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AIR FORCE T.O. 13C5-33-2
NAVY NAVAIR 13-1-34

TECHNICAL MANUAL

UNIT AND DIRECT SUPPORT (DS)
MAINTENANCE MANUAL (INCLUDING REPAIR PARTS
AND SPECIAL TOOLS LIST)

FOR

PARACHUTE, CARGO TYPE:
35-FOOT DIAMETER, RIBBON
EXTRACTION PARACHUTE
NSN 1670-01-283-4531

Approved for public release; distribution is unlimited

HEADQUARTERS, DEPARTMENTS OF THE ARMY, AIR FORCE,
AND NAVY

30 JULY 1991

WARNING

DEATH could result if inspections are not performed as specified in this manual. Perform all inspections as specified.

WARNING

DEATH from burns or parachute failure could result if cleaning solvents other than tetrachloroethylene are used in cleaning this equipment. Other solvents shall not be used because of their flammable properties and nylon-damaging substances.

WARNING

Prolonged inhalation of tetrachloroethylene vapors can cause respiratory injury. Provide adequate ventilation when using it. Also avoid skin contact. Repeated exposure can cause injury.

WARNING

Exercise extreme care when using petroleum products to destroy equipment by fire, as severe burns or DEATH could result.

WARNING

FIRST AID

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

a/(b blank)

TECHNICAL MANUAL

NO. 10-1670-294-23&P

HEADQUARTERS,
DEPARTMENTS OF THE ARMY, NAVY AND AIR FORCE
WASHINGTON, D.C., **30 JULY 1991**

Unit and Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List)

for

**PARACHUTE, CARGO TYPE: 35-FOOT DIAMETER,
RIBBON EXTRACTION PARACHUTE
NSN 1670-01-283-4531**

Current as of 5 September 1990

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of away to improve the procedures, please let us know. Mail your letter, 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 Troop Support Command, ATTN: AMSTR-MMTS, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

Reports by U.S. Air Force units should be submitted on AFTO Form 22 (Technical Order System 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 SA-ALC1MMILRA, Kelly AFB, TX 78241-5000.

For Navy, mail comments to Commander, Space and Naval Warfare Systems Command, ATTN: SPAWAR 8122, Washington, DC, 20363-5100.

In either case, a reply will be furnished directly to you.

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CHAPTER 1

INTRODUCTION

OVERVIEW

This chapter includes the general information common to all parachute manuals and specific information pertinent to the parachute described in this manual.

SECTION I. GENERAL

1-1. **Scope**. The scope of this manual is described in the following subparagraphs.

a. Type of Manual. This manual provides unit and intermediate direct support (DS) maintenance instructions for parachute NSN 1670-01-283-4531. This is a 35-Foot Diameter Ribbon Extraction Cargo Parachute (figure 1-1). This manual also provides a Repair Parts and Special Tools List located at Appendix C.

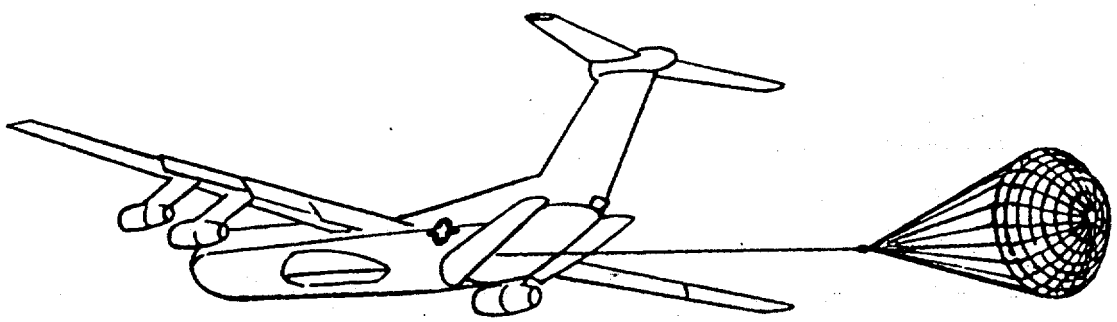
b. Equipment Name. 35-Foot Diameter Ribbon Extraction Cargo Parachute, hereinafter called the 35-Foot Cargo Parachute.

c. Purpose of Equipment. The parachute provides Low Altitude Parachute Extraction (LAPES) of non-fragile supplies.

1-2. **Maintenance Forms and Records**.

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, as contained in, The Army Maintenance Management System (TAMMS). Air Force personnel will use AFR 66-1 for maintenance reporting and TO-00-35D54 for unsatisfactory equipment reporting. Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) IAW OPNAVINST 4790.2, Vol 3 and unsatisfactory material/conditions (UR submissions) IAW OPNAVINST 4790.2, Vol 2, chapter 17.

b. Reporting of Item and Packaging Discrepancies. Fill out and forward SF364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 414-.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.



4887-001

Figure 1-1. 35-Foot Diameter Ribbon Extraction Cargo Parachute.

c. Transportation Discrepancy Report (TDR) (SF361). Fill out and forward Transportation Discrepancy Report (TDR) (SF 361) as prescribed in AR 55-28/NAVUSPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-3. **Destruction of Army Materiel to Prevent Enemy Use**. Destruction methods are described in the following subparagraphs.

a. *General*.

(1) *Objective*. Methods of destruction used to inflict damage on air delivery equipment should make it impossible to restore equipment to a usable condition in a combat zone by either repair or cannibalization.

(2) *Authority*. Destruction of a parachute that is in imminent danger of capture by an enemy is a command decision that must be made by a battalion or higher commander or the equivalent.

(3) *Implementation plan*. All units which possess air delivery equipment should have a plan for the implementation of destruction procedures.

(4) *Training*. All personnel who use or perform such functions as rigging, packing, maintenance, or storage of air delivery equipment should receive thorough training on air delivery equipment destruction procedures and methods. The destruction methods demonstrated during training should be simulated. Upon completion of training, all applicable personnel should be thoroughly familiar with air delivery equipment destruction methods and be capable of performing destruction without immediate reference to any publication.

(5) *Specific methods*. Specific methods of destroying Army materiel to prevent enemy use shall be by mechanical means, fire or by use of natural surroundings.

b. *Destruction by Mechanical Means*. Air delivery equipment metal assemblies, parts, and packing aids shall be destroyed using hammers, bolt cutters, files, hacksaws, drills, screwdrivers, crowbars, or other similar devices to smash, break, bend or cut.

WARNING

Exercise extreme care when using petroleum products to destroy equipment by fire, as these materials are highly flammable.

c. Destruction by Fire. Items that can be destroyed by fire shall be burned. The destruction of equipment by use of fire is an effective method of destroying low-melting-point metal items. However, mechanical destruction should be completed first, whenever possible, before initiating destruction by fire. When items to be destroyed are made of metal, textile materials (or some comparable low combustible material) should be packed under and around the items, then soaked with a flammable petroleum product and ignited. Proper concentration of equipment which is suitable for burning will provide a hotter and more destructive fire.

d. Destruction By Use of Natural Surroundings. Small vital parts of assemblies which are easily accessible may be disposed of as follows: Disposal or denial of equipment to an enemy may be accomplished through use of 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. Total submersion of equipment in a body of water will provide water damage as well as concealment. Salt water will inflict extensive damage to air delivery equipment.

1-4. **Preparation for Storage or Shipment**. For storage, refer to Chapter 2, Section VII of this manual.

1-5. **Reporting of Equipment Improvement Recommendations (EIR).**

a. Army. If your parachute system needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF368 (Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Troop Support Command, ATTN: AMSTR-MOF, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. We will send you a reply.

b. Air Force. Air Force personnel are encouraged to submit EIR's in accordance with AFR 900-4.

c. Navy. Navy personnel are encouraged to submit EIR's through their local Beneficial Suggestion Program.

SECTION II. EQUIPMENT DESCRIPTION AND DATA

1-6. **Equipment Characteristics, Capabilities and Features**. A summary of the characteristics, capabilities and features of the equipment is contained in the following subparagraphs.

a. Characteristics. Provides a capability to deliver non-fragile supplies and equipment using low-velocity air delivery method.

b. Capabilities and Features.

(1) Capable of extracting up to 42,000 pounds.

(2) Used on the C-130 aircraft.

(3) Designed for Low Altitude Parachute Extraction (LAPE) of cargo.

(4) Components of the system.

(a) Canopy assembly.

(b) Adapter web.

(c) Deployment bag.

1-7. **Location and Description of Major Components**. The following subparagraphs contain locations and descriptions of major components (figure 1-2).

a. Canopy. The canopy (fig. 1-2) is a 35-foot diameter flat circular ribbon canopy, constructed with 85 equally spaced horizontal ribbons which are supported by 48 radial ribbons. Each gore is reinforced with 5 two ply vertical ribbons. There are 48 35-foot suspension lines attached at the canopy skirt.

b. Adapter Web. The adapter web is 24-foot in length and consist of 12 plies of nylon webbing. The plies are secured together by 10 equally spaced fixed keepers, a removable keeper, a large sliding keeper and a small sliding keeper.

c. *Deployment Bag*. The deployment bag (fig. 1-3) is made from nylon duck and is used to stow and deploy the cargo canopy.

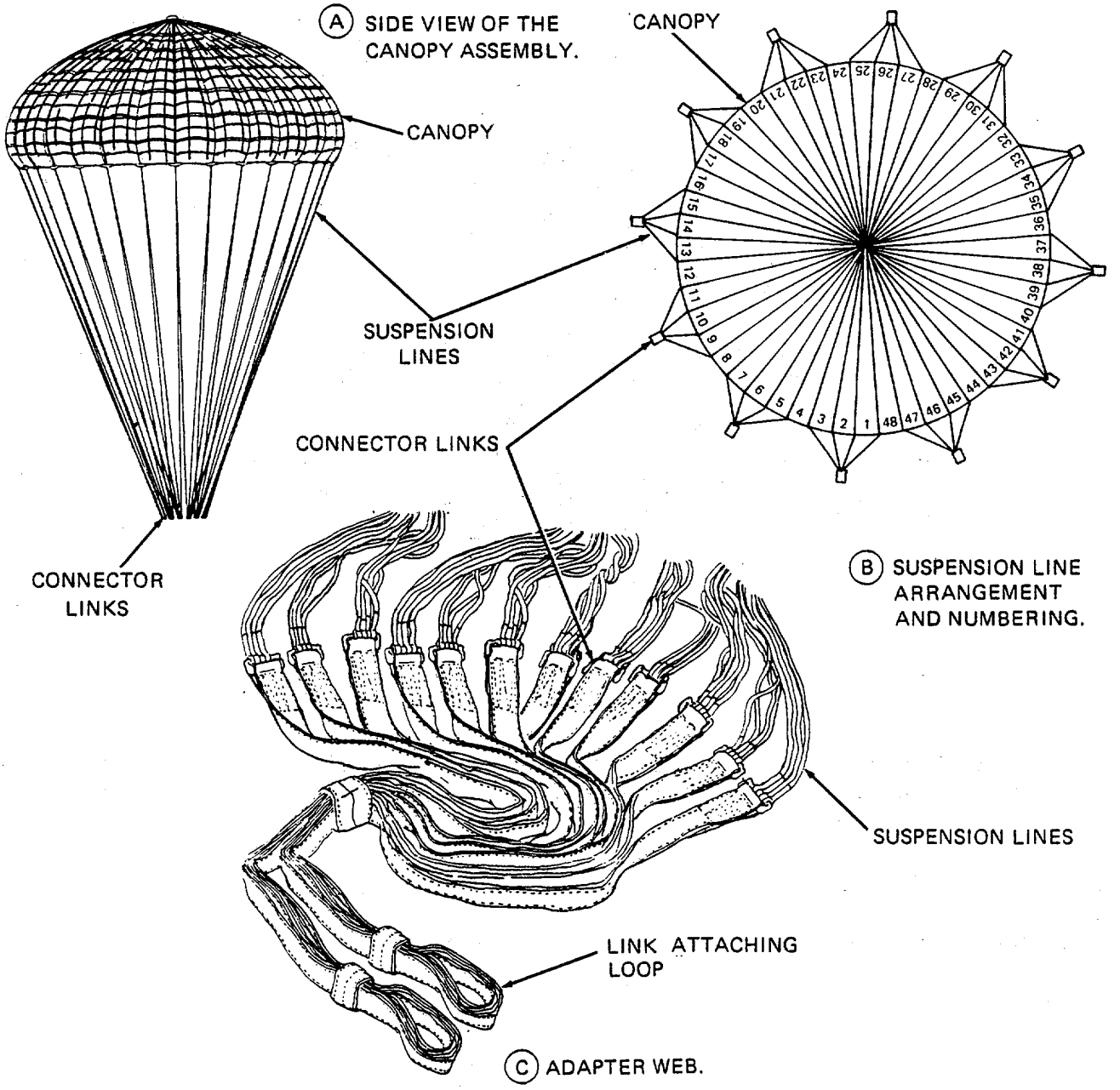


Figure 1-2. Major Components of Parachute Assembly.

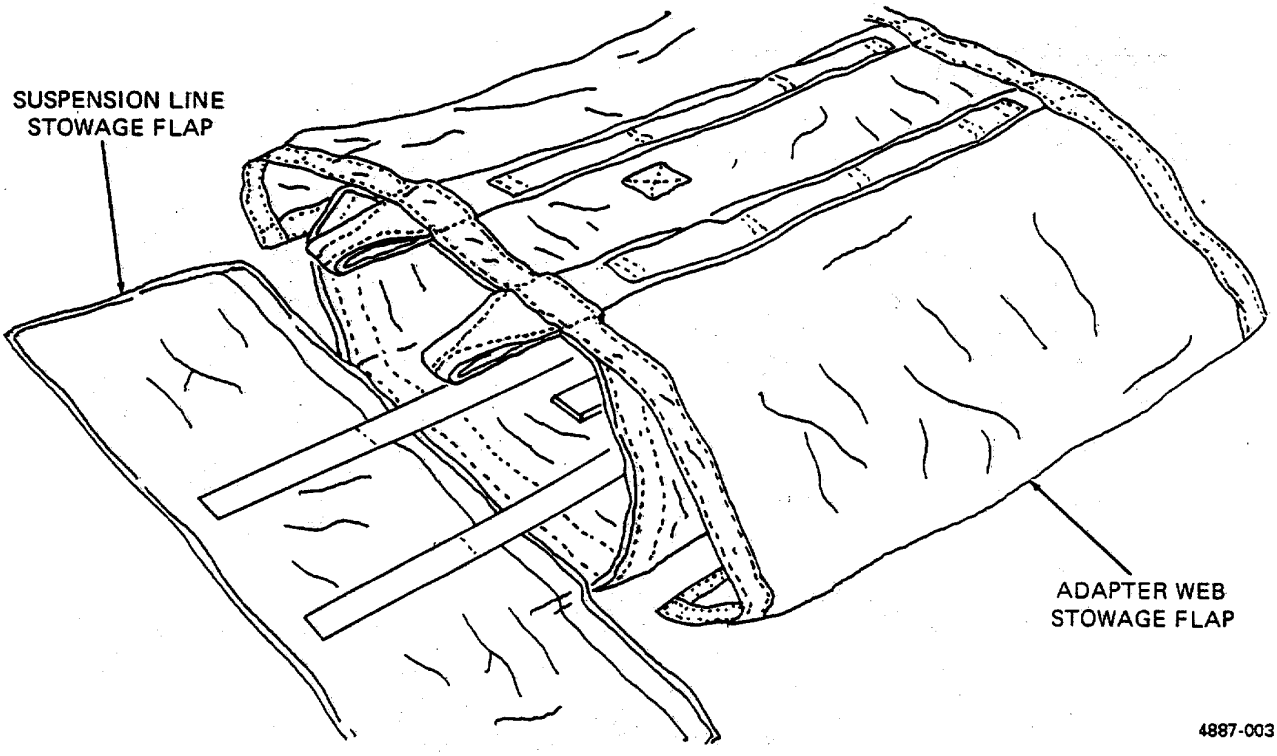


Figure 1-3. Deployment Bag.

1-8. **Equipment Data**. The following listing summarizes the specific capabilities and limitations of the equipment and other critical data needed by the unit and intermediate direct support (DS) maintenance personnel for maintenance of the 35-foot ribbon extraction cargo parachute.

a.	*Weight* (packed for use).	140 lbs. (approx)
b.	*Dimensions* (packed for use.	36 in. lg. by 22 in. wd. by 15-in. h.
c.	*Canopy Assembly*.	
	Shape	Flat-circular
	Diameter	35 feet
	Design	Ribbon
	Number of gores	48
	Number of vent lines	24
	Number of suspension lines	48
	Suspension line material	Type I tubular nylon webbing
	Suspension line length (from lower lateral band to connector link)	35 feet
	Canopy length (from upper to lower lateral band)	15.625 feet
	Number of Pocket Bands	48
	Number of connector links	12
	Horizontal ribbons material	Type V ribbon

Number of horizontal ribbons (per gore)	85
Number of vertical ribbons (per gore)	5
Vertical ribbon material	Type III ribbon
Number of radial ribbons	48
Radial ribbon material	Type II ribbon

d. Adapter Web.

Length	24 feet
Number of plies	12

e. Deployment Bag.

Bag length	36 in.
Bag width	22 in.
Bag material	7.25 oz nylon webbing

1-9. **Safety, Care, and Handling.**

a. Safety. It is imperative that you observe all safety precautions specified on the warning page in the front of this manual. You must also observe specific warnings and cautions specified throughout this manual. The warnings are provided to tell you how to protect yourself from death or serious injury.

b. Care and Handling. Observe the following precautions:

(1) Use care in handling packed parachutes as metal parts could cause personal injury.

(2) Remove all jewelry when packing or performing maintenance on the parachute. Damage to the canopy materials could result from watches, rings, bracelets, etc.

(3) Use every effort to protect the parachute from the weather elements, dust, dirt, oil, grease, acids, and direct sunlight.

(4) Cover canopy during periods of inactivity. Avoid exposing canopy for prolonged periods to sunlight, inspection lights or fluorescent lights. Nylon material is subject to deterioration by ultraviolet light.

(5) Use a heated building to store parachutes when available. Store parachute in a dry, well-ventilated location, protected from pilferage, dampness, fire, dirt, insects, rodents, and direct sunlight.

CHAPTER 2
UNIT AND DIRECT SUPPORT (DS) MAINTENANCE INSTRUCTIONS

Page

OVERVIEW

This chapter contains information necessary to maintain the 35-Foot Cargo Parachute on the unit and intermediate direct support (DS) maintenance levels in accordance with the Maintenance Allocation Chart for the equipment. It includes the following:

a. Procedures for processing a new or used parachute assembly upon receipt.

b. Assembly of components prior to packing.

c. Preventive maintenance procedures to ensure continued serviceability of all components.

d. As-required inspections and maintenance procedures performed prior to packing such as shakeout and airing, cleaning and drying, and acidity and salt-water contamination tests.

e. Detailed packing procedure.

f. Repair methods and repair or replacement procedures for all components of the parachute assembly.

SECTION I. REPAIR PARTS, SPECIAL TOOLS, TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE) AND SUPPORT EQUIPMENT

Paragraph Page

2-1. **Common Tools and Equipment**. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-2. **Special Tools, TMDE and Support Equipment**. Special Tools, TMDE and Support Equipment are not required.

2-3. **Repair Parts**. Repair parts are listed and illustrated in Appendix C of this manual.

SECTION II. SERVICE UPON RECEIPT

2-4. **Initial Receipt**. The following describes the procedures for processing parachutes upon initial receipt.

a. General Procedures for Air Delivery Equipment. When the air delivery equipment is initially procured from a supply source and issued to a using unit, the item(s) will be unpacked from the shipping container(s) and inspected by a qualified parachute rigger (MOS 43E). The inspection performed will be a technical/rigger-type which will be conducted as outlined in paragraph 2-13. Upon completion of the inspection, the item(s) will be tagged as prescribed in The Army Aviation Systems Maintenance (Aviation) DA PAM 738-751. Serviceable equipment may then be entered either into storage or into use in airdrop operations, as applicable. An unserviceable item will be held and reported in accordance with DA PAM 738-750.

b. Inspection Personnel. Personnel other than parachute rigger personnel may assist in the unpacking process of initially received parachutes as directed by the local air delivery equipment maintenance officer. However, the maintenance officer will insure that the entire unpacking effort is conducted under the direct supervision of a qualified rigger (MOS 43E).

c. Configuration/Condition. Acceptance of new equipment from the manufacturer is based upon inspections made of sample lots which have been randomly selected in accordance with military standards. It is incumbent upon the using activity personnel to bear this in mind whenever equipment is first placed in service. Changes will sometimes evolve from the original equipment design and sometimes contracts are authorized to make deviations in material and construction techniques. Air delivery equipment that has been in the field cannot be expected to meet exacting manufacturing specifications; however, the equipment should closely reflect desired design characteristics. Since repairs, modifications, and/or changes can alter or detract from the configuration originally desired, such equipment shall be airworthy, safe, of the desired configuration, and adequate for intended use.

d. Parachute Log Record. The Army Parachute Log Record DA Form 10-42 or DA Form 3912 is a history-type maintenance document which accompanies the parachute canopy and pack assemblies through the period of service of the individual assembly. The log record provides a means of recording maintenance actions performed on a parachute canopy assembly. Normally, a log record is initiated and attached upon receipt by a using unit. However, if the item is subjected to alteration or modification by a maintenance activity during the interim period from date of manufacture to receipt by a using unit, the log record will be prepared by the activity performing the maintenance function. Once initiated, a log record will be attached to and contained in an affixed parachute log record/inspection data pocket until such time as the parachute canopy assembly is destroyed or rendered unfit for further use or repair. Additionally, should an item that requires a log record be transferred from one unit to another, the log record for the parachute assembly will accompany the item in the transfer action. A prepared log record will not be removed or separated from a parachute, and especially

a packed parachute, except as directed by the local air delivery equipment maintenance activity officer. A log record which is illegible, lost, damaged, soiled, or precludes further entries due to lack of space will be replaced upon the next repack or inspection, as applicable, with a serviceable item from stock.

e. *Installing Attaching Tie*. Install attaching tie as follows:

(1) Cut a 30-inch length of size 6 waxed nylon thread (item 36/37, Appendix D) and double the thread length to form a 15-inch length, double strand.

(2) Pass the looped end of the double thread length around the centerfold of the log record and form a slip loop on the outside at the log record top (A, figure 2-1).

(3) Pass the thread length running ends through the corner attaching hole from the front cover of the log record (B, figure 2-1) and ensure running ends are routed over that part of the thread length located along the log record centerfold (C, figure 2-1).

(4) Complete the attachment tie by making a half hitch on top of the slip loop made in (2) above.

(5) Thread one running end of the log record attachment tie in a tacking needle and pass the tacking needle with attached thread end through the edge binding of the applicable parachute log record/inspection data pocket.

(6) Remove the thread end from the tacking needle and make a finished 10-inch long log attaching loop by securing the two thread ends together with an overhand knot.

(7) Insert log record into the pocket and secure the record within pocket using the pocket flap and applicable type flap fastener.

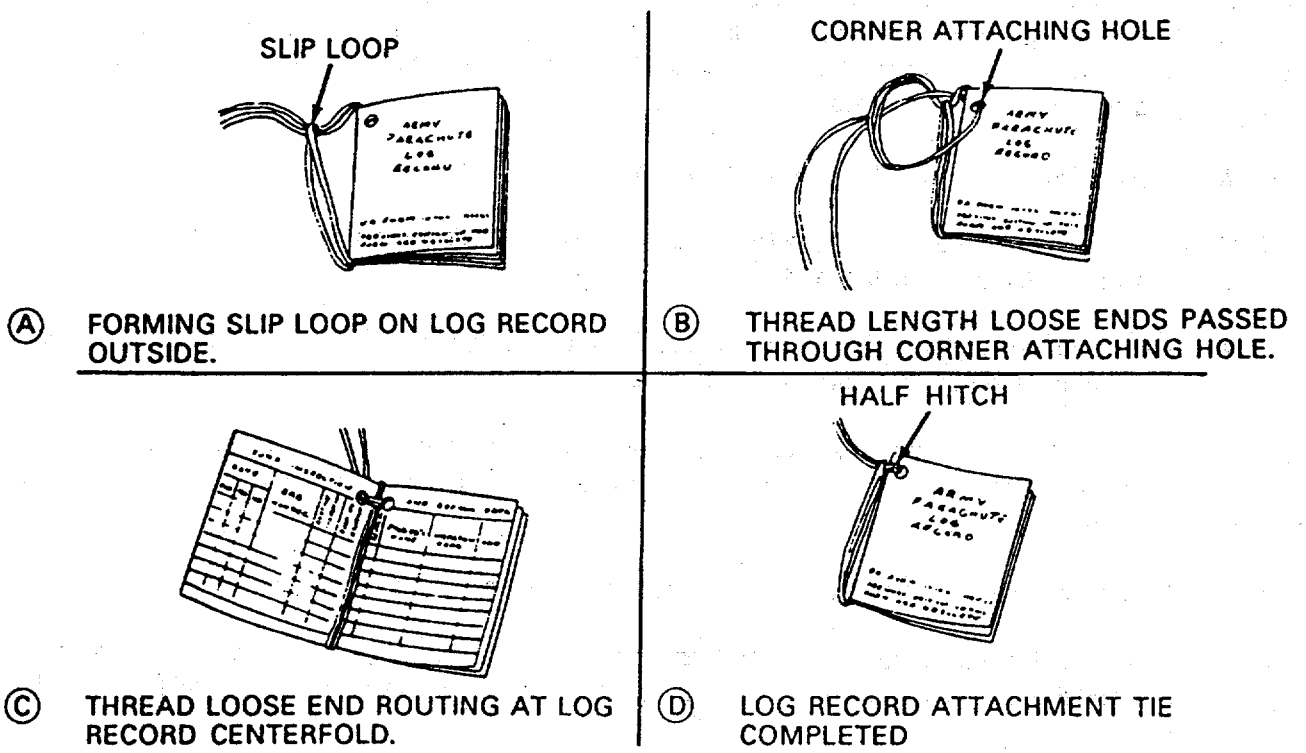


Figure 2-1. Installing Attachment Tie on Parachute Log Record.

f. *Accomplishing a Log Record*. Upon completion of the first technical/rigger-type inspection, the individual performing the inspection will initially prepare a log record for an individual parachute and accomplish subsequent record entries using the following procedures:

NOTE

Log record book entries will be made with a suitable type blue or black marking device that cannot be erased.

(1) *Inside front cover*. Using the information provided on the parachute canopy data block, make the following entries on the inside front cover of the log record (figure 2-2). Entries may be continued on the inside of the back cover, if necessary.

NOTE

A parachute canopy serial number is recorded in a log record as a method of establishing control for maintenance, EIR (Equipment Improvement Report) and QDR (Quality Deficiency Report) documentation, and to insure the correct original record is reattached should the record become detached. A canopy serial number will not be used for property accountability, except in test projects or other special instances.

(a) Serial number. Enter the parachute canopy assembly serial number.

(b) Type. Enter the parachute type.

(c) Part number. Enter the part number of the parachute canopy.

(d) Date of manufacture. Enter the month and year the parachute canopy was manufactured.

(e) Manufacturer. Enter the name of the parachute canopy manufacturer.

(f) Canopy contract number. Enter the entire contract number specified for the parachute canopy.

(g) Station and unit. Enter the name of the station and unit to which the parachute canopy is currently assigned. When a parachute is transferred permanently to another station and/or unit, the original entry will be lined out and the name of the receiving station and/or unit will be entered.

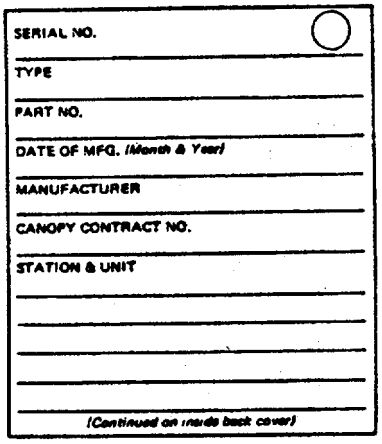


Figure 2-2. Inside Front Cover of Parachute Log Record.

(2) Inside back cover Entries may be continued on the inside back cover, if necessary (figure 2-3).

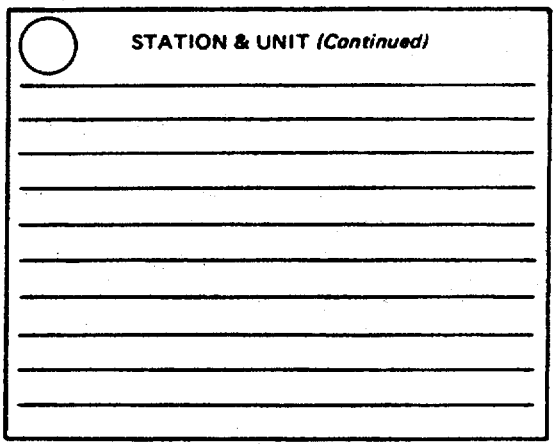


Figure 2-3. Inside Back Cover of Parachute Log Record.

(3) Modification work order compliance record page. When a modification is performed on a parachute canopy, the following entries will be made on the "Modification Work Order Compliance Record" pages of the Log Record (figure 2-4).

(a) MWO number. Enter the publication number and date of the Modification Work Order (MWO) which describes the MWO (1, figure 2-4).

(b) MWO title. Enter a short, abbreviated title extracted from the MWO prescribing the work.

(c) Modified by. Enter the last name of the individual who has performed the modification. If the original log record for the parachute has been lost, and it has been ascertained through inspection that a particular modification has been accomplished, the entry for this-column will be C/W "Complied With" (2, figure 2-4), which signifies the applicable MWO has been complied with.

(d) Inspected by. The individual who accomplished the inspection required after modification will sign this entry with last name only.

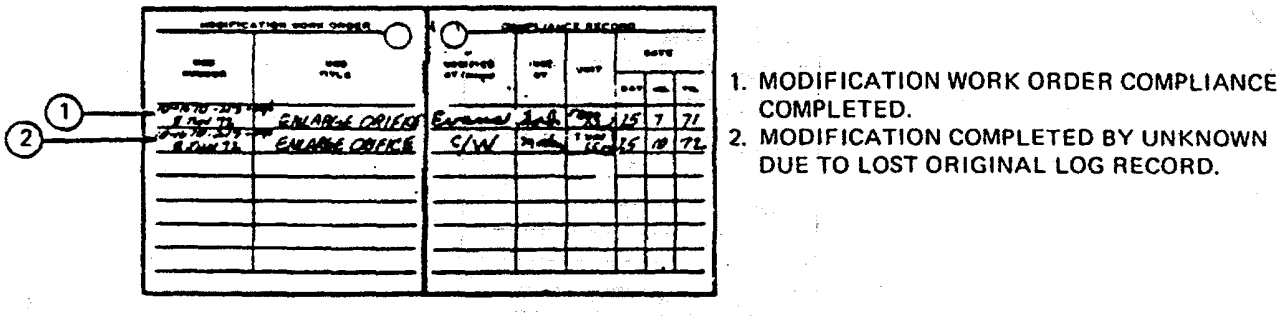


Figure 2-4. Log Record Entries for the Modification Work Order Compliance Record Page.

(e) Unit. Enter the unit designation responsible for performing the MWO or in the event of a lost Log Record, the unit to which the inspector is assigned.

(f) Date. Enter the date (day, month, and year) the modification work was completed.

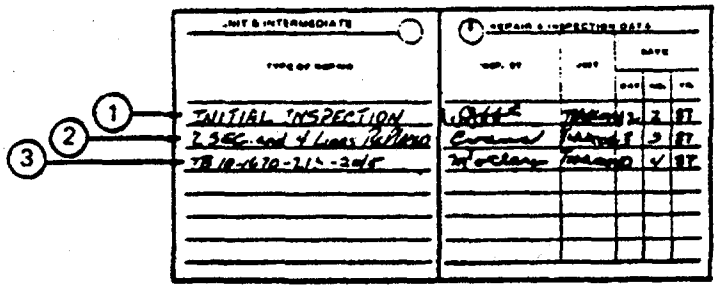
(4) Unit and intermediate DS repair and inspection data. When a parachute canopy assembly is initially received from a supply source and a technical/rigger-type inspection is performed, the inspection accomplishment will be documented on the "Unit and Intermediate Repair and Inspection Data" page of the individual Parachute Log Record (figure 2-5). Additional entries will also be made on this-page each time the canopy assembly is repaired or is administered an inspection in compliance with a one-time inspection Technical Bulletin (TB). The page completion criteria is as follows:

(a) Type of repair Enter the type of repair, completion of initial inspection, repair accomplishment, Technical Bulletin Inspection compliance.

(b) Inspection by. The individual who accomplished the inspection required will sign this entry with last name.

(c) Unit. Enter the unit designation responsible for performing the type of repair.

(d) Date. Enter the day, month and year the repair was performed.



1. COMPLETION OF INITIAL INSPECTION.
2. REPAIR ACCOMPLISHMENT.
3. TECHNICAL BULLETIN INSPECTION COMPLIANCE.

Figure 2-5. Log Record Entries for Unit and Intermediate DS Repair and Inspection Data Page.

(5) *Note page*. A page is provided at the back of a parachute log record to accommodate recording of additional data pertinent to the serviceability of a parachute canopy assembly (figure 2-6). This shall also include the month and year the item was placed in service.

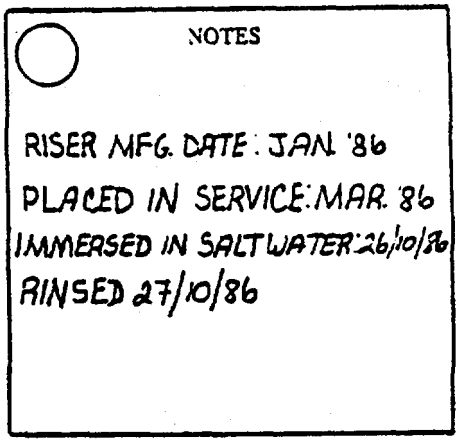


Figure 2-6. Data Entries for a Log Record Note Page.

2-5. **Receipt of Used Parachute**. Upon initial receipt of used parachute proceed as follows:

a. Follow procedures given in paragraph 2-4a, and check each component for excessive wear and tear.

b. If defects of damages are discovered, process the parachute for maintenance at the maintenance level assigned by the Maintenance Allocation Chart (Appendix B).

2-6. **After-Use Receipt**. When a parachute is received at the maintenance activity following its use during air delivery, it must be given a shakeout and aired (para 2-11) and, if necessary, cleaned (para 2-12) before it can be returned to service. If a parachute is issued but not used, it does not need to be given a shakeout; however, it must be aired if it has been subjected to conditions of dampness.

2-7. **Checking Unpacked Equipment After Shipment.**

a. Inspect equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Packing Improvement Report.

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions in DA PAM 738-750.

Section III. ASSEMBLY

2-8. **Assembly of the 35-Foot Cargo Parachute.**

NOTE

The procedure for assembling components of parachute is incorporated in the packing procedure, paragraph 2-16.

Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-9. **PMCS Procedures**. The following describe PMCS procedures on the unit and intermediate direct support (DS) maintenance levels.

a. General. Table 2-1 lists preventive maintenance checks and services. The purpose of PMCS is to ensure that the 35-foot cargo parachute is operational.

b. Frequency of Performing PMCS. PMCS will be performed before equipment is packed for use, during modification and repair, after use, or at any time deemed necessary by the air delivery equipment maintenance officer.

c. PMCS Columnar Entries Table 2-1. Enter data in columns as follows:

(1) *Item number*. The item number column shall be used as a source of the item number required for the 'TM Number" column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when recording the results of PMCS.

(2) *Interval*. This column identifies the required PMCS level.

(3) *Item to be inspected*. Contains the common name of the item to be inspected.

(4) *Procedures.* Provides a brief description of the procedure by which the checks are to be performed.

d. *Recording Defects*. All defects discovered during the inspection will be recorded using the applicable specifics in DA Pamphlet 738-750 and TB 43-0002-43.

e. *Conservation of Resources*. To conserve time and labor, and to avoid evacuation to an intermediate maintenance activity, unit/detachment commanders may designate, in writing, rigger personnel to accomplish classification inspection of overage air delivery equipment.

f. *Inspection Function Requirement*. Normally, a technical/rigger-type inspection will be performed by air delivery equipment maintenance personnel at a packing, rigging, or repair activity. The inspection of initial receipt items will be performed as a separate function from packing or rigging activity; the item to be inspected will be placed in proper layout on packing surface or suitable sized floor area. Should defect or damage be discovered at any point during the inspection, the inspection will be terminated and the applicable item will be processed and forwarded to repair activity. The repair activity, in turn, will conduct a technical/rigger-type inspection that will be performed by only those parachute rigger personnel cited in AR 750-32. Any defect discovered during a unit level repair activity inspection which exceeds the capability of that activity will require the affected item to be evacuated to an intermediate maintenance function for further determination of economic repair and repair accomplishment, if applicable.

NOTE

Parachutes which are deemed unserviceable by a packing or rigging activity will be rigger-rolled prior to being sent to a repair activity.

Table 2-1. Unit and Intermediate Direct Support (DS) Preventive Maintenance Checks and Services (PMCS).

