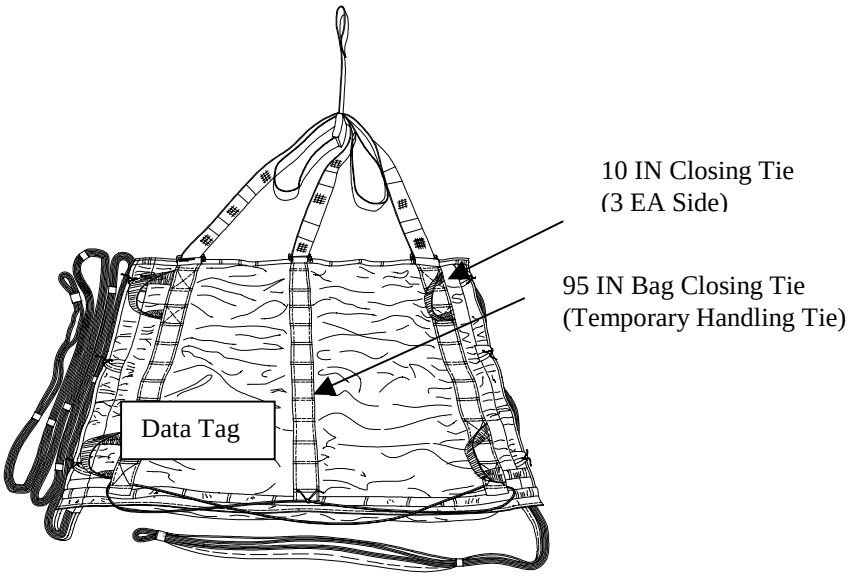

Figure 12. Temporary Handling Tie.

h. Fold and secure running ends of extraction line to carrying handles using a suitable length of type I, ¼-inch cotton webbing.

i. Attach a data tag to completed Extraction Line Bag. Data tag will identify the person who stowed it, date stowed, length, and the number of loops.

5. Secure Parachute.

a. Place a single 22-foot extraction parachute on top of Extraction Line Bag, centered, with parachute deployment bag V-rings facing up.

b. Align parachute deployment bag bridle with edge of bridle end on Extraction Line Bag.

c. Cut four 36-inch lengths of type I, ¼-inch cotton webbing, fold in half, and girth-hitch a length to each bottom-securing loop on parachute deployment bag.

d. Pass the running ends of each tie through carrying handle of top Extraction Line Panel. Secure each tie to the bottom-carrying handles with alternating half-hitches (figure 13).

6. Attach Extraction Bridle to Parachute Deployment Bag Bridle Straps.

a. Disassemble two of the previously installed connector links tied to parachute bridle straps.

CAUTION

Ensure that the connector links are not routed through the bridle loop of the parachute.

b. Using connector link, attach parachute attaching webs to parachute deployment bag bridle strap and reassemble connector links.

c. Fold the remaining bridle of the parachute attaching web and tape it to center extraction bridle (figure 13).

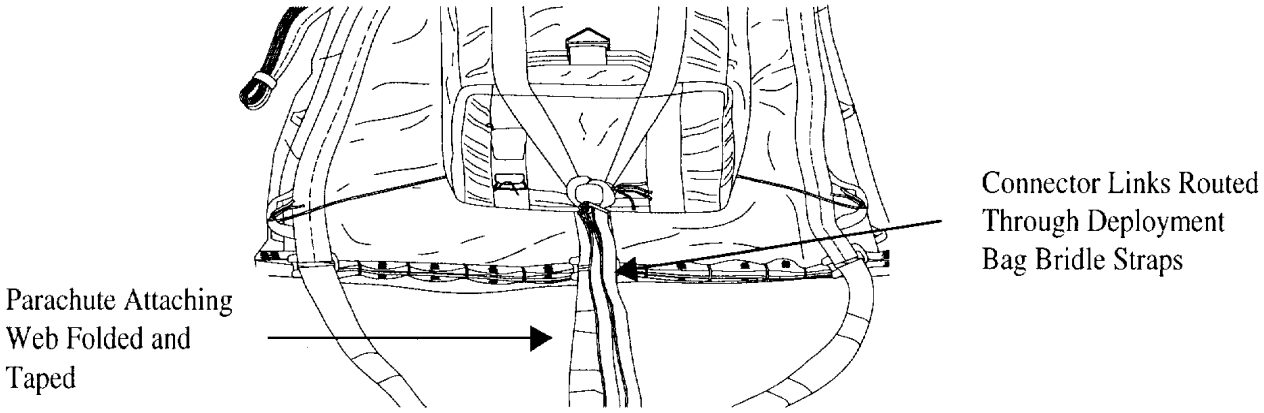

Figure 13. Breakcord and Bridle Attached to the Parachute.

7. Replace Breakcord Tie.

a. Remove the temporary canopy breakcord tie installed during packing of parachute.

b. Cut an 18-inch length of type I, ¼-inch cotton webbing for use in replacing the canopy breakcord tie.

c. Route the type I, ¼-inch cotton webbing one turn double, through canopy bridle loop, around deployment bag bridle straps and through both connector link. Secure tie with a surgeon's knot, and locking knot (figure 14).

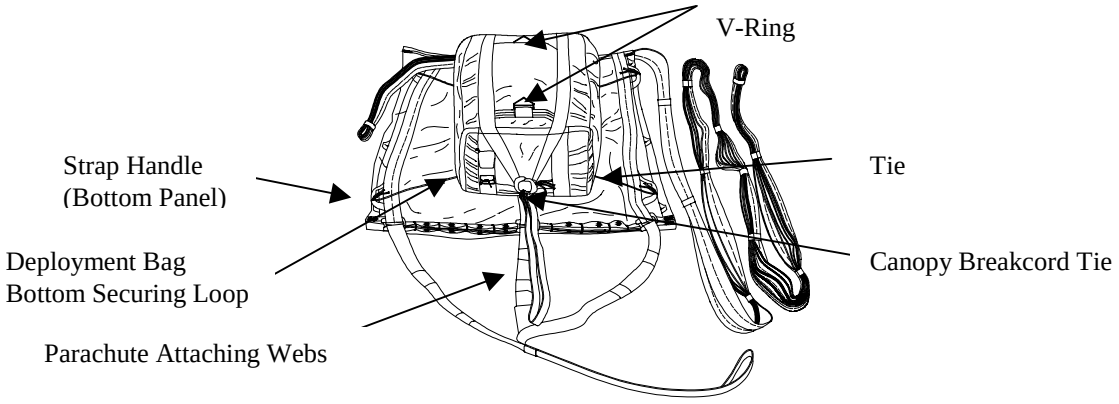

Figure 14. 22' Extraction Parachute Secured to Extraction Line Bag.

8. Install Lanyard and Safety Ties.

NOTE

Install Deployment Bag Figure Eight Safety Tie IAW WP 0012 00.

a. Cut a 60-inch length of ½-inch tubular nylon used as a parachute deployment bag cutter knife lanyard.

CAUTION

The cutter knife lanyard must be adjusted to ensure it is 2 inches shorter than the parachute adapter web, measure from the point where the adapter web exists the parachute deployment bag at the figure eight tie, to where the adapter web attaches to the two-point link.

b. Using a 3 ¾-inch two-point link, connect the parachute adapter web to the extraction line. Fold the ½-inch tubular nylon in half and girth-hitch through the cutter knife. Extend lanyard and attach to the middle of the top plate of the two-point link.

c. Secure ends of tie with three alternating half hitches and an overhand knot in running ends. Trim off excess and tape (figure 15).

d. Tape the bolts of the ¾-inch 2-point link using a suitable length of 2-inch pressure sensitive adhesive tape.

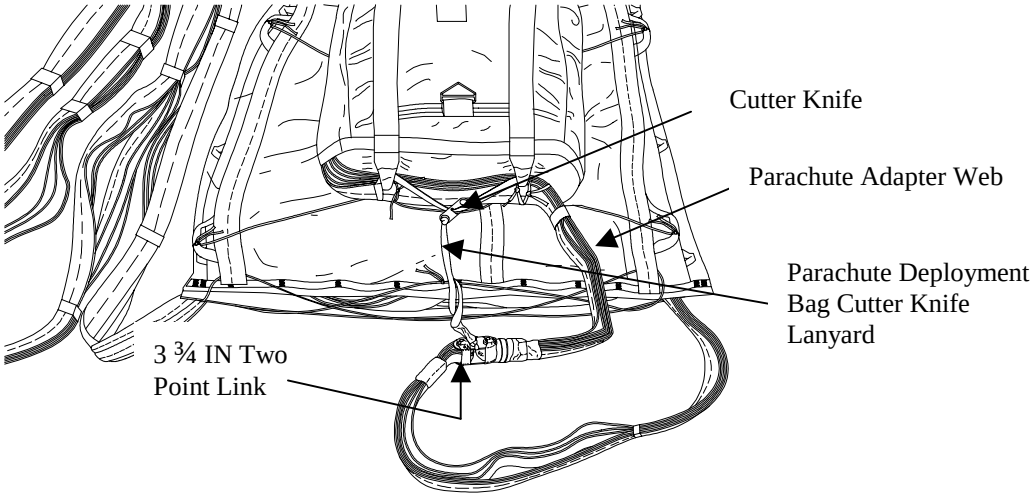

Figure 15. Extraction Parachute Attached to Extraction Line.

e. Cut two 24-inch lengths of type III nylon cord to be used as a two-point link break cord tie.

f. Safety the two-point link to the bag closing loops (centered between bag closing loops) with the two lengths of type III nylon cord. Pass one length around adapter web attaching bolt on the two-point link and through top left bag-closing loop. Pass the second length around the adapter web attaching bolt on the two-point link and through top right bag closing loop. Secure with surgeon's knot, locking knot, and an overhand knot in the running end (figure 16).

g. Cut a 24-inch length of ¼-inch cotton webbing, double it and secure extraction line to top right deployment bag tie loop (figure 16).