B - Before **D - During** **A - After**

Item No	Interval B	Interval D	Interval A	Item To Be Inspected	Procedures
					NOTE Any defective material noted must be repaired prior to use.
				The 35-Foot Cargo Parachute	
1		*		Parachute Packed for Use	Visually check visible parts for serviceability and completeness without opening pack. Check parachute inspection data record for pack date.
2	*		*	Canopy	As canopy is raised, lowered, and suspended during shakeout, check for dampness, fungus, acid, grease, oil, dirt, foreign material, holes, cuts, tears; broken lines and webbing.
	*		*	Fabric Materials	Legibility of data markings; completeness; dampness, fungus, dirt, acid, grease, oil, foreign material, rips, burns, cuts, breaks, frays, tears, holes, thin spots, loose weaving; loose or broken stitching, lines, or webbing.
	*		*	Hardware Components	Riser clevis assemblies for corrosion, rough spots, burrs, breaks, cracks, bends; missing tie cord, clevis pin or safety pin.
3	*		*	Adapter Web	Completeness; dampness, fungus, acid, grease, oil, dirt, foreign material, holes, cuts, and breaks.
4	*		*	Deployment Bag	Completeness; dampness, fungus, acid, grease, oil, dirt, foreign material, holes, cuts, and breaks.
	*		*	Fabric Materials	Completeness; dampness, fungus, dirt, acid, grease, oil, foreign material, rips, burns, cuts, breaks, frays, tears, holes; loose or broken stitching.

Section V. UNIT AND DIRECT SUPPORT (DS) MAINTENANCE PROCEDURES

2-10. **General Information**. The following paragraphs contain general information pertinent to unit and intermediate maintenance procedures:

a. *Scope*. This section contains maintenance procedures which are the responsibility of the specified technician as authorized by the maintenance allocation chart (MAC) and the Source, Maintenance and Recoverability (SMR) coded items that are identified in the repair parts and special tools list (RPSTL).

b. *Maintenance Functions/Procedures*. Each paragraph identifies a maintenance function specified in the MAC. All maintenance procedures required to complete a maintenance function are identified under "This task covers:", in the order in which the work is most logically accomplished.

2-11. Shakeout and Airing.

This task covers:

a. Shakeout **b. Airing**

Tools: *Equipment Condition:*

Brush, Scrub, Household, Item 1, Appendix B — Parachute suspended

a. *Shakeout*. The shakeout will be accomplished by a two-person team either indoors within a shakeout room or outdoors at a shakeout tower. Each parachute will be suspended by the canopy vent and all debris removed by shaking the canopy thoroughly or by brushing with a dry, soft-bristled brush as detailed below:

(1) With assistance from no. 2 person, no. 1 person will connect the snap on a pulley rope to canopy bridle loop (A, figure 2-7).

(2) Through use of pulley rope, no. 2 person will raise the canopy to a suitable height which will enable the no. 1 person to perform shakeout on each of the canopy gores. Until gore shaking process is completed no. 2 person will maintain a steady pull on pulley rope to hold the suspended canopy at working height needed by the no. 1 person.

(3) The no. 1 person will grasp any two consecutive suspension lines, one in each hand (B, figure 2-7), and vigorously shake the first gore. When the gore is free of debris, no. 1 person passes the line from the right hand to the left hand and grasps next consecutive suspension line in right hand. No. 1 person will shake out each consecutive gore until all suspension lines are held in the left hand and all gores are free of debris.

(4) Once the gore shaking process is completed, no. 2 person will slowly raise suspended canopy higher as no. 1 person clears suspension lines of debris and removes entanglements (C, figure 2-7) when possible.

(5) After suspension lines have been cleared, no. 2 person may hold or temporarily secure pulley rope while no. 1 person proceeds to clear debris from other parachute components such as risers or deployment bag.

(6) When all components are free of debris, no. 2 person will slowly lower canopy while the no. 1 person S-folds suspension lines into deployment bag (D, figure 2-7). After suspension lines have been completely folded, no. 1 person will accordion-fold canopy length on top of folded lines.

(7) As canopy folding is being completed, no. 1 person disconnects canopy vent from pulley rope snap. Secure the folded canopy assembly for further handling.

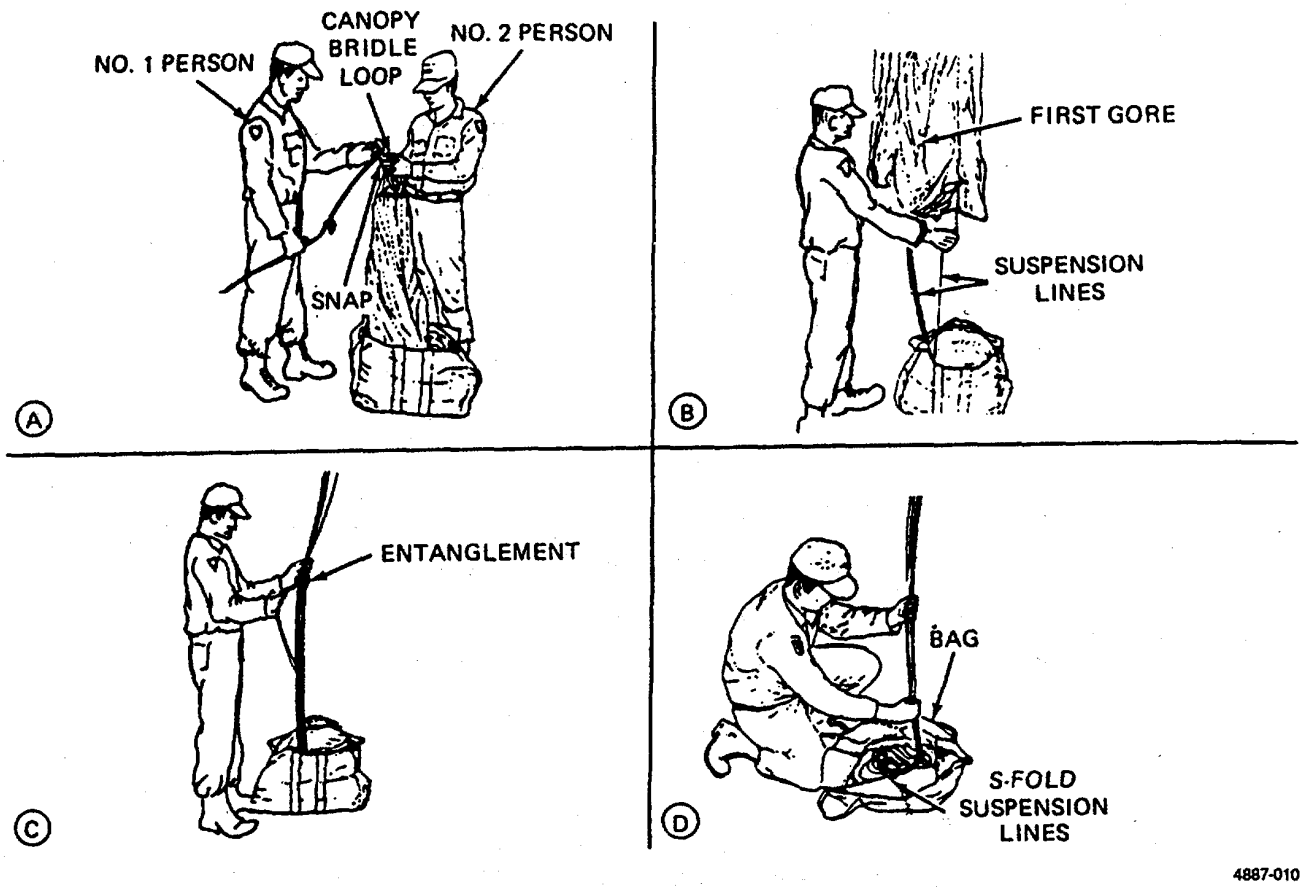


Figure 2-7. Shakeout.

b. *Airing.* Where dampness and mildew are prevalent, air delivery equipment will be aired at frequent intervals according to the severity of the prevailing conditions. Parachutes that have been previously packed or are unpacked, which have been subjected to conditions of dampness or mildew, will be aired for a period of at least 6 hours prior to being repacked. Air delivery items may be aired either indoors or outdoors in dry weather. However, fabric items will not be aired in direct sunlight. Airing may be accomplished by suspending or elevating the applicable item(s) in a manner which would allow entire exposure to the circulation of air. Outside facilities used for the shakeout of parachutes may be used for the airing of air delivery equipment if weather conditions permit. If the shakeout facilities are inadequate for airing, the applicable item(s) may be suspended or elevated at several points or by draping over suitable type objects which would not cause damage.

2-12. Cleaning and Drying.

This task covers:

a. Cleaning fabric items with cleaning solvent
b. Cleaning fabric items with dishwashing compound
c Drying fabric items
d Cleaning metal items
e. Equipment immersed in salt water
f. Equipment immersed in fresh water

Tools:

Brush, Scrub, Item 1, Appendix B

Equipment Condition:

Layout on packing table or other suitable area.

Materials/Parts:

Tetrachloroethylene, Item 21, Appendix D
Dishwashing Compound, Item 5, Appendix D
Rag, Wiping, Item 13, Appendix D
Lubricant, Solid Film, Item 7, Appendix D
Cloth, Abrasive, Item 3, Appendix D

Special Environmental Condition:

Ventilation required as repeated or prolonged inhalation of cleaning solvent vapors can be detrimental to human health.

WARNING

Due to flammable properties and nylon-damaging substances, cleaning solvents other than tetrachloroethylene will not be used in the spot-cleaning of air delivery equipment. Tetrachloroethylene will only be used in areas where substantial ventilation is available. Repeated or prolonged inhalation of the solvent vapors can be detrimental to human 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 the cleaning there exists a possibility that the substance to be removed contains acid or some other equally destructive ingredient, the item will be evacuated to intermediate maintenance activity for determination as to the nature of the substance and item disposition. If the substance cannot be identified or if normal repair procedures will not eliminate all traces of chemical or acid damage, the applicable item will be condemned.

NOTE

Cleaning of parachutes should be held to a minimum and should be performed only when necessary to prevent malfunction or deterioration. When a parachute contains debris, or when it is soiled by dirt; oil, grease, rust, corrosion, or other foreign substances to such an extent that cleaning is necessary, the cleaning should be performed manually and should be limited to the soiled area only, unless the parachute has been contaminated by water. The methods of cleaning must be determined by the nature of the substance to be removed.

NOTE

Do not use cleaning solvent to clean item soil caused by air sickness Use a solution of hand dishwashing compound to clean this type of soiling.

a. *Cleaning Fabric Items with Cleaning Solvent*. Use cleaning solvent to clean fabric items as follows

(1) Gently brush with a soft bristle brush

(2) Spot clean with cleaning solvent tetrachloroethylene

(a) Rub soiled area with a clean cloth dampened with tetrachloroethylene.

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

NOTE

Do not wring out the rinsed area if an excessive amount of cleaning solvent was applied

b. *Cleaning Fabric Items with a Solution of Hand Dishwashing Compound*. Use dishwashing compound to clean fabric items as follows:

(1) Gently brush with a soft bristle brush

(2) Spot clean with a solution of dishwashing compound.

(a) Dissolve 1/2 cup of dishwashing compound In one gallon of warm water.

(b) Rub soiled area with a clean cloth dampened with solution of dishwashing compound.

(c) Rinse cleaned area by repeating rubbing process with a clean portion of cloth dampened with the dishwashing compound

NOTE

Fabric items will not be dried In direct sunlight or by laying an item on the ground

c. *Drying Fabric Items*. Dry fabric items as follows:

(1) Suspend or elevate Item In a well-ventilated room or in a heated drying room

(2) Drying time may be reduced by using electric circulating fans.

(3) When heat is used, the heat temperature shall not exceed 160°F (71°C) Preferred temperature Is 140°F (60°C).

2-12 **Cleaning and Drying (cont).**

d. *Cleaning Metal Items*. Clean metal items as follows

CAUTION

Use care not to damage the adjacent fabric materials.

(1) Remove burrs, rough spots, rust or corrosion from metal items by filing with a metal file or by buffing and polishing with abrasive cloth.

WARNING

Use tetrachloroethylene only in areas where substantial ventilation is provided. Repeated or prolonged Inhalation can be detrimental to human health Avoid prolonged or repeated contact with skin areas. Tetrachloroethylene must not be taken internally

(2) Remove all oils and filings by brushing and dipping in tetrachloroethylene Allow to dry.

NOTE

Shield adjacent fabric material before spraying solid film lubricant

(3) Spray metal item with a solid film lubricant and allow to air dry for 24 hours.

NOTE

A small amount of lubricant will not damage fabric, but may cause discoloration and make fabric appear soiled.

e. *Equipment Immersed in Salt Water*. Equipment made of cotton fabric immersed In salt water are to be condemned See paragraph 2-13e, for equipment disposition

f. *Equipment Immersed in Fresh Water*. Any air delivery equipment that has been Immersed In a fresh water lake, river or stream will not require rinsing unless It has been ascertained that the water is dirty, oily or otherwise contaminated. Procedures for handling a fresh water immersed parachute are as follows:

(1) Contaminated fresh water If the air delivery equipment has been Immersed in contaminated fresh water, rinse, dry and, if applicable, repair the item(s). Rinse the item(s) as follows

(a) Place the parachute assembly in a large water-tight container filled with a suitable amount of fresh, clean water to cover the assembly.

NOTE

If the water-soaked parachute assembly is too large to be placed into a rinsing container, then the rinsing process will be effected by applying fresh, clean water to the assembly using a hose.

(b) Agitate the container contents by hand for 5 minutes

(c) Remove the parachute assembly from the container and suspend or elevate it in a shaded area, allowing a 5-minute drainage period. Do not attempt to wring the fabric or the suspension lines.

(d) Repeat the procedures In steps (a) through (c) above, twice, using fresh, clean water for each rinse

(e) After the third rinse, allow the parachute assembly to drain thoroughly. Upon completion of draining, dry the assembly In accordance with procedures In c., above

(f) When dried, perform a technical/rigger-type inspection of the parachute assembly. Corroded metal components, or corrosion-stained fabrics or suspension lines, will be either repaired or replaced as prescribed by the Maintenance Allocation Chart (MAC) In Appendix B.

(g) Record any repairs, immersion and rinsing In the NOTES page of the parachute log record (figure 2-6)

(2) Uncontaminated fresh water. If air delivery equipment has been Immersed in uncontaminated fresh water, item(s) will be cleaned and dried as outlined In this paragraph. Minor discoloration of fabric Items resulting from Immersion In uncontaminated fresh water may occur. No attempt should be made to eliminate a minor discoloration as a slight discoloring is preferable to employing vigorous techniques that may damage fabric. Small stains caused by petroleum products or blood will be removed using spot-cleaning procedures in a, or b , above.

2-13. Inspection

This task covers:

a. Routine	**b. Pack-In Process**	**d. Technical-Rigger Type**
c. Technical-Rigger Type	**d. In-storage**	**e. Equipment Disposition**

Equipment Condition:

Packed/Unpacked

a. *Routine Inspection*. A routine inspection is a visual check performed to ascertain the serviceability of all visible components of a parachute that Is packed or rigged for use. The inspection will be made on all components that can be inspected without opening the parachute pack. This inspection will be administered by a parachute rigger prior to use Parachutes Issued for an air delivery operation and not deployed will receive a routine inspection prior to being placed into ready-for-issue storage.

b. *Pack-in-Process Inspection.* A pack-in-process inspection is performed at specified intervals during the packing of a parachute to insure that only authorized procedures and methods are being used. The Inspection will be accomplished by a parachute rigger other than the packer or rigger preparing the applicable equipment for use. The intervals at which the Inspection is performed is as follows.

(1) After the parachute is placed in proper layout.

(2) After gores are folded and flatfold is completed.

(3) After canopy is longfolded and deployment bag is attached.

(4) After canopy is stowed.

(5) After suspension lines are stowed.

(6) After adapter web is stowed.

(7) After parachute Is completely packed.

c. *Technical/Riager-Type Inspection Procedures.*

(1) *Overall inspection*. An overall Inspection will be made on the 35-foot cargo parachute to ascertain the following:

(a) *Log record/parachute inspection data pocket and form* As. applicable, inspect the assembly log record/parachute inspection data pocket to insure the Army Parachute Log Record (DA Form 10-42 or 3912) is enclosed and properly attached as prescribed In paragraph 2-4e. Further, remove the log record from the pocket and evaluate the recorded entries to insure compliance with paragraph 2-4e.

(b) *Assembly completeness*. Ensure that the applicable assembly is complete and no components or parts are missing.

(c) Operational adequacy. Check Item components and parts to ensure proper assembly, which includes attachment and alinement, and that assembled product functions In prescribed manner. Further ensure that no stitch formation or sewn seam has been omitted.

(d) Markings and stenciling. Inspect each assembly and components for faded, illegible, obliterated, or missing Informational data, identification numbers.

(e) Foreign material and stains. Inspect each assembly and related components for presence of dirt or similar type foreign material. Also check for evidence of mildew, moisture, oil, grease, pitch, resin, or contamination by salt water.

(2) *Detailed Inspection.* In addition to the overall inspection performed in (1) above, a detailed inspection will be performed on materials which constitute assembly or component construction using the following criteria, as applicable

(a) Metal. Inspect for rust, corrosion, dents, bends, breaks, burrs, rough spots, sharp edges, wear, deterioration, damaged, loose or missing safety pins.

(b) Cloth. Inspect for breaks, burns, cuts, frays, holes, rips, snags, tears, loose, missing or broken stitching or tacking, weak spots, wear, or deterioration.

(c) Fabric tape, webbing, and cordage. Inspect for breaks, burns, cuts, frays, holes, snags, tears, incorrect weaving, and sharp edges formed from searing, loose, missing, or broken stitching, tacking, whipping, and weaving, weak spots, wear, and deterioration.

(d) Pressure-sensitive (adhesive) tape. Inspect for burns, holes, cuts, tears, weak spots, looseness and deterioration.

d. *In-Storage Inspection*. An In-storage Inspection is a physical check conducted on a random sample of air delivery equipment which is located In storage. The purpose of the Inspection is to Insure that the equipment is ready for Issue, that the Item is properly Identified and segregated from other types of equipment, that no damage or deterioration of equipment has been Incurred, and that all modifications or similar action requirements have been completed. The Inspection shall also concern the methods and procedures applied to the storage of air delivery items, the adequacy of storage facilities, efforts of pest and rodent control, and protection against unfavorable climatic conditions. Air delivery equipment which Is In storage will be Inspected at least semiannually and at more frequent Intervals if prescribed by the local parachute maintenance officer. The frequency of Inspection may vary according to the type of storage facilities and local climatic conditions In-storage Inspection will be conducted only by parachute rigger personnel designated by local parachute maintenance officer

e. Equipment Disposition. Air delivery equipment may be rendered unserviceable by either normal fair wear or by aging and will subsequently be repaired, modified, or condemned, as appropriate. Equipment that is uneconomically reparable (outdated) will be condemned. Disposition of air delivery equipment that is condemned, unserviceable, or for which the serviceability is questionable, will be accomplished using the following procedures, as applicable.

(1) *Item requiring repair or modification*. An air delivery item which requires repair or modification will be tagged In accordance with DA PAM 738-751. Subsequent work on the item will be performed at the maintenance level specified for the maintenance function In MAC, Section II, Appendix B of this manual.

2-13. **Inspection (cont).**

(2) *Disposition of condemned air delivery equipment.* Condemned equipment, other than fatality parachutes, will be removed from service and disposed of In accordance with current directives listed In Appendix A of this manual.

(3) *Rejected equipment*. Equipment which, prior to use, is deemed unserviceable for use will be reported In an Equipment Improvement Recommendation (EIR) In accordance with DA Pam 738-750, as authorized by AR 750-1 Each applicable item which is defective will be held and safeguarded pending receipt of disposition instructions from the National Maintenance Point (NMP) In all Instances, EIR exhibit material will be handled as prescribed in DA Pam 738-750 If the quality or the serviceability of an item Is questionable, clarification and assistance may be obtained by contacting Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN AMSTR-QP, 4300 Goodfellow Blvd, St. Louis, Missouri 63120.

(4) *Equipment of doubtful serviceability*. Equipment which has had previous use and has not exceeded normal fair wear or aging criteria, but of which further serviceability is doubtful, will be tagged as prescribed In DA PAM 738-751. In addition, the equipment will be reported. In an Equipment Improvement Recommendation (EIR) in accordance with DA Pam 738-750 and AR 750-1. The Item(s) in question will be held as EIR exhibit material as outlined In DA Pam 738-750 pending receipt of disposition instructions from the National Maintenance Point (NMP). A maintenance activity holding EIR exhibit material will not tamper with the applicable item(s) or make any attempt to ascertain cause factors. Unnecessary handling of EIR exhibit material may disturb or alter peculiar aspects of the affected item(s) which might affect the judgment of engineering personnel who have the responsibility for final evaluation of EIR actions.

2-14. Acidity Test.

This task covers: **Acidity test**

Tools:

Packing Paddle, Item 26, Appendix B

Materials/Parts:

Medicine Dropper, Item 9, Appendix D
Three-Color pH Paper, Item 10, Appendix D
Spool with Color Chart, Item 15, Appendix D

Equipment Condition:

Unpacked.
Layout on packing table or other suitable area.

a *Fabric and Webbing Acidity Test*. Components and parts that are constructed from fabric or webbing will be administered an acidity test whenever the material is discolored, stained, or the presence of acid is suspected. The acidity test will be accomplished using approved colorimetric pH paper, strip type, with the color comparison chart on the side of each manufacturer's dispenser, to determine the acidity level in steps of 1 pH on fabric or webbing item.

b. *Test Procedure*. Perform test as follows:

(1) Using a medicine dropper or equivalent type applicator, place one to two drops of water on the Item In the intended test area If water drops do not penetrate the material, gently rub the moistened area with a flat side of a clean metal packing paddle.

(2) Tear a suitable length of colorimetric pH paper from dispenser, place the piece of pH paper on the wetted area and press the full surface of the paper against the material with a flat side of the packing paddle used In step (1) above. Insure the pH paper becomes thoroughly wet.

(3) Using the color comparison chart enclosed in the dispenser, compare the color of the moistened pH paper strip with the pH 1-3 color scale. If the color of the pH paper matches the numerical pH 1-3, the acidity present In the material exceeds the acceptable level and the Item Is to be condemned and processed for disposition in accordance with paragraph 2-13e.

(4) After a packing paddle has been used as outlined In steps (1) and (2), above, thoroughly rinse and dry the paddle before using the paddle for any other functions.

2-15. Salt-Water Contamination Test.

This task covers: Inspection

Equipment Condition:

Layout on packing surface or other suitable area

NOTE

Clean or condemn equipment known or suspected of salt contamination.

Inspection. Look for a white crystalline residue

2-16. Packing the 35-foot Cargo Parachute.

This task covers:

a.	**Inspection**	**j.**	**Folding the Gores**
b.	**Orientation**	**k.**	**Wrapping Connector Links**
c.	**Preparing Parachute for Proper Layout**	**l.**	**Longfolding the Canopy**
d.	**Removing Inversions**	**m.**	**Stowing the Canopy**
e.	**Removing Turns**	**n.**	**Stowing the Suspension Lines**
f.	**Removing Tangles**	**o.**	**Closing Deployment Bag**
g.	**Removing Twists**	**p.**	**Stowing Adapter Web**
h.	**Proper Layout**	**q.**	**Closing Adapter Web Flaps**
i.	**Assembling Components**	**r.**	**Permanent Bag Closing**

Tools:

Packing Weights, Item 12, Section III, Appendix B
Line Separator, Item 8, Section III, Appendix B

Equipment Condition:

Parachute cleaned (reference paragraph 2-12) and given a shakeout (reference paragraph 2-11)

Materials/Parts:

Tape, Pressure Sensitive, Item 20, Appendix D
Thread, Cotton, Ticket No 8/7, Item 22, Appendix D
Webbing, Cotton, Type I, 1/4-in., Item 33, Appendix D

WARNING

Failure to detect areas of damage may result In malfunction of the parachute and Injury or loss of life to personnel

a. *Inspection*. If defects or damages are discovered during Inspection of a parachute, the parachute must be rigger-rolled and processed for maintenance. A rigger-type Inspection (refer to para. 2-13 c (2) and a pack-in-process inspection must be performed in conjunction with each packing of a parachute (refer to para 2-13.b).

(1) *Rigger-type inspection*. During the packing of each parachute, it must be given a rigger-type Inspection by the packer In accordance with paragraph 2-13 c (2).

(2) *Pack-in-process inspection*. A pack-in-process Inspection must be performed by a designated supervisory rigger, other than the packer, at seven intervals during the packing procedure. The inspection is performed to assure that the parachute is packed according to authorized packing procedures (refer to para 2-13).

b. *Orientation*. Throughout this manual, all directions (right, left, upper, lower, top, bottom, clockwise, and counterclockwise) are given from the rigger's point of view, as the rigger stands looking from the tension device toward the stationary post. See figure 2-8.

2-16. Packing the 35-Foot Cargo Parachute (cont).

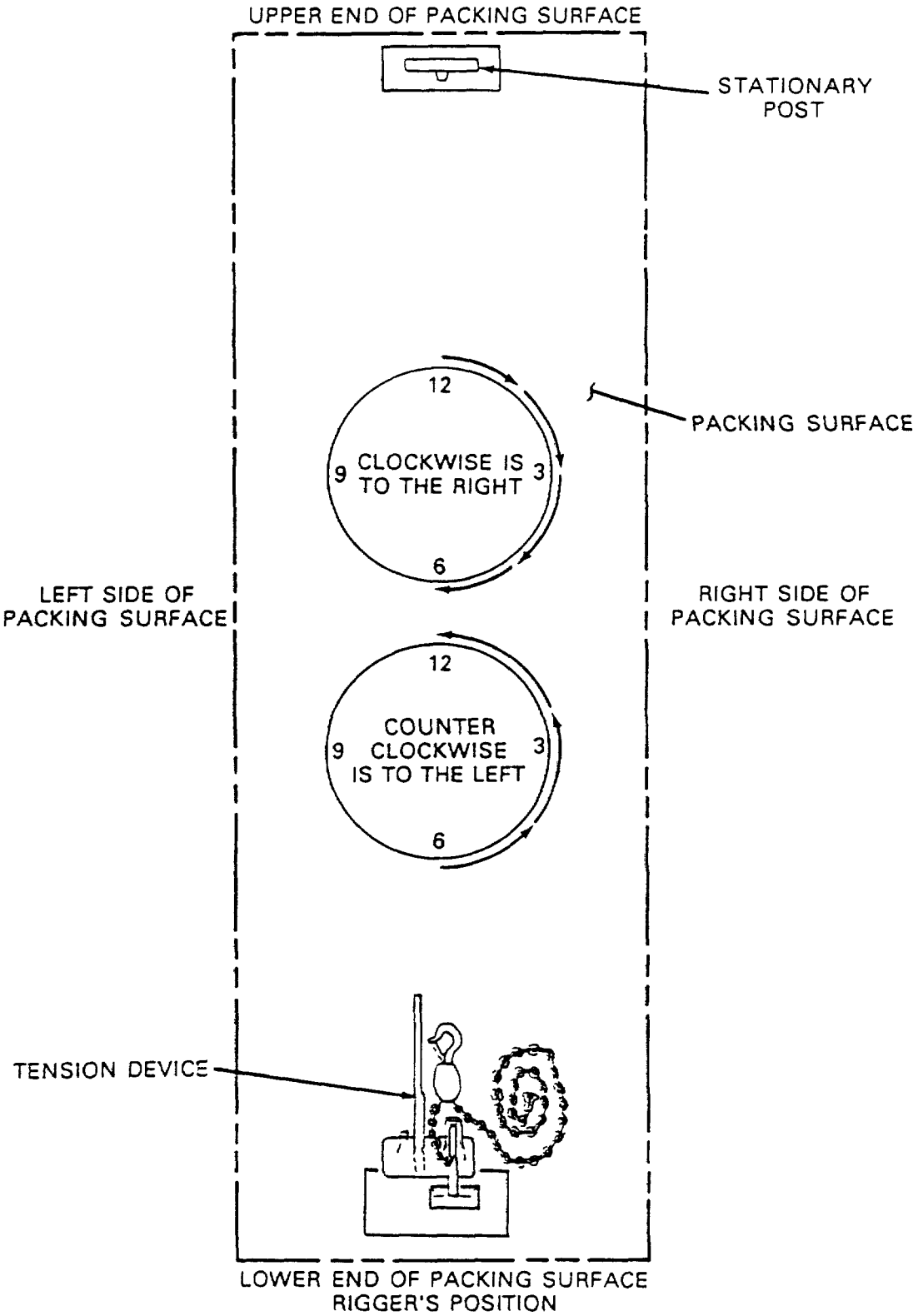


Figure 2-8. Rigger's Orientation

(1) Top, that portion of the equipment that Is farthest from the packing surface

(2) Bottom, that portion of the equipment that is nearest to the packing surface

c. *Preparing Parachute for Proper Layout*. Place packing tools In convenient locations near packing area. Lay the canopy assembly lengthwise on the packing surface, attach the bridal loop to the stationary post (figure 2-9) and elongate canopy.

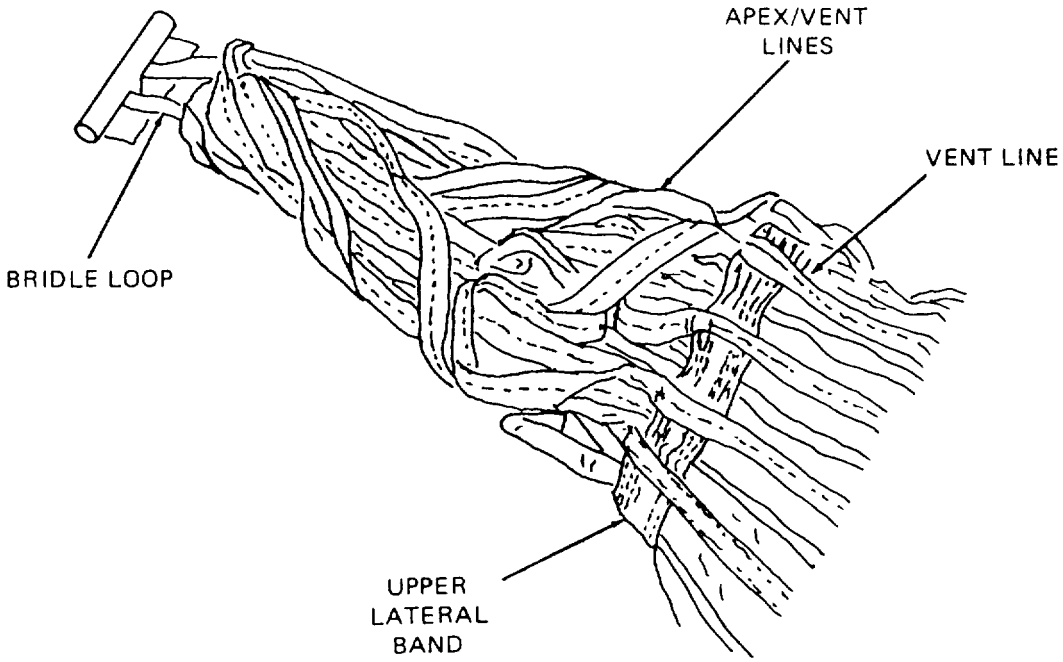


Figure 2-9. Canopy Attached to Stationary Post.

NOTE

When inversion, turns, tangles and twist are present In the canopy assembly, the proper sequence for removal to achieve proper layout is to remove an inversion first, remove turns secondly, then remove tangles and, finally, remove twist.

d. *Removing Inversions.*

(1) *Canopy inversion*. Check canopy vent lines to determine If canopy has been inverted. Canopy Is Inverted when vent lines are located Inside upper lateral band (see figure 2-10). Remove Inversion as follows:

(a) Detach bridal loop from stationary post and pass vent through canopy.

(b) Pass vent out of canopy skirt, between two adjacent suspension lines (figure 2-10).

2-16. Packing the 35-Foot Cargo Parachute (cont).

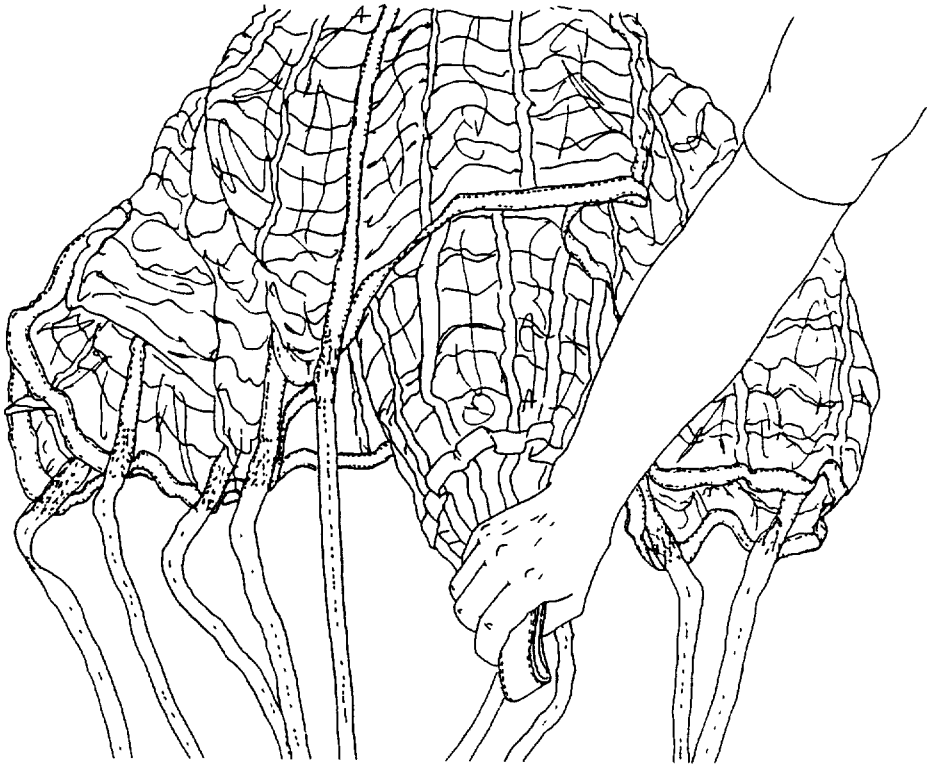


Figure 2-10. Removing Inversion.

e. *Removing Turns*. A turn exists when one group of suspension lines is rotated around opposite group of lines. To remove a turn, rotate lines In a direction opposite to direction of turn (figure 2-11).

f. *Removing Tangles*. Maintain separation between two line groups and work tangle(s) to a point close to connector links. With left hand, select top line(s) forming a tangle and lift them away from remaining lines. As person No 1 holds suspension lines as person No. 2 pulls adapter web through suspension lines (figure 2-12).

g *Removing Twists..* Grasp top inside suspension lines (1 and 48) of canopy skirt and trace these lines down to connector links (figure 2-13). Rotate adapter web between suspension line groups In a direction opposite to that of twist. Attach adapter web to tension device.

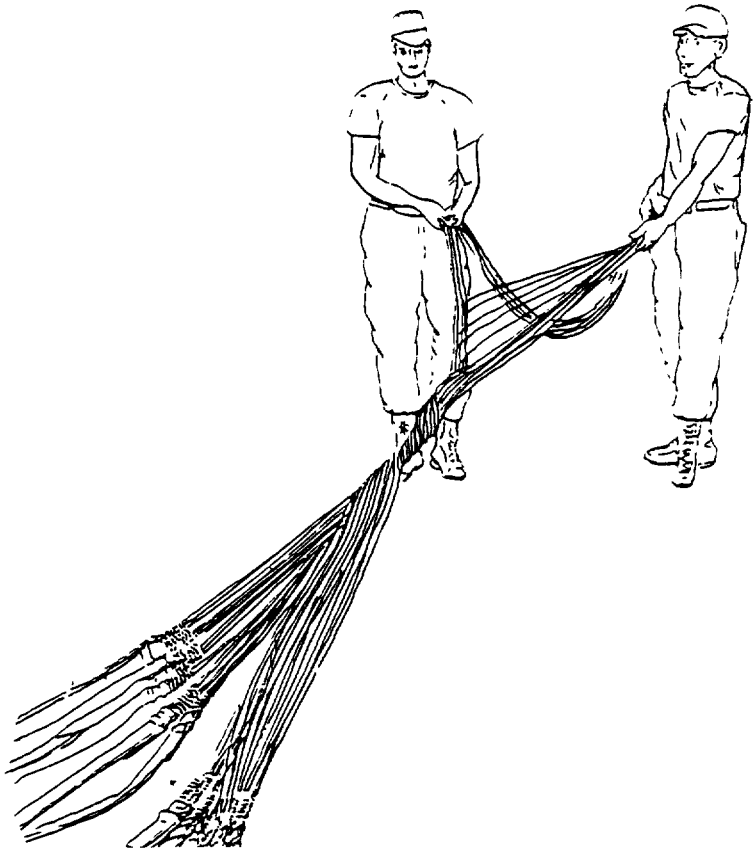


Figure 2-11. Removing Turns.

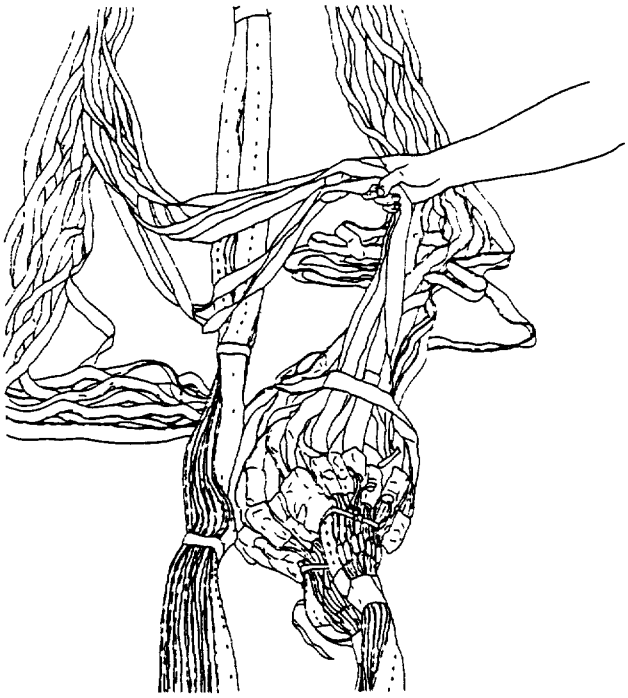


Figure 2-12. Removing Tangles.

2-16. Packing the 35-Foot Cargo Parachute (cont).

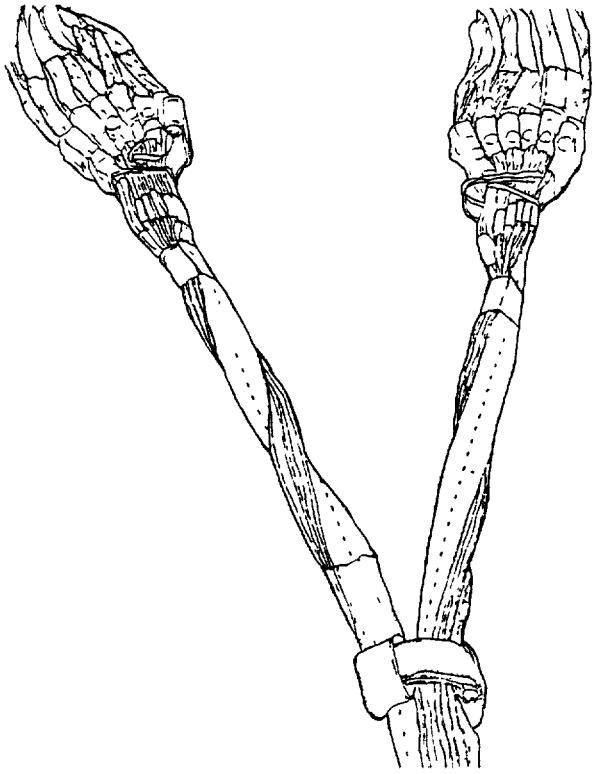


Figure 2-13. Removing Twists.

h. *Proper Layout.*

(1) Locate top center gore of canopy and divide suspension lines into two groups. Lines 1 thru 24 should be In right group, lines 25 thru 48 in left group, lines 1 and 48 should be located on top outside of their respective groups, lines 24 and 25 on the bottom inside (figure 2-14).

(2) Check canopy assembly for proper layout by raising top and bottom center gores, and tracing suspension' lines to connector links. Check lines 1, 48, 24 and 25 for proper position (figure 2-14).

i. *Assembling Components*

NOTE

When the parachute Is received from the supply activity and before it is packed for use, the components must be assembled. This must be accomplished during the layout of parachute (para 2-16c) after removing inversion, turns, tangles or twists, If required. In assembling components, If any component is found to be defective, parachute must be processed for repair. Place components on the packing lane and obtain proper layout of canopy assembly; then assemble components in accordance with the following:

(1) *Attaching deployment bag*.

(a) Pass the bridle loop of the canopy through the opening In the center of the deployment bag.

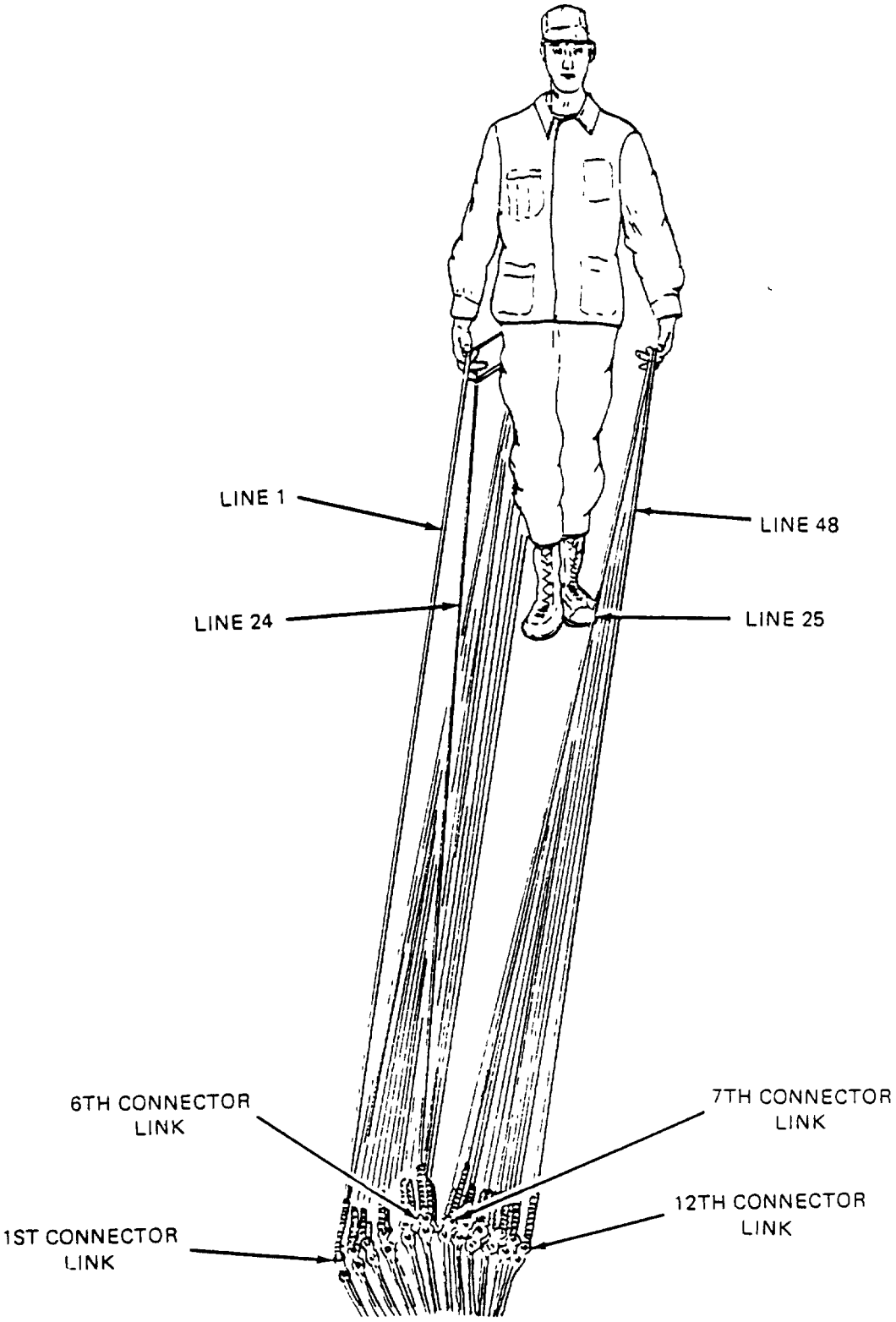


Figure 2-14. Four Line Check.

2-16. Packing the 35-Foot Cargo Parachute (cont).

(b) Cut a 12 inch length of type III nylon cord.

(c) Pass one end of the cord length through the canopy bridle loop and center the cord In the bridle loop.

(d) Pass a running end of the cord over the top of the two deployment bag bridle straps and pass the opposite running end under the bridle straps

(e) Secure the cord running ends together above the bag bridle straps with a surgeon's knot and a ocking knot Make an overhand knot In each running end (figure 2-15)

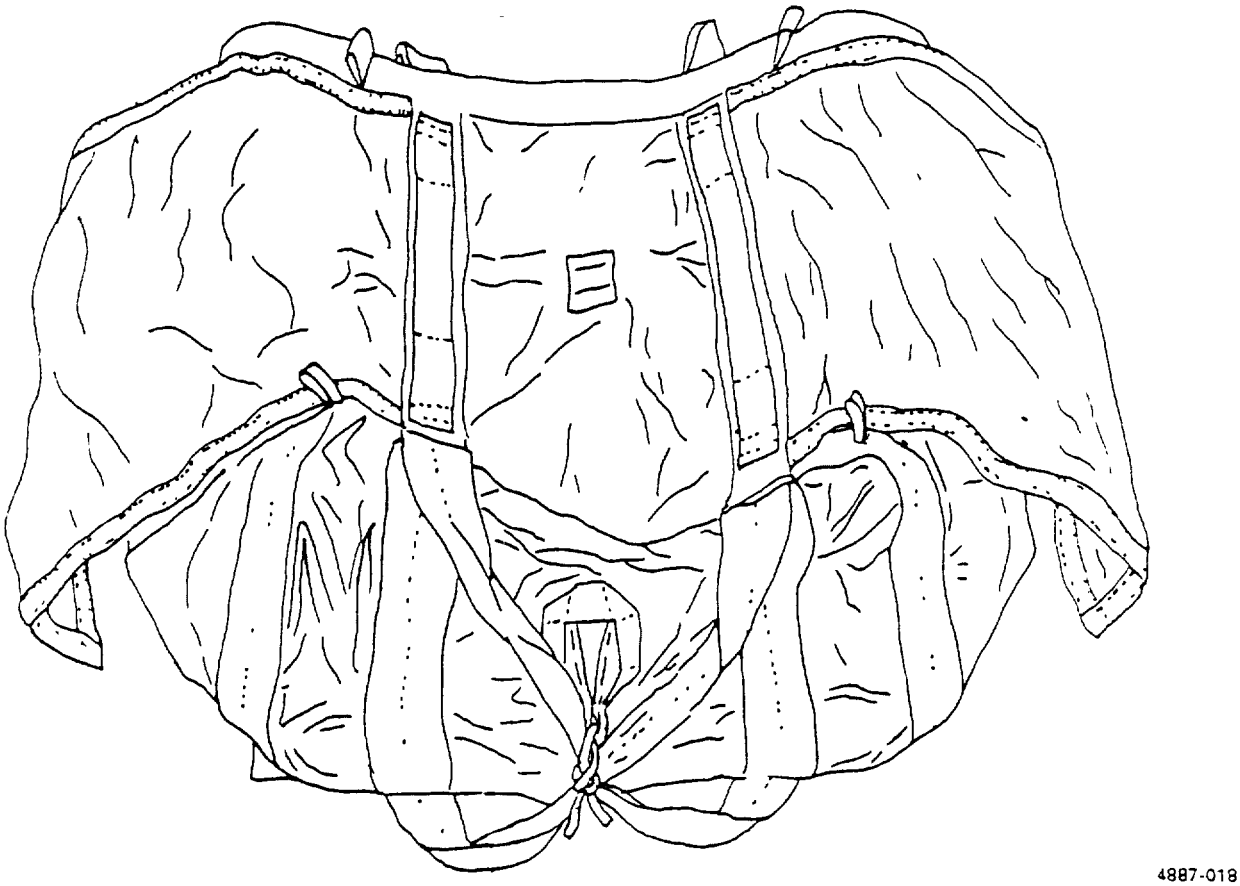


Figure 2-15. Attaching Deployment Bag to Bridle Loop.

j. *Folding the Gores.*

(1) Apply tension to the canopy assembly.

(2) Insert line 25 into suspension line separator.

(3) Pick up right group of suspension lines and flip right group of gores over left group of gores (figure 2-16)

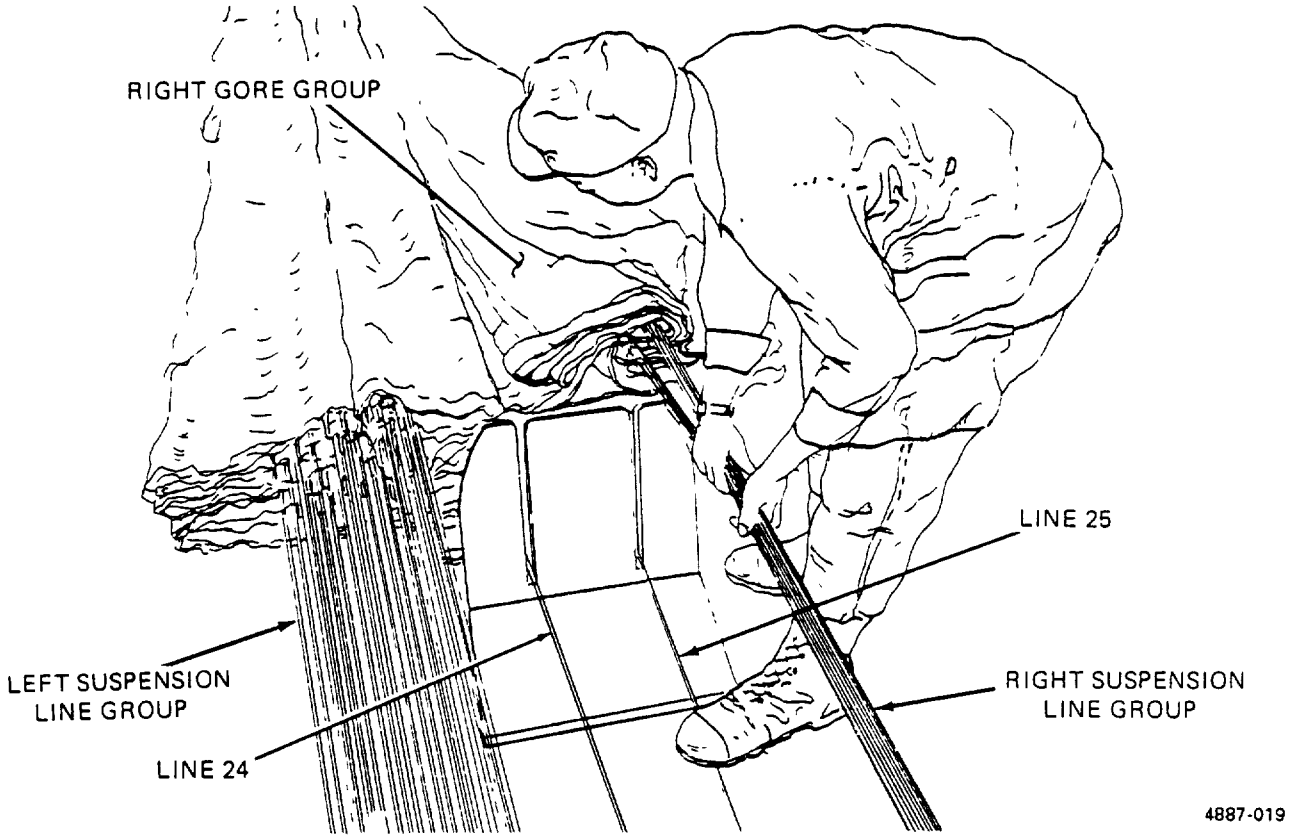


Figure 2-16. Flipping Right Group of Gores.

(4) Person No. 1 lift line 26 to expose gore. Fold gore to right, at the same time person No 2 folds gore at the top of the canopy (figure 2-17).

(5) To complete fold, lower suspension line into suspension line separator.

(6) Repeat steps 4 and 5 for remaining gores in right group.

(7) Place suspension line 24 In suspension line separator

(8) Flip left group of gores over right group of gores.

(9) Person No 1 lift line 23 to expose gore. Fold gore to left, at the same time person No 2 folds gore at the top of the canopy.

(10) Lower suspension line into suspension line separator.

(11) Repeat steps 9 and 10 for remaining gores In left group.

(12) Lay packing weight across suspension lines at suspension line separator.

(13) Grasp the corners of the top gores of right and left gore groups. Count down 24 gores for each gore group.

(14) Dress both gore groups at the skirt reinforcement (lower lateral band) (figure 2-18).

2-16. Packing the 35-Foot Cargo Parachute (cont).

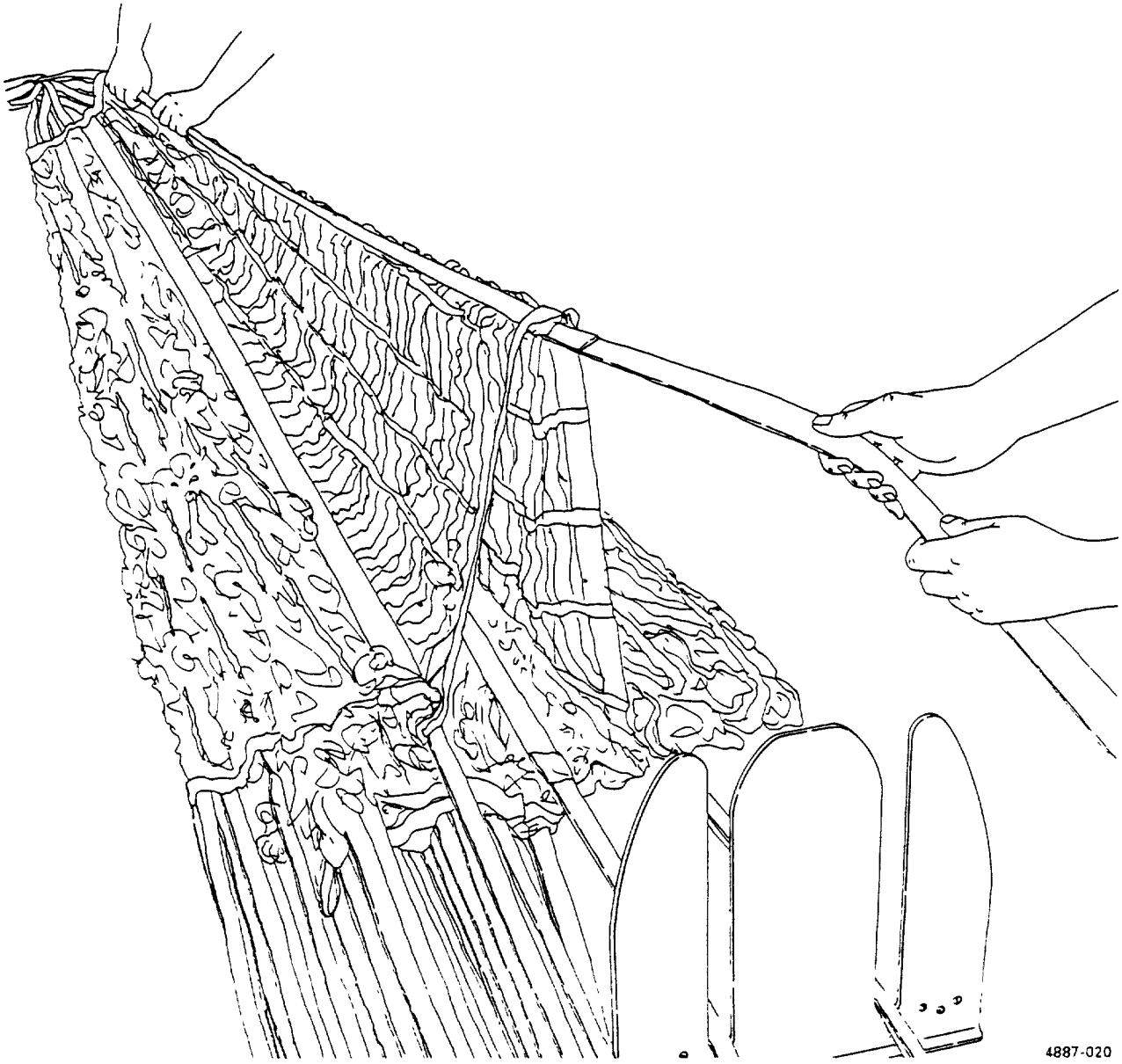


Figure 2-17. Folding Gores.

Figure 2-18. Dressing Gores at Canopy Skirt.

(15) To complete flatfold, work from the skirt reinforcement (lower lateral band) to the vent reinforcement (upper lateral band) dress the top gores, brushing with fingertips from the radial ribbon toward the folded edges (figure 2-19).

k. *Wrapping Connector Links.*

Wrap each suspension line connector link with 2-inch wide, pressure sensitive masking tape Start at a point 1 inch above the connector link. Wrap so that the tape will cover twice around each link and overlap. End the wrap 1 inch below the connector link on the adapter web.

l. *Longfolding the Canopy*.

(1) Longfold the right group of gores by folding the edges of the gores toward the center of the canopy Temporarily secure the folded gores with packing weights (figure 2-20).

(2) Longfold the left group of gores over the night group of gores and insure that a width of 22 Inches is obtained at the canopy skirt. Secure the folded gores with packing weights every two feet starting with two at the canopy skirt (figure 2-21).

2-16. Packing the 35-Foot Cargo Parachute (cont).

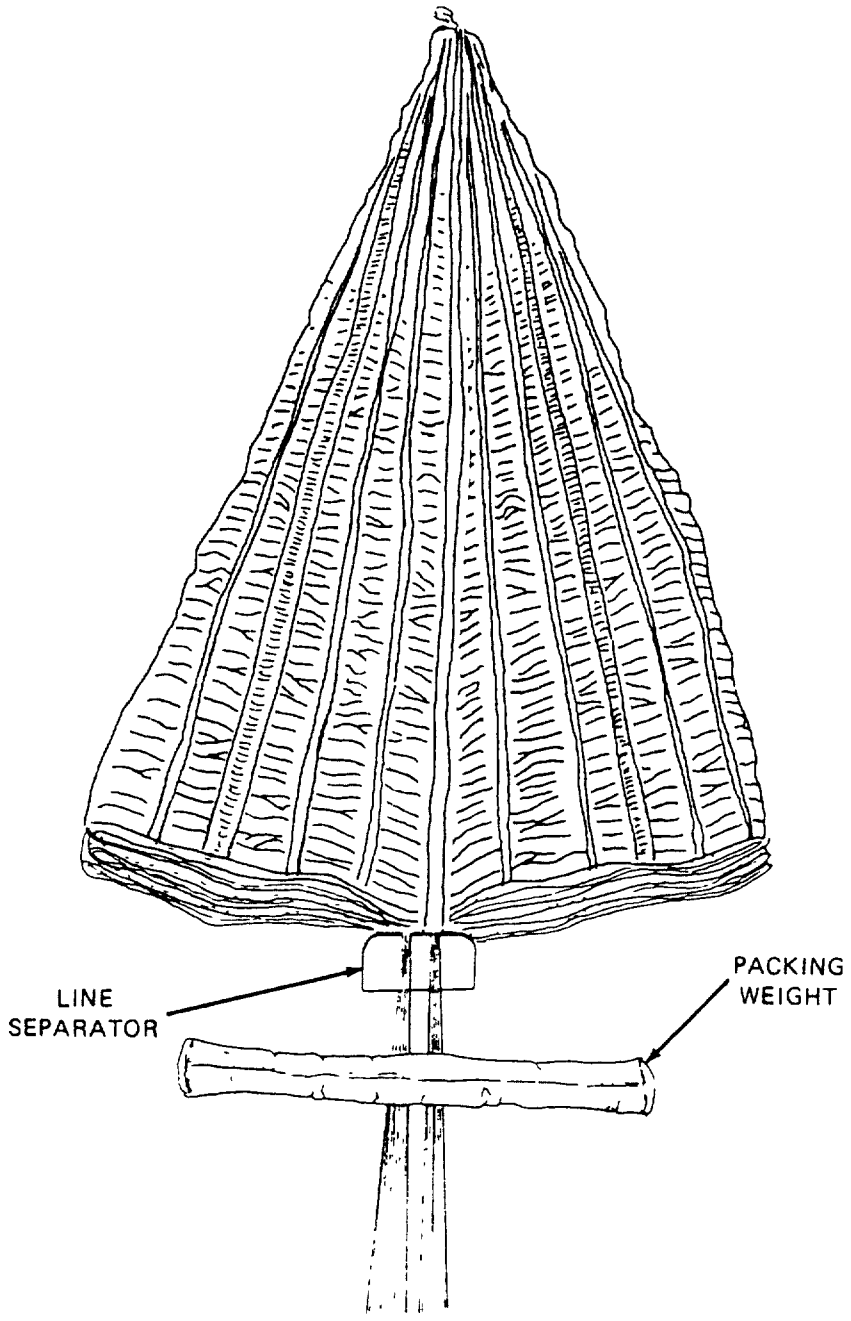


Figure 2-19. Flatfold Complete.

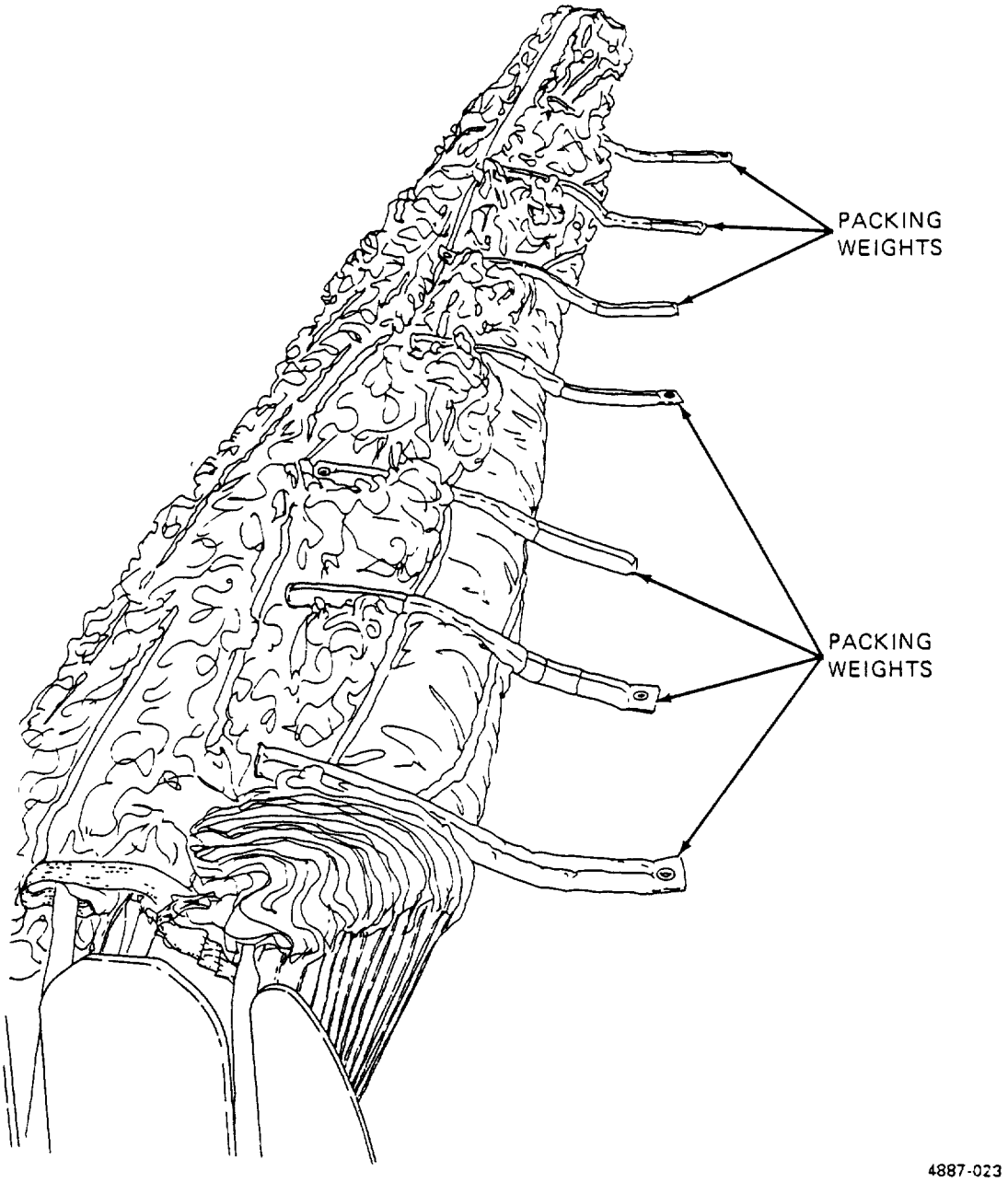


Figure 2-20. Right Group of Gores in Longfolded.

2-16. Packing the 35-Foot Cargo Parachute (cont).

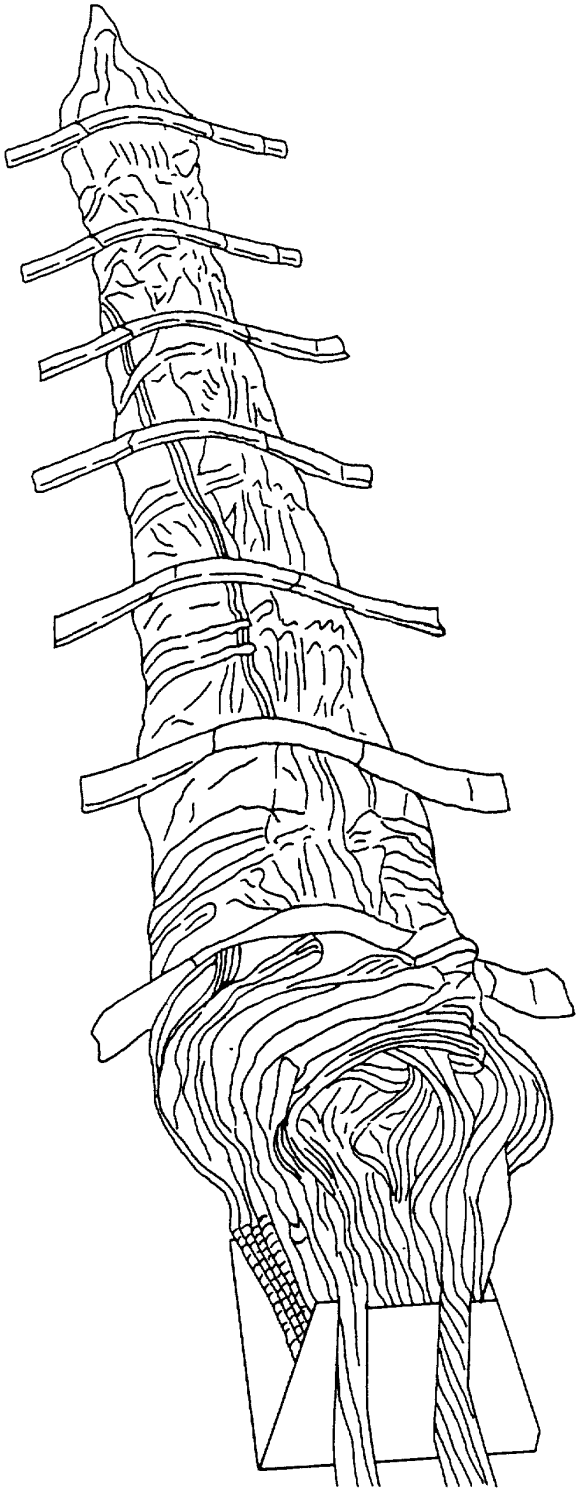


Figure 2-21. Longfolded Completed.

m. *Stowing the Canopy*

(1) Make the first stow of the canopy at the upper right corner of the deployment bag. Make the second stow at the upper left corner of the deployment bag and continue to make S-fold stows across the width of the bag until canopy is completely stowed (figure 2-22).

(2) Turn deployment bag on end (figure 2-23).

(3) Make one fold of suspension lines from left to right across the stowed canopy skirt.

(4) To install a skirt hesitater pass a length of one turn 1/4-inch cotton webbing under the suspension lines through the two Inside bag tie loops, across the top of the suspension lines, and secure with a surgeon's knot and a locking knot (figure 2-24).

(5) Lay bag on floor with mouth of bag toward stationary post and suspension line stowage flap open across top of deployment bag Insure suspension line retaining straps are facing up.

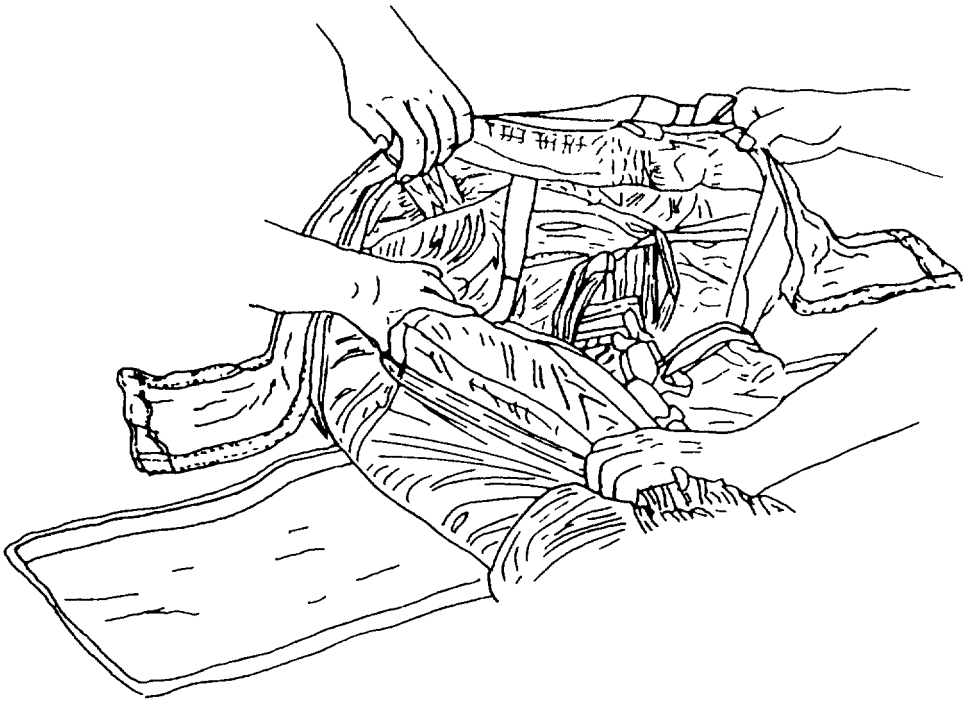


Figure 2-22. S-fold Canopy into Deployment Bag.

2-16. Packing the 35-Foot Cargo Parachute (cont).

Figure 2-23. Deployment Bag Standing Upright.

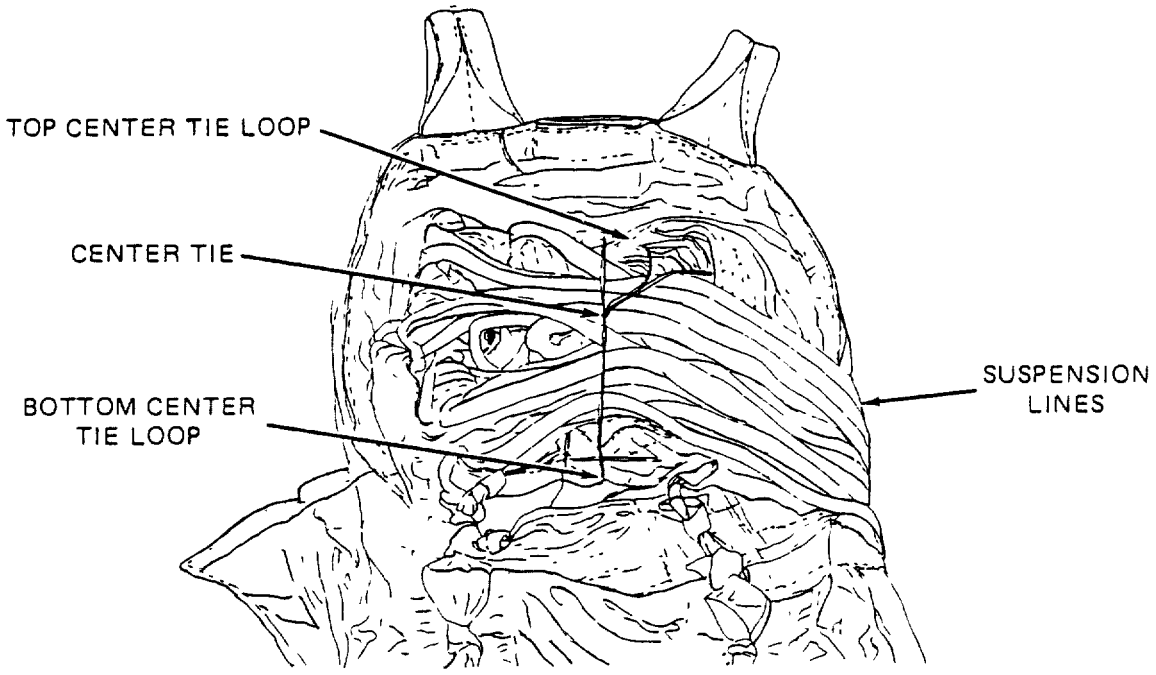


Figure 2-24. Tying Skirt hesitater.

n. *Stowing Suspension Lines*.

(1) Install two 3-foot lengths of 1/4-inch cotton webbing on each retaining strap loop along the stowage panel (figure 2-25).

(2) Form the first suspension line stow at the upper night corner of the stowage panel and secure the stow with the ends of the cotton webbing using a surgeon's knot and a locking knot.

(3) Form and secure the second suspension line stow at the upper left corner of the stowage flap (figure 2-26).

(4) Continue stowing the suspension lines on the stowage panel from left to right alternately until the last stow, which is secured at the lower right hand corner of the stowage flap, and is within approximately 2 1/2 feet of the connector links (figure 2-27).

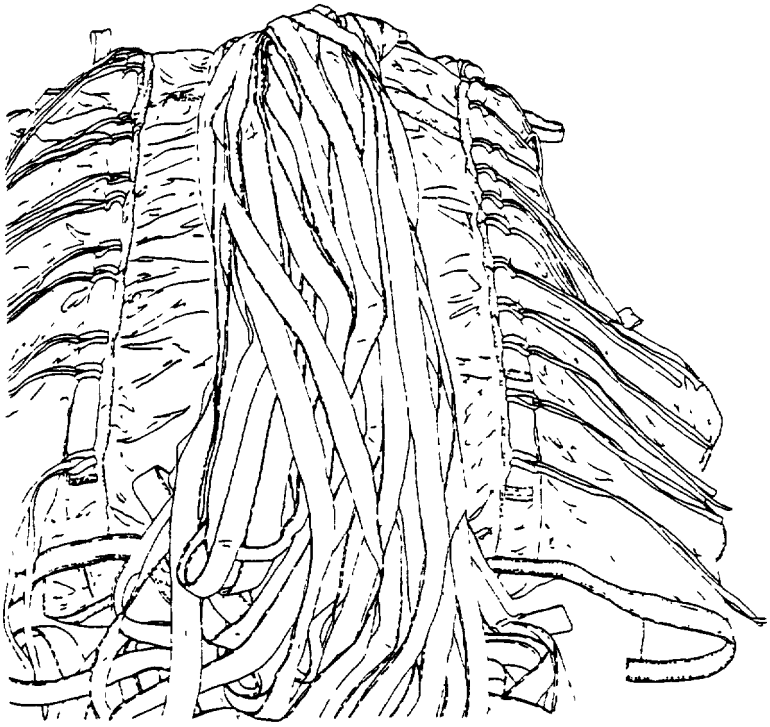


Figure 2-25. Stowage Panel Prepared

2-16. Packing the 35-Foot Cargo Parachute (cont).