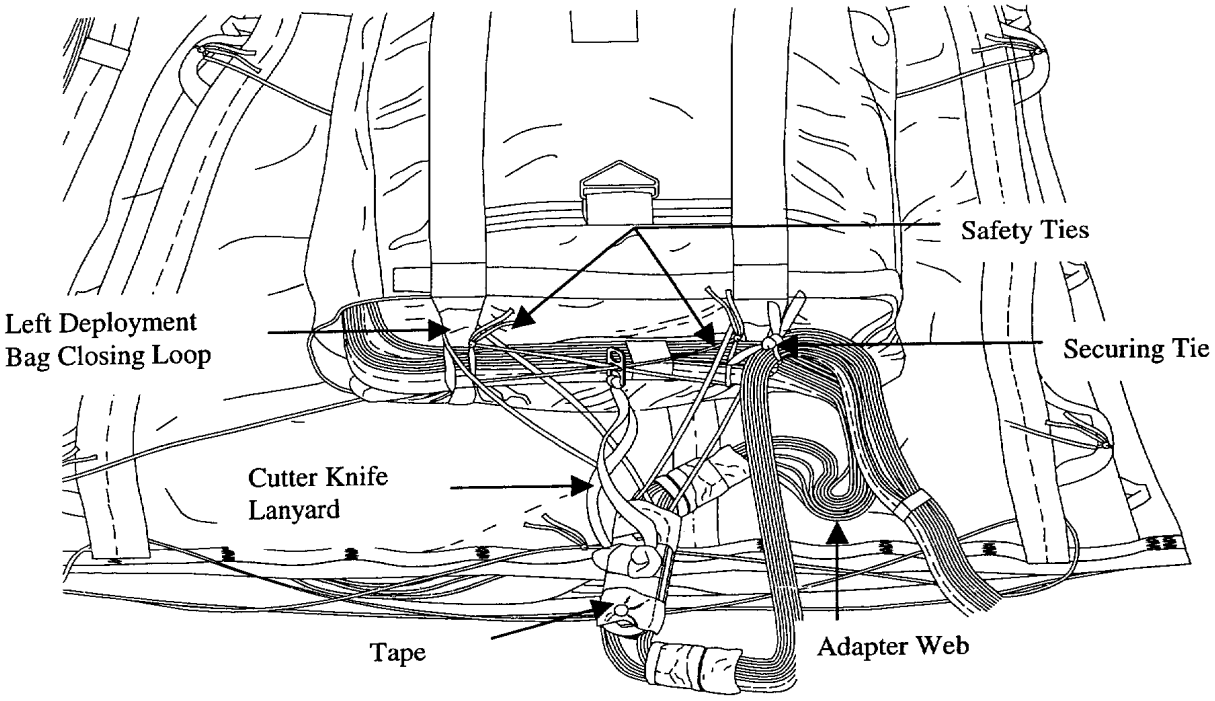

Figure 16. Safety Ties Installed.

END OF WORK PACKAGE

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EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0017 00**
ATTACHING THE 28-FOOT EXTRACTION PARACHUTE TO THE 140-FOOT, THREE LOOP EXTRACTION LINE AND EXTRACTION LINE BAG

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife - NSN 5110-00-162-2205
Wrench Comb, 1 7/16-Inch – NSN 5120-00-228-9519
Wrench Comb, 1 1/2-Inch – NSN 5120-00-277-8834

Materials Parts

Parachute, 28-Foot Dia. – NSN 1670-00-040-8135
Link, Connector, Parachute – NSN 1670-00-217-2421
Side Plates, 5½-Inch – NSN 1670-00-003-1954 Spacers, Large – NSN 5365-00-007-3414
Bolts – NSN 5305-00-435-8994
Nuts – NSN 5310-00-232-5165
Webbing, Nylon, Tubular - Item 16, Appendix C
Webbing, Cotton, Type I - Item 15, Appendix C
Tape, Pressure Sensitive, Adhesive, 2-Inch – Wide, Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-4	Extraction Line Panel
WP 0003 00	Service and Repair
WP 0012 00	Figure Eight Tie
TM 10-1670-277-23&P	28-Ft Extraction Parachute

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate directions, as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end. When two Extraction Line Panels are laced together, the item then takes the noun nomenclature of <u>Extraction Line Bag</u>.

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0017 00**
ATTACHING THE 28-FOOT EXTRACTION PARACHUTE TO THE 140-FOOT, THREE LOOP EXTRACTION LINE AND EXTRACTION LINE BAG

1. Secure Parachute.

   a. Place a single 28-foot extraction parachute on top of Extraction Line Bag, centered, with parachute deployment bag V-rings facing up.

   b. Align parachute deployment bag bridle with edge of bridle end on Extraction Line Bag.

   c. Cut four 36-inch lengths of type I, ¼-inch cotton webbing, fold in half, and girth-hitch a length to each bottom-securing loop on parachute deployment bag.

   d. Pass the running ends of each tie through carrying handle of top Extraction Line Panel. Secure each tie to the bottom-carrying handle with alternating half hitches (figure 1).

2. Attach Extraction Bridle to Parachute Deployment Bag Bridle Straps.

   a. Disassemble two of the previously installed connector links tied to parachute bridle straps.

CAUTION

Ensure that the connector links are not routed through the bridle loop of the parachute.

   b. Using connector links, attach parachute-attaching webs to parachute deployment bag bridle strap and reassemble connector links.

   c. Fold the remaining bridle (parachute) attaching webs and tape it to center extraction bridle (figure 1).

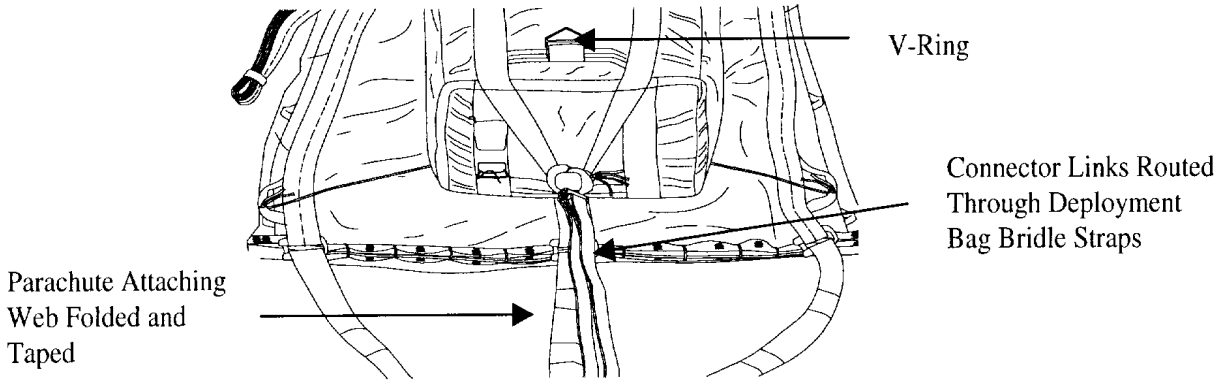

Figure 1. Breakcord and Bridle Attached to the Parachute.

3. Replace Breakcord Tie.

a. Slide safety loop from bent V-Ring and fold under the deployment bag. Run pendulum line under the deployment bag and through the safety loop. Tie through the pendulum line attachment loop with alternating half hitches and tape.

b. Remove the temporary canopy breakcord tie installed during packing of the parachute.

c. Cut an 18-inch length of type III nylon cord for use in replacing canopy breakcord tie.

d. Route the type III nylon cord one turn single, through canopy bridle loop, around deployment bag bridle loop straps and through connector link. Secure tie with a surgeon's knot, locking knot and overhand knot in running end (figure 2).