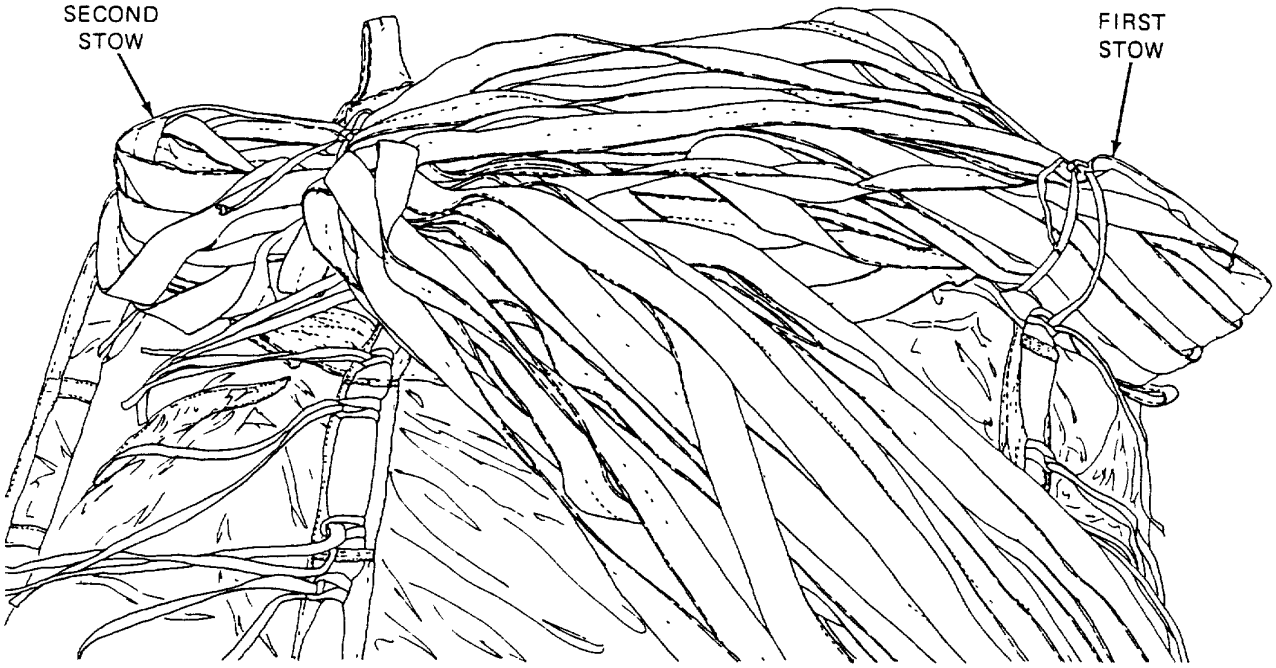


Figure 2-26. First and Second Suspension Line Stows.

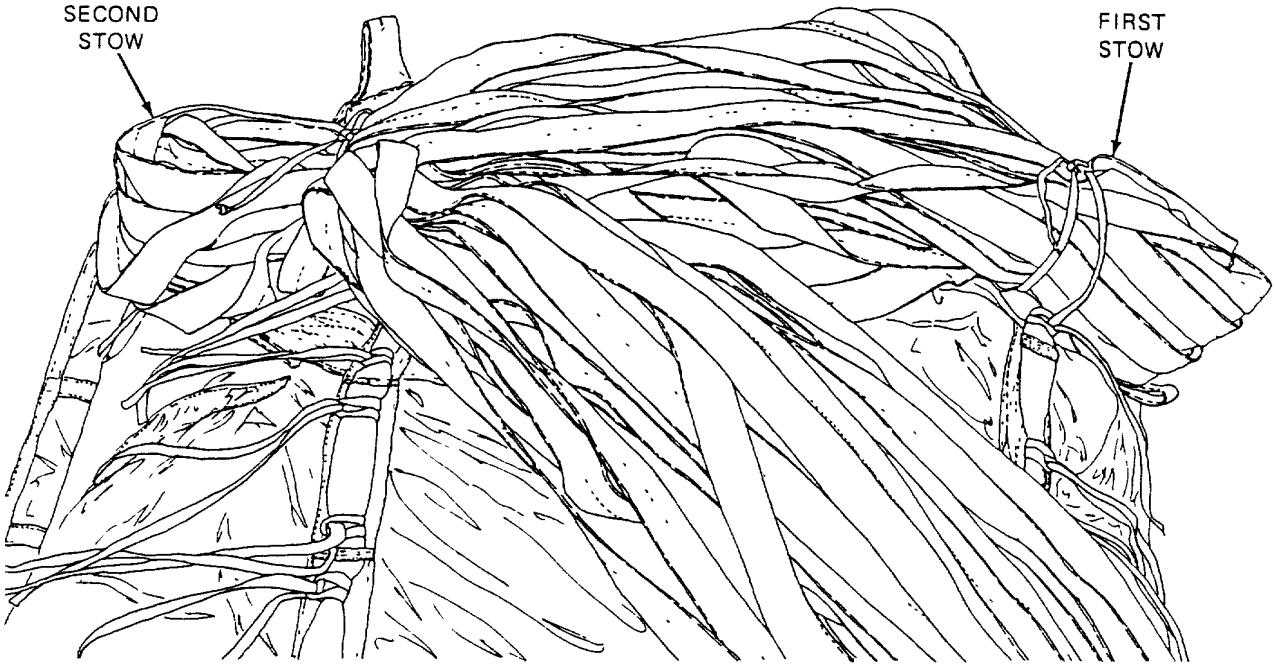


Figure 2-27. Suspension Line Stow Complete.

o. *Closing Deployment Bag*

(1) Lift deployment bag and stand on end.

(2) Lay bag on floor with mouth of bag and stowed suspension lines toward tension device.

(3) Position the taped suspension line connector links in the upper center of the stowage panel next to the canopy skirt. Insure that the adapter web extends from the left side of the bag (figure 2-28).

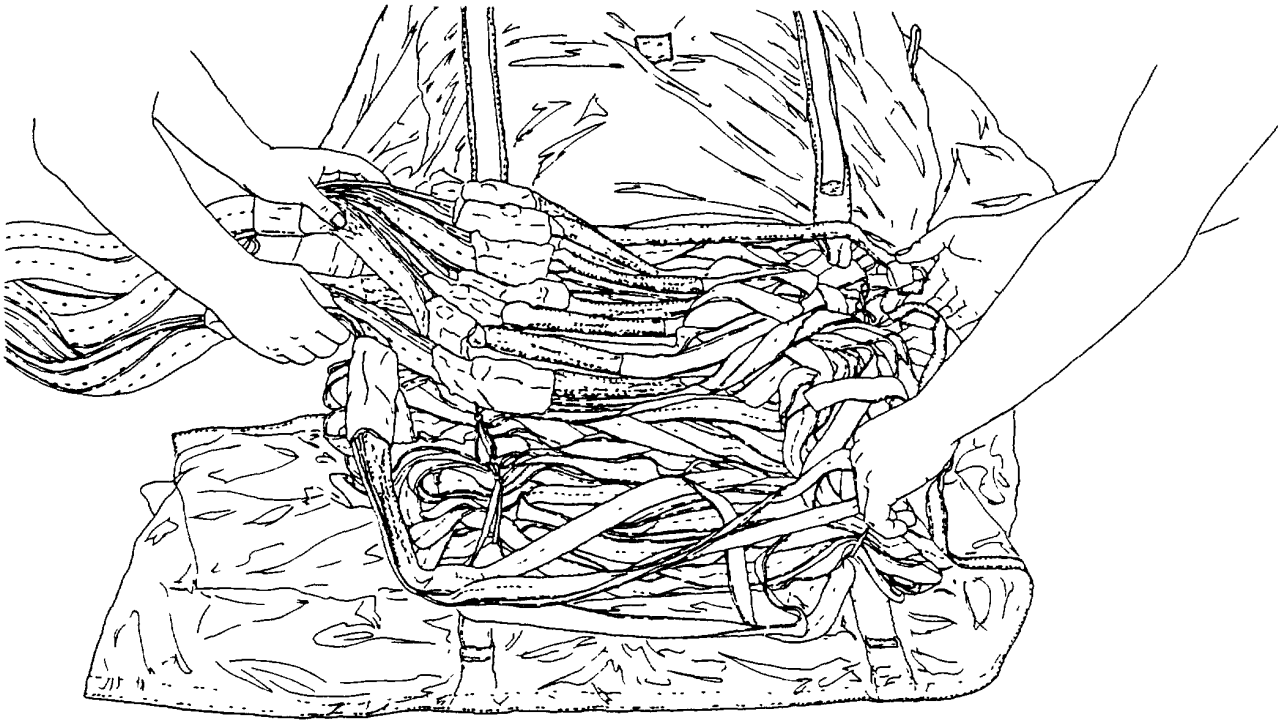


Figure 2-28. Suspension Lines Prepared for Rollup.

(4) Tightly roll the suspension line stowage panel while lifting the bag to upright position and tuck into the mouth of the deployment bag (figure 2-29).

(5) Fold the adapter web lengthwise from left to right across the rolled suspension line stowage panel.

(6) Use a suitable length of 1/4-inch cotton webbing, Install a temporary bag closing tie (hourglass tie) using the four bag closing loops. Secure with a surgeon's knot and a locking knot (figure 2-30).

2-16. Packing the 35-Foot Cargo Parachute (cont).

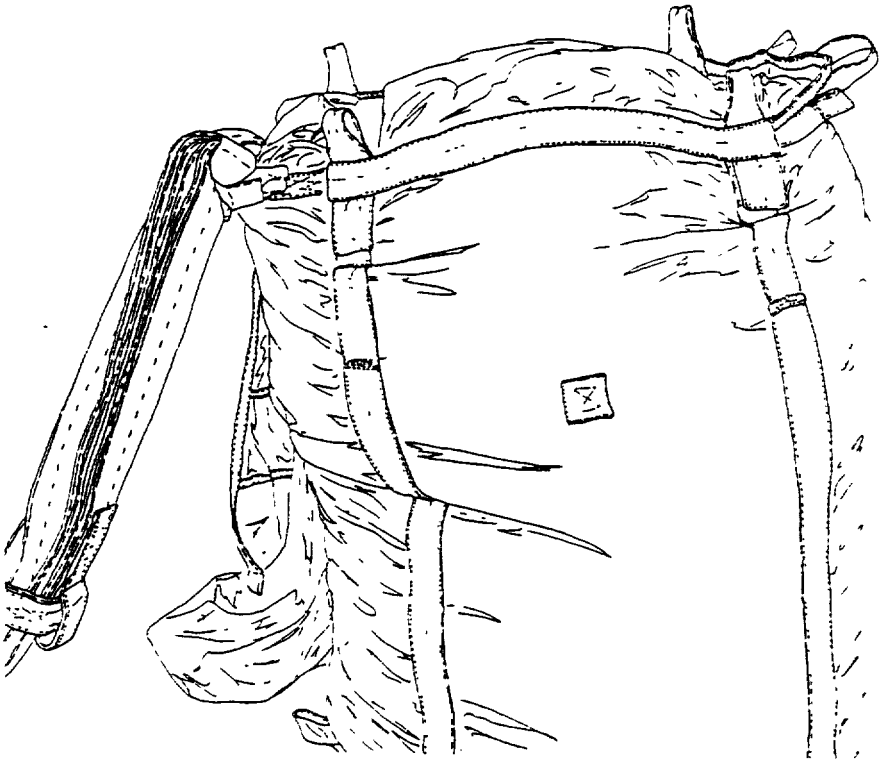


Figure 2-29. Suspension Line Storage Flap Stowed.

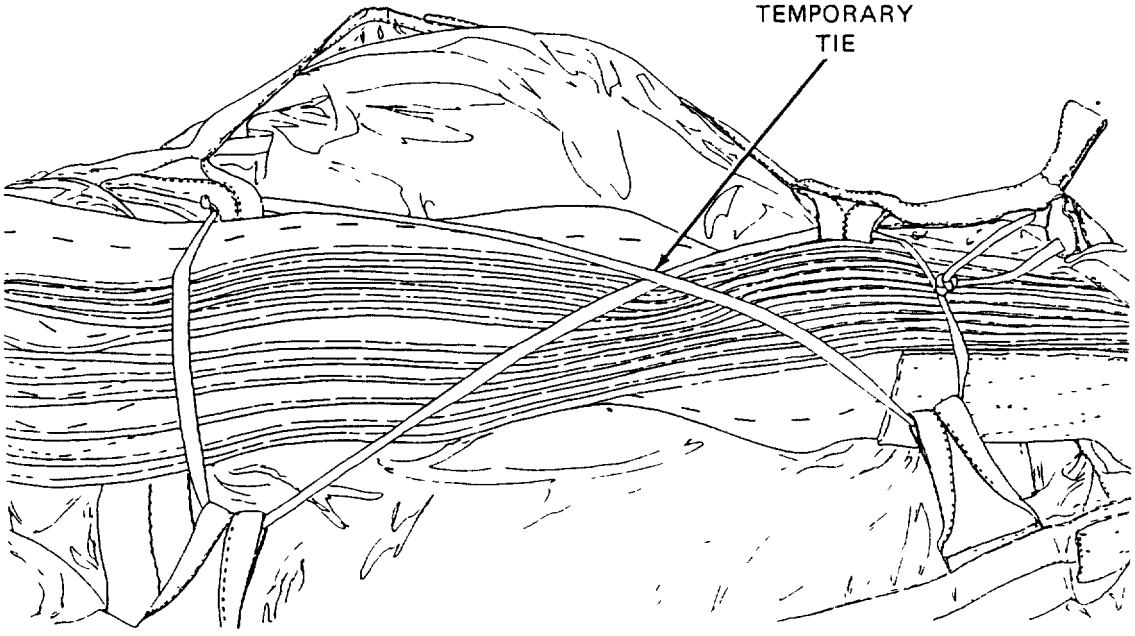


Figure 2-30. Temporary Bag Closing Tie.

p. *Stowing the Adapter Web*.

(1) Lay the deployment bag down on packing surface so that the adapter web stowage flaps are facing up.

(2) Cut a minimum of eight 24-inch lengths of 1/4-inch wide cotton webbing for use as adapter web stow ties. Attach webbing at equal intervals along each row of the retaining strap loops.

(3) Bring the adapter web from the lower right up and across the bag to make the first stow in the upper left corner of the deployment bag. Secure the stows with a surgeon's knot and locking knot (figure 2-31).

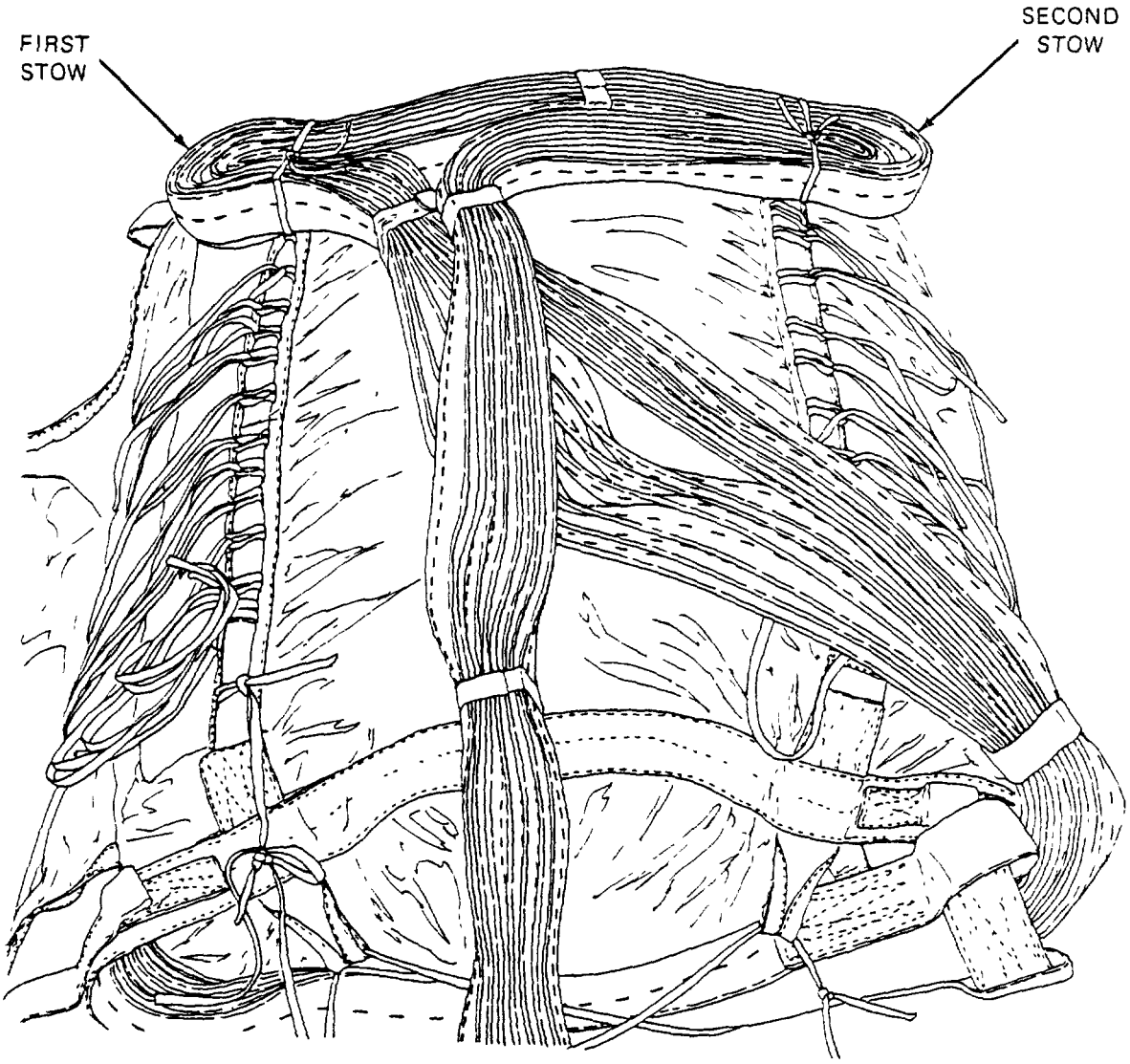


Figure 2-31. First and Second Stow of Adapter Web.

(4) Continue stowing until the final stow is made In the lower left corner with approximately 2 feet of adapter web extending from bottom of deployment bag (figure 2-32).

2-16. Packing the 35-Foot Cargo Parachute (cont)

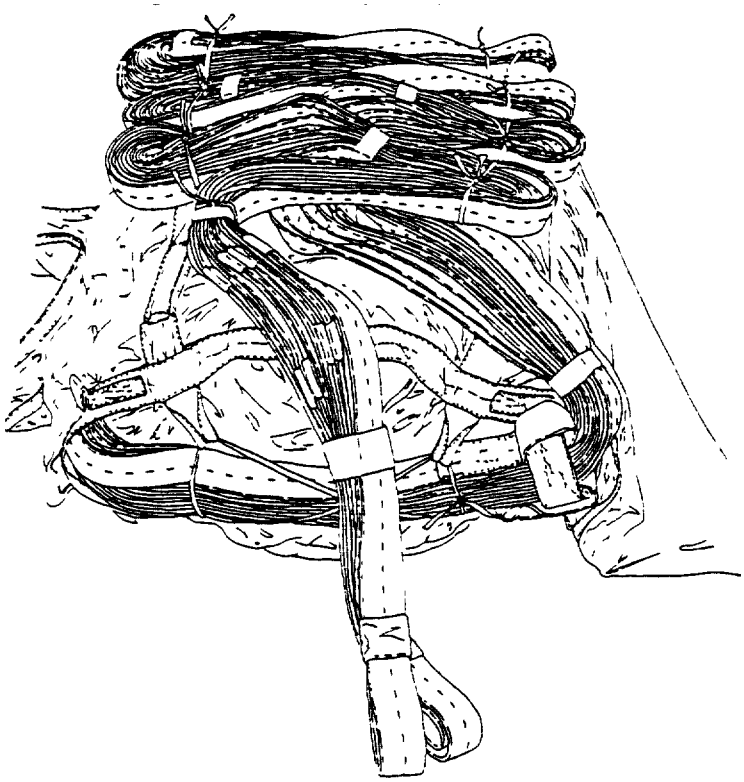
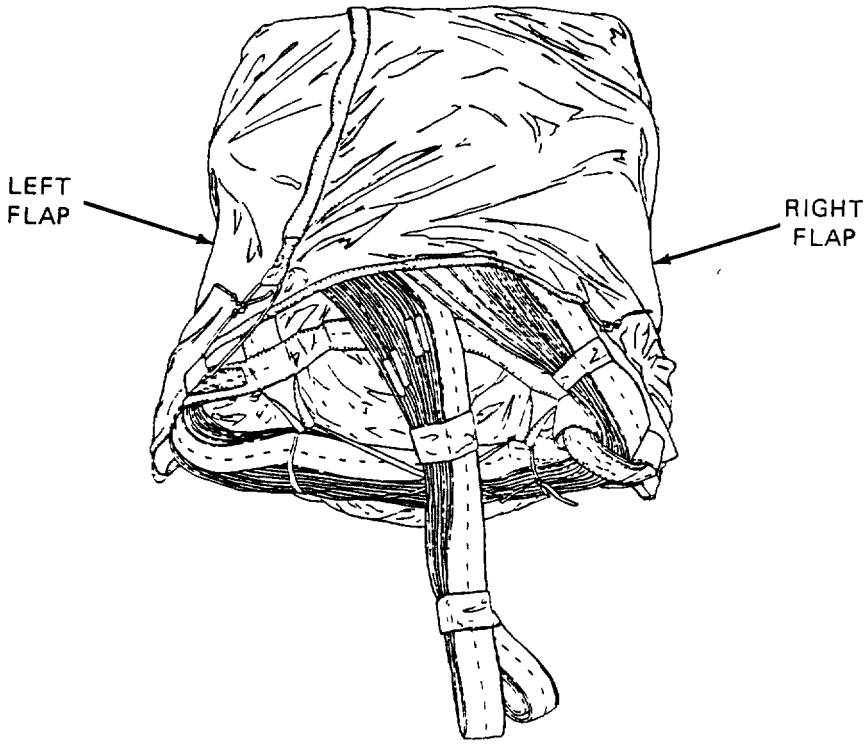


Figure 2-32. Adapter Web Stow Complete.

q. *Closing the Adapter Web Flaps.*

(1) Extend the left adapter web closing flap from left to right across the adapter web and pass a suitable length of type III nylon cord through the upper left adapter web flap closing loop and the upper right bag closing loop. Secure with a surgeon's knot and an overhand knot.

(2) Extend and secure the right adapter web closing flap from right to left across the other flap (figure 2-33). Secure with a surgeons overhand knot.



4887-036

Figure 2-33. Adapter Web Flaps Secured.

r. *Permanent Bag Closing*.

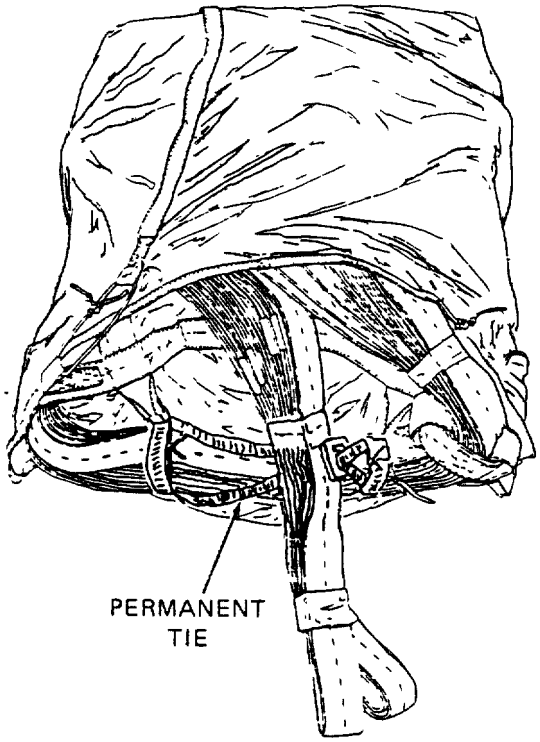
(1) Replace the temporary cotton webbing bag closing tie with 1/2-inch tubular nylon webbing.

(2) Cut a suitable length of nylon webbing and starting on the right side of the deployment bag run the tubular nylon webbing from right to left through the lower left adapter web closing flap, from right to left through the upper right bag closing loop and cross down, through miniature cutter, to the lower left bag closing loop and the lower right adapter closing flap, from left to right through the upper left bag closing loop and cross down, through the miniature cutter, and across and from left to right through the bottom right bag closing loop and vertically up. Secure running ends of webbing with surgeon's knot, locking knot and an overhand knot at each running end (figure 2-34).

(3) Insure that the miniature cutter is In the middle of the deployment bag mouth where the two legs of the tie cross.

(4) Pass one turn of double ticket 8/7 cotton thread through the holes above the safety reinforcing safety bar of the cutter knife Secure with a surgeon's knot and locking knot.

2-16. Packing the 35-Foot Cargo Parachute (cont.).



4887-037

Figure 2-34. Permanent Bag Closing Tie.

s. Signing DA Form 10-42.

(1) Remove parachute log record book from parachute inspection data pocket (log record pocket) on upper end of the deployment bag and record pack data as prescribed in para 2-4.

(2) After completion of entries, return log record book to inspection data pocket.

SECTION VI. REPAIR.

NOTE

Repair and replacement of parachute components is performed in accordance with the general repair instructions in this section, and in specific paragraphs applicable to the item being repaired.

2-17. Sewing Procedures

This task covers:

a. Basting and Temporary Tacking
b. Stitching and Restitching
c. Darning
d. Zig-Zag Sewing

Tools:

Specified In paragraph applicable to the item being repaired

Equipment Condition:

Unpacked. Canopy with defects recorded and clean

Materials/Parts:

Specified In paragraph applicable to the item being repaired

NOTE

Sewing requirements will vary according to the type of item being repaired and the type of repair being made. The type of sewing machine, type of thread, the stitch range, and the stitch pattern, if applicable, required to accomplish a sewing procedure will be specified In the paragraph applicable to the item being repaired. All original stitching that is cut during the performance of a sewing procedure will be removed from the applicable Item Immediately after the accomplishment of a machine sewing procedure, trim thread ends to a point as close as possible to the material which has been sewn.

a. Basting and Temporary Tacking. Basting and temporary tacking are hand-sewing methods used to temporarily hold layers of cloth fabric together while a repair Is being performed. The following Is a list of procedures which apply to basting and temporary tacking actions.

(1) Basting and temporary tacking should be made using thread which Is of a contrasting color to the material being worked.

(2) On small cargo parachute canopies, basting will be made using a single strand of size. A nylon thread or ticket no 24 cotton thread.

(3) When basting, do not tie knots at any point In the thread length. The sewing should be made with two stitches per inch.

(4) Temporary tacking will usually be made using a length of size E nylon thread. However, an alternate type thread may be specified within the paragraph applicable to the item.

(5) Immediately upon completion of a repair, remove previously made basting or temporary tacking stitches.

b. *Stitching and Restitching*. Perform stitching and restitching as follows, referring to tables 2-2 and 2-3:

(1) Parachute canopy assemblies. The stitching and restitching made on parachute canopies should be accomplished with thread that is contrasting in color to the fabric being restitched If contrasting color thread is not available, thread of matching color may be used, providing all other specifications are met. Straight stitching and restitching on parachute canopy assemblies should be locked by at least 2 inches at each end of a stitch row, when possible. Zig-zag stitching does not require locking; however, zig-zag restitching should extend at least 1/4 inch into undamaged stitching at each end, when possible. When restitching parachute canopy assemblies, stitch directly over the original stitching and follow the original stitch pattern as closely as possible.

Table 2-2. Sewing Machine Code Symbols.

Code symbol	Sewing machine
LD	SEWING MACHINE, INDUSTRIAL: General sewing, 301 stitch, light duty, NSN 3530-01-177-8590.
MD ZZ	SEWING MACHINE, INDUSTRIAL Zig-zag, 308 stitch, medium duty, NSN 3530-01-181-1421.
LD ZZ	SEWING MACHINE, INDUSTRIAL Zig-zag, 308 stitch, light duty, NSN 3530-01-181-1420
HD	SEWING MACHINE, INDUSTRIAL. General sewing, 301 stitch, heavy duty, NSN 3530-01-177-8588.
MD	SEWING MACHINE, INDUSTRIAL: General Sewing, 301 stitch, medium duty, NSN 3530-01-177-8591.
DN	SEWING MACHINE, INDUSTRIAL· Darning, lock stitch, NSN 3530-01-177-8589.
LHD	SEWING MACHINE, INDUSTRIAL: 301 stitch; light heavy duty; NSN 3530-01-186-3079.
ND	SEWING MACHINE, INDUSTRIAL 301 stitch, double-needle; NSN 3530-01-182-2873

Component	Recommended sewing machine (code symbol)	Stitches per inch	Thread size
Canopy			
Gore Section	LD	7 to 11	E
	DN	Darn	A/E
Skirt reinforcement tape (lower lateral band)	LD	7 to 11	FF
Radial ribbon	LD	7 to 11	E
Suspension line	HD	7 to 11	5
Bridle loop	HD	5 to 8	3
Vent line	HD	7 to 11	3
Pocket band	LD	7 to 11	FF
Vent reinforcement tape (upper lateral band)	LD	7 to 11	FF
Vertical ribbon	LD	7 to 11	E
Horizontal ribbon	HD	7 to 11	E
Deployment bag			
Main strap	LD	7 to 11	E
Stow loops	LD	7 to 11	E
Tie loops and reinforcement	LD	7 to 11	E
Suspension line stowage flap	LD	7 to 11	E
Adapter web stowage flap	LD	7 to 11	E
Bridle Attachment loops	LD	7 to 11	E

Table 2-3. Stitching and Restitching Specifications.

(2) Other parachute Items Stitching and restitching on other parachute items constructed from cloth, canvas, and webbing should be accomplished with thread which matches the color of the original stitching, when possible. All straight stitching should be locked by backstitching at least 1/2 inch Restitching should be locked by overstitching each end of the stitch formation by 1/2 inch. Zig-zag stitching does not require locking, however, zig-zag restitching should extend at least 1/4 inch into undamaged stitching at each end, when possible. Restitching should be made directly over the original stitching, following the original stitch pattern as closely as possible.

c. *Darning*. (Refer to tables 2-2 and 2-3). Darning is a sewing procedure used to repair limited size holes, rips, and tears in assorted air delivery items constructed from textile material such as parachute canopy gore sections. A darning repair may be made either by hand or sewing machine, depending upon the method preferred and the availability of equipment. However, a darning machine should be used to darn small holes and tears where fabric is missing. Darning of previously patched material can be performed provided darning size limitations prescribed in the paragraph applicable to the Item are not exceeded. A darning repair will be performed using the following procedures, as appropriate.

(1) Machine darning Proceed as follows:

(a) Using an authorized marking aid of contrasting color, mark a square around the damaged area and ensure that the marking is at least 1/4 inch back from each edge of the damaged area. The marking will be made with the warp and filling of the material.

(b) Darn the damaged area by sewing the material in a back-and-forth manner, using size A or E nylon thread, allowing the stitching to run with the warp or filling of the fabric (A, figure 2-35).

(c) Turn the material and stitch back and forth across the stitching made In (b), above, until the hole or tear is completely darned (B, figure 2-35).

(d) If applicable, restencil Informational data, gore number(s), or identification marks using the criteria in paragraph 2-19.

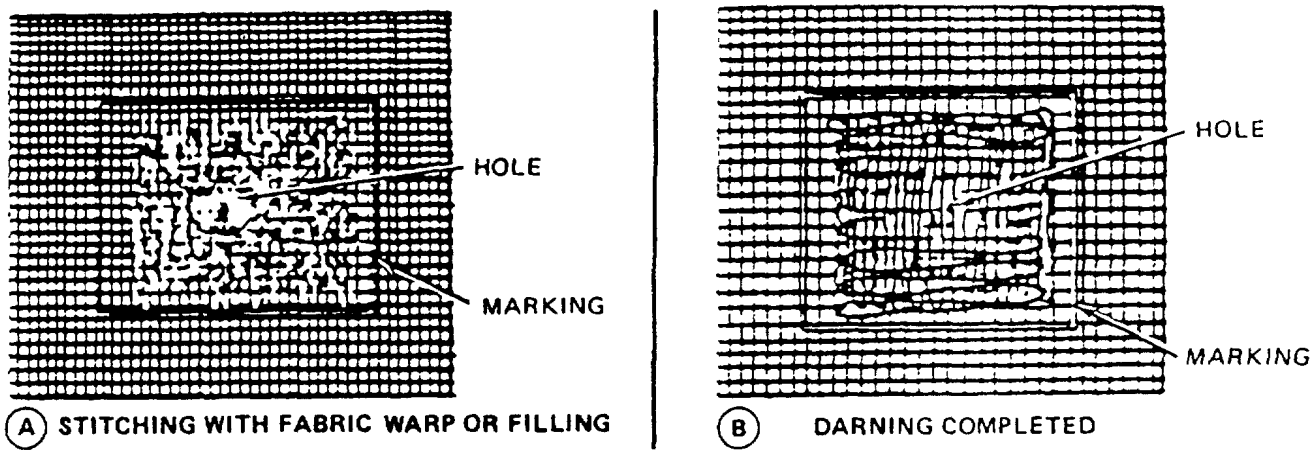


Figure 2-35. Darning Method Using a Darning Sewing Machine.

(2) *Hand darning*. When repair of a hole or tear is made by hand darning, the darn should match the original weave of the damaged material as closely as possible. Hand darning will be performed as follows.

(a) Using an authorized marking aid of contrasting color, mark a square around the damaged area and ensure that the marking is a least 1/4 inch back from edge of the damaged area. The marking will be made with the warp and filling of the material.

2-17 Sewing Procedures (cont.).

(b) Using a darning needle and a length of size A or E nylon thread, begin darning at one corner of the. marked area. Working in the direction of the fabric warp or filling, pass the needle and thread back. and forth through the material until the opposite diagonal comer of the marked area is reached. (A, figure 2-36).

(c) Turn the material and weave the needle and thread back and forth across the stitching made in (b),. above, until the hole Is completely darned (B, figure 2-36).

(d) If applicable, restencil informational data or identification marks as outlined in paragraph 2-19. Figure 2-36. Hand Darning Method.

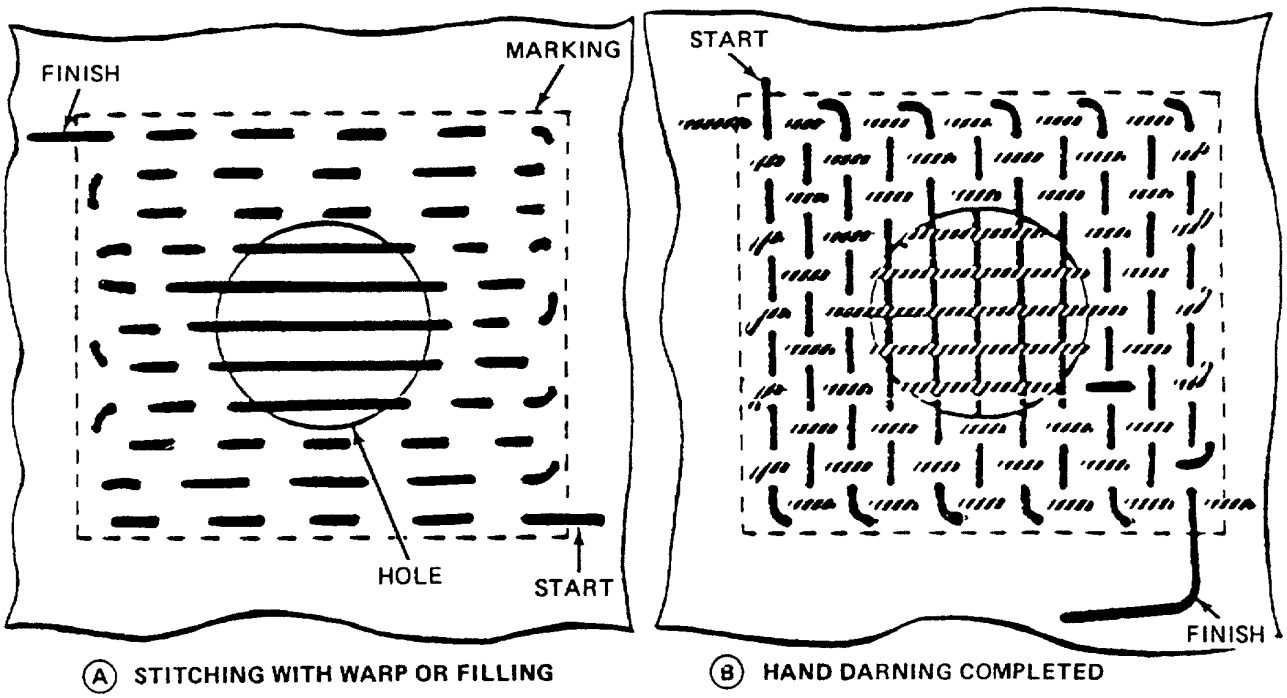


Figure 2-36. Hand Darning Method.

d. *Zig-Zag Sewing* (Refer to Tables 2-2 and 2-3). Air delivery items, except the canopy, made from textile. materials that have sustained cut or tear damage may be repaired by zig-zag sewing provided the applicable. damaged area does not have any material missing and the cut or tear is straight or L-shaped. Should the. damaged area be irregular shaped or have material missing, the repair will be achieved by either darning or patching, as required. A zig-zag sewing repair will be accomplished with a zig-zag sewing machine, using the following procedure.

(1) Set the sewing machine to the maximum stitch width.

(2) Beginning at a point 1/4 inch beyond one end of the cut or tear, stitch lengthwise along the damaged area. to a point 1/4 inch beyond the opposite end of the cut or tear (A, figure 2-37) The cited stitching. procedure will also apply to an L-shaped cut or tear (B, figure 2-37).

(3) If applicable, restencil informational data or Identification marks as prescribed in para. 2-19.

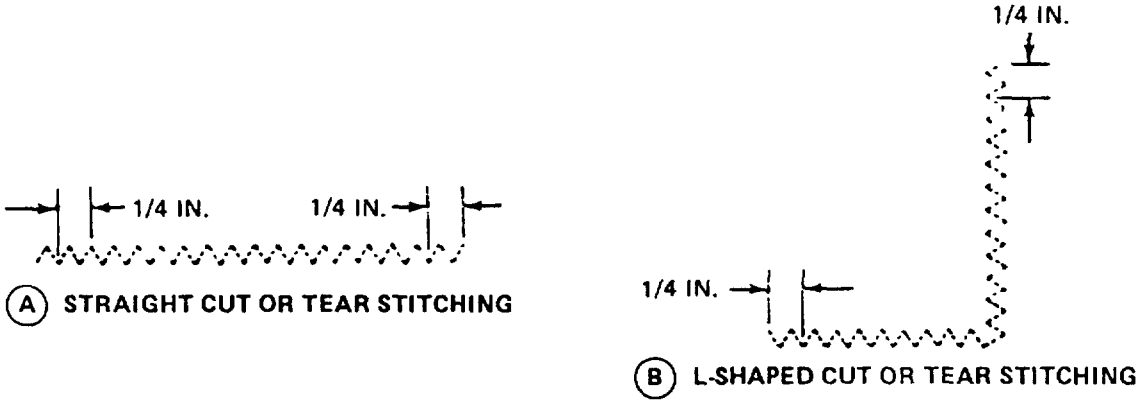


Figure 2-37. Repair Method Using a Zig-Zag Sewing Machine.

2-18. Searing and Waxing

This task covers:

a. Searing **b. Waxing**

Tools:	*Equipment Condition:*
Knife, Hot Metal, Item 6, Appendix B Pot, Melting, Electric, Item 14, Appendix B.	Unpacked.
Materials/Parts:	
Beeswax, Item 1, Appendix D. Wax, Paraffin, Item 32, Appendix D.	

.

CAUTION

Cotton tape, webbing, or cord will not be seared.

NOTE

Fabric materials such as cord, tape, and webbing that are cut for use In the maintenance of parachutes will normally be heat-seared or dipped. In a melted wax mixture, as. applicable, to prevent the material from fraying or unraveling. However, in some instances the preparation of the material may not be necessary and will be specified accordingly.

a. *Searing*. The cut ends of nylon tape, webbing, and cord lengths may be prepared by heat-searing which is performed by pressing the raw end of the material against a hot metal surface (knife) until the nylon has melted sufficiently. Avoid forming a sharp edge or lumped effect on the melted end.

b. *Waxing*. The fraying or unraveling of cotton or nylon tape, webbing, and cord length ends may be prevented by dipping 1/2 inch of the raw end of the material into a thoroughly melted mixture of half beeswax and half paraffin In an electric melting pot. The wax temperature should be substantial enough to ensure the wax completely penetrates the material rather than just coating the exterior fabric.

2-19. Marking and Restenciling

This task covers:

a. Marking **b. Restenciling**

Materials/Parts:	*Equipment Condition:*
Brush, Stenciling, Item 2, Appendix D Ink, Marking, Item 6, Appendix D Marker, Felt Tip, Black, Item 8, Appendix D Pen, Ballpoint, Item 11, Appendix D Stencilboard, Oiled, Item 14, Appendix D	Layout on packing table or other suitable area.

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. However, only felt tip markers that contain parachute marking ink and marked "FOR PARACHUTE MARKING" are authorized for use In marking air delivery Items. Any type. ball point pen using black or blue ink may be used for marking on labels only.

Original stenciled data or marking that becomes faded, illegible, obliterated, or 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.

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

b. *Restenciling*. Proceed as follows:

(1) Cut oiled stencilboard to original lettering type and size of data to be restenciled.

(2) Place cut stencilboard over, or as near as possible to, original marking to be restenciled.

(3) Place additional sheet of stencilboard beneath the area to be restenciled to prevent the marking Ink from penetrating to other areas.

(4) Hold stencilboard in place and, using stenciling brush filled with parachute marking ink, restencil original marking.

2-20. Parachute Canopy

This task covers:

a. Repair **b. Replacement**

Equipment Condition:

Cleaned (paragraph 2-12)
Inspected (paragraph 2-13)
Unpacked, canopy laid flat

a. *Repair*. Refer to individual component/assembly repairs and replacement procedures.

b. *Replace*. Replace an unrepairable/unrepairable parachute with a serviceable parachute canopy from stock.

2-21 Attachment Loop (Birdie Loop).

This task covers:

a. Repair **b. Replace**

Tools:

Pot, Electric Melting, Item 14, Appendix B
Sewing Machine, Heavy Duty, Item 19, Appendix B
Shears, Item 15, Appendix B
Yardstick, Item 25, Appendix B

Materials/Parts:

Beeswax, Item 1, Appendix D
Thread, Nylon, Size 3, Item 25/26, Appendix D
Webbing, Cotton, Type VIII, Item 34, Appendix D
Parafin, Item 32, Appendix D

Equipment Condition:

Cleaned (paragraph 2-12).
Inspected (paragraph 2-13).
Unpacked, canopy laid flat.

a. *Repair*. Repair an attachment loop requiring restitching as follows.

(1) Use a heavy-duty sewing machine to restitch any loose or broken stitches.

(2) Restitch over original stitch pattern using nylon thread, size. 3 Overstitch 1/2 Inch to lock stitches.

b. *Replace*. Replace a damaged or missing attachment loop by fabricating as follows:

(1) Cut a 20-inch length of cotton webbing, type VII. Wax ends of webbing (para 2-18).

(2) Pass one end of webbing through all canopy vent lines. Join both webbing ends together with a 5-inch overlap (figure 2-38).

(3) Use a heavy duty sewing machine, secure overlapped ends, with nylon thread, size 3, stitch a 5-inch long, three point W-W stitches, 7 to 11 stitches per inch.

(4) Cut and remove damaged attachment loop.

2-21. Attachment Loop (Bridle Loop) (cont.).

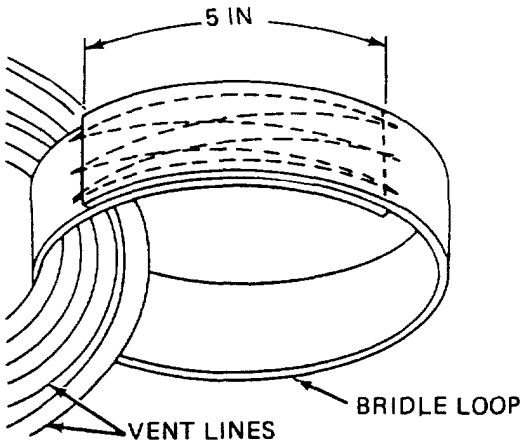


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Figure 2-38. Attachment Loop Replacement Details.

2-22. Vent Lines

This task covers:

a. Repair **b. Replace**

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Heavy Duty, Item 19, Appendix B
Yardstick, Item 25, Appendix B

Materials/Parts:

Webbing, Tubular Nylon, 1-In, Item 38, Appendix D.
Pencil, Marking Aid, Item 12, Appendix D.
Thread, Nylon, Size 3, Items 25/26, Appendix D.

Equipment Condition:

Inspected (paragraph 2-13).
Cleaned (paragraph 2-12).
Unpacked, canopy In proper layout.

a. *Repair*. Repair vent lines requiring restitching as follows.

(1) Use a heavy duty sewing machine to restitch any loose or broken stitches.

(2) Restitch over original stitch pattern using size 3 nylon thread. Overstitch 1/2 Inch to lock stitches.

NOTE

Replacement of vent lines Is accomplished at the Direct Support (DS) maintenance level only In accordance with the Maintenance Allocation Chart (MAC) Appendix B.

b. *Replace*. Replace missing or damaged vent lines as follows:.

(1) Place canopy In proper layout on table and trace damaged vent line from one end of original vent line to other end. Using suitable marker, mark canopy at each end of vent line.

(2) Remove damaged vent line by cutting stitching that holds line to canopy at both sides of apex.

(3) Cut a 58-inch length of 1-inch webbing that will extend 6 1/2 inches beyond edge of vent. Sear or dip ends of webbing (para 2-18).

(4) Position one end of new vent line in exact location formerly occupied by end of old line (figure 2-39).

2-22 Vent Lines (cont.)

NOTE

Measuring from the outside edge of the upper lateral band, the vent line should extend 6 1/2 inches into radial seam.

(5) Using a heavy-duty sewing machine and size 3 nylon thread, stitch new line in place. Sew webbing in place with a WW-stitch pattern, 1/8 inch from edge. Overstitch ends of webbing 1 stitch.

(6) Pass remaining end of line under other vent lines, and through attachment loop as required.

(7) Position and sew remaining end of line to opposite side of canopy as in steps (4) and (5) above.

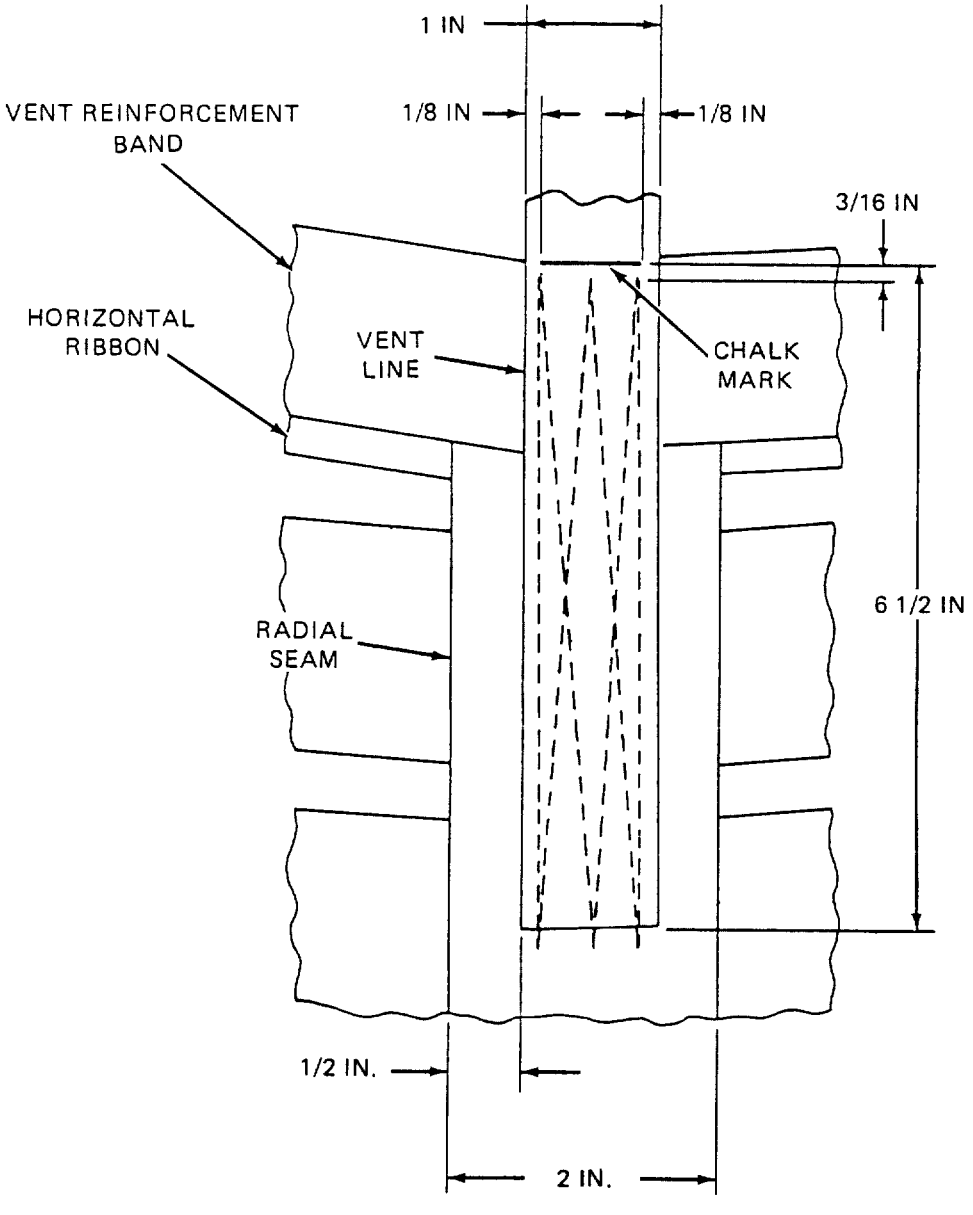

Figure 2-39. Vent Line Replacement Details.

2-23. Vent Reinforcement (Upper Lateral Band).

This task covers:

a. Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Medium Duty, Item 20, Appendix B
Yardstick, Item 25, Appendix B

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Unpacked (canopy laid flat)

Materials/Parts:

Pencil, Marking Aid, Item 12, Appendix D.
Webbing, Nylon, Type VI, 1 3/4-Inch, Item 35, Appendix D.
Thread, Nylon, Size E, Item 23/24, Appendix D

.

a *Restitching*. Restitching of vent reinforcement tape is authorized. Use a light duty sewing machine and size E nylon thread of contrasting color Stitch over the original stitch pattern. Lock each row of stitches two inches at each end.

NOTE

The canopy Is reinforced with two vent reinforcement tapes, one on the inside and one on the outside. If a damaged lateral band is originally made of two piles of webbing the splice may be made on either inside or the outside of the canopy, depending on the location of the damage In the event both piles of webbing are damaged, a splice will be applied to both sides of the canopy.

Vent reinforcement tapes may be spliced only once and will not be replaced.

b. *Upper Lateral Band.* A parachute canopy upper lateral band may be spliced one time as follows.

(1) Place the applicable canopy on a repair table with the damaged side of the upper lateral band facing up and smooth out the canopy material in the affected area.

(2) If the damage is located between radial seams (A, figure 2-40), cut the stitching securing the two vent lines on each side of the damaged area and lay the four vent line ends aside. Should the damage extend into a radial seam (B), cut the stitching of the vent line attached at the affected radial seam and also cut the stitching of the two vent lines located beyond each side of the damaged area. Lay the five vent line ends aside.

(3) Cut a length of webbing long enough to extend 1 inch beyond the outside edge of the second radial seam located on each side of the damaged area and wax the ends. The type of webbing material to be used will be as prescribed In the applicable Item equipment publication.

2-23. Vent Reinforcement (Upper Lateral Band) (cont.).

(4) Center the webbing length over the damaged area and secure the splice material by making four rows of continuous stitching along the full length of the splice. Overstitch each webbing end by 1/2 Inch. Stitching will be made using the stitching specifics in the applicable item equipment publication.

(5) Reattach the vent line ends removed in (2) above by restitching according to original construction details, using the stitching specified In the applicable item equipment publication.

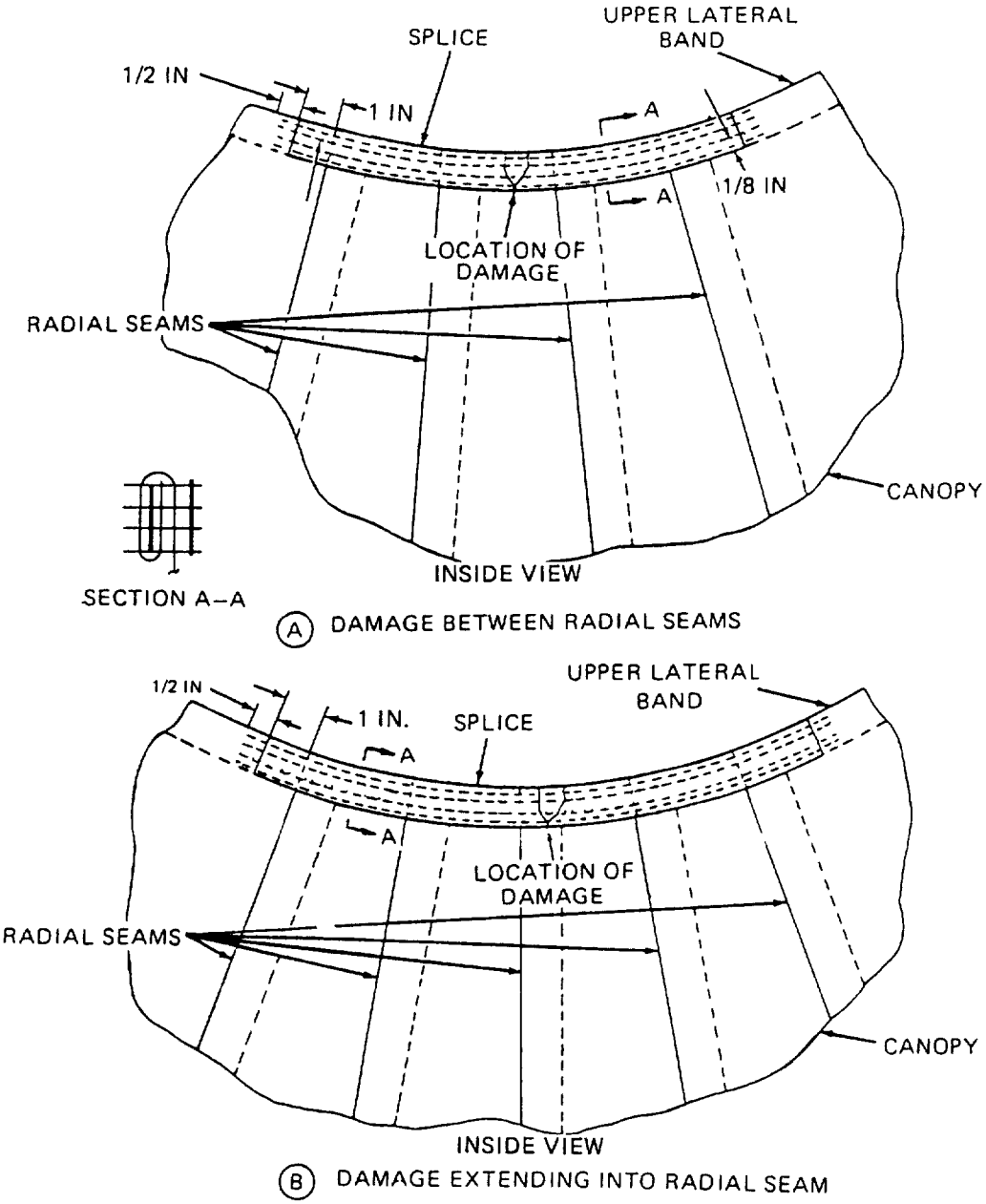

Figure 2-40. Upper Lateral Band Splicing Details.

2-24 Gore.

This task covers:

a. Repair **b. Replace**

Tools:

Brush, Stenciling, Item 2, Appendix B
Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 17, Appendix B
Shears, Item 15, Appendix B
Yardstick, Item 25, Appendix B
Push Pins, Item 11, Appendix B
Needle, Tacking, Item 1U0, Appendix B

Materials/Parts:

Thread, Nylon, Size E, Item 23/24, Appendix D
Tape, Nylon Type III, Item 17, Appendix D

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Parachute laid out on table

a. *Repair*. Restitching of gore is authorized Use a light-duty sewing machine and size E nylon thread of contrasting color. Stitch over the original stitch pattern Lock each row of stitches two inches at each end.

NOTE

Replacement of gore section is accomplished at the Direct Support (DS) maintenance level only in accordance with the Maintenance Allocation Chart (MAC) Appendix B.

This procedure is used when It is necessary to replace large sections of gore that require six or more horizontal ribbons.

Radial ribbons should not be cut unless major repair to a radial ribbon is necessary.

b. *Replace*.

(1) Lay damaged gore area on table and tack In place with push pins.

(2) Make a section composed of horizontal and vertical ribbons (A, figure 2-41). Use an area on an undamaged adjacent gore as a pattern.

(3) Cut required lengths of type III vertical ribbon long enough to extend 6 inches beyond the outer horizontal ribbons, and cut required number of type V horizontal ribbons to form replacement section.

(4) Carefully cut out damaged area, leaving at least 1/8 inch from edges of radial ribbons.

(5) Baste section together with size E nylon thread.

2-24. Gore (cont.)

(6) Remove push pins.

(7) Sew each vertical ribbon with three rows of stitching using a light duty sewing machine and size E thread, (A, figure 2-41).

(8) Cut stitching along inside of radial ribbon piles where damaged area has been removed.

(9) Position the constructed section with vertical ribbons alined on the inside and outside of canopy. Secure vertical ribbon ends to canopy with three rows of stitching using a light duty sewing machine and size E thread. Overstitch ends 1 Inch.

(10) Position horizontal ribbons between the radial ribbon plies and secure with four rows of stitching using a light duty sewing machine and size E thread. Lock stitch each row 2 inches.

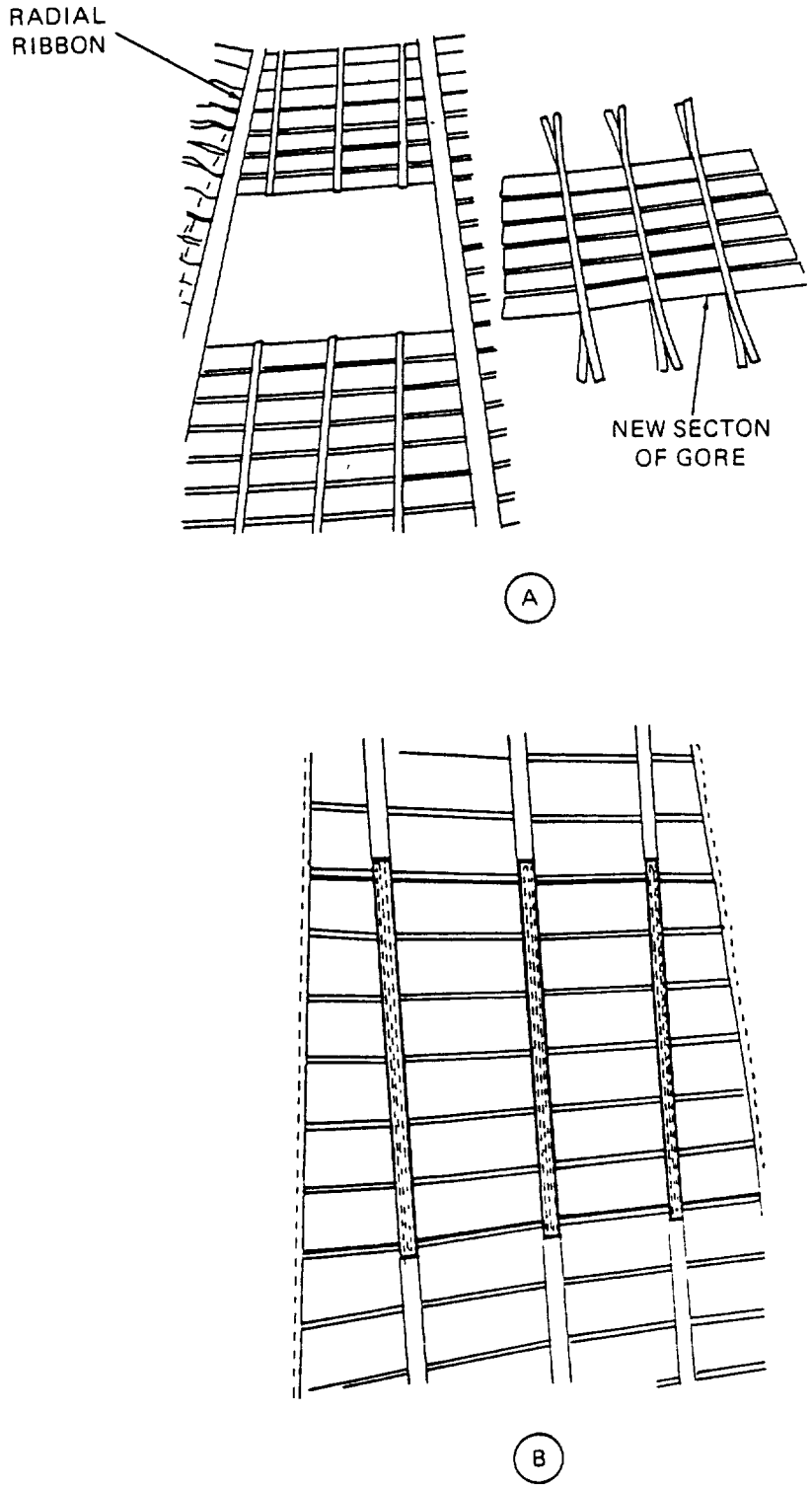

Figure 2-41. Gore Section Replacement Details.

2-25. Radial Ribbon.

This task covers:

a. Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 17, Appendix B
Yardstick, Item 25, Appendix B

Equipment Condition:

Inspected (paragraph 2-13).
Cleaned (paragraph 2-12).
Unpacked, laid flat.

Materials/Parts:

Tape, Nylon, Type II, 2-Inch Wide, Item 18, Appendix D
Thread, Nylon, Size E, Item 23/24, Appendix D
Pencil, Marking Aid, Item 12, Appendix D

a. *Restitching.* Restitch radial ribbon. Using a light duty sewing machine and size E nylon thread of contrasting color. Stitch over original pattern. Lock each row of stitches two inches at each end.

b. *Splicing.* Splice damaged radial ribbon as follows:.

(1) Place canopy on a repair table with damaged side of radial tape facing up and smooth out canopy material In affected area.

NOTE

There is no limit to the number of splices that may be made on radial tape. When splicing an area previously spliced, remove old splice material before attempting a second splice.

(2) Cut a length of 2-inch wide nylon ribbon long enough to extend 6 inches beyond each side of damaged area and sear ends as specified In paragraph 2-18.

(3) Center ribbon length over outside of damaged area. Using a light duty sewing machine and size E nylon thread, secure splice by stitching eight rows of stitching along full length of splice. Overstitch rows 2 Inches beyond ends of splice (figure 2-42).

(4) To splice radial ribbon from inside, repeat steps 2 and 3.

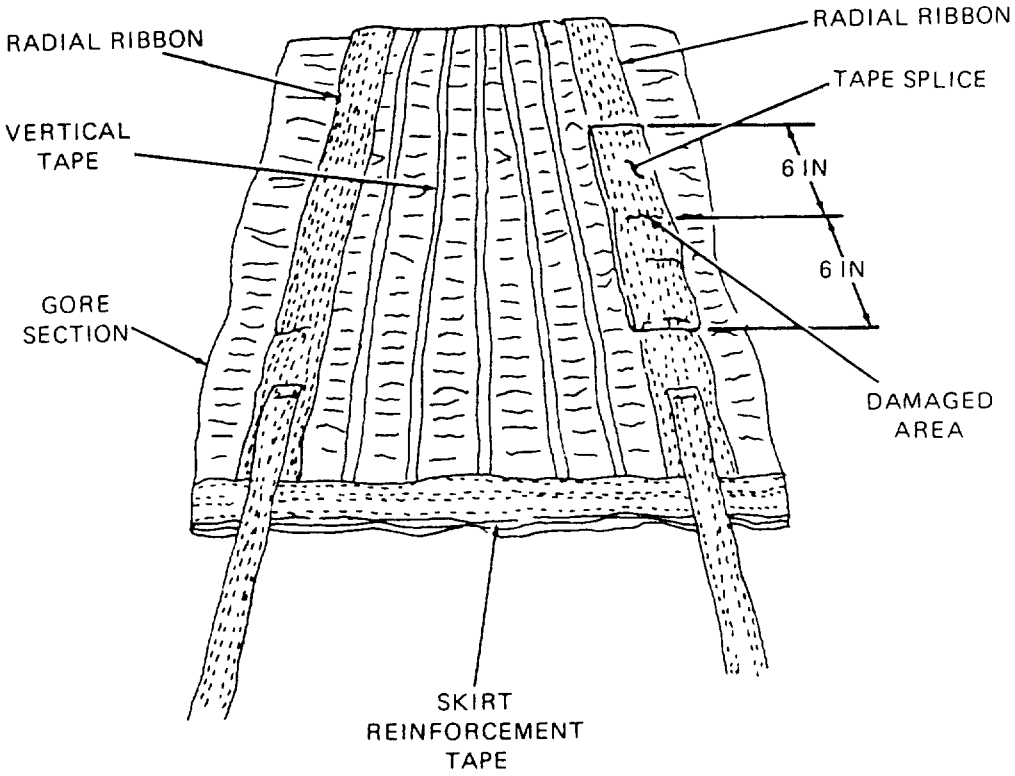

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Figure 2-42. Radial Ribbon Splicing Details.

2-26. Radial Reinforcement Band.

This task covers:

a. Repair

Tools:

Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 17, Appendix B
Yardstick, Item 25, Appendix B

Equipment Condition.

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Unpacked, laid flat

Materials/Parts:

Tape, Nylon, Type V, Item 18, Appendix D
Thread, Nylon, Size 5, Item 29, Appendix D

Repair.

Restitch. Stitch and restitch with size 5 nylon thread of contrasting color, when possible. Lock all straight stitching by backstitching at least 1/2 Inch. Restitch directly over the original stitch, following the original pattern as closely as possible (figure 2-43).

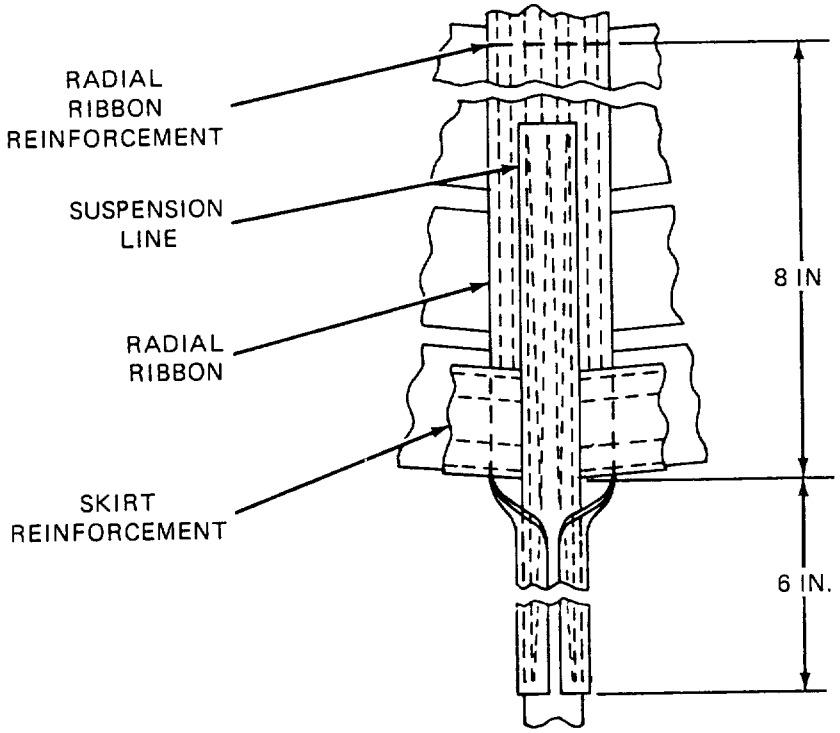

Figure 2-43. Radial Ribbon Reinforcement Repair.

2-27. Vertical Ribbons.

This task covers:

a. Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 17, Appendix B
Yardstick, Item 25, Appendix B
Push Pins, Item 11, Appendix B

Equipment Condition:

Inspection (paragraph 2-13)
Cleaned (paragraph 2-12)
Laid-out on work table

Materials/Parts.

Pencil, Marking Aid, Item 12, Appendix D
Ribbon, Nylon, Type III, Item 17, Appendix D
Thread, Nylon, Size E, Item 23, Appendix D

a. *Stitching*. Stitch and restitch (para 2-17) with thread size E nylon of contrasting color of the original stitching, when possible. Lock all straight stitching by backstitching at least 2 inches. Restitch directly over the original stitch, following the original stitch pattern as closely as possible.

b. *Splicing*. Splice vertical ribbon as follows.

NOTE

There are vertical ribbons on the inside and outside of the canopy.

(1) Fasten canopy section to table and secure with push pins.

(2) Cut a length of type Ill nylon ribbon long enough to extend 4 1/2 Inches beyond damage on each side.

(3) Turn ends under 1/8 Inch, baste in place and remove push pins.

(4) If necessary, turn canopy over and repeat steps 1 through 3.

(5) Using a light-duty sewing machine and size E nylon thread, secure splice by stitching three rows of stitching, 7 to 11 stitches per Inch, outside rows 1/8 Inch from edge, and over stitch 1 inch beyond ends of new ribbon, lockstitch 2 Inches (figure 2-44).

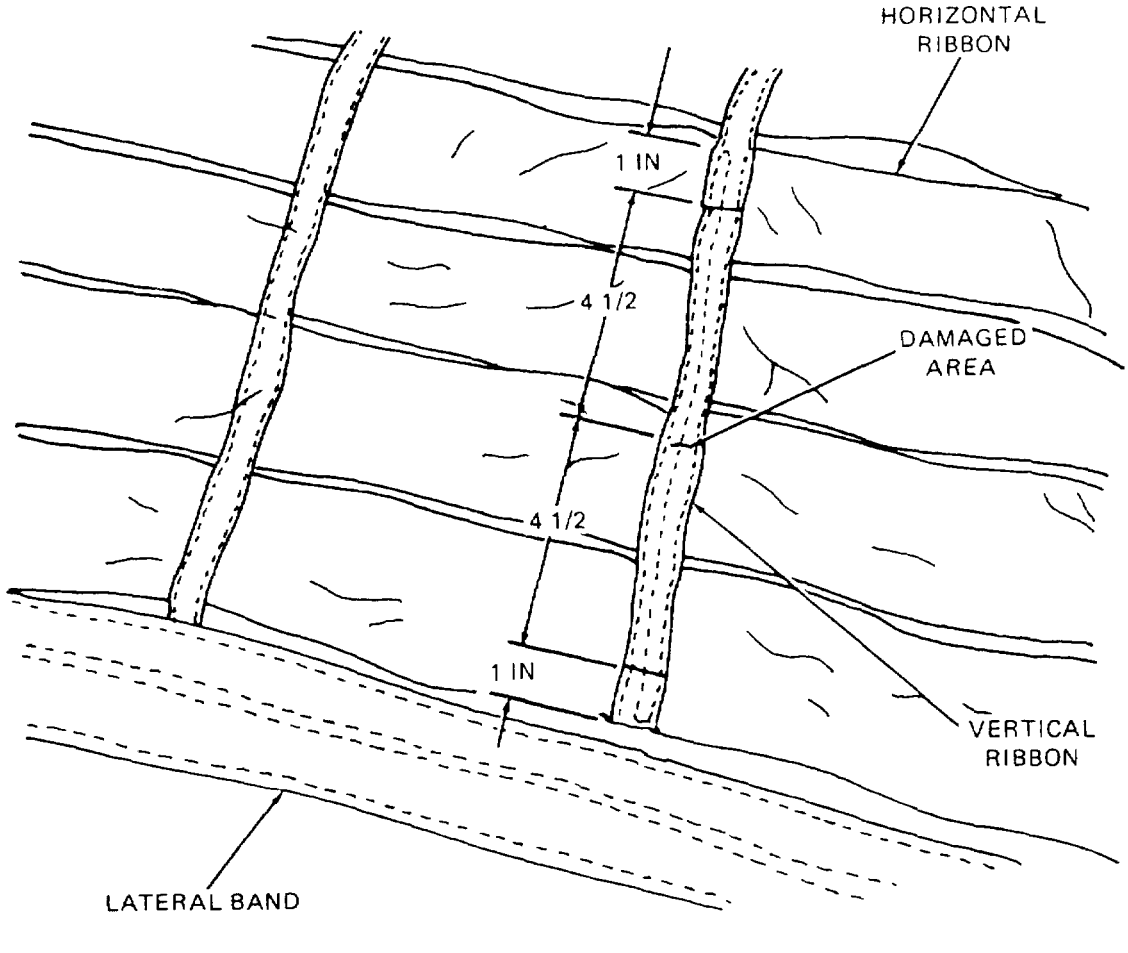

Figure 2-44. Vertical Ribbon Splicing Details.

2-28. Horizontal Ribbon

This task covers:

a. Repair **b. Replace**

Tools:

Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 19, Appendix B
Yardstick, Item 25, Appendix B
Push Pins, Item 11, Appendix B

Materials/Parts:

Thread, Nylon, Size E, Item 23/24, Appendix D
Thread, Nylon, Size A, Item 27, Appendix D

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Unpacked, lying flat on repair table

a. *Repair.*

(1) Lay inside of canopy face up on table.

(2) Tack ribbons surrounding damaged area with push pins.