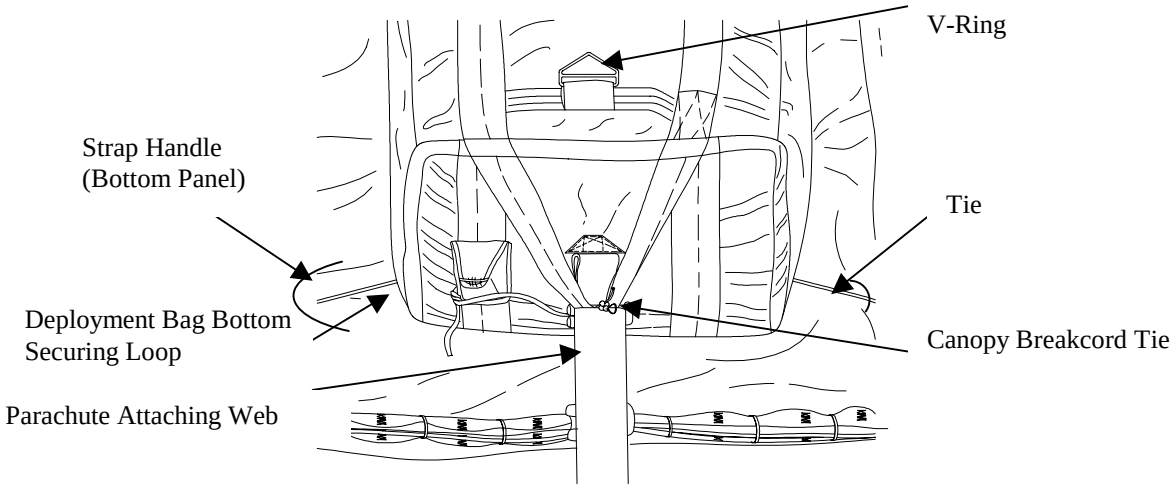

Figure 2. 28' Extraction Parachute Secured to Extraction Line Bag.

4. Install Lanyard and Safety Ties.

NOTE

Install Deployment Bag Figure Eight Safety Tie IAW WP 0012 00.

a. Cut a 60-inch length of ½-inch tubular nylon to be used as a parachute deployment bag cutter knife lanyard.

CAUTION

The cutter knife lanyard must be adjusted to ensure that it is 2-inches shorter than the parachute adapter web, measured from the point where the adapter web exits the parachute deployment bag at the figure eight tie, to where the adapter web attaches to the two-point link.

b. Using a 5 ½-inch two-point link, connect the parachute adapter web to the extraction line. Fold ½-inch tubular nylon in half and girth-hitch through the cutter knife, extend lanyard and attach to the middle of the top plate of the two-point link.

c. Secure ends of tie with three alternating half hitches and an overhand knot in the running ends. Trim off excess and tape (figure 3).

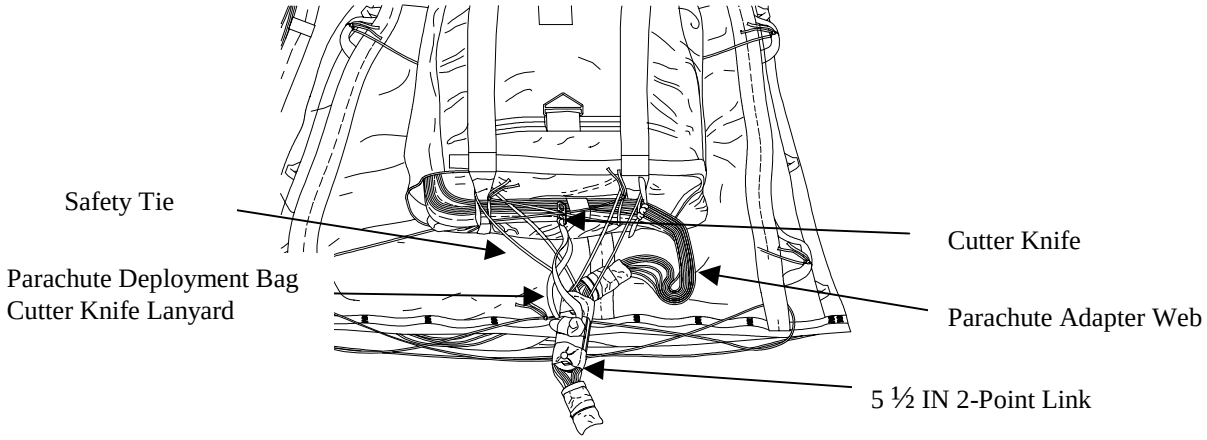

Figure 3. Extraction Parachute Attached to Extraction Line.

d. Tape the bolts of the 5 ½ -inch 2-point link with a suitable length of pressure sensitive adhesive tape.

e. Cut two 24-inch lengths of type III nylon cord to be used as a two-point link break cord tie.

f. Safety the two-point link to the bag closing loops (centered between the bag closing loops) with the two lengths of type III nylon cord. Pass one length around adapter web attaching bolt on the two-point link and through top left bag-closing loop. Pass the second length around the adapter web attaching bolt on the two-point link and through top right bag closing loop. Secure with surgeon's knot, locking knot, and an overhand knot in the running end (figure 4).

g. Cut a 24-inch length of type I, ¼-inch cotton webbing, double and secure extraction line to top right deployment bag tie loop (figure 4).

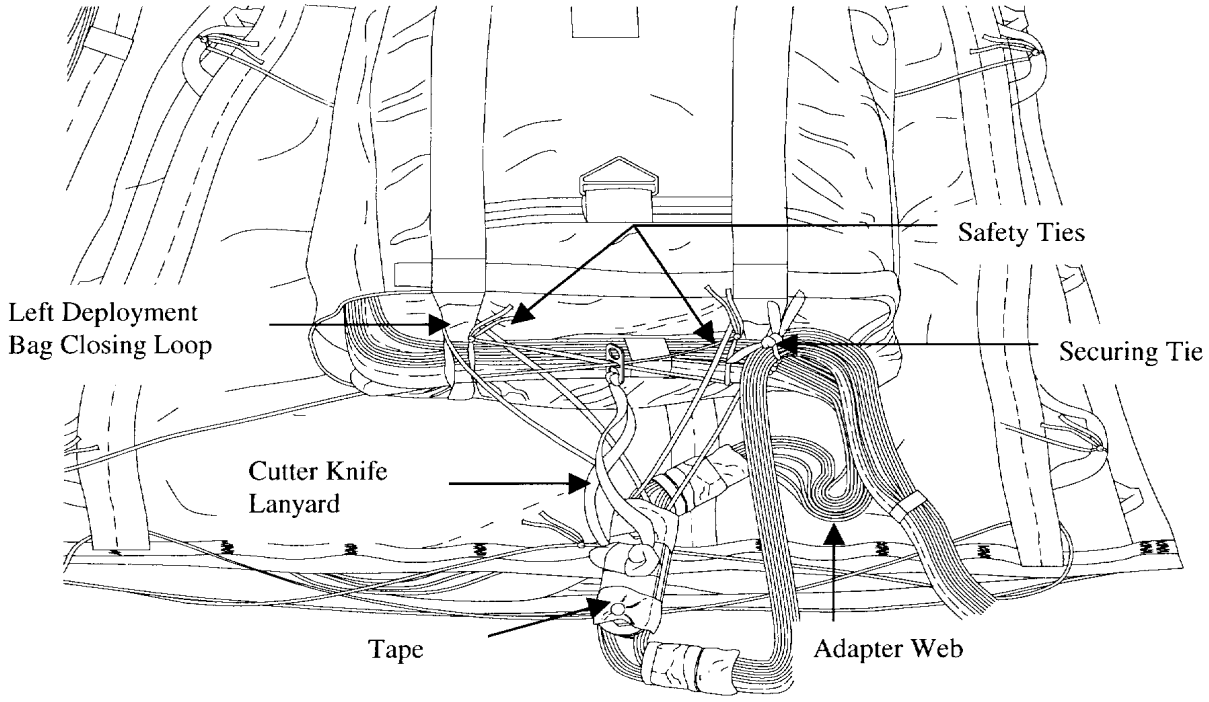

Figure 4. Safety Ties Installed.

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EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0018 00**
STOWING 120/140-FOOT SIX LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL WITH EXTRACTION LINE BRIDLE ATTACHED

THIS SECTION COVERS:
Stowing

INITIAL SETUP

Tools

Knife- NSN 5110-00-162-2205
Wrench Comb, 1 7/16-Inch – NSN 5120-00-228-9519
Wrench Comb, 1 1/2-Inch – NSN 5120-00-277-8834

Materials/Parts

Parachute, 28-Foot Dia. – NSN 1670-00-040-8135
Extraction Line Panel - NSN 1670-01-183-2678
Extraction Line, 140-FT 6 Loop - NSN 1670-01-468-9178
Extraction Line, 120-FT 6 Loop - NSN 1670-01-062-6312
Extraction Bridle - NSN 1670-01-335-6054
Four Point Link - NSN 1670-00-006-2752
Cloth, Cotton-Muslin - Item 4, Appendix C
Webbing, Nylon, Tubular - Item 16, Appendix C
Kraft Paper - Item 9, Appendix C
Webbing, Textile, Cotton Type I ¼-Inch - Item 15 Appendix C
Tape, Pressure Sensitive, Adhesive, 2-Inch – Wide, Item 17, Appendix C

Personnel Required

92R (10) Parachute Rigger

Equipment Condition

All equipment shall be serviceable and ready for use.