(3) Cut a length of 2-inch wide nylon ribbon, long enough to extend a minimum of 2 1/4 inches on each side of damage and over next vertical or radial ribbon (figure 2-45).

(4) Fold ends of ribbon under 1/4 Inch and baste (para 2-17).

(5) Repeat steps (1) through (4) for all damaged ribbons, then remove push pins.

(6) Using a box pattern, sew splices In place with size E nylon thread using a light duty sewing machine, 7 to 11 stitches per inch, Over stitch 1 stitch (figure 2-46).

b. Replace. Replace broken or previously repaired horizontal ribbons as follows.

(1) Lay Inside of damaged ribbons on table Hold in position with push pins.

(2) Cut out damaged ribbons between radial ribbons, leave 1/8 Inch from edges.

CAUTION

Do not cut into selvage edge of radial, vertical or undamaged horizontal ribbons adjoining damaged area.

(3) Cut a length of 2-inch wide nylon ribbon, that will extend 1/8 Inch beyond outer edge of radial ribbons.

(4) Line up selvage edge of splice with selvage edge of remaining ribbon. Fold ends of ribbon over 1/4 Inch. Tack down with push pins.

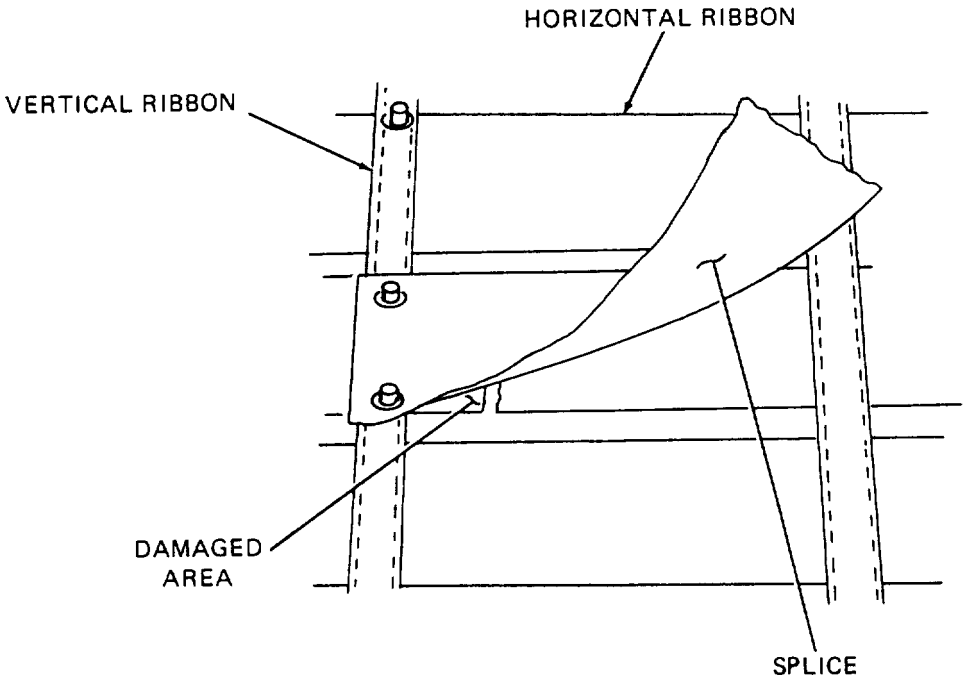

Figure 2-45. Horizontal Ribbon Splicing Details.

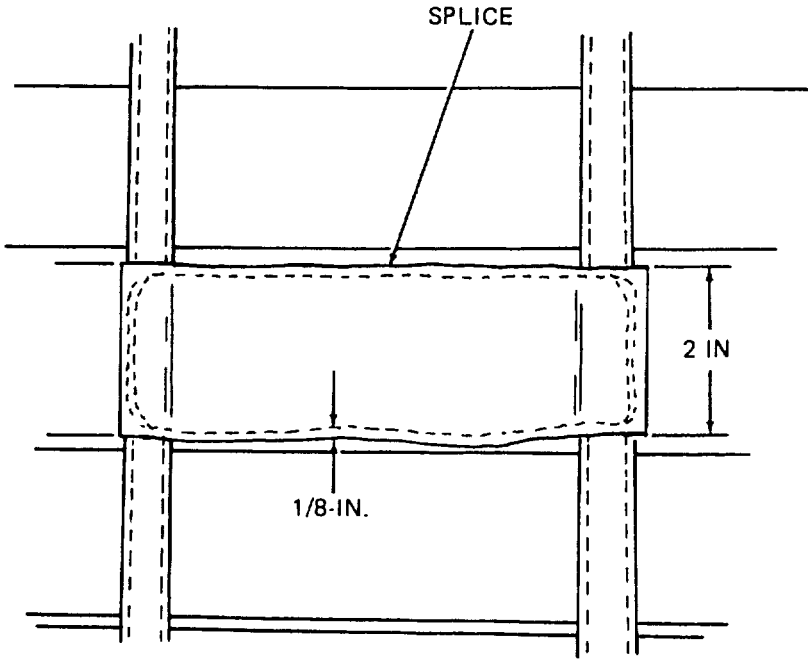

Figure 2-46. Horizontal Ribbon Repair Details.

2-28. Horizontal Ribbon (cont.).

(5) Baste ribbon splice with size A thread (para 2-17).

(6) Repeat steps (1) through (5) for all repairs which will overlap. This is to avoid sewing through radial ribbons more than once.

(7) With size E thread, secure splice to radial or vertical ribbons one-point cross-stitch-box pattern (figure 2-47).

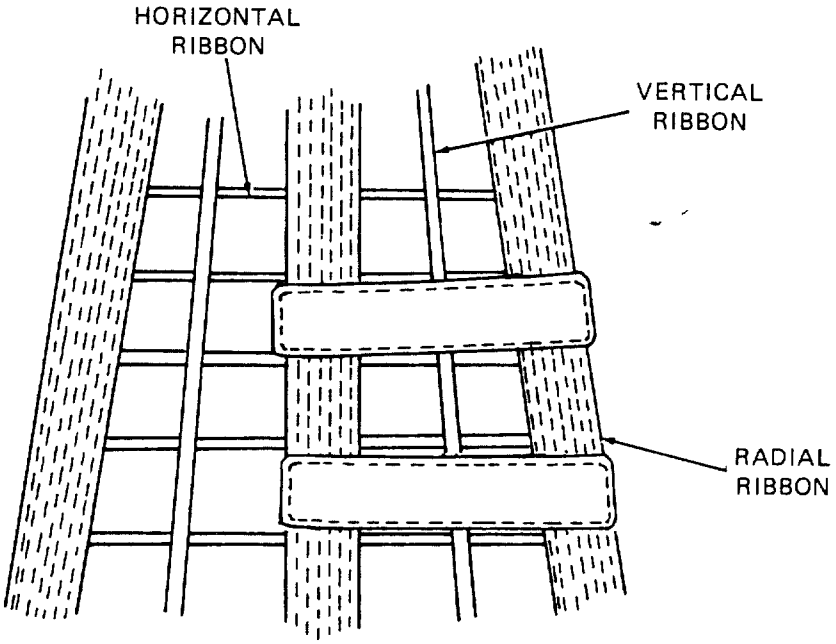

Figure 2-47. Horizontal Ribbon Details.

2-29. Skirt Reinforcement (Lower Lateral Band).

This task covers:

a. Repair

Tools:

Knife, Item 5, Appendix B
Melting Pot, Electric, Item 14, Appendix B
Sewing Machine, Light Duty, Item 17, Appendix B
Yardstick, Item 25, Appendix B

Materials/Parts:
Cleaned (paragraph 2-12)
Beeswax, Item 1, Appendix D
Webbing, Nylon, Type VI, 1 3/4-Inch Wide, Item 35, Appendix D
Thread, Nylon, Size E, Item 23/24, Appendix D

Materials/Parts (cont.):

Thread, Nylon, Size FF, Item 30/31, Appendix D
Parrafin, Item 32, Appendix D

Equipment Condition:

Inspected (paragraph 2-13)

Unpacked, lying flat on repair table

NOTE

The skirt reinforcement tape may have one splice between any suspension lines and cannot be replaced.

If the damage is located in a previously spliced area between two suspension lines, the earlier made splice material will be removed before attempting a second splice repair.

a. *Stitching and Restitching*. Stitch and restitch (para. 2-17) with nylon thread, size E, of contrasting color of. the original stitching and material when possible. Lock all straight stitching by back stitching at least 2 inches. Restitch directly over the original stitching. Follow the original stitch pattern as closely as possible.

b. *Splicing*. Splice the skirt reinforcement tape as follows.

(1) With damaged side of skirt reinforcement tape facing up, smooth out affected area of canopy. Remove previous splice, if required.

(2) As required, cut and remove original stitching which secures pocket band end to skirt reinforcement (lower lateral band) Fold loose end of pocket band away from repair area.

(3) Cut a length of 1 3/4-inch wide nylon webbing long enough to extend 6 inches beyond each side of damaged area Wax each end of tape (para. 2-18).

(4) Center tape length over damaged area (figure 2-48) and secure splice by making four rows of continuous stitching along the full row of this splice using a light duty sewing machine and size E thread. Overstitch each webbing end by 1/2 inch. Stitching will be 7 to 11 stitches per inch.

(5) Replace or Install loose end of pocket band, if required (para 2-30).

2-29. Skirt Reinforcement (Lower Lateral Band) (cont.).

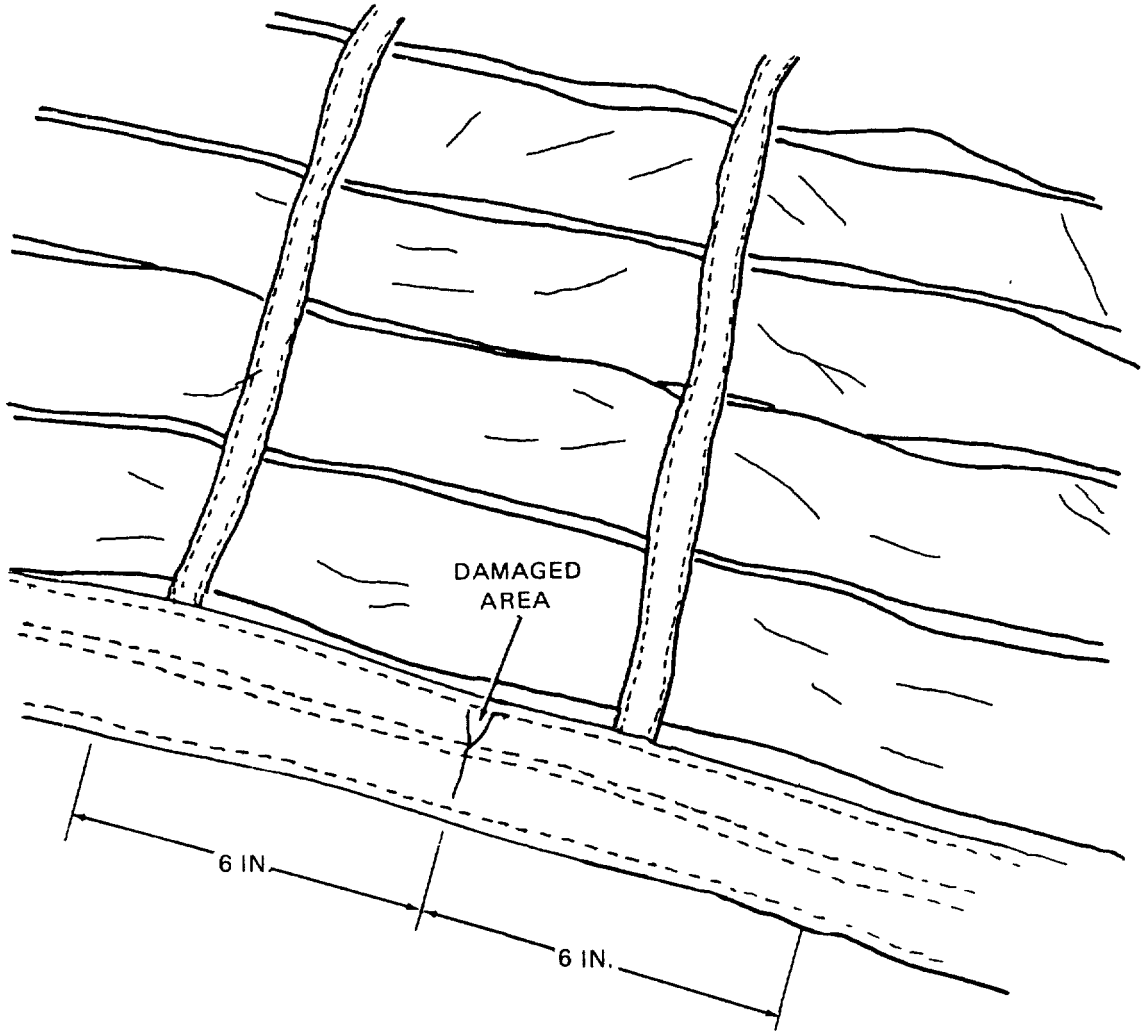

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Figure 2-48. Skirt Reinforcement Splicing Details.

2-30. Pocket Band.

This task covers:

a. Repair **b. Replace**

Tools	*Equipment Condition*.
Knife, Item 5, Appendix B	Inspected (paragraph 2-13)
Knife, Hot Metal, Item 6, Appendix B	Cleaned (paragraph 2-12)
Sewing Machine, Heavy Duty, Item 19, Appendix B	Unpacked, laid flat on repair table
Yardstick, Item 25, Appendix B	

Materials/Parts:

Pencil, Marking Aid, Item 12, Appendix D
Thread, Nylon, Size FF, Item 30/31, Appendix D
Webbing, Nylon, Type VI, 1 3/4-Inch, Item 35, Appendix D

a. *Repair*. Stitch and restitch (para 2-17) with size FF nylon thread of contrasting color of the original stitching, when possible Lock all stitching by overstitching at least one inch. Restich directly over the original stitch pattern, following the original stitch pattern as closely as possible.

b. *Replacement*. Replace an unserviceable pocket band by fabricating as follows.

(1) Using a suitable marking aid, mark canopy at each end of original pocket band.

(2) Cut stitching on both ends of the original pocket band and remove pocket band from canopy skirt.

(3) Cut a 7-inch length of 1 3/4-inch wide nylon webbing, sear ends (para 2-18).

(4) Mark 2 inches from each end.

(5) Position webbing length in original pocket band location.

(6) Using a medium-duty sewing machine and size FF nylon thread, secure each end of replacement pocket band with a 1 3/4-inch long box-X with a double row stitch formation at each end Stitching will be 7 to 11 stitches per Inch (figure 2-49).

2-30. Pocket Band (cont).

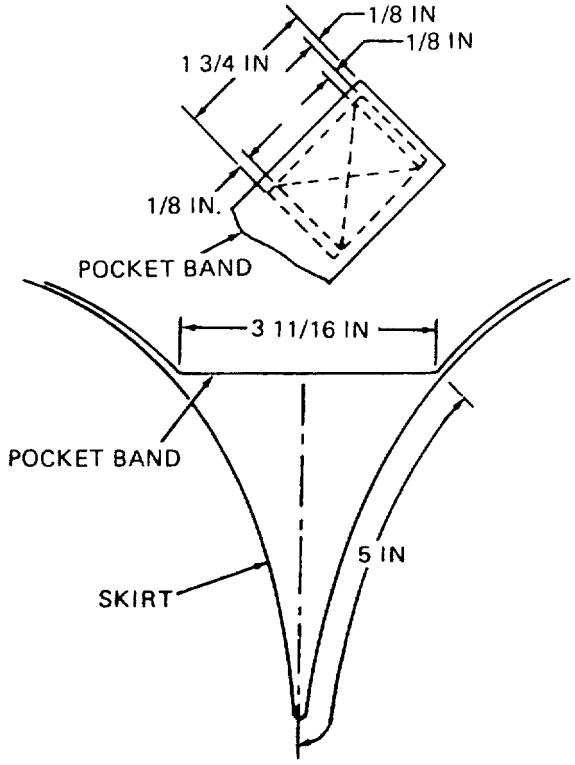


Figure 2-49. Pocket Band Replacement Details.

2-31. Suspension Line.

This task covers:

a. Repair **b. Replace**

Tools	*Equipment Condition*.
Knife, Hot Metal, Item 6, Appendix B	Inspected (paragraph 2-13)
Knife, Item 5, Appendix B	Cleaned (paragraph 2-12)
Sewing Machine, Heavy Duty, Item 19, Appendix B	Canopy flat on table
Yardstick, Item 25, Appendix B	

Materials/Parts:

Marker, Felt-Tip, Item 8, Appendix D
Webbing, Nylon, Tubular, 1-Inch Wide, Item 38, Appendix D

a. *Repair*. Stitch and restitch (para 2-27) with size 5 nylon thread of contrasting color of the original stitching, when possible. Lock all stitching by at least one inch. Restitch directly over the original stitch pattern, following the original stitch pattern as closely as possible

NOTE

Replacement of suspension lines is accomplished at the direct support (DS) Maintenance level only. In accordance with the Maintenance Allocation Chart (MAC) Appendix B.

b. *Replace*. Replace unserviceable suspension line by fabricating as follows.

(1) Place canopy assembly In proper layout on an Inspection table.

(2) Apply partial tension to suspension lines and trace defective suspension line from connector link to canopy skirt. Upon completion of line tracing, release line tension.

(3) Remove stitching from one end of pocket band

(4) Remove original suspension line from canopy by cutting the stitching at the upper end of suspension line.

(5) Remove stitching at lower end of suspension line at connector link.

(6) Cut a length of 1-inch wide nylon tubular webbing 36 feet 5 1/2-inches long and sear ends (para 2-18) Measured under 40 lbs of tension.

(7) Using a marking aid, mark webbing 11 inches from one end and 6 inches from other end.

2-31. Suspension Line (cont).

CAUTION

Be careful not to change overall length of line, this will impose excessive loads on lines.

(8) Align 6-inch mark with end of canopy skirt. Fold radial reinforcement band around suspension line below skirt of canopy. Using nylon thread, size 5, sew suspension line to canopy with a 12-inch three-point WW-stitch formation, (figure 2-50).

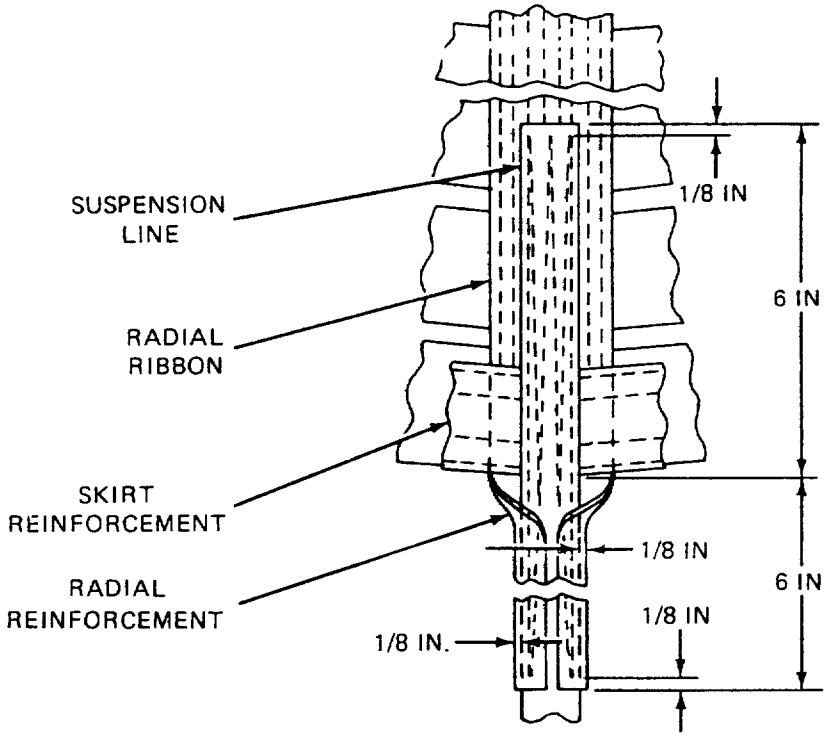


Figure 2-50. Suspension Line Attachment Details.

(9) Reattach pocket band to canopy skirt (paragraph 2-30).

(10) Pass the webbing end through the connector link, at the 11-inch markmake an overhand knot and draw the knot snug.

(11) Secure the foldback at the connector link by stitching a 6-inch long, three-point WW-stitch formation (figure 2-51).

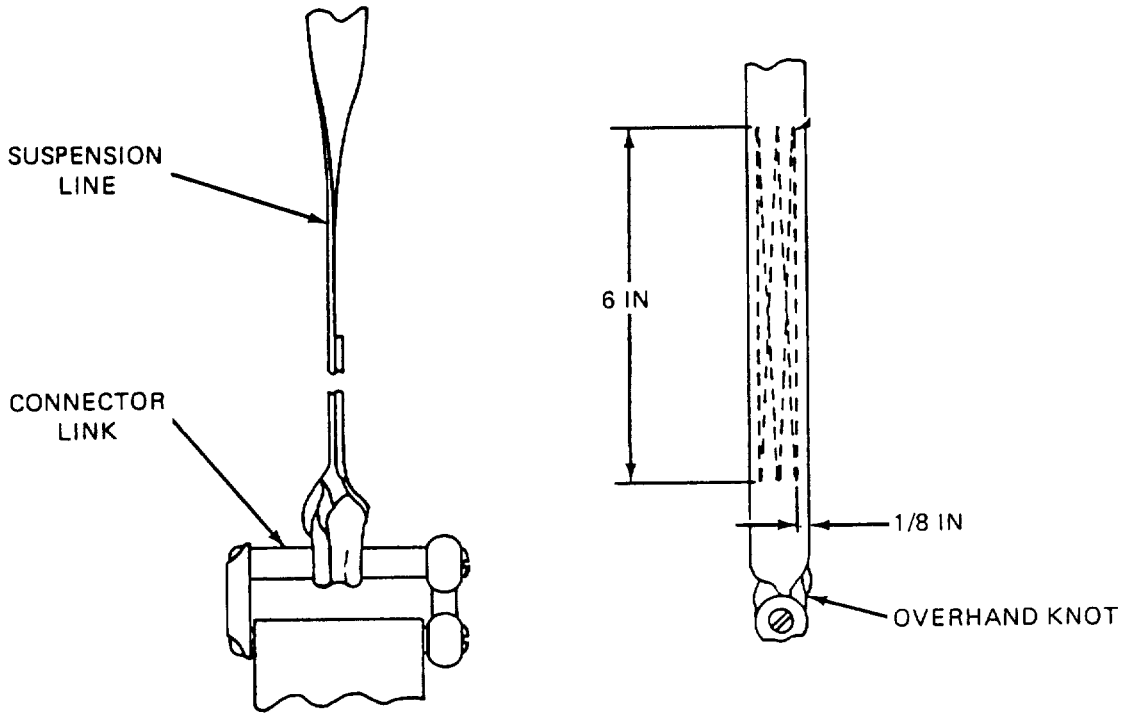


Figure 2-51. Suspension Line Attachment at Connector Link.

2-32. Inspection Data Pocket.

This task covers:
Replace

Tools.	*Equipment Condition*:
Light Duty Sewing Machine, Item 17, Appendix B	Inspected (paragraph 2-13)
Needle, Tacking, Item 10, Appendix B	Cleaned (paragraph 2-12)
	Laid out on work table
Materials/Parts:	
Thread, Cotton, Ticket 8/7, Item 28, Appendix D	

Replace. Replace missing or unserviceable parachute Inspection data pocket (log record pocket) as follows.

(1) *Hand tacking*.

(a) Position parachute inspection data pocket in original location.

(b) Hand tack pocket to attachment loop webbing at four corners using a tacking needle and two turns of doubled waxed ticket 8/7 thread as In a above. Wax thread In accordance with para 2-18.

(c) Secure tacking ends with a surgeon's knot and a locking knot. Trim ends to 1/4 inch (figure 2-52).

(2) *Stitching*.

(a) Position parachute inspection data pocket in original location.

(b) Using a light duty sewing machine and nylon thread size E, 7-11 stitches per inch, sew around outside edge of pocket (figure 2-53).

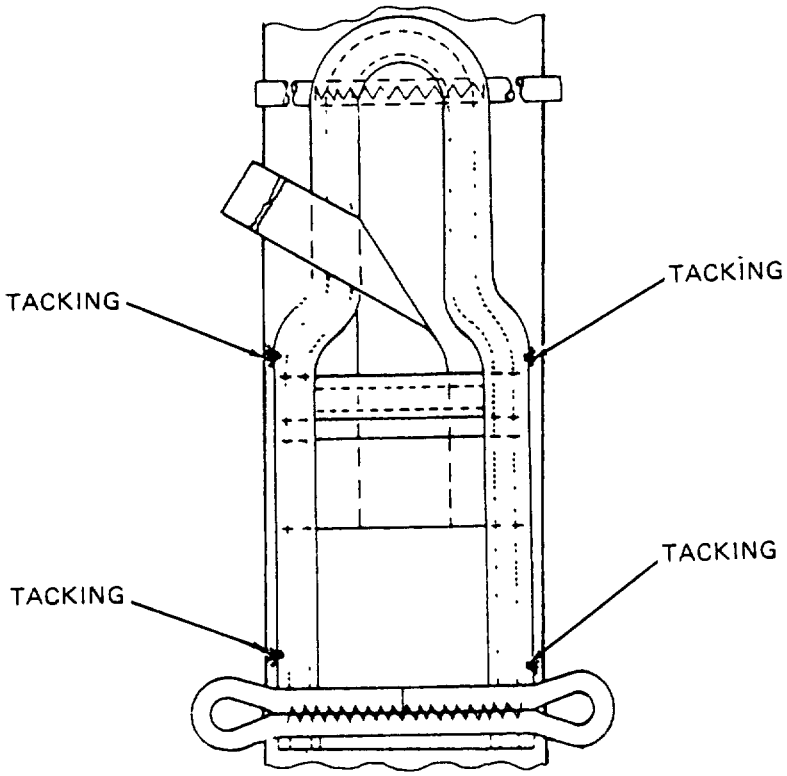


Figure 2-52. Parachute Inspection Data Pocket Tacking Details.

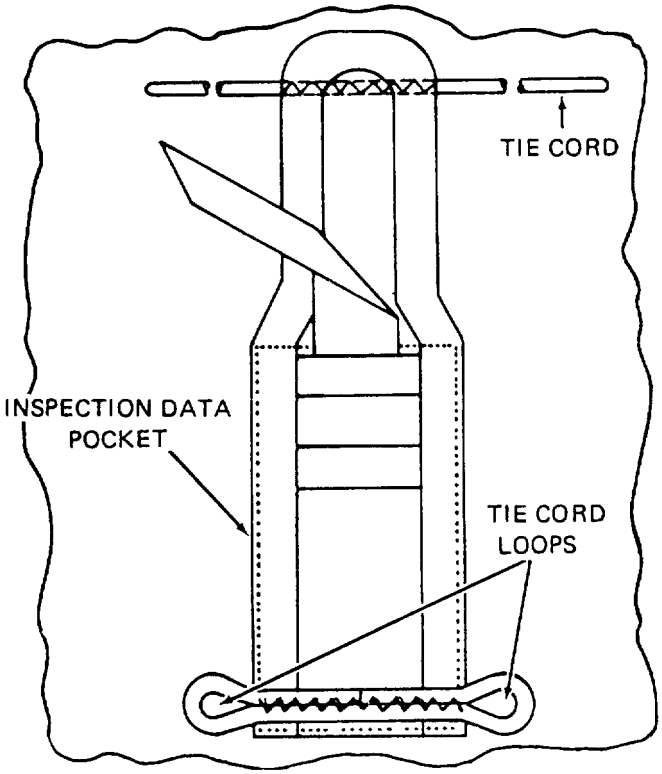


Figure 2-53. Parachute Inspection Data Pocket Stitching Attachment Details.

2-33. Connector Link.

This task covers:
Replace

Tools:

Connector Link Separator, Item 8, Appendix B
File, Item 3, Appendix B
Mallet, Item 9, Appendix B
Screwdriver, Flat-Tip, Item 23, Appendix B

Equipment Condition:

Connector link laid out on table

Materials/Parts:

Cloth, Abrasive Item 3, Appendix D

Replace. A parachute connector link assembly, which is damaged beyond repair will be replaced with a serviceable heavy duty parachute connector link assembly from stock. Use the following procedures:

(1) Using a flat-tip (slotted-head) screwdriver, remove two locking screws from ends of a replacement parachute connector link assembly and disassembly link (see figure 2-54).

(2) Using a flat-tip (slotted-head) screwdriver, remove two locking screws from damaged original parachute connector link assembly. Disassemble link assembly, using a link separator, as required If connector link contains suspension lines, ensures lines are not allowed to slide off damaged link during disassembly process.

(3) As applicable, position leg of replacement link assembly adjacent to disassembled original link assembly and slide suspension lines from damaged link onto replacement link.

(4) Pass remaining leg of replacement link through attaching loop of adapter web.

(5) Fit replacement link together and ensure leg engagement by tapping end with a mallet Install set screws.

(6) Trace suspension lines from connector link assembly to canopy to ensure lines are properly installed and in correct sequence.

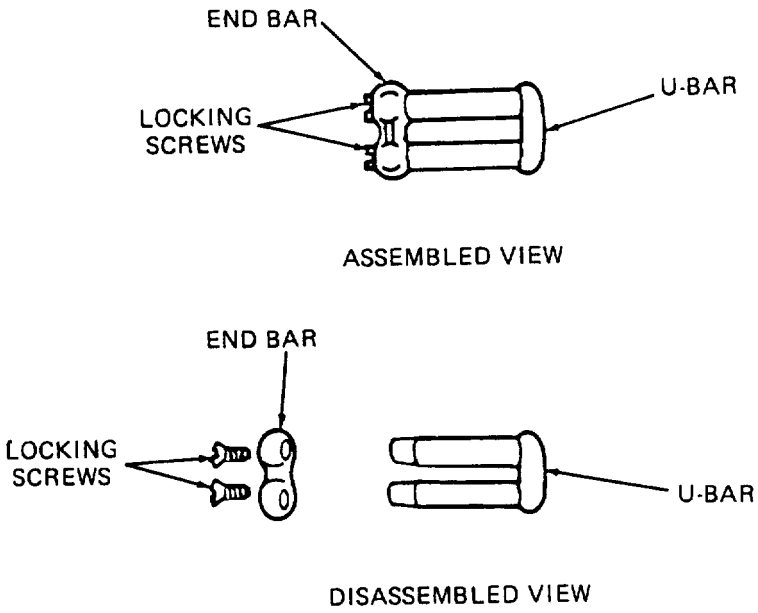


Figure 2-54. Connector Link Assembly.

2-34. Deployment Bag.

This task covers:

a. Inspect **b. Service** **c. Repair**
d. Replace

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Detached from canopy and static line

a. *Inspect*. Refer to paragraph 2-13 for Inspection procedures.

b. *Service*. Refer to paragraph 2-12 for cleaning procedures.

c. *Repair*. Refer to individual repair procedures in the following paragraphs.

CAUTION

When performing a repair on a deployment bag that requires cutting of stitching or an original part, ensure that adjacent bag material is not damaged during the cutting process.

d. *Replacement*. An unrepairable deployment bag will be replaced with a serviceable bag from stock.

2-35. 25 to 30 Inch Tie Stow Loop.

This task covers:
a. Repair **b. Replace**

Tools	*Equipment Condition*.
Knife, Item 5, Appendix B	Inspected (paragraph 2-13)
Knife, Hot Metal, Item 6, Appendix B	Cleaned (paragraph 2-12)
Sewing Machine, Medium Duty, Item 20, Appendix B	Canopy flat on table
Yardstick, Item 25, Appendix B	
Shears, Item 15, Appendix B	
Materials/Parts'	
Thread, Nylon, Size FF, Items 30/31, Appendix D	
Webbing, Nylon, Type XIII, Item 37, Appendix D	

a. *Repair*. Stitch and restitch with size FF thread of contrasting color of the original stitching, when possible. Lock all straight stitching by backstitching at least 1/2 Inch. Restitch directly over the original stitching, following the original stitch pattern as closely as possible.

b. *Replace*.

(1) Tie stow loop.

(a) Remove tie stow loop by cutting stitching securing webbing to suspension line stowage flap.

(b) Cut a 32-inch length of 1-inch wide nylon webbing, sear ends (para 2-18).

(c) Make a 1-inch long turnunder on each end of webbing and position webbing In original location with turnunders facing down.

(d) Secure each end of webbing to deployment bag by stitching three rows of size FF thread, across webbing ends. Stitch three lateral rows of stitching across webbing width at five points to form six equal sized loops in webbing (A, figure 2-55).

(2) Adapter web tie stow loop.

(a) Remove original tie stow loop by cutting stitching securing webbing to adapter web stowage flap.

(b) Cut a 27-inch length of 1-inch wide nylon webbing, sear ends (para. 2-18).

(c) Make a 1-inch long turnunder on each end of webbing and position webbing in original location with turnunders facing down.

2-35. 25 to 30 Inch Tie Stow Loop (cont).

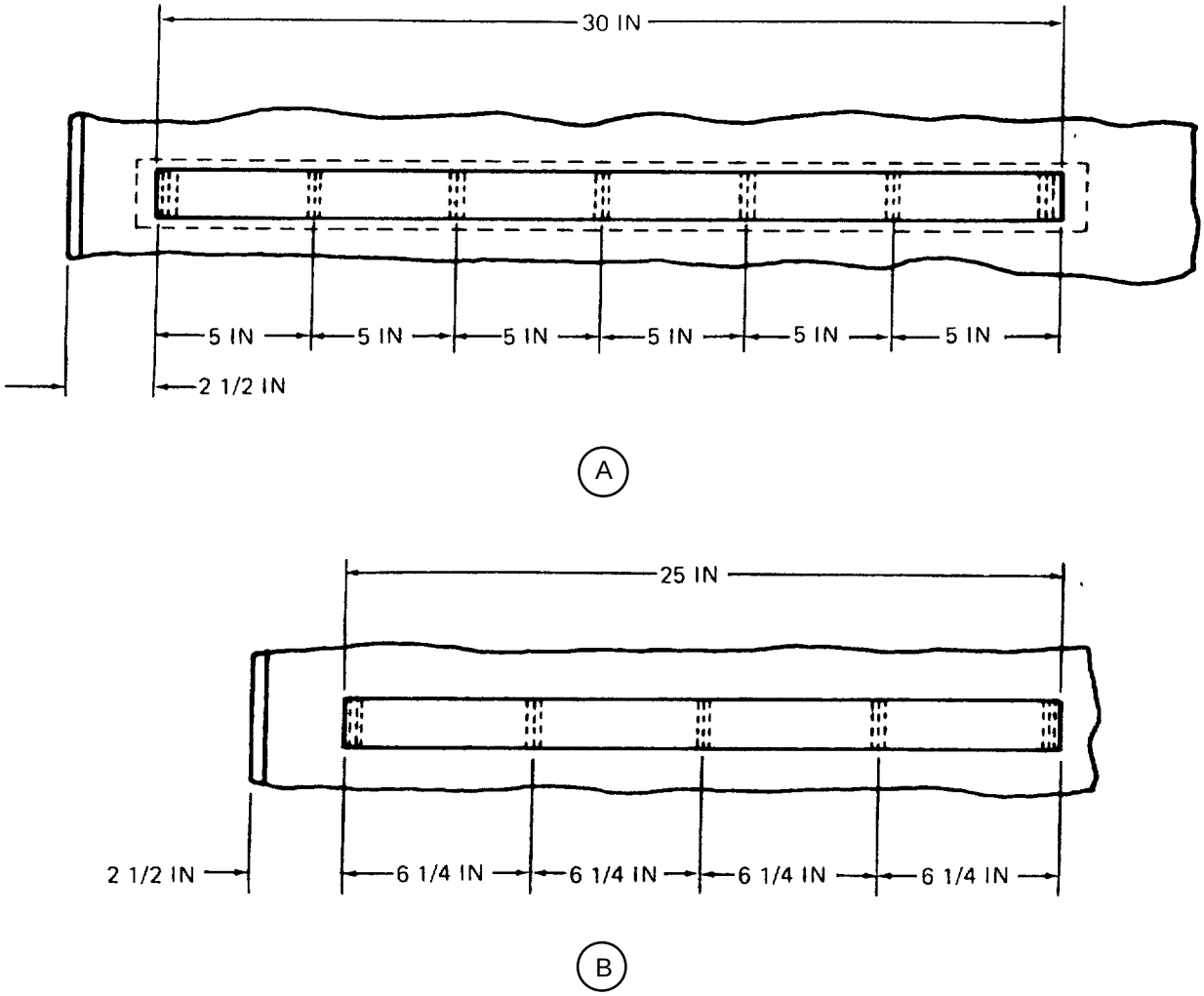


Figure 2-55. Tie Stow Loop Replacement.

2-36. Deployment Bag Closing Loop.

This task covers:

a. Repair **b. Replace**

Tools

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Medium Duty, Item 20, Appendix B
Sewing Machine, Heavy Duty, Item 19, Appendix B
Shears, Item 15, Appendix B
Yardstick, Item 25, Appendix B

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Laid out on work table

Materials/Parts:

Thread, Size FF, Item 30/31, Appendix D
Webbing, Nylon, Type VIII, Item 39, Appendix D

a. *Repair*. Stitch and restitch with size FF thread of contrasting color of the original stitching, when possible Lock all straight stitching by backstitching at least 1/2 inch. Restitch by overstitching each end of the stitch formation by 1/2 inch. Restitch directly over the original stitching, following the original stitch pattern as closely as possible Stitch according to para 2-18 and table 2-4.

b. *Replace*. Replace a damaged bag closing loop by fabricating as follows:

(1) Remove original closing loop by cutting loop webbing flush along edge of bag end reinforcement.

(2) Cut a 12 1/4-Inch length of type VIII nylon webbing, sear ends according to para 2-18.

(3) Mark webbing length at a point 4 inches from each end (A, figure 2-56).

(4) Between two marks made in (3) above, roll webbing edges in to center of webbing width and secure each rolled edge by stitching a 4 1/2-inch long row of stitching according to details in A, figure 2-56. Stitching will be made In accordance with para 2-17, using specifics In table 2-3.

(5) Double webbing length with rolled edges facing out and aline webbing ends

(6) Position formed loop in original closing loop location with alined webbing end placed over applicable main strap and bag end reinforcement. Secure webbing ends bag end reinforcement and main strap by stitching a 4 inch four-point WW-stitch formation, according to the details in B, figure 2-56. Stitching will be made In accordance with para 2-17, using specifics In table 2-3.

2-36. Deployment Bag Closing Loop (cont).

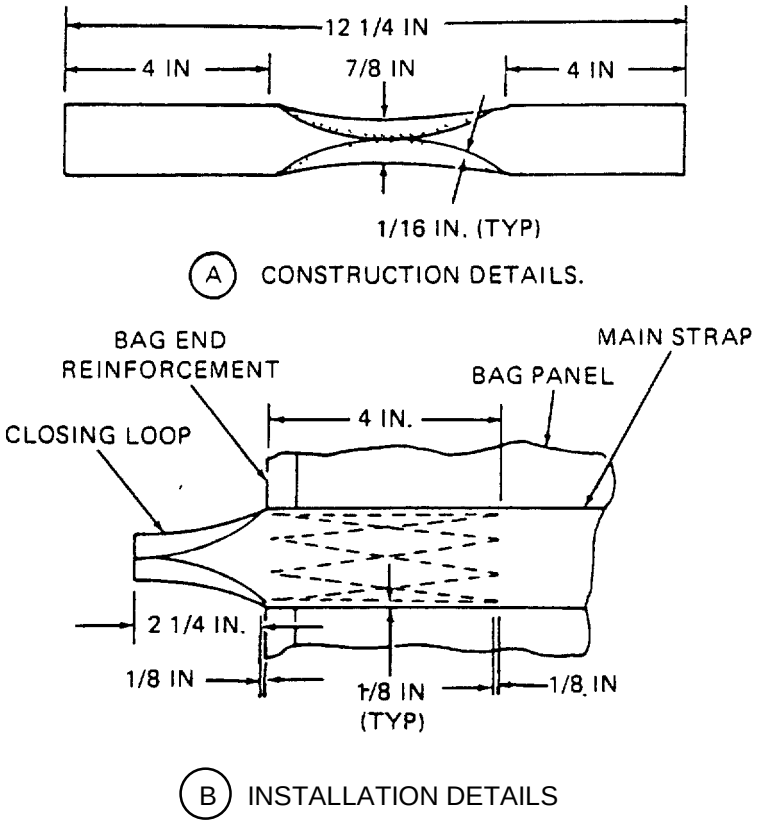


Figure 2-56. Closing Loop Replacement Details.

2-37. Deployment Bag Tie Loop and Tie Loop Reinforcement.

This task covers:

a. Repair **b. Replace**

Tools:

Knife, Hot Metal, Item 6, Appendix B
Knife, Item 5, Appendix B
Sewing Machine, Medium Duty, Item 20, Appendix B
Shears, Item 15, Appendix B
Yardstick, Item 25, Appendix B

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Laid out on work table

Materials/Parts

Thread, Size 3, Item 25/26, Appendix D
Webbing, Nylon, Type VIII, Item 37, Appendix D

a. *Repair*. Stitch and restitch with size 3 thread of contrasting color of the original stitching, when possible lock all straight stitching by backstitching at least 1/2 inch. Restitch by overstitching each end of the stitch formation by 1/2 inch Restitch directly over the original stitching, following the original stitch pattern as closely as possible. Stitch according to para 2-17 and table 2-3

b. *Replace*. When either a tie loop on bag inside or a tie loop reinforcement on bag outside Is damaged, the replacement action will include both Items. Replace a tie loop and tie loop reinforcement by fabricating as follows (figure 2-57).

(1) Remove applicable original tie loop and tie loop reinforcement by cutting stitching that secures both Items to deployment bag.

(2) Cut a 10-inch length of type VIII nylon webbing and a 1 3/4-inch length of type VIII nylon webbing. Sear ends of both webbing lengths according to para 2-18

(3) Position 1 3/4-inch length webbing In original tie loop reinforcement location on deployment bag outside. Secure replacement reinforcement to deployment bag outside by stitching a row of stitching outside the edge, 7-11 stitches per inch. Stitching will be made in accordance with para 2-17, using specifics in table 2-3.

(4) Double 10-inch webbing length, aline ends, and position folded webbing In original tie loop location on Inside of deployment bag. Secure replacement tie loop to deployment bag and tie loop reinforcement by stitching a 3/4-inch wide by 1-inch long single-X-box-stitch formation with double ends (figure 2-57). Stitching will be in accordance with para. 2-17, using specifics in table 2-3.

2-37. Deployment Bag Tie Loop and Tie Loop Reinforcement (cont).

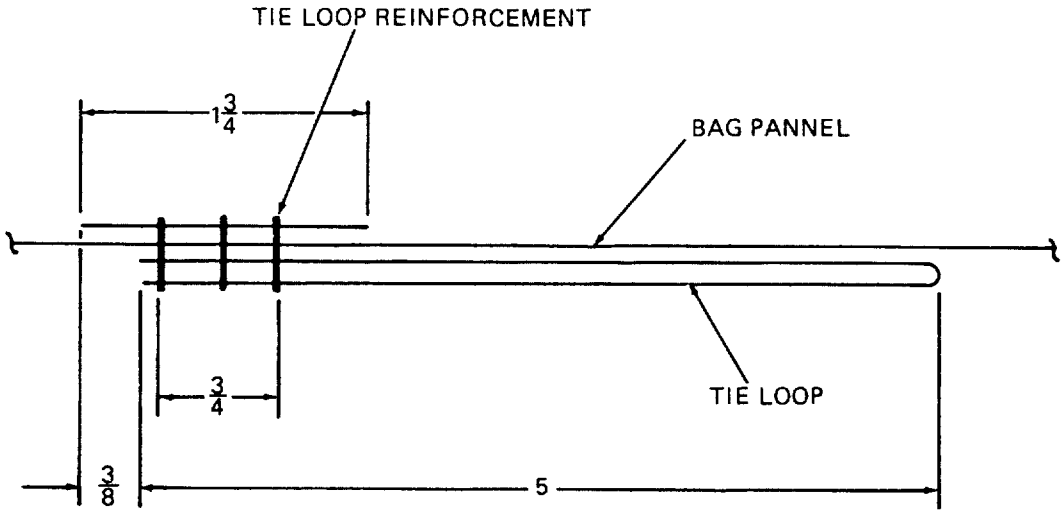


Figure 2-57. Tie Loop and Tie Loop Reinforcement Replacement.

2-38. Deployment Bag Panels and Flaps.

This task covers:
Repair

Tools:	*Equipment Condition*
Push Pins, Item 11, Appendix B	Inspected (paragraph 2-13)
Shears, Item 15, Appendix B	Cleaned (paragraph 2-12)
Sewing Machine, Darning, Item 21, Appendix B	Laid out on work table
Sewing Machine, Light Duty, Item 17, Appendix B	

Materials/Parts.

Thread, Size E, Item 23/24, Appendix D
Cloth, Nylon Duck, Item 4, Appendix D

Repair.

(1) *Stitching*. Stitch and restitch with size E thread of contrasting color of the original stitching, when possible lock all straight stitching by backstitching at least 1/2 inch. Restitch by overstitching each end of the stitch formation by 1/2 inch. Restitch directly over the original stitching, following the original stitch pattern as closely as possible. Stitch according to para 2-17

(2) *Darning*. Darn a hole or tear which does not exceed 3/4 Inch in length or diameter, according to procedure In para 2-17, using specifics In table 2-3. There Is no limit to the number of darns which may be made on the bag panels and flaps.

(3) *Patching*. Patch a hole or tear which exceeds 3/4 Inch In length or diameter using 7.25-ounce nylon duck cloth and specifics in table 2-3. There is no limit to the number of patches which may be made on the bag panels and flaps as follows:

NOTE

The suspension line stowage flap is limited to one patch which will not be larger than 6-inches square.

Patches may be applied to the inside or outside of deployment bag.

The damaged area must be accessible and there must be at least 1 1/4 inches of undamaged material remaining on all sides of the affected area.

(a) Smooth fabric around the damaged area, and secure with push pins. Do not pin damaged area.

(b) Using a marking aid of contrasting color, mark a square or rectangle around the area to be patched and ensure one side of marked square or rectangle is parallel to warp or filling of fabric.

2-38. Deployment Bag Panels and Flaps (cont).

(c) Cut damaged area fabric along lines made in (b) above. Further cut fabric diagonally at each corner to allow a 1/2-inch foldback in raw edges

(d) Make a 1/2-inch foldback on each raw edge. Pin and baste each foldback to complete prepared hole Basting will be performed using procedures In para. 2-17.

(e) Using duck cloth, mark and cut a patch 2 1/2 inches wider and longer than inside measurements of the prepared hole. Ensure that patch material is marked and cut along the warp or filling of fabric.

(f) Center patch material over prepared hole and ensure the warp or filling of patch material matches warp or filling of fabric being patched Pin patch material in position.

(g) Make a 1/2-inch foldunder on each edge of patch material and baste patch to prepared area. Basting will be performed using procedures in para 2-17

(h) Remove push pins securing the item to repair table and secure the patch by stitching, using applicable details In figure 2-58 and stitching specifics outlined in applicable item maintenance publication. Make first row of stitching completely around patch. Turn deployment bag inside out and make second row of stitching around prepared hole. Stitching will be performed In accordance with para 2-17.

(4) *Restenciling*. As required, restencil Identification markings using procedures In para. 2-19.

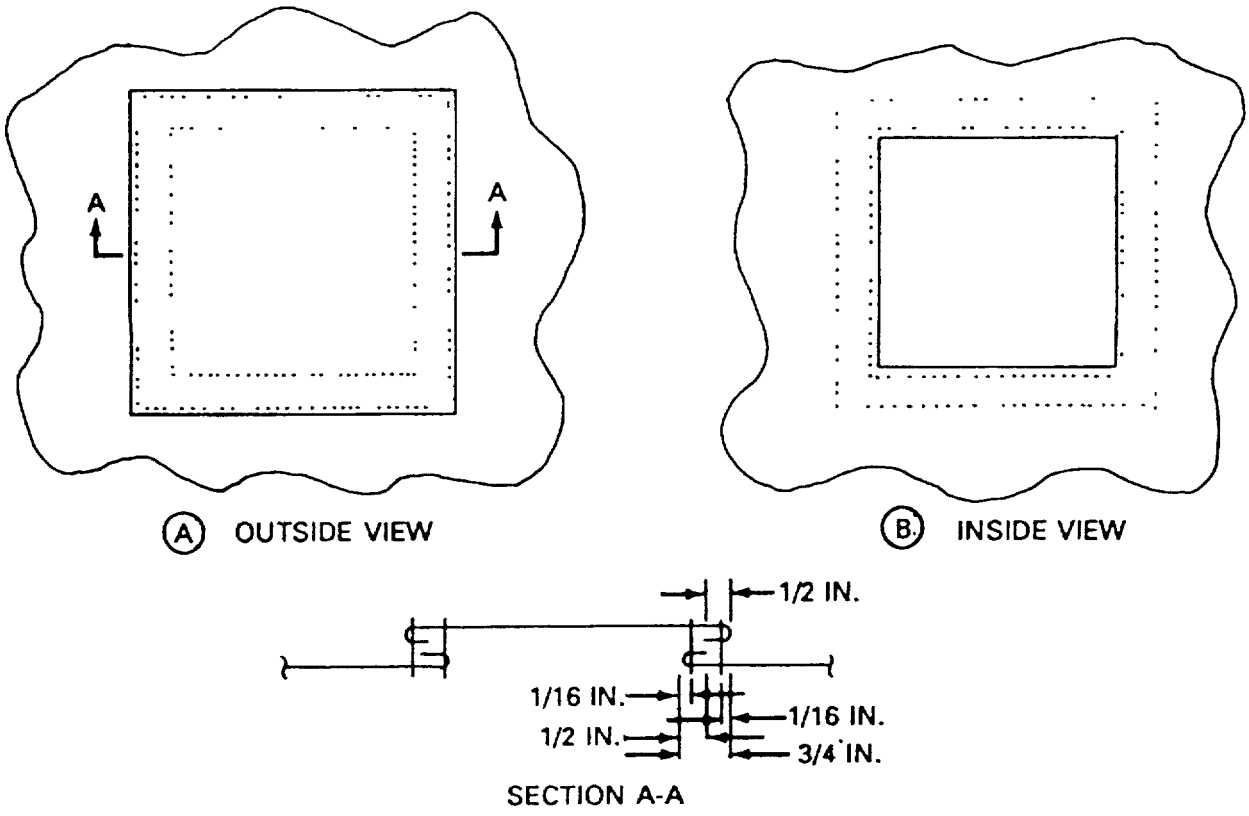


Figure 2-58. Patching Deployment bag Panels and Flaps.

2-39. Adapter Web.

This task covers:

a. Inspect **b. Service** **c. Repair**
d. Replace

Equipment Condition.

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Laid out on work table

a. *Inspect*. Inspect adapter web in accordance with para 2-13.

b. *Service*. Service adapter web by cleaning in accordance with para 2-12.

CAUTION

When performing a repair on the adapter web which requires the cutting of stitching or tacking, ensure that adjacent webbing material is not damaged during the cutting process.

c. *Repair*. Refer to Individual component procedures for repair of adapter web.

d. *Replace*. Replace an unserviceable/unrepairable adapter web with a serviceable one from stock.

2-40. Removable Keeper.

This task covers:
Replace

Tools	*Equipment Condition*
Knife, Hot Metal, Item 6, Appendix B	Inspected (paragraph 2-13)
Shears, Item 15, Appendix B	Cleaned (paragraph 2-12).
Sewing Machine, Heavy Duty, Item 19, Appendix B	Unpacked, canopy laid flat.
Pot, Melting Electric, Item 14, Appendix B	

Materials/Parts -

Thread, Nylon, Size 5, Item 29, Appendix D
Webbing, Nylon, Type X, Item 39, Appendix D

Replace

(1) Remove original removable keeper by disconnecting the connector link and sliding it through support loops.

(2) Cut a 28 1/2-inch length of type X nylon webbing and sear ends (para 2-18).

(3) Wrap webbing around connector link forming a 3 ply keeper strap. Stitch webbing plies together with a 3 point WW-stitch formation forming a 1 1/4 inch loop at each end. Overstitch webbing ends one stitch as shown In figure 2-59.

(4) Slip keeper through support loops and secure with connector link.

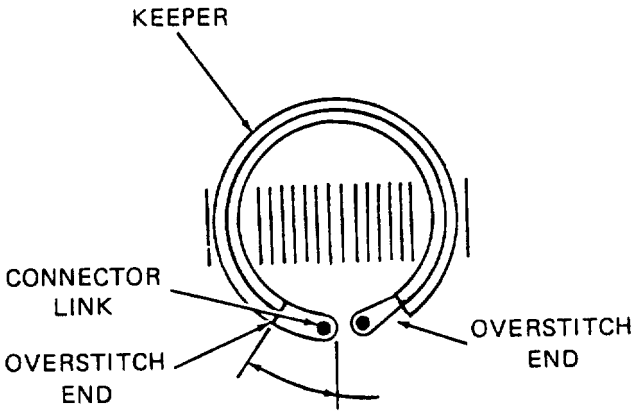


Figure 2-59. Removable Keeper Replacement.

2-41. Fixed Keepers.

This task covers:
Replace

Tools:	*Equipment Condition:*
Knife, Item 5, Appendix B	Inspected (paragraph 2-13) Cleaned (paragraph 2-12)
Materials/Parts:	*Laid on work table*
Tape, Filament Reinforced, Type IV, 1-Inch Wide, Item 16, Appendix D	

NOTE

The 10 fixed keepers are located 18 Inches apart beginning at a point 29 Inches from attaching loop ends.

Replace.

(1) Remove original fixed keeper.

(2) Apply tension to adapter web.

(3) Wrap all 12 adapter webs with tape in original location, gummed side away from loops for two wraps.

(4) Reverse tape direction, gummed side toward loops for two wraps (figure 2-60).

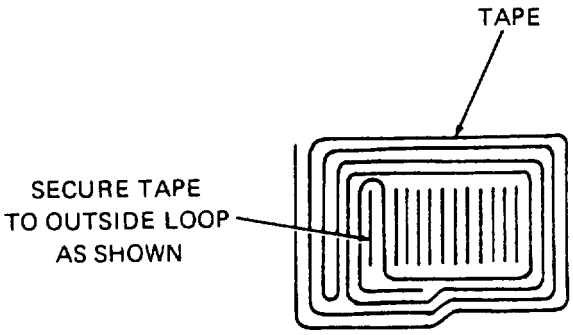


Figure 2-60. Fixed Keepers Replacement.

2-42. Small Sliding Keeper.

This task covers:
Replace

Tools

Knife, Item 5, Appendix B
Sewing Machine, Heavy Duty, Item 20, Appendix B
Pot, Melting Electric, Item 14, Appendix B

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12).
Unpacked, canopy laid flat

Materials/Parts:

Thread, Nylon, Size 3, Item 25/26, Appendix D
Webbing, Nylon, Type VIII, Item 36, Appendix D
Paraffin, Item 32, Appendix D
Beeswax, Item 1, Appendix D

NOTE

After stitching, a sliding keeper must provide as snug a fit as possible around the adapter web straps while still being large enough to slide Into position over the attaching loop with the long buffer tacked In place.

Replace.

(1) Remove original keeper by cutting stitching.

(2) Cut a length of nylon webbing long enough to make two turn single around six plies of the adapter web straps and wax ends (para. 2-18).

(3) Form the keeper by folding the nylon webbing as shown (figure 2-61).

(4) Using a heavy duty sewing machine and size 3 thread, secure small sliding keeper with three rows of stitching.

(5) Wax keeper until it is completely saturated.

(6) Slide replacement keeper over end of attaching loop.

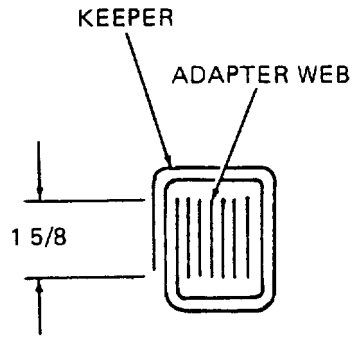


Figure 2-61. Small Sliding Keeper Replacement.

2-43. Large Sliding Keeper.

This task covers:
Replace

Tools:

Knife, Item 5, Appendix B
Sewing Machine, Heavy Duty, Item 19, Appendix B
Pot, Melting Electric, Item 14, Appendix B

Equipment Condition:

Inspected (paragraph 2-13)
Cleaned (paragraph 2-12)
Unpacked, canopy laid flat

Materials/Parts'

Thread, Nylon, Size 3, Item 25/26, Appendix D
Webbing, Nylon, Type VIII, Item 36, Appendix D
Beeswax, Item 1, Appendix D
Paraffin, Item 32, Appendix D

NOTE

After stitching, a sliding keeper must provide as snug a fit as possible around the adapter web straps while still being large enough to slide into position over the attaching loop with the long buffer tacked In place.

Replace.

(1) Remove original keeper by cutting stitching.

(2) Cut a length of nylon webbing, sear ends and wax entire piece of webbing after shaping around adapter web (para. 2-18).

(3) Wrap webbing around the 12 adapter web lines twice (figure 2-62).

(4) Using a heavy duty sewing machine and size 3 thread, secure large sliding keeper with three rows of stitching.

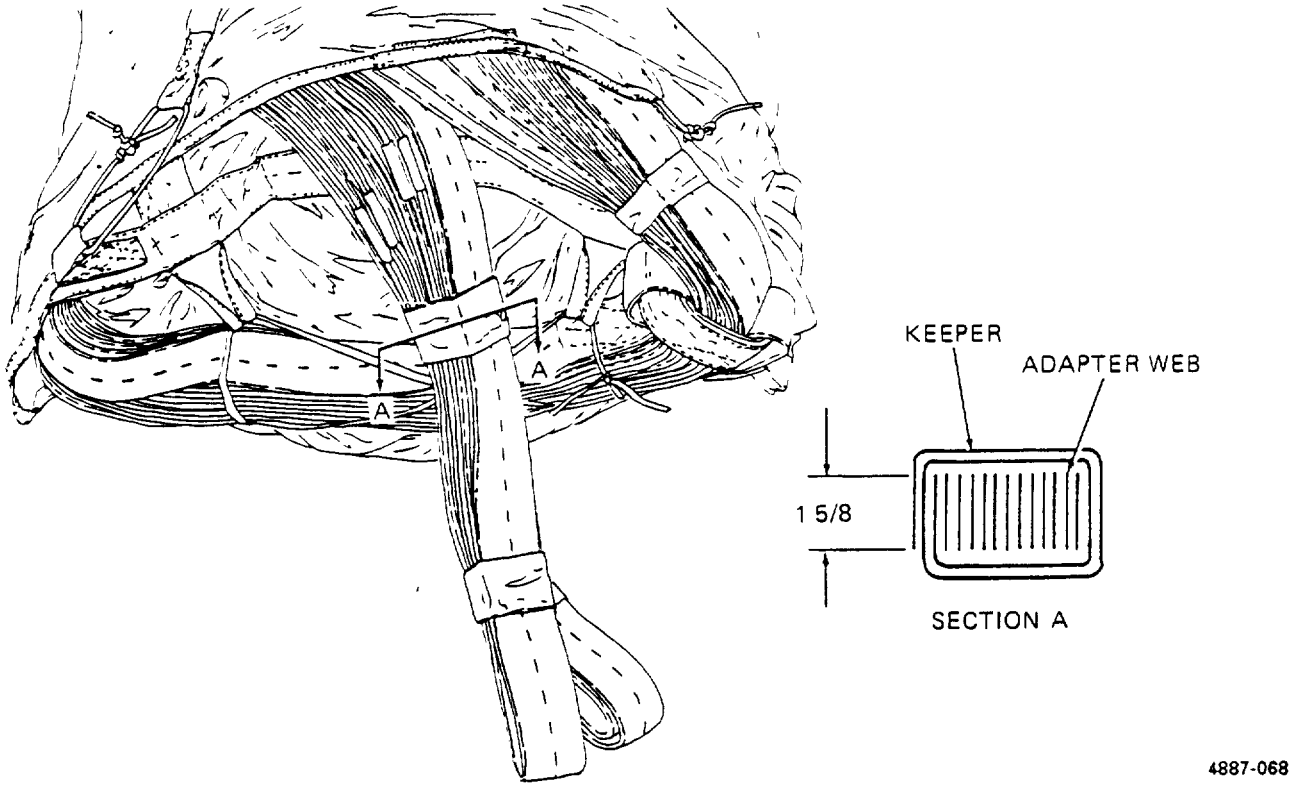


Figure 2-62. Large Sliding Keeper Replacement

SECTION VII. PREPARATION FOR STORAGE OR SHIPMENT

2-44. Storage.

a. *Storage Criteria*. Administrative storage of air delivery equipment will be accomplished in accordance with AR 750-1 and the Instructions furnished below.

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

(1) When available, a heated building should be used to store parachutes and other air delivery items.

(2) Air delivery equipment will be stored In a dry, well-ventilated location and protected from pilferage, dampness, fire, dirt, insects, rodents, and direct sunlight.

(3) Air delivery 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.

(4) Air delivery items will not be stored in a damaged, dirty, or damp condition.

(5) All stored air delivery items will be marked, segregated, and located for accessibility and easy identification.

(6) Air delivery 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 preconstructed shelving or similar storage accommodations are not available, locally fabricate storage provisions using suitable lumber or wooden boxes.

(7) All available materials handling equipment should be used as much as possible in the handling of air delivery Items.

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

c. *Storage Specifics for Parachutes*. In addition to the storage requirements stipulated In subparagraph b. above, the following is a list of specifics which must be enforced when storing parachutes.

(1) Except for those assemblies required for contingency operation, parachutes will not be stored In a packed configuration.

(2) Stored parachute assemblies will be secured from access by unauthorized personnel.

(3) A parachute which is in storage, and Is administered a cyclic repack and inspection, will not be exposed to Incandescent light or indirect sunlight for a period of more than 36 hours In addition, exposure to direct sunlight should be avoided entirely

2-45. In-Storage Inspection.

a. *General Information*. An In-storage inspection is a physical check conducted on a random sample of parachutes which are located In storage.

b. *Intervals*. Parachutes in storage will be inspected at least semiannually and at more frequent intervals if prescribed by the local parachute maintenance officer.

c. *Inspection*. Inspect to insure that the parachute Is ready for Issue.

(1) Check the parachute for proper identification

(2) Check that no damage or deterioration has been incurred

(3) Ensure that all modifications or similar requirements have been completed.

(4) Check the adequacy of the storage facilities; efforts taken to control pests and rodents; and protection against unfavorable climatic conditions

2-46. Shipment.

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

b. *Shipping Between Maintenance Activities*. The shipping of air delivery equipment between organizational and direct support maintenance activities will be accomplished on a signature verification basis using whatever means of transportation are available. Used parachutes and other fabric items will be tagged In accordance with DA PAM 738-751, and rolled, folded, or placed loosely in a parachute pack, deployment bag, or other suitable container, as required. Used wood and metal air delivery items will be tagged as prescribed in DA PAM 738-751 and placed In a suitable type container, if necessary. Unused air delivery equipment will be transported In original shipping containers. During shipment, every effort will be made to protect air delivery equipment from weather elements, dust, dirt, oil, grease, and acids. Vehicles used to transport parachutes will be inspected to ensure the Items are protected from the previously cited material damaging conditions

c. *Other Shipping Instructions*. Air delivery 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.

APPENDIX A

REFERENCES

A-1. **Scope**. This appendix lists all forms, technical manuals, and miscellaneous publications referenced in, or to be used with, this manual.

A-2. **Publication Indexes**. The following publication indexes should be consulted frequently for the latest changes or revisions of references given In this appendix and for new publications relating to the material covered In this manual.

Consolidated Index of Army Publications and Blank Forms	DA PAM 25-30
The Army Maintenance Management System (TAMMS)	DA PAM 738-750
The Army Maintenance Management System (AVIATION)	DA PAM 738-751

A-3. **Technical Manuals**.

General Maintenance of Parachutes and Other Airdrop Equipment	TM 10-1670-201-23/ T.O. 13C-1-41/ NAVAIR 13-1-17
Preservation, Packaging, Packing of Military Supplies and Equipment (Volts 1 and 2)	TM 38-230-1 and TM 38-230-2
Procedures for the Destruction of Air Delivery Equipment to Prevent Enemy Use	TM 43-0002-1

A-4. **Field Manuals**.

First Aid for Soldiers	FM 21-11

A-5. **Army Regulations**.

Dictionary of United States Army Terms	AR 310-25
Authorized Abbreviation and Brevity Codes	AR 310-50
Packaging of Material	AR 700-15
Army Materiel Maintenance Concepts and Policies	AR 750-1
Air Delivery, Parachute Recovery, and Aircraft Personnel Ejection Systems	AR 750-32

A-6. **Technical Bulletins**.

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

A-7. **Joint Regulations**.

Joint Airdrop Inspection Records, Malfunction Investigations, and Activity Reporting	AFR 55-10 AR 59-4 OPNAVINST 4630-24B MCO 13480 1B
Unsatisfactory Equipment Reporting	TO OD-35D4 OPNAVINST 4790 2, Vol. 2
Reporting of Packaging Discrepancies	AR 735-11-2/DLAR 414-55 SEC NAVINST 4355 18 AFR 400-54/MCO 4430 3J
Reporting of Transportation Discrepancies	AR 55-28 NAVUSPINST 4610 33C AFR 75-18/MCO P4610 19D/ DLAR 4500 15
Equipment Improvement Report	AFR 900-4

A-8. **Form**.

Packing Improvement Report	SF 367
Quality Deficiency Report	SF 368
Equipment Inspection and Maintenance Worksheet	DA PAM 2404
Army Parachute Log	DA Form 10-42 or 3912
Maintenance Reporting	AFR 66-1 OPNAVINST 4790.2, Vol. 3
Transportation Discrepancy Report	SF 361

APPENDIX B

MAINTENANCE ALLOCATION CHART

SECTION I. INTRODUCTION

B-1. **General**.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b The Maintenance Allocation Chart (MAC) In Section II designates overall authority and responsibility for the performance of maintenance functions on the Identified end item or component. The application of the maintenance functions to the end Item or component will be consistent with the capacities and capabilities of the designated maintenance levels.

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

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

B-2. **Maintenance Functions**. Maintenance functions will be limited to and defined as follows.

a. 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).

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

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

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

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

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used In precision measurement. Consists of comparisons of two instruments, one of which Is a certified standard of known accuracy, to detect and adjust any discrepancy In the accuracy of the Instrument being compared.

g. *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.

h. *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 3d position code of the SMR code

I. *Repair*. The application of maintenance services, including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures, and maintenance actions to identify trouble 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.

j. *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 performed by the Army Overhaul does not normally return an item to like new condition

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

B-3. **Explanation of Columns in the MAC, SECTION II**.

a. *Column 1. Group Number*. Column 1 lists functional group code numbers the purpose of which Is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly End item group shall be "00".

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

c. *Column 3. Maintenance/Function*. Column 3 lists the functions to be performed on the Item listed In Column 2. (For detailed explanation of these functions, see paragraph B-2).

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

C - Operator or crew
O - Unit Maintenance
F - Intermediate Direct Support Maintenance
H - Intermediate General Support Maintenance
D - Depot Maintenance

e. 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

f. *Column 5. Remarks*. This column shall, when applicable contain a letter code, In alphabetic order, which shall be keyed to the remarks contained In Section IV

B-4. **Explanation of Columns in Tool and Test Equipment Requirements, Section III.**

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

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

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

d. *Column 4. National Stock Number*. The National stock number of the tool or test equipment.

e. *Column 5. Tool Number*. The manufacturer's part number

B-5. **Explanation of Columns in Remarks, Section IV** .

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

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

SECTION II. MAINTENANCE ALLOCATION CHART FOR 35-FOOT DIAMETER CARGO RIBBON EXTRACTION PARACHUTE ASSEMBLY

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Inter Mediate		Depot		
Group Number	Component/ Assembly	Maintenance Function	C	O	F	H	D	Tools And Equipment	Remarks
01	Canopy	Inspect		1.0					A
		Service		1.0					B
		Replace		0.1					
		Repair		0.4					
	Attachment Loop	Replace		0.1				14,15,19, 25	
		Repair		0.1				19	
	Vent Line	Replace			0.4			5,6,19,25	
		Repair		0.1				19	

35-FOOT DIAMETER CARGO RIBBON EXTRACTION PARACHUTE ASSEMBLY (cont)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Inter Mediate		Depot		
Group Number	Component/ Assembly	Maintenance Function	C	O	F	H	D	Tools And Equipment	Remarks
	Vent Reinforcement Tape (Upper Lateral Band)	Repair			0.3			5,6,20,25	
	Gore	Replace			0.5			2,5,15, 17,25	
		Repair		0.3				17	
	Radial Ribbons	Repair		0.4				5,6,17,25	
	Radial Reinforcement Band	Repair		0.4				5,17,25	
	Vertical Ribbon	Repair		0.3				5,6,11, 17,25	
	Horizontal Ribbon	Repair		0.3				5,11,19, 25	
	Skirt Reinforcement (Lower Lateral Band)	Repair		0.4				5,14,17, 25	
	Pocket Band	Replace		0.3				5,6,19,25	
		Repair		0.1				19	
	Suspension Line	Replace			0.8			5,6,19,25	
		Repair		0.1				19	
	Inspection Data Pocket	Replace		0.3				10,17	
	Connector Link	Replace		0.1				3,8,9,23	
02	Deployment Bag	Inspect		0.1					
		Service		0.1					
		Replace		0.1					
		Repair		0.1					
	25 to 30 Inch Tie Stow Loop	Replace		0.4				5,6,15, 20,25	
		Repair		0.3				20	

35-FOOT DIAMETER CARGO RIBBON EXTRACTION PARACHUTE ASSEMBLY (cont)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Inter Mediate		Depot		
Group Number	Component/ Assembly	Maintenance Function	C	O	F	H	D	Tools And Equipment	Remarks
	Bag Closing Loop	Replace		0 4				5,6,15, 19,20, 25	
		Repair		0 1				19,20	
	Tie Loop and Tie Loop Reinforcement	Replace		0 3				5,6,15, 20,25	
		Repair		0 1				20	
	Panels and Flaps	Repair		0 4				11,15, 17,21	
03	Adapter Web	Inspect		0 1					
		Service		0 1					
		Replace		0 1					
		Repair		0 1					
	Removable Keeper	Replace		0 1				6,14,15, 19	
	Fixed Keepers	Replace		0.3				5	
	Small Sliding Keeper	Replace		0 2				5,14,20	
	Large Sliding Keeper	Replace		0.2				5,14,19	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

Tool or test equipment ref code (1)	Maintenance category (2)	Nomenclature (3)	National NATO stock number (4)	PN Tool number (5)
1	O	Brush, Scrub, Household	7920-00-282-2940	H-B-1490
2	O	Brush, Stenciling	7520-00-248-9285	H-B-621
3	O	File, Flat	5110-00-249-2848	GGG-F-325
4	O	Iron, Household	7290-00-634-2010	
5	O	Knife	5110-00-162-2205	MIL-K-818C
6	O	Knife, Hot Metal	3439-01-197-7656	4025
7	O	Lead, Pig, 5-pounds	9650-00-264-5050	QQ-C-40
8	O	Line Separator	1670-00-092-8661	11-1-17-1
9	O	Mallet, Rawhide	5120-00-293-3397	GGG-H-33
10	O	Needle, Tacking	8315-00-262-3733	FF-N-180
11	O	Pins, Push	7510-00-940-0935	
12	O	Packing Weight	1670-00-375-9134	66C38599
13	O	Pliers, Lineman	5120-00-756-1156	GGG-P-471
14	O	Pot, Melting, Electric	5120-00-242-1276	WG441
15	O	Shears	5110-00-223-6370	GGG-S-278
16		Set, Chuck and Die	5120-00-694-5153	7540756
17	O	Sewing Machine, Light-Duty	See Table 2-2	
18	O	Sewing Machine, Zig-Zag	See Table 2-2	
19	O	Sewing Machine, Heavy-Duty,	See Table 2-2	
20	O	Sewing Machine, Medium-Duty	See Table 2-2	
21	O	Sewing Machine, Darning	See Table 2-2	

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS

Tool or test equipment ref code (1)	Maintenance category (2)	Nomenclature (3)	National NATO stock number (4)	PN Tool number (5)
22	O	Sewing Machine, Very Heavy-Duty	See Table 2-2	
23	O	Screwdriver, Flat Tip	5120-00-293-0314	GGG-S-121
24	O	Separator, Link	1670-00-072-4941	MIL-S-43243
25	O	Yardstick	5120-00-985-6610	GGG-Y-0035
26	O	Packing Paddle	1670-00-764-6381	11-1-152

SECTION IV. REMARKS

Reference Code	Remarks/Notes
A	Inspect is a technical-rigger type inspection.
B	Service Is to clean equipment
C	Service is the packing of parachutes
D	Repair by restitching, darning or restenciling canopy panel
E	Repair at organizational maintenance consists of darning, restitching, patching and replacement of parts authorized for organizational maintenance Direct support repair consists of replacing gore sections

APPENDIX C
REPAIR PARTS AND SPECIAL TOOLS LIST

SECTION I. INTRODUCTION

C-1. **SCOPE**. This manual lists and authorizes spares and repair parts, special tools, special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of unit and direct support maintenance of the Parachute, Cargo Type. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

C-2. **GENERAL**. This Repair Parts and Special Tools List is divided into the following sections

a. *Section II. Repair Parts List* A list of spares and repair parts authorized by this RPSTL for use In the performance of maintenance The list also Includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups In ascending alphanumeric sequence, with the parts In each group listed In ascending figure and item number sequence. Bulk materials are listed In Item name sequence Items listed are shown on the associated Illustration(s)/figure(s)

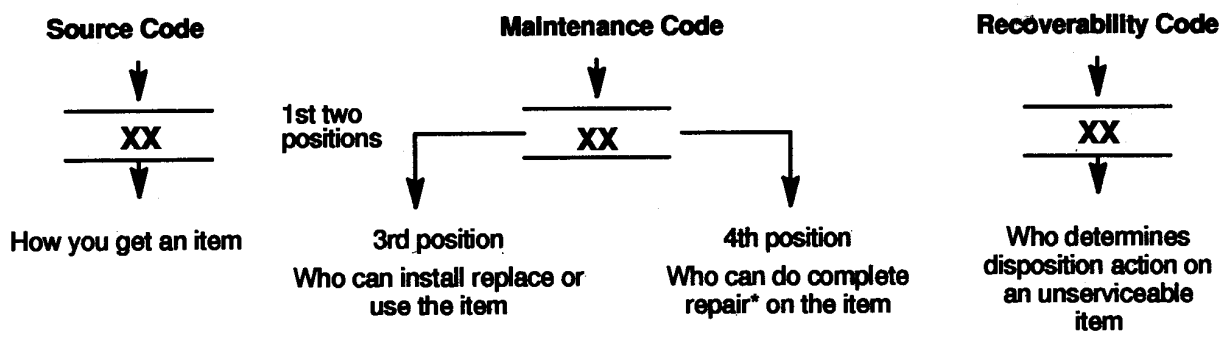
b. *Section III. Special Tools List* (Not Applicable) No special tools are required to assemble the 35-foot diameter parachute. Common tools are listed in Appendix B, Section II because they are equipped for performance of packing and maintenance procedures/tasks. These tools are authorized under Chapter 22, paragraph 2-1 of this manual referenced to each illustration figure and item number appearance.

c. *Section IV. National Stock Number and Part Number Index*. A list, in National Item Identification Number (NIIN) sequence, of all National Stock Numbers (NSN) appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

C-3. **EXPLANATION OF COLUMNS (SECTION II).**

a. *Item No (Column (1))* Indicates the number used to identify items called out in the illustration

b. *SMR Code (Column (2))* The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout



*Complete Repair Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function In a use/user environment In order to restore serviceability to a failed item

(1) Source code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end Item/equipment Source codes are always the first two positions of the SMR code. Explanations of source codes follow:

Code	Explanation
PA PB PC** PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3rd position of the SMR code

	Explanation
KD KF KB	Items with these codes are not to be requested/requisitioned individually They are part of a kit which is authorized to the maintenance category indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied

	Explanation
MO--(Made at org. AVUM Level MF--(Made at DS/ AVUM Level MH--(Made at GS Level) ML--Made at Specialized Repair Activity (SRA)) MD--(Made at Depot)	Items with these codes are not to be requested/requisitioned Individually. They must be made from bulk material which is Identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the Bulk Material group of the repair parts list in the RPSTL. If the Item is authorized to you by the 3rd position code of the SMR code, but the source code indicates it. Is made at a higher level, order the item from the higher level of maintenance.