References

WP 0002 00-4	Extraction Line Panel
WP 0003 00	Service and Repair
TM 10-1670-277-23&P	28-Ft Extraction Parachute
TM 10-1670-296-20&P	Extraction Line

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III **0018 00**
STOWING 120/140-FOOT SIX LOOP EXTRACTION LINE TO EXTRACTION LINE PANEL WITH EXTRACTION LINE BRIDLE ATTACHED

STOWING

NOTE

Throughout this task the terms Right, Left, Upper, Lower, Clockwise, Counterclockwise, Top and Bottom indicate directions as viewed by the Rigger, standing at the Tension Board end of a parachute pack table looking toward the apex end. When two Extraction Line Panels are laced together, the item then takes the noun nomenclature of Extraction Line Bag.

Use the same procedures to stow the 120 FT as the 140 FT Line Bag. There will be two less stows with the 120 FT Line Bag.

1. Attach Extraction Bridle to Extraction Line Panels.

a. Place one Extraction Line Panel on packing table or other suitable surface with stow loops facing up and running lengthwise. Place second panel on top of first panel with stow loops facing down (figure 1).

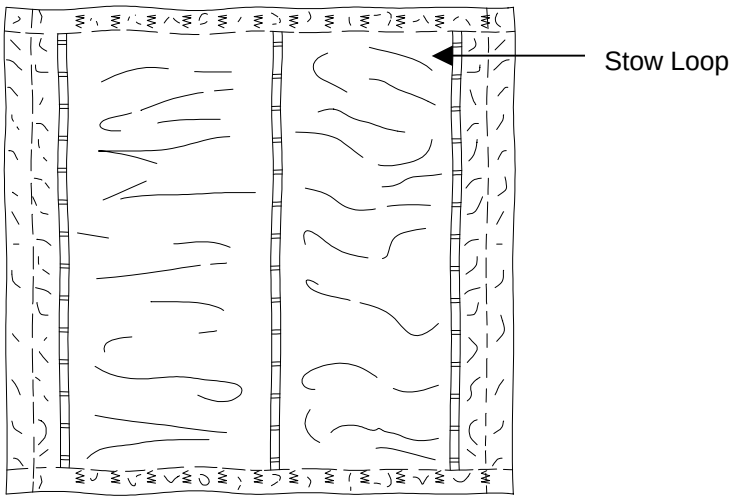

Figure 1. Extraction Line Panel with Stow Loops Facing Up.

b. Using nine connector links, attach six to the double end webs of extraction bridle-to-bridle attachment loops located on upper end of each panel. Attach three connector links to parachute attaching webs of extraction bridle (figure 2).

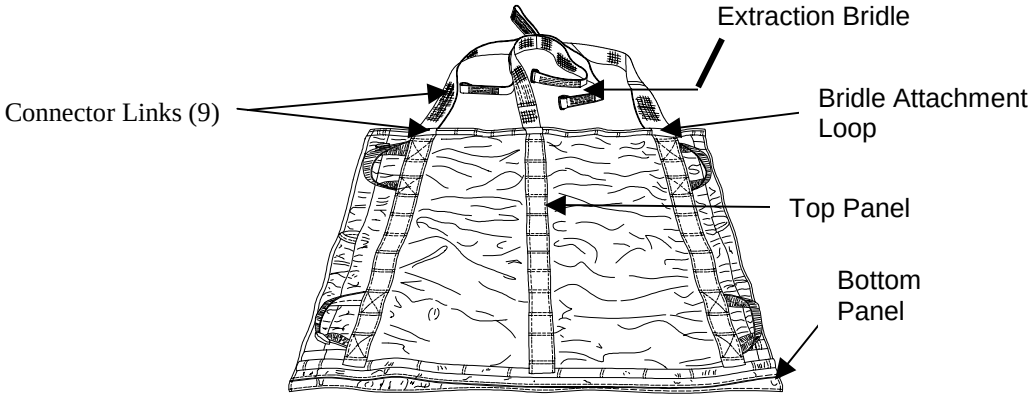

Figure 2. Extraction Bridle Attached to Two Extraction Line Panels.

2. Layout.

a. Position Extraction Line Panels on the packing table or suitable surface with stow loops facing up and running lengthwise (figure 3).

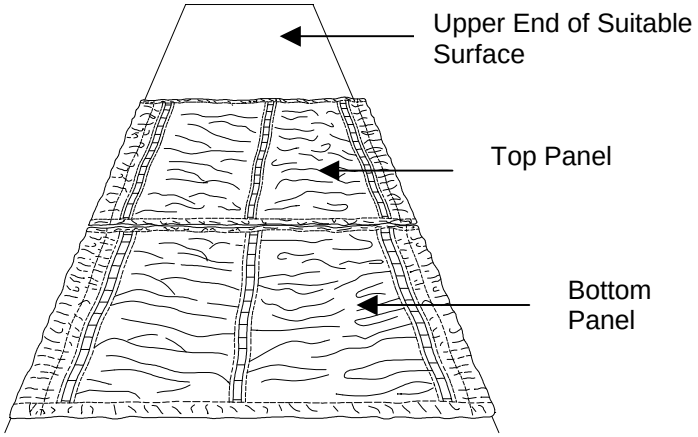

Figure 3. Layout of Two Panels for Stowing the 120/140-Foot Six Loop Extraction Line.

b. Cut 92 eighteen-inch lengths of type I, ¼-inch cotton webbing. Girth hitch 49 ties to the right, center and left row of stow loops on the bottom panel. Girth hitch 42 ties to top panel evenly spaced to the right, center and left row of stow loops.

c. Cut six 24-inch lengths of type I, ¼-inch cotton webbing. Girth hitch 3 ties to the left and right stow loop rows of the bottom panel using stow loops 1, 6, and 12 (figure 4).

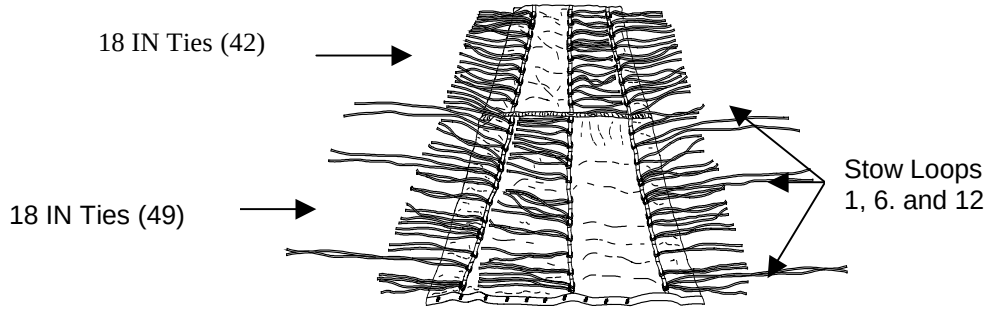

Figure 4. Extraction Line Bag with Ties Installed.

d. Cut two 36 x 16-inch pieces of cotton muslin cloth and five 36-inch lengths of type I, ¼-inch cotton webbing and position at the lower end of bottom panel.

e. Cut and lay aside a 36 x 38-inch sheet of kraft paper for use as a line separator.

f. Place a 140-foot six-loop extraction line at upper end of pack table.

g. Measure and mark a point on the extraction line 4-feet from one end (parachute attaching point).

h. Route marked end of extraction line from the upper end of panel to lower end along right row of stow loops aligning the 4-foot mark with the lower edge of panel.

3. Stow Extraction Line.

a. Wrap the extraction line with one piece of 36 x 16-inch cotton muslin cloth at a point immediately above the 4-foot mark on the extraction line. Ensure cotton muslin runs the entire length of the panel (figure 5).

b. Secure wrapped extraction line in 5 places with two turns single 36-inch lengths of type I, ¼-inch cotton webbing. Secure with a surgeon's knot and locking knot (figure 5).

CAUTION

The extraction line must be firmly secured to the panel to prevent slippage and damage during deployment.

c. Tie extraction line on right side of bottom panel with one turn 24-inch length of type I, ¼-inch cotton webbing with ties on stow loops 1, 6, and 12 on the right side. Secure with a surgeon's knot and locking knot (figure 5).

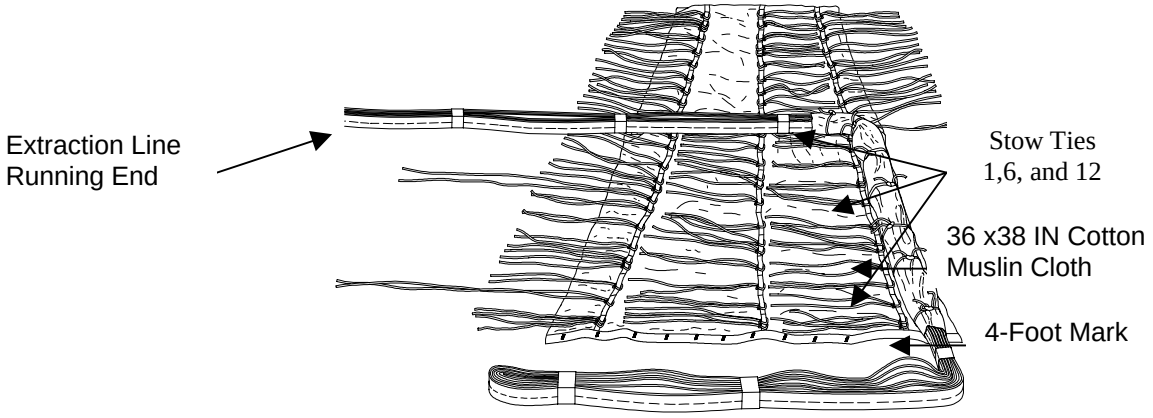

Figure 5. Extraction Line Secured to Bottom Panel.

d. Beginning at upper left corner of bottom panel, make first S-fold/stow of extraction line and secure with previously installed type I, ¼-inch cotton webbing (figure 6).

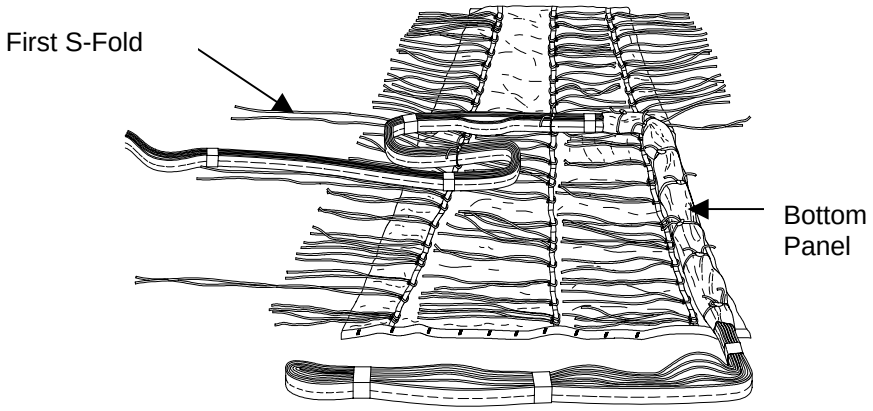

Figure 6. First S-Fold of Extraction Line.

e. Working from left to right, stow and secure extraction line on the bottom panel (8 stows on the left and 8 on the right) with extraction line routed from bottom panel at lower left corner. Secure extraction line using the type I, ¼-inch cotton webbing with a surgeon's knot and locking knot (figure 7).

NOTE

Stows must not extend beyond the edge of the panel.

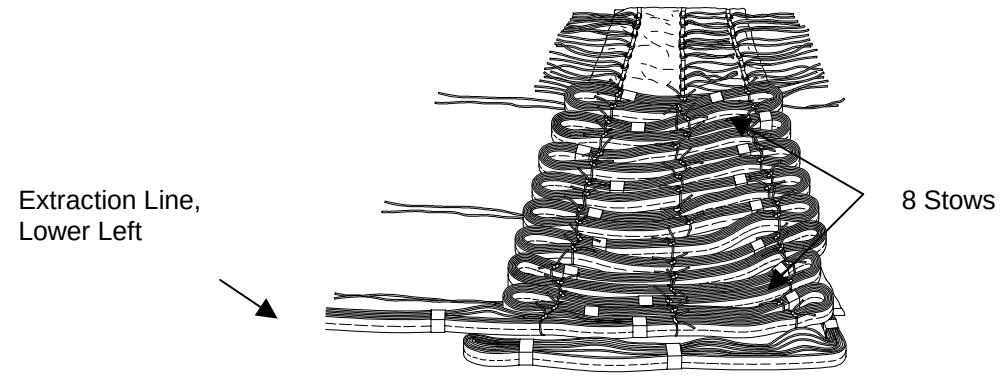

Figure 7. Extraction Line Stowed to Bottom Panel.

f. Run the extraction line up the left side of bottom panel. Wrap the extraction line with second piece of cotton muslin cloth and secure in five places with two turns single type I, ¼-inch cotton webbing (same as the right side).

g. Secure the extraction line on the left side of bottom panel using one turn type I, ¼-inch cotton webbing (previously installed), on stow loops 1, 6, and 12 on the left side.

h. Route extraction line to the lower left side of the top panel. Make first line tie in bottom left corner of top panel (figure 8).

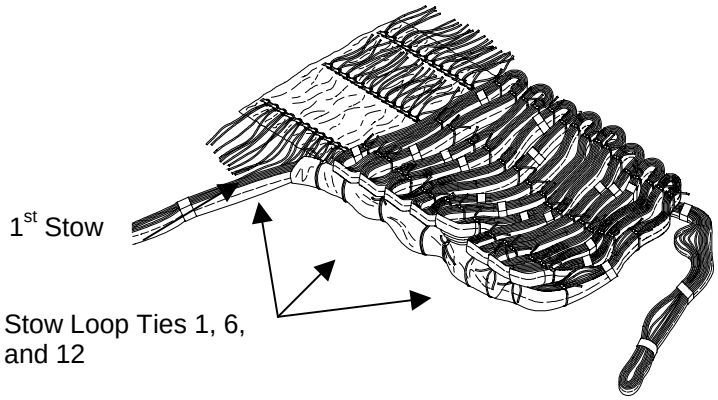

Figure 8. Extraction Line Routed to Left Side of Bottom Panel.

i. Working from left to right, stow and secure remaining extraction line. Make seven stows on the right side and six stows on the left side of the top panel. Secure extraction line stows with type I, ¼-inch cotton webbing making positive ties on the right, center, and left stow loops.

j. Ensure that the running end of the extraction line extends approximately 20-feet from the top left corner of the top panel. Secure to stow loop on the left side with one turn, type I, ¼-inch cotton webbing (figure 9).

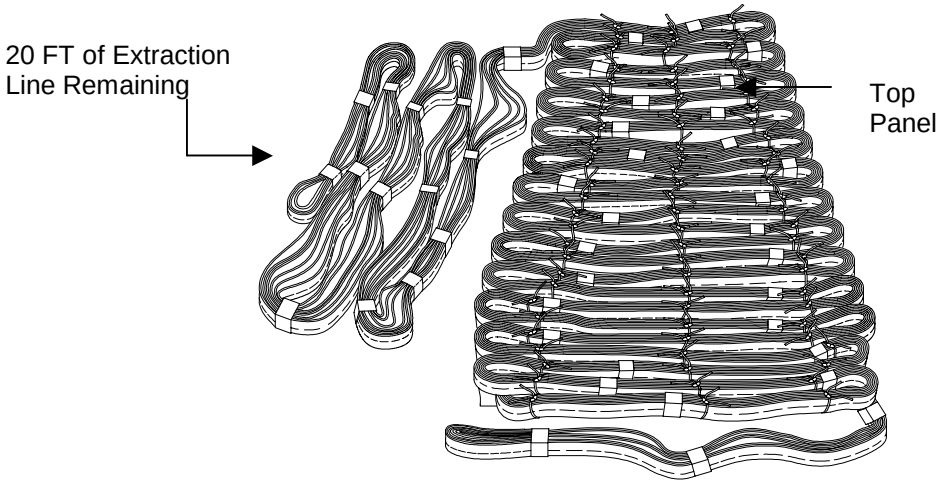

Figure 9. Extraction Line Stowed to Top Panel.

4. Close Extraction Line Bag.

a. Place a 36 x 38-inch sheet of kraft paper (line separator) on top of stowed extraction line of bottom panel (figure 10).

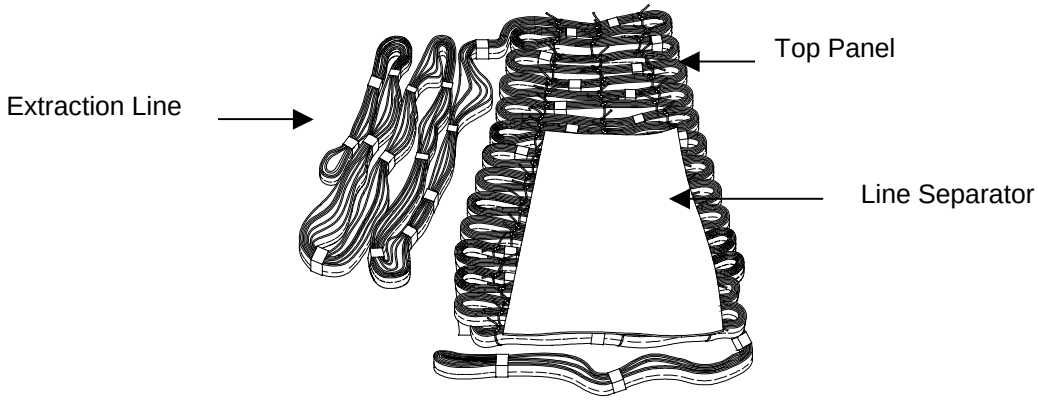

Figure 10. Line Separator in Place.

b. Fold top panel onto bottom panel and kraft paper (line separator). Align with upper edge of bottom panel.

NOTE

Ensure that the extraction line stows do not shift out of position.

c. Cut one 95-inch length of ½-inch tubular nylon. Cut one 95-inch length and six 10-inch lengths of type I, ¼-inch cotton webbing to be used as bag closing ties.

d. Beginning at lower left corner of panels, secure one end of the 95-inch ½-inch tubular nylon Bag-closing tie to lacing loops located on the outside corner of the top and bottom panels with three alternating half hitches and an overhand knot in the running end.

e. Using running end of attached 95-inch ½-inch tubular nylon bag closing ties, lace lower end of panels closed, working from bottom to top and left to right forming half hitches between closing loops. Secure end of closing tie with three alternating half hitches and a knot in the running end. Trim off excess.

f. Secure top and bottom closing loops together on left and right sides with six 10-inch bag closing ties. Secure ties with surgeon's knot and locking knot (figure 11).

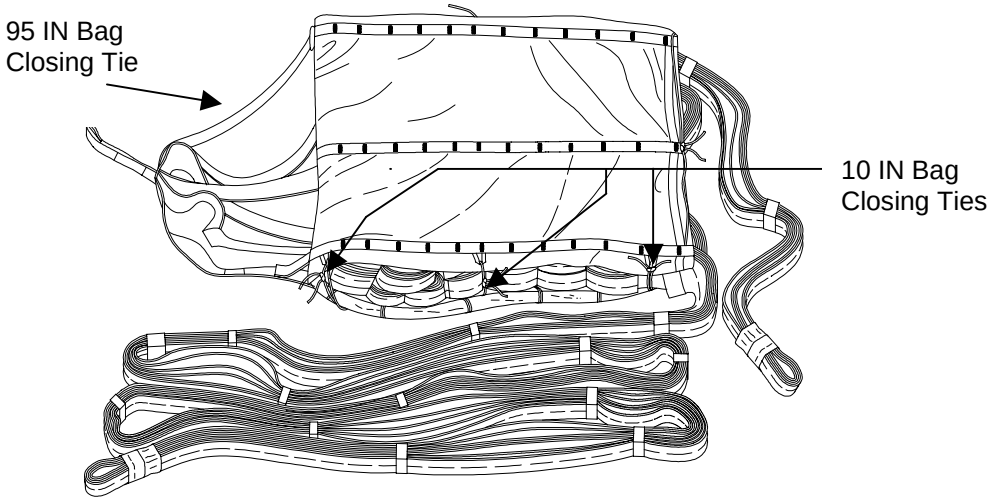

Figure 11. Extraction Line Bag Closed.

g. Beginning at upper top center bridle attaching loops, pass one end of remaining 95-inch type I, ¼-inch cotton webbing bag closing tie (temporary handling tie) through top center, bottom right, top right, bottom center, top left, bottom left and back through top center loops. Remove slack from tie and secure ends with surgeon's knot and locking knot (figure 12).

NOTE

This tie is for handling and transport only. Remove aboard aircraft.

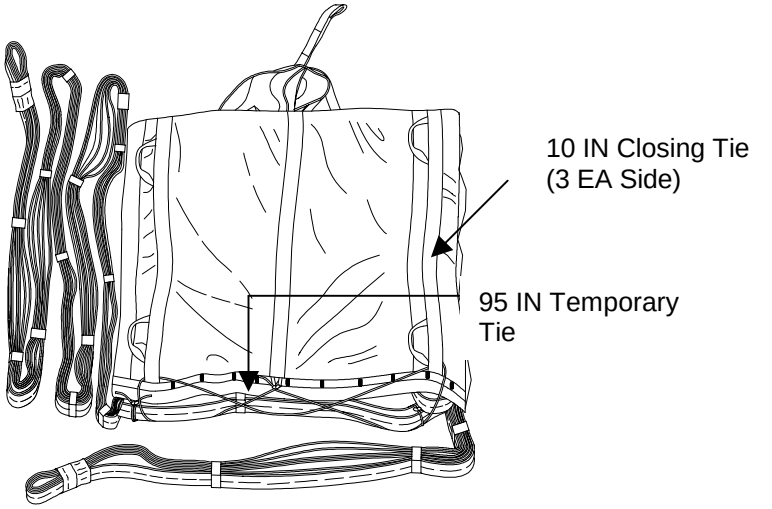

Figure 12. Temporary Handling Tie.

h. Fold and secure running ends of extraction line to carrying handles using type I, ¼-inch cotton webbing.

i. Attach a data tag to completed Extraction Line Bag. Data tag will identify the person who stowed it, date stowed, length, and the number of loops.

5. Secure Parachute.

a. Place two 28-foot extraction parachutes on top of Extraction Line Bag centered, with parachute deployment bag V-rings side facing up.

b. Align parachute deployment bag bridle with edge of bridle end on Extraction Line Bag.

c. Cut four 24-inch lengths of type III nylon cord, used to secure the two parachutes together.

d. Pass the type III nylon cord, one turn single, through the parachute deployment bag inside tie loops at the top, bottom, front, and rear. Secure tie with surgeon's knot and locking knot and an overhand knot in the running end.

e. Cut four 36-inch lengths of type I, ¼ inch cotton webbing, fold in half and girth-hitch a length to each bottom tie loop on the parachute deployment bag.

f. Pass the running ends of each tie through strap handle of top Extraction Line Panel. Secure each tie to bottom strap handle with alternating half hitches (figure 13).

6. Attach Extraction Bridle to Deployment Bag Bridle Straps.

a. Disassemble two of the previous installed connector links tied to the parachute bridle straps.

CAUTION

Ensure that the connector links are not routed through the bridle loop of the parachute.

b. Using connector link, attach the parachute attaching webs to parachute deployment bag bridle strap and reassemble connector (figure 13).

c. Fold the remaining bridle to the parachute attaching web and tape it to center extraction bridle (figure 13).

7. Replace Breakcord Tie.

a. Slide safety loop from bent V-ring and fold under the deployment bag. Run pendulum line under the deployment bag and through the safety loop. Tie to the pendulum line attachment loop with alternating half hitches and tape.

b. Remove the temporary canopy breakcord tie installed during packing of parachute.

c. Cut an 18-inch length of type III nylon cord for replacing canopy breakcord tie.

d. Route the type III nylon cord through the canopy bridle loop, around deployment bag bridle loop straps and through connector link. Secure tie with surgeon's knot, locking knot, and an overhand knot in the running ends (figure 13).

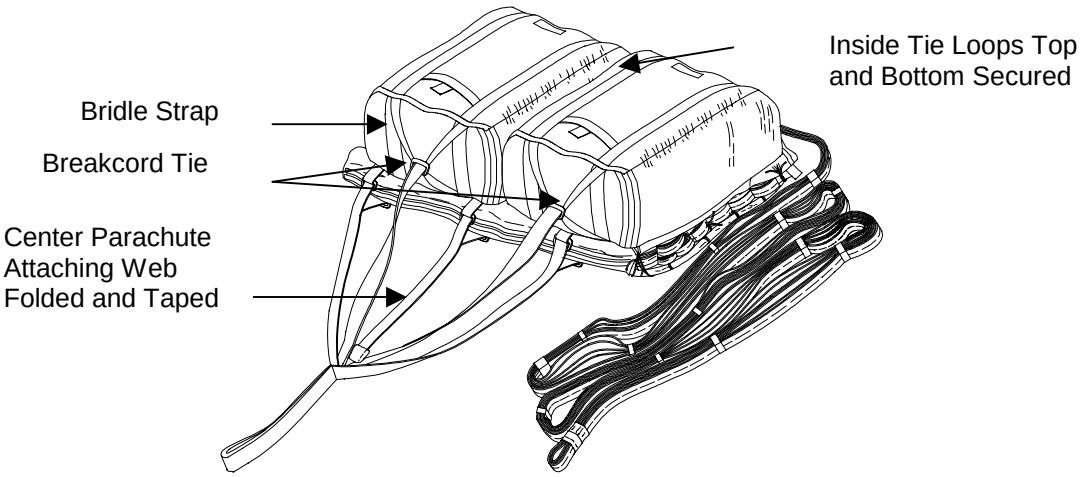

Figure 13. Two 28-Foot Extraction Parachutes Secured to Extraction Line Bag/Bridle Attached.

8. Install Lanyard and Safety Ties.

NOTE

Install Deployment Bag Figure Eight Safety Tie IAW WP 0012 00.

a. Cut two 60-inch lengths of ½-inch tubular nylon to be used as a parachute deployment bag cutter knife lanyards.

CAUTION

The cutter knife lanyard must be adjusted to ensure that it is 2-inches shorter than the parachute adapter web, measured from the point where the adapter web exits the parachute deployment bag at the figure eight tie, to where the adapter web attaches to the four-point link.

b. Fold ½-inch tubular nylon in half and girth-hitch to the left cutter knife, extend lanyard and tie it to the left bolt of the four-point link. Secure ends of tie with three alternating half hitches and an overhand knot in the running ends. Trim off excess and tape. Repeat this procedure for the right side (figure 14).

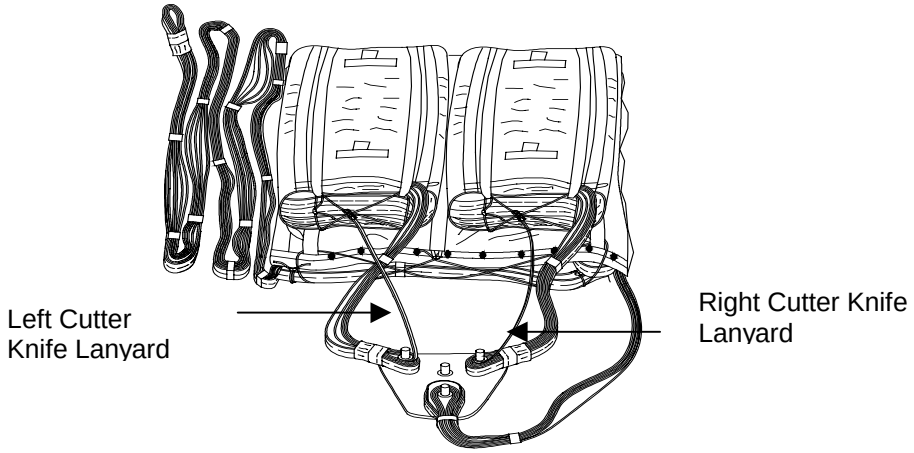

Figure 14. Lanyards Installed.

c. Cut two 24-inch lengths of ½ tubular nylon webbing.

d. Use four-point link to connect parachute adapter webs to the extraction line. Pass one length of ½-inch tubular nylon around the left bolt on the four-point link and through top left bag-losing loop. Take second length around the right attaching bolt on the four-point link and through the top right bag-closing loop. Secure ends with surgeons knot, locking knot and an overhand knot in the running end (figure 15).

e. Use a 24-inch length of type I, ¼-inch cotton webbing doubled to secure excess extraction line to the deployment bag tie loops, if necessary.

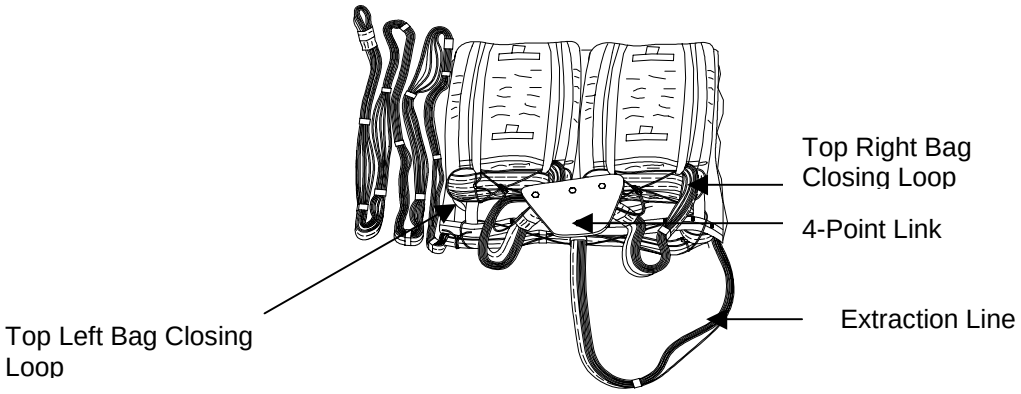

Figure 15. Safety Ties Installed.

END OF WORK PACKAGE

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III PREPARATION FOR STORAGE AND SHIPMENT **0019 00**

ADMINISTRATIVE STORAGE.

Storage Criteria. Administrative storage of airdrop equipment will be accomplished in accordance with TM 740-90-1, AR 750-1, and the instructions furnished below.

General Storage Requirements. To insure that serviceability standards of stored airdrop equipment are maintained, every effort will be exerted to adhere to the following storage requirements:

When available, a heated building should be used to store parachutes and other airdrop items.

Airdrop equipment will be stored in a dry, well-ventilated location and protected from pilferage, dampness, fire, dirt, insects, rodents, and direct sunlight.

Airdrop equipment will not be stored in a manner, which would prevent ventilation or interfere with light fixtures, heating vents, fire fighting devices, cooling units, exits, or fire doors.

Airdrop items will not be stored in a damaged, dirty, or damp condition.

All stored airdrop items will be marked, segregated, and located for accessibility and easy identification.

Airdrop equipment will not be stored in direct contact with any building floor or wall. Storage will be accomplished using bins, shelves, pallets, racks, or dunnage to provide airspace between the storage area floor and the equipment. If pre-constructed shelving or similar storage accommodations are not available, locally fabricate storage provisions using suitable lumber or wooden boxes.

All available materials handling equipment should be used as much as possible in the handling of airdrop items.

Periodic rotation of stock, conversion of available space, proper housekeeping policies and strict adherence to all safety regulations will be practiced at all times.

SHIPMENT.

Initial Shipment. The initial packaging and shipping of airdrop equipment is the responsibility of item manufacturers who are required to comply with federal and military packing specifications as stipulated in contractual agreements. Airdrop equipment is normally shipped to depot activities by domestic freight or parcel post, packaged to comply with overseas shipping requirements. Except for those airdrop items, which are unpacked and subjected to random inspections or testing by a depot activity, airdrop equipment received by a using unit will be contained in original packaging materials.

EXTRACTION LINE PANEL PROCEDURES FOR C-17 GLOBEMASTER III PREPARATION FOR STORAGE AND SHIPMENT **0019 00**

Shipping Between Maintenance Activities. The shipping of airdrop equipment between organizational and direct support maintenance activities will be accomplished on a signature verification basis using whatever means of available transportation. Used parachutes and other fabric items will be tagged in accordance with TB 750-126, and rolled, folded or placed loosely in a parachute pack, deployment bag, or other suitable container, as required. Used wood and metal airdrop items will be tagged as prescribed in TB 750-126 and placed into a suitable type container, if necessary. Used airdrop equipment will be transported in the original shipping containers. During shipment, every effort will be made to protect airdrop items from weather elements, dust, dirt, oil, grease, and acids. Vehicles used to transport parachutes will be inspected to insure the items are protected from the previously cited material damaging conditions.

Other Shipping Instructions. Airdrop equipment destined for domestic or overseas shipment will be packaged and marked in accordance with AR 700-15, TM 38-230-1, and TM 38-230-2. Shipment of airdrop items will be accomplished in accordance with AR 55-45.

END OF WORK PACKAGE

APPENDIX A

PUBLICATION INDEX

The following publication index should be consulted frequently for the latest changes or revisions of reference given in this appendix and for new publications relating to the materiel covered in this manual.

DA Pam 25-30	Consolidated Index of Army Publications and Blank Forms

A-2. Technical Manuals

TM 10-1670 Series	General Maintenance of Parachutes and Other Airdrop Equipment 12-Foot-Diameter High-Velocity, 26-Foot-Diameter High-Velocity, G-14 34-Foot-Diameter, G-12E and G-12D 64-Foot-Diameter, G-11 100-Foot-Diameter, 15-Foot-Diameter Extraction, 22-Foot-Diameter Extraction, 28-Foot-Diameter Extraction.
TM 10-1670-296-20&P	Ancillary Equipment for Low Velocity Air Drop Systems (LVADS)
The DA Pam 738-750	Army Maintenance Management System (TAMMS)

A-3. Field Manuals

FM 10-500-2/T.O. 13C7-1-5	Airdrop of Supplies and Equipment: General Information for Rigging Airdrop Platform.
FM 21-11	First Aid Data

A-4. Army Regulations

DOD 4500-32-R Vol. 2	Military Standard Transportation and Movement Procedures (MILSTAMP)
AR 700-15	Packing of Materials
AR 750-1	Army Material Maintenance Policies and Retail Maintenance

A-5. Technical Bulletins

TB 43-0002-43	Maintenance Expenditure Limits for FSC Group 16

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APPENDIX B

INTRODUCTION, SECTION I

GENERAL.

This section provides a general explanation of all maintenance and repair function authorized at various maintenance categories.

The Maintenance Allocation Chart (MMAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified and item or component. The application of the maintenance functions to the end item or component will be the capacities and capabilities of the designated maintenance categories.

Section III lists the tools and test equipment (both special tools and common tools sets) required for each maintenance function as referenced from section II.

Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follows:

Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

Service. Operations required periodically to keep an item in proper operating condition i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the characteristics to specified parameters.

Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

Calibrate. To determine and cause corrections to be made or to be adjusted on instructions or test, measuring and diagnostic equipment used in precision measurement. Consists of comparisons of two instructions, one of, which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

Replace. To remove an unserviceable item and install a serviceable counterpart in its place. “Replace” is authorized by the MAC and is shown as the 3rd position code of the SMR code.

Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, and disassemble/assembly procedures, and maintenance action to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance by the Army. Overhaul does not normally return an item to like new condition.

Rebuild. Consists of those services/actions necessary for the restoration or unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, ect.) considered in classifying Army equipment/components.

EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

Column 1, Group Number. Column 1 lists functional group codes numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column 2, Component/Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column 3, Maintenance Category. Column 3 lists the function to be performed on the item listed in column 2 (For detailed explanation of these functions, see paragraph B-2).

Column 4, Maintenance Category. Column 4 specifies, by the listing of a work time figure in appropriate subcolumn (s), the category of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or the complexities of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including and necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific task identified of the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C Operator or Crew
O Unit Maintenance
F Intermediate – DS Maintenance
H Intermediate – GS Maintenance
D Depot Maintenance

Column 5, Tools and Equipment. Column 5 specifies, by code, those common tools sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

Column 6, Remarks. This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

Column 1, Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

Column 2, Maintenance Category. The lowest category of maintenance authorized to use the tool or test equipment.

Column 3, Nomenclature. Name of identification of the tool or test equipment.

Column 4, National Stock Number. The national stock number of tool or test equipment.

Column 5, Tool Number. The manufacture's part number.

EXPLANAITON OF COLUMNS IN REMARKS, SECTION IV.

Column 1, Reference code. The code recorded in column 6, Section II.

Column 2, Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

EXTRACTION LINE PANEL **0021 00**
MAINTENANCE ALLOCATION CHART

(1) GROUP NO.	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
00	Extraction Line Panel	INSPECT SERVICE REPAIR		0.1 0.1 0.2				1, 2, 3	A B

EXTRACTION LINE PANEL **0021 00**
MAINTENANCE ALLOCATION CHART

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	0	Knife	5110-00-162-2205	___
2	0	Wrench, Comb, 1 ½ Inch	5120-00-277-8834	___
3	0	Wrench, Comb 1 7/16	5120-00-228-9519	___

Section IV. REMARKS

REFERENCE CODE	REMARKS
A	Service is cleaning, marking, and stowing. Common tools are listed since knife and wrenches are required for performance of stowing tasks: These tools are authorized under WP 0002 00.
B	Repair of Extraction Line Panel is limited to restitching (0.2) and darning (0.2).

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APPENDIX C

INTRODUCTION, SECTION I

SCOPE

This appendix lists expendable supplies and materials you will need to operate and maintain the Extraction Line Panel. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical Class V, Repair Parts, and Heraldic Items).

EXPLANAITON OF COLUMNS

Column (1)-Item Number. This number is assigned to the entry in the listing and a reference in the narrative instructions to identify the material (e.g., “Use cleaning compound, item 5, App. C”).

Column (2)-Level. This column identifies the lowest level of maintenance that requires the list item.

Column (3)-National Stock Number. This is the National Stock Number assigned to the item: use to request or requisition the item.

Column (4)-Description. Indicates the federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

Column (5)- Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetic abbreviation (e.g., EA, IN, PR). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	0	1670-00-568-0323	Band, Rubber, Retainer (81349) MIL-B-1832	EA
2	0	7920-00-282-2470	Brush, Scrub, Household (81348) H-B-1490	EA
3	0	7520-00-248-9285	Brush, Stenciling (81348) H-B-00621	EA
4	0	8305-00-433-5986	Cloth, Muslin-Cotton, Type II (81349) MIL-C-4279	YD
5	0	7930-00-281-4731	Dishwashing Compound, Hand Flake (81348) P-D-410	LB
6	0	4020-00-240-2146	Cord, Nylon, Type III (81349) MIL-C-5040	YD
7	0	7510-00-286-5362	Ink, Marking, Parachute, Strata-Blue (81349 MIL-1-6903	PT
8	0	7520-00-230-2734	Marker, Felt Tip, Black (81348) GG-0M-0014	EA
9	0	8135-00-160-7759	Paper, Kraft, Untreated (81348) UU-P-268	FT
10	0	7520-00-491-2917	Pen, Ballpoint (81348) GG-B-0060	EA
11	0	7920-00-205-3570	Rag, Wiping (81348) DDD-R-30	EA

EXTRACTION LINE PANEL **0022 00**
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LISTS

(1) ITEM NUMBER	(2) LEVEL	(3) NAITONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
12	0	9310-00-160-7858	Stencil board, Oiled (81348) UU-S-625 TY II	SH
13	0		Type VIII Nylon Webbing	
14	0	8310-00-917-3945	Thread, Cotton, Ticket No. 8/7 (81348) V-T-296	YD
15	0	8310-00-262-2770	Thread, Nylon, Size E (81348) V-T-295	YD
16	0	8305-00-268-2411	Webbing, Textile, Cotton, Type I, ¼ Inch Wide (81348) MIL-W-5661	YD
17	0	8305-00-286-2453	Webbing, Textile, Nylon, Tubular, ½ Inch Wide (81348) PPP-T-5625	YD
18	0	7510-00-266-5016	Tape, Pressure Sensitive, Adhesive, 2 Inch Wide, (81348) PPP-T-60	YD
19	0	8310-00-248-9714	Thread, Nylon, Size 3 (81348) V-T-295	YD
20	0	6810-00-270-9982	Tetrachloroethylene, Technical (81348) O-T-236	GL
21		8310-227-1244	Thread, Nylon Size FF OD	YD

ALPHABETICAL INDEX

A

C

D

E

F

EXTRACTION LINE PANEL
ALPHABETICAL INDEX

G

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M

N

P

EXTRACTION LINE PANEL
ALPHABETICAL INDEX

R

S

EXTRACTION LINE PANEL
ALPHABETICAL INDEX

EXTRACTION LINE PANEL
ALPHABETICAL INDEX

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By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0109401

DISTRIBUTION:
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These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" <whomever@avma27.army.mil>
To: amssb−rim−e@natick.army.mil

Subject: DA Form 2028

1. ***From:*** Joe Smith
2. *Unit:* home
3. ***Address:*** 4300 Park
4. ***City:*** Hometown
5. ***St:*** MO
6. ***Zip:*** 77777
7. ***Date Sent:*** 19−OCT−93
8. ***Pub no:*** 55−2840−229−23
9. ***Pub Title:*** TM
10. ***Publication Date:*** 04−JUL−85
11. *Change Number:* 7
12. *Submitter Rank:* MSG
13. ***Submitter FName:*** Joe
14. *Submitter MName:* T
15. ***Submitter LName:*** Smith
16. ***Submitter Phone:*** 123−123−1234
17. ***Problem:*** **1**
18. *Page:* 2
19. *Paragraph:* 3
20. *Line:* 4
21. *NSN:* 5
22. *Reference:* 6
23. *Figure:* 7
24. *Table:* 8
25. *Item:* 9
26. *Total:* 123
27. ***Text:***

This is the text for the problem below line 27.

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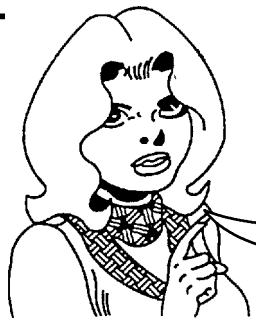
RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN . .JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC John DOE
CO A 3rd Engineer Bn
Ft. Leonardwood, MO 63108

DATE SENT
22 August 1992

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 1–1520–250–10	15 June 1992	Operator's manual MH60K Helicopter

BE EXACT PIN–POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

In line 6 of paragraph 2–1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.

Callout 16 on figure 4–3 is pointed at a bolt. In key to figure 4–3, item 16 is calle a shim. Please correct one or the other

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
JOHN DOE, PFC (268) 317–7111

SIGN HERE
JOHN DOE John Doe

DA FORM 1 JUL 79 2028–2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M verprint2, 1 Nov 80

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REVERSE OF DA FORM 2028−2 Reverse of DRSTS-M Overprint 2, 1 Nov 80

TEAR ALONG PERFORATED LINE

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DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS

COMMANDER
U.S. ARMY SOLDIER SYSTEMS COMMAND
ATTN: AMSSB−RIM−E
KANSAS STREET
NATICK, MA 91760−5000

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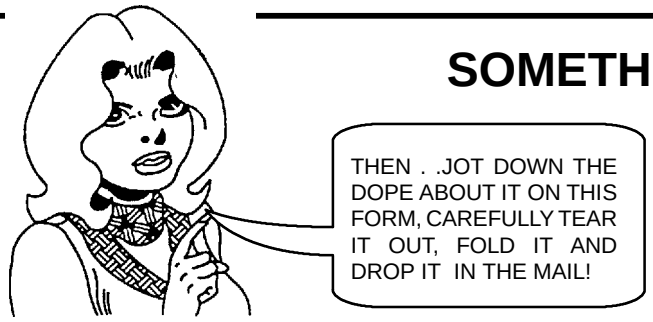

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FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 10−1670−286−20	15 February 2001	Extraction Line Panel

BE EXACT PIN−POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

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KANSAS STREET
NATICK, MA 91760-5000

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigrams = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.07062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square	feet square meters	.093	square centimeters	square inches	.155
square	yards square meters	.836	square meters	square feet	10.764
square	miles square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic	feet cubic meters	.028	square hectometers	acres	2.471
cubic	yards cubic meters	.765	cubic meters	cubic feet	35.315
fluid	ounces milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C.

PIN: 059980-001