	Explanation
AO--(Assembled by org/AVUM Level) AF--(Assembled by DS/AVIM Level) AH--(Assembled by GS Category) AL--(Assembled by SRA) AD--(Assembled by Depot)	Items with these codes are not to be requested/requisitioned Individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3rd position code of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the SRA) higher level of maintenance.

Code	Explanation
XA	Do not requisition an "XA" - coded item. Order its next higher assembly (Also refer to the NOTE below.)
XB	If an "XB" item Is not available from salvage, order it using the FSCM and part number given.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	Item is not stocked. Order an "XD"- coded item through normal supply channels using the FSCM and part number given, if no NSN Is available

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 700-42.

(2) Maintenance code. Maintenance codes tell you the level(s) of maintenance authorized to USE and REPAIR support items The maintenance codes are entered In the third and fourth positions of the SMR Code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an Item. The maintenance code entered In the third position will Indicate authorization to one of the following levels of maintenance

Code	Application/Explanation
C	Crew or operator maintenance done within organizational or aviation unit maintenance.
O	Organizational or aviation unit category can remove, replace, and use the Item
F	Direct support or aviation Intermediate level can remove, replace, and use the Item
H	General support level can remove, replace, and use the Item.
L	Specialized repair activity can remove, replace, and use the Item
D	Depot level can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e, perform all authorized repair functions.) (NOTE: Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR code) This position will contain one of the following maintenance codes.

Code	Application/Explanation
O	Organizational or aviation unit is the lowest level that can do complete repair of the item.
F	Direct support or aviation intermediate is the lowest level that can do complete repair of the item.
H	General support Is the lowest level that can do complete repair of the Item
L	Specialized repair activity (designate the specialized repair activity) is the lowest level that can do complete repair of the item.
D	Depot is the lowest level that can do complete repair of the item
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B" coded item) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level

(3) *Recoverability code*. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR Code as follows:

Recoverability codes	Application/Explanation
Z	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in 3rd position of SMR Code.
O	Reparable item. When uneconomically reparable, condemn and dispose of the Item at organizational or aviation unit level
F	Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate level.
H	Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support level
D	Reparable Item When beyond lower level repair capability, return to depot Condemnation and disposal of item not authorized below depot level
L	Reparable item. Condemnation and disposal not authorized below specialized repair activity (SRA).
A	Item requires special handling or condemnation procedures because of specific reasons (e g , precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions

c. *FSCM (Column (3))*. The Federal Supply Code for Manufacturer (FSCM) is a 5-digrt numeric code which is used to Identify the manufacturer, distributor, or Government agency, etc., that supplies the Item

d. *Part Number (Column (4))* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to Identify an item or range of Items

NOTE

When you use a NSN to requisition an item, the item you receive may have a different part number from the part ordered

e. *Description and Usable on Code (UOC) (Column (5)).* This column includes the following information

(1) The Federal item name and, when required, a minimum description to identify the item

(2) The physical security classification of the item is indicated by the parenthetical entry; insert applicable physical security classification abbreviation (e.g., Phy Sec C1 (C) - Confidential, Phy Sec C1 (S) - Secret, Phy Sec C1 (T) - Top Secret)

(3) Items that are included in kits and sets are listed below the name of the kit or set

(4) Spare/repair parts that make up an assembled Item are listed immediately following the assembled item line entry.

(5) Part numbers for bulk materials are referenced in this column in the line Item entry for the Item to be manufactured/fabricated

(6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC)

(7) The usable on code, when applicable (see paragraph 5, Special Information)

(8) In the Special Tools List section, the basis of issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment When density of equipments supported exceeds density spread indicated In the basis of issue, the total authorization is increased proportionately.

(9) The statement "End of Figure" appears just below the last item description in Column 5 for a given figure In Section II

f. *Qty (Column (6))*. The Qty (quantity per figure) column Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in the column in lieu of a quantity Indicates that the quantity is variable and may vary from application to application.

C-4. **Special Information**.

a. The "Usable on Code" title appears in the lower right corner of column (5) Description. Usable on codes are shown in the right-hand margin of the description column

b. Bulk materials required to manufacture Items are listed in the Bulk Material Group of this manual NSN's for bulk materials are also referenced in the description column of the line item entry for the item to be manufactured/fabricated. Detailed manufacturing Instructions for items source coded to be manufactured or fabricated are found In this manual

c. Detailed assembly instructions for Items source coded to be assembled from component spare/repair parts are found In this manual Items that make up the assembly are listed immediately following the assembled item entry.

d. Line item entries for repair parts kits and sets appear as the last entries in the repair parts listing for the figure in which their parts are listed as repair parts.

e. Items which have the word Bulk in the figure number column will have an index number shown in the item number column This index number is furnished for use as a cross-reference between the National Stock Number/Part Number Index and the bulk material list in Section II.

f. In the repair parts list, some items are indented to show that they are a component or components of the Item under which they are indented

C-5. **Explanation of Columns (Section IV).**

a. National Stock Number (NSN) Index.

(1) Stock number column This column lists the NSN by National Item Identification Number (NIIN) sequence The NIIN consists of the last nine digits of the NSN (i.e.,

NSN
5305-01-574-1487)
NIIN

When using this column to locate an item, ignore the first 4 digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

(2) *Fig. column*. This column lists the number of the figure where the item is identified/located. The figures are In numerical order in Section II.

(3) *Item column*. The item number identifies the item associated with the figure listed In the adjacent Fig. column. This item Is also identified by the NSN listed on the same line.

b. *Part Number Index*. Part numbers in this index are listed by part number In ascending alphanumeric sequence (i e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order)

(1) *FSCM column* The Federal Supply Code for Manufacturer (FSCM) is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the Item.

(2) *Part number column*. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and Inspection requirements to identify an item or range of items.

(3) *Stock number column*. This column lists the NSN for the associated part number and manufacturer Identified In the part number and FSCM columns to the left

(4) *Fig. column*. This column lists the number of the figure where the Item Is identified/located in Section II and III.

(5) *Item column*. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

C-6. **How to Locate Repair Parts**.

a. *When National Stock Number or Part Number is Not Known*.

(1) *First*. Using the table of contents, determine the functional group or subfunctional group to which the item belongs This is necessary since figures are prepared for functional groups and subfunctional groups, and listings are divided into the same groups.

(2) *Second*. Find the figure covering the functional group or subfunctional group to which the item belongs

(3) *Third*. Identify the items on the figure and note the item number

(4) *Fourth*. Refer to the Repair Parts List for the figure to find the line entry for the item number noted on the figure.

(5) *Fifth*. Refer to the Part Number Index to find the NSN, If assigned.

b. When National Stock Number or Part Number Is Known

(1) *First*. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National Stock Number or Part Number. The NSN index is in National Item Identification Number (NIIN) sequence (see 4 a (1)). The part numbers in the Part Number index are listed in ascending alphanumeric sequence (see 4 b). Both indexes cross-reference you to the illustration figure and item number of the item you are looking for

*The NIIN consists of the last 9 digits of the NSN (i.e.,

NSN
5305-01-675-1467)
NIIN

(2) Second. After finding the figure and item number, verify that the item is the one you're looking for, then locate the item number In the repair parts list for the figure.

C-7. **Abbreviations**.

Abbreviations	Explanation
EA	Each
FT	Foot/Feet
IN.	Inch/inches
LG	Long
MTG	Mounting
NF	National Fine (Thread)

SECTION II

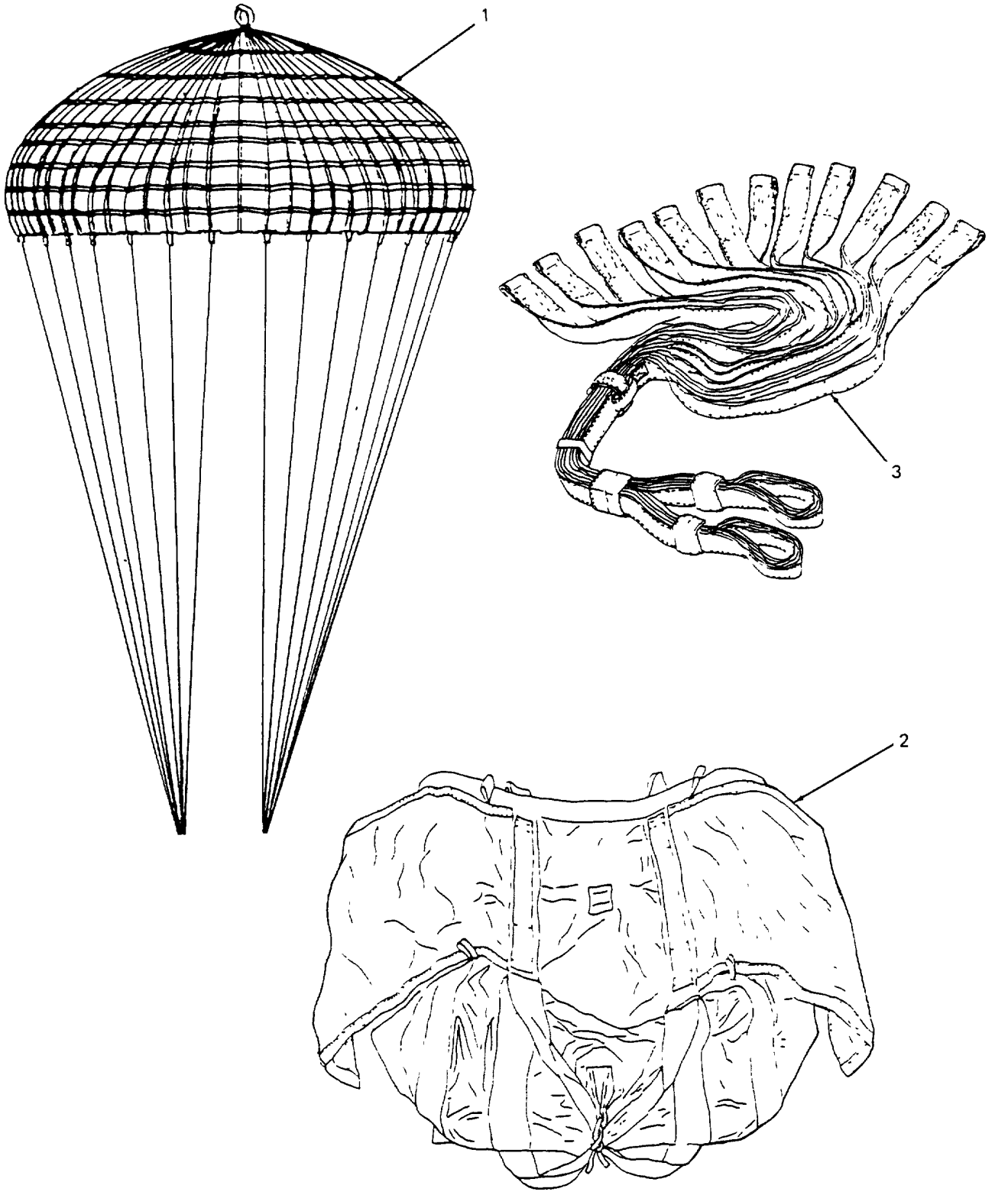


Figure C-1. 35-Foot Ribbon Cargo Extraction Parachute.

SECTION II

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 00 PARACHUTE, CARGO, 35 FOOT, RIBBON EXTRACTION FIG. C-1 35-FOOT CARGO PARACHUTE P/N 11-1-3766	
1	XAOFF	81337	11-1-3208	CANOPY, CARGO PARACHUTE, 35-FOOT	1
2	PAOOO	81337	11-1-3035	DEPLOYMENTBAG, PARACHUTE	1
3	PAOOO	81337	11-1-3210	ADAPTER WEB	1
				END OF FIGURE	

SECTION II

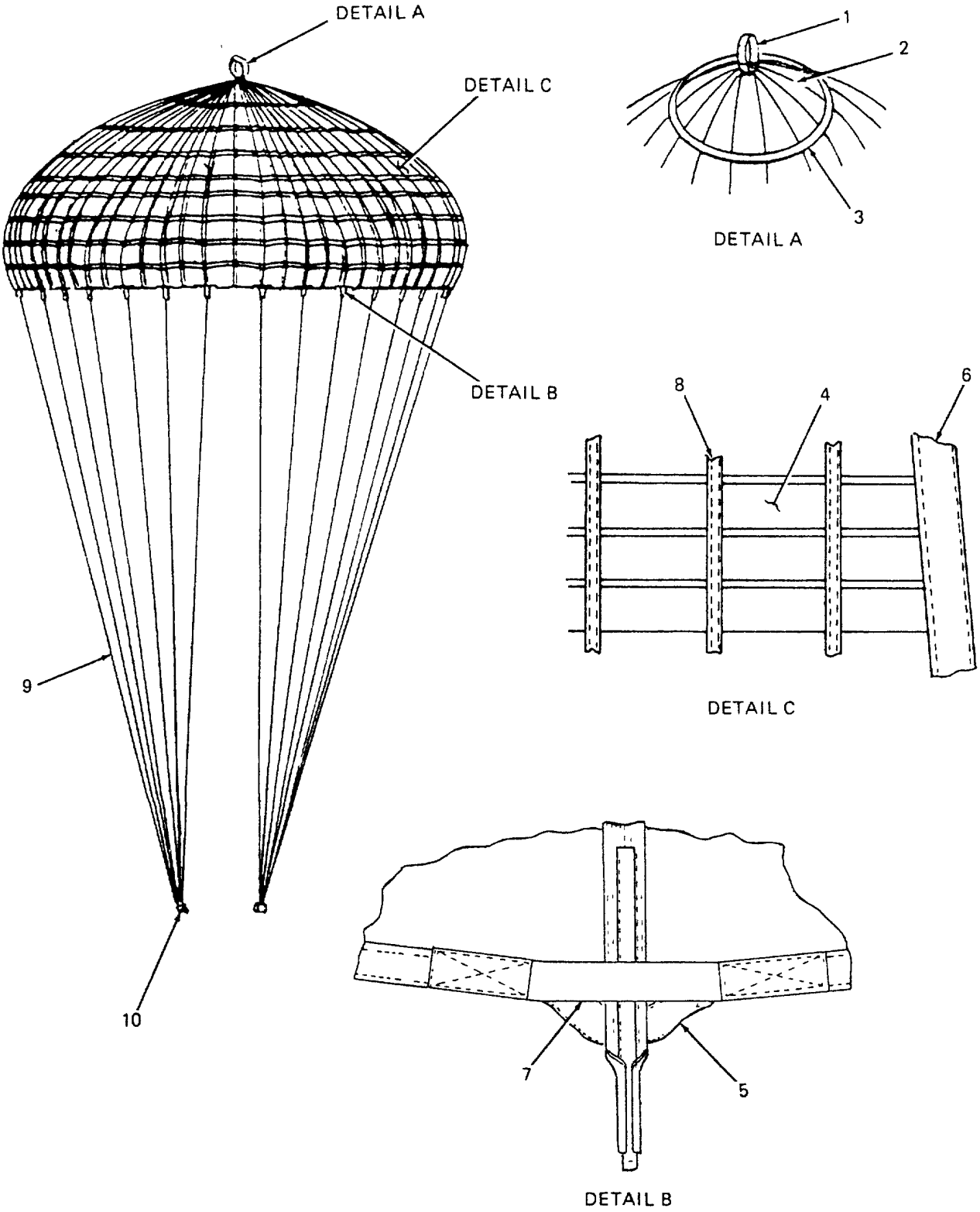


Figure C-2. 35-Foot Cargo Parachute Canopy.

SECTION II

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 01 CANOPY, PARACHUTE, CARGO, 35-FOOT	
				FIG. C-2 35-FOOT CARGO PARACHUTE CANOPY, P/N 11-1-3208	
1	MOOOO	81337	11-1-3209-9	ATTACHMENT LOOP, CANOPY, MAKE FROM, WEBBING, COTTON, TYPE VIII, CLASS 2B, OD P/N MIL-W-5665 & THREAD, NYLON, TYPE I, CLASS A, SIZE 3, P/N V-T-295	1
2	MFFFF	81337	11-1-3209-8	VENT LINE, MAKE FROM, WEBBING, NYLON, TUBULAR, 1-IN. WD, OD, P/N MIL-W-5625 & THREAD, NYLON, TYPE I, CLASS A, SIZE 3, P/N V-T-295	24
3	MFFFF	81337	11-1-3209-5	VENT, REINFORCEMENT, MAKE FROM, WEBBING, NYLON, TYPE VI, 3/4-IN WD, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, CLASS A, SIZE F, P/N V-T-295	1
4	MOOOO	81337	11-1-3211-3	HORIZONTAL RIBBON, MAKE FROM, RIBBON, NYLON, TYPE V, CLASS C, OD, P/N MIL-T-5608 & THREAD, NYLON, TYPE 1, CLASS A, SIZE 3, P/N V-T-295	85
5	MOOOO	81337	11-1-3209-4	SKIRT REINFORCEMENT, MAKE FROM WEBBING, NYLON, TYPE VI, OD, P/N MIL-T-4088 & THREAD, NYLON, TYPE El, CLASS A, SIZE FF, P/N V-T-295	1
6	MOOOO	81337	11-1-3211-2	RADIAL RIBBON, MAKE FROM RIBBON, NYLON, TYPE II, CLASS E, OD, P/N MIL-T-5608 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295.....	96
7	MOOOO	81337	11-1-3209-6	POCKET BAND, MAKE FROM WEBBING, NYLON, TYPE VI, 3/4-IN. W , OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE El, CLASS A, SIZE FF, P/N V-T-295.....	48
8	MFFFF	81337	11-1-3211-1	VERTICAL RIBBON, MAKE FROM RIBBON, NYLON, TYPE III, CLASS C, OD, P/N MIL-T-5608 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295	480
9	MFFFF	81337	11-1-3209-7	SUSPENSION LINE, MAKE FROM WEBBING, NYLON, TUBULAR, 1-INCH, OD, P/N MIL-W-5625 & THREAD, NYLON, TYPE I, CLASS A, SIZE 5 P/N V-T-295	48

SECTION II

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 01 CANOPY, PARACHUTE, CARGO, 35-FOOT	
				FIG C-2 35-FOOT CARGO PARACHUTE CANOPY, P/N 11-1-3208	
10	PAOZZ	96906	MS24553-1	LINK, CONNECTOR	12
				END OF FIGURE	

SECTION II

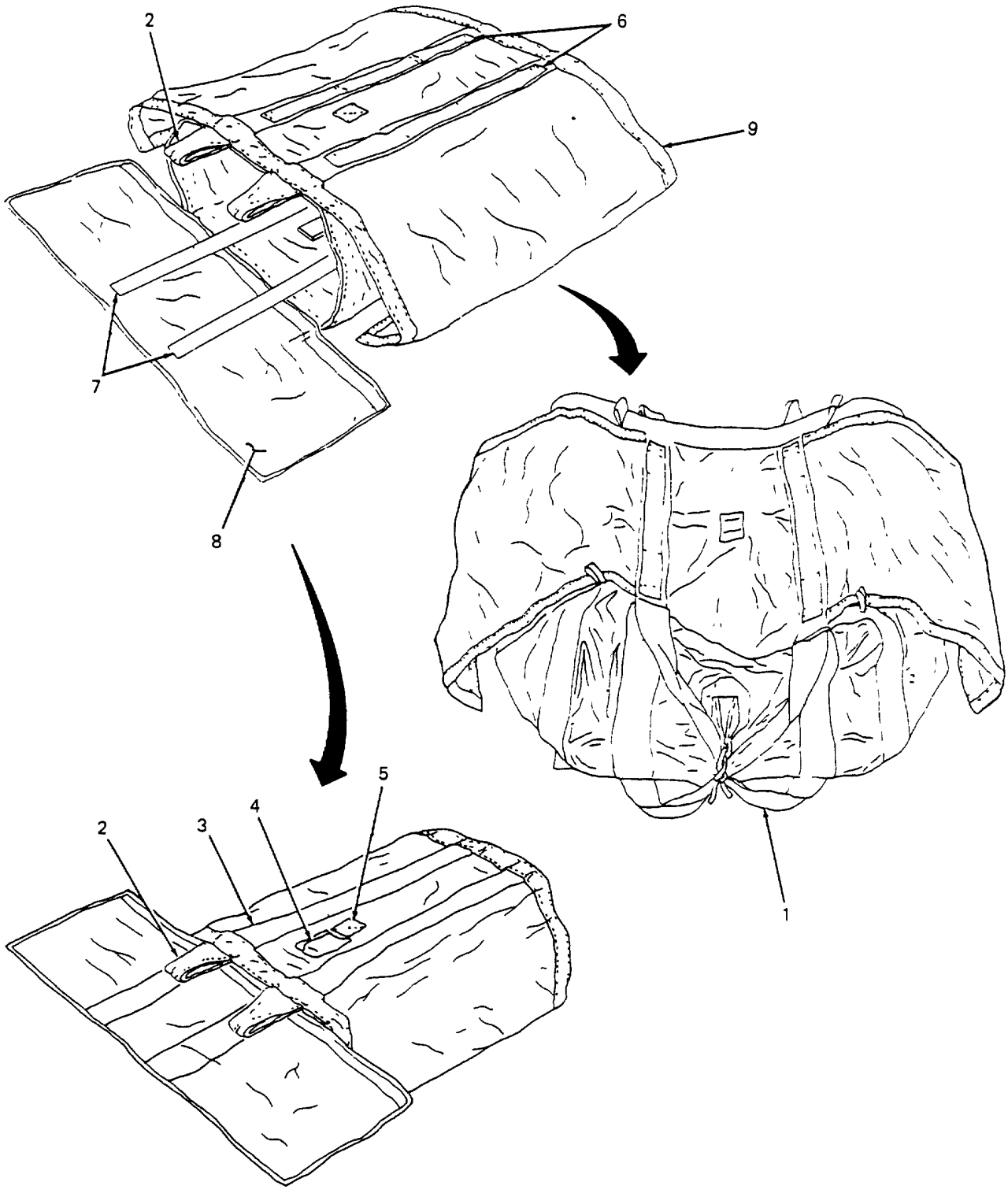


Figure C-3. Deployment Bag.

SECTION II

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 02 DEPLOYMENT BAG, PARACHUTE	
				FIG. C-3 DEPLOYMENT BAG P/N 11-1-3035	
1	XAOOO	81337	11-1-3038	BRIDLE, MAKE FROM WEBBING, NYLON, TYPE VII, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE FF, P/N V-T-295	2
2	MOOOO	81377	11-1-3039	LOOP, CLOSING, MAKE FROM WEBBING, NYLON, TYPE VII, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE FF, P/N V-T-295	4
3	XAOOO	81377	11-1-3036-4	STRAP, MAIN, MAKE FROM WEBBING, NYLON, TYPE VIII, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE FF, P/N V-T-295	2
4	XAOOO	81377	11-1-3036-9	LOOP, TIE, MAKE FROM WEBBING, NYLON, TYPE XIII, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 3, P/N V-T-295.....	2
5	XAOOO	81377	11-1-3036-13	REINFORCEMENT, TIE LOOP, MAKE FROM WEBBING, NYLON, TYPE VIII, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 3, P/N V-T-295	2
6	MOOOO	81377	11-1-3036-6	LOOP, STOW, 25-INCH, MAKE FROM WEBBING, NYLON, TYPE XIII, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 3, P/N V-T-295.....	2
7	MOOOO	81377	11-1-3036-7	LOOP, STOW, 30-INCH, MAKE FROM WEBBING NYLON, TYPE XIII, OD P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 3, P/N V-T-295.....	2
8	XAOOO	81377	11-1-3037	FLAP, SUSPENSION LINE, MAKE FROM CLOTH, DUCK, NYLON, 7.25 OZ, CLASS I, OD, P/N MIL-C-7219 & THREAD, NYLON, TYPE I, SIZE FF, P/N V-T-295P/N V-T-295	1
9	XAOOO	81377	11-1-3037-1	FLAP, BODY, MAKE FROM CLOTH, DUCK, NYLON, 7 25 OZ, CLASS I, OD, P/N MIL-C-7219 & THREAD, NYLON, TYPE I, SIZE FF, P/N V-T-295P/N V-T-295	1
				END OF FIGURE	

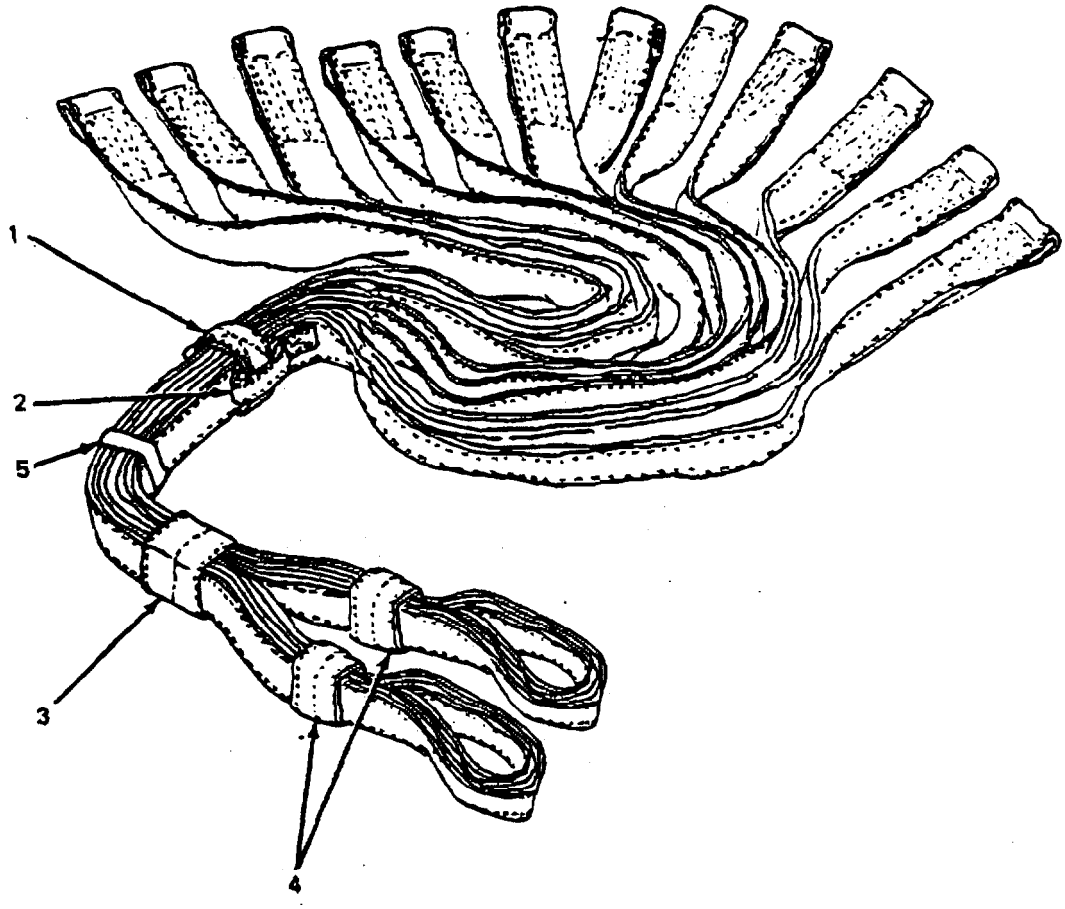


Figure C-4. Adapter Web.

SECTION II

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 03 ADAPTER WEB, PARACHUTE	
				FIG. C-4 ADAPTER WEB PN 11-1-3210	
1	MOOZZ	81377	11-1-3210-2	KEEPER, REMOVABLE, MAKE FROM WEBBING, NYLON, TYPE X, CLASS I, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 5, OD, P/N V-T-295.....	1
2	PAOZZ	96906	MS24553-1	LINK, CONNECTOR	1
3	MOOZZ	81377	11-1-3210-3	KEEPER, LARGE, SLIDING, MAKE FROM WEBBINBG, NYLON, TYPE VIII, CLASS I, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 3, OD, P/N V-T-295.....	1
4	MOOZZ	81377	11-1-3210-4	KEEPER, SMALL, SLIDING, MAKE FROM WEBBING, NYLON, TYPE VIII, CLASS I, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, SIZE 3, OD, P/N V-T-295	2
5	MOOZZ	81377	11-1-3210-5	KEEPER, FIXED, MAKE FROM TAPE, PACKING, TYPE IV, 1-INCH WIDE, P/N PPP-T-97.....	10
				END OF FIGURE	

SECTION II

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 99 BULK MATERIALS	
				FIG. BULK	
1	PAOZZ	81349	MIL-C-4279	CLOTH, DUCK, NYLON, 7 25 OZ, CLASS I, OD.....	YD
2	PAOZZ	81349	MIL-C-7515	CORD, NYLON, CORELESS, TYPE II, OD	SL
3	PAOZZ	81349	MIL-C-5040	CORD, NYLON, TYPE I	YD
4	PAOZZ	81349	MIL-T-5608	RIBBON, NYLON, TYPE III, CLASS C, OD	YD
5	PAOZZ	81349	MIL-T-5608	RIBBON, NYLON, TYPE II, CLASS E, OD.....	YD
6	PAOZZ	81349	MIL-T-5608	RIBBON, NYLON, TYPE V, CLASS C, OD	YD
7	PAOZZ	81348	V-T-295	THREAD, NYLON, TYPE I, CLASS A, SIZE E, OD	TU
8	PAOZZ	81348	V-T-295	THREAD, NYLON, TYPE I, CLASS A, SIZE 3, OD.....	TU
9	PAOZZ	81348	V-T-295	THREAD, NYLON, TYPE I, CLASS A, SIZE FF, OD	TU
10	PAOZZ	81349	MIL-W-5665	WEBBING, COTTON, TYPE VIII, CLASS 2B, OD	YD
11	PAOZZ	81349	MIL-W-4088	WEBBING, NYLON, TYPE VI, OD.....	FT
12	PAOZZ	81349	MIL-W-5625	WEBBING, NYLON, TUBULAR, 1-IN. W, OD.....	YD
				END OF FIGURE	

SECTION III. SPECIAL TOOLS LIST

Not Applicable

SECTION IV

CROSS REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG	ITEM	STOCK NUMBER	FIG.	ITEM
8315-00-176-8083	BULK	6	1670-00-872-6109	C-1	-
8305-00-260-2564	BULK	10	1670-00-933-9522	C-3	-
8310-00-262-2772	BULK	7	1670-01-283-3684	C-4	-
4083-00-678-8560	C-2	11	1670-01-283-4531	C-1	-
1670-00-719-6243	C-4	2	1670-01-283-4562	C-3	-

SECTION IV

CROSS REFERENCE INDEXES

PART NUMBER INDEX

FSCM	PART NUMBER	STOCK NUMBER	FIG	ITEM
81349	MIL-C-4279		BULK	1
81349	MIL-C-5040		BULK	3
81349	MIL-C-7515		BULK	2
81349	MIL-T-5038		BULK	4
81349	MIL-T-5038		BULK	5
81349	MIL-T-5038	8315-00-176-8083	BULK	6
81349	MIL-T-5625		BULK	13
81349	MIL-W-2765		BULK	12
81349	MIL-W-5665	8305-00-260-2564	BULK	10
81349	MIL-W-5665	8305-00-281-3315	BULK	11
96906	MS24553-1	1670-00-719-6243	C-4	2
81337	MS245530-1		C-2	11
96906	MS70086C		C-4	4
96906	MS70086P		C-4	3
96906	MS70086-1	4030-00-678-8560	C-2	11
96906	MS70086-1		C-4	2
81348	QQ-W-423		BULK	14
81348	V-T-295	8310-00-262-2772	BULK	7
81348	V-T-295		BULK	8
81348	V-T-295		BULK	9
81337	11-1-3035	1670-00-872-6109	C-1	-
81337	11-1-3035	1670-01-283-4562	C-3	-
81337	11-1-3036-4		C-3	3
81337	11-1-3036-9		C-3	4
81337	11-1-3038		C-3	1
81337	11-1-3039		C-3	2
81337	11-1-3208		C-i	1
81337	11-1-3209-4		C-2	5
81337	11-1-3209-5		C-2	3
81337	11-1-3209-9		C-2	1
81337	11-1-3210	1670-01-283-3684	C-4	-
81337	11-1-3211-1		C-2	8
81337	11-1-3211-2		C-2	6
81337	11-1-3211-3		C-2	4
81337	11-1-3766	1670-01-283-4531	C-1	-
81337	11-1-556-3209-7		C-2	9
81337	11-1-556-3209-8		C-2	2

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

SECTION I. INTRODUCTION

D-1. Scope. This appendix lists expendable supplies and materials you need to operate and maintain the 35-Foot Diameter High-Velocity Cargo Parachute. These Items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)

D-2. Explanation of Columns.

a. *Column (1) - Item Number*. This number is assigned to the entry in the listing and is referenced In the narrative Instructions to Identify the material (e g, "Use Cloth, Abrasive Item 5, App D").

b. *Column (2) -Level*. This column Identifies the lowest level of maintenance that requires the listed Item (Enter as applicable).

C - Operator/Crew
O - Organizational Maintenance - Unit Maintenance
F - Direct Support Maintenance - Intermediate Maintenance
H - General Support Maintenance - Intermediate Maintenance
D - Depot Maintenance

c. *Column (3) - National Stock Number*. This is the National stock number assigned to the item, use. it to request or requisition the item

d. *Column (4) - Description*. Indicates the Federal item name and, if required, a description to identify the item.

e. *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 alphabetical 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.

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) Item number	(2) Level	(3) National stock number	(4) Description	(5) U/M
1	O	9160-00-253-1171	Beeswax, Technical, 1 Lb (81348) C-B-191	lb
2	O	7520-00-248-9285	Brush, Stenciling (81348) H-B-00621	ea
3	O	5350-00-221-0872	Cloth, Abrasive, Ferric Oxide & Quartz (81348) P-C-458	sh

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (cont)

(1) Item number	(2) Level	(3) National stock number	(4) Description	(5) U/M
4	O	8305-00-926-6870	Cloth, Nylon, Duck, 7.25 Oz OD (81349) MIL-C-7219	yd
5	O	7930-00-281-4731	Dishwashing Compound, Hand, Flake (81348) P-D-410	lb
6	O	7510-00-286-5362	Ink, Marking, Parachute, Strata-Blue (81349) MIL-I-6903	pt
7	O	9150-00-168-2000	Lubricant, Solid Film	
8	O	7520-00-230-2734	Marker, Felt Tip, Black (81349) GG-M-0014	ea
9	O		Medicine Dropper	ea
10	O		Paper, Three Color, PH	
11	O	7520-00-491-2917	Pen, Ballpoint (81348) GG-B-0060	ea
12	O	7510-00-240-1525	Pencil, Marking Aid, White (81348) A-A-87	ea
13	O	7920-00-205-3570	Rag, Wiping (81348) DDD-R-30	be
14	O	9310-00-160-7858	Stencil board, Oiled (81348) UU-S-625 Type II	sh
15	O	6630-00-442-8000	Spool W/Color Chart	ea
16	O	7510-00-633-0199	Tape, Nylon Adhesive, Type IV, 1 Inch, PPP-T-97	
17	O		Tape, Nylon, Ribbon, Type III, CL C (81349) MIL-T-5608	yd
18	O		Tape, Nylon, Ribbon, Type V, CL C (81349) MIL-T-5608	yd
19	O		Tape, Nylon, Ribbon, Type II, CL E (81349) MIL-T-5608	yd
20	O	7510-00-663-0199	Tape, Pressure Sensitive, 1 Inch (81348) PPP-T-60	yd
21	O	6810-00-270-9982	Tetracloroethylene, Technical (81348) O-T-236	dr
22	O	8310-00-917-3945	Thread, Cotton, Ticket No. 8/7 (81348) V-T-276	tu
23	O	8310-00-262-2770	Thread, Nylon, Size E, Nat White (81348) V-T-295	tu
24	O	8310-00-262-2772	Thread, Nylon, Size E, OD (81348) V-T-295	tu

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (cont)

(1) Item number	(2) Level	(3) National stock number	(4) Description	(5) U/M
25	O	8310-00-248-9714	Thread, Nylon, Size 3, Nat. White (81348) V-T-295	tu
26	O	8310-00-267-3027	Thread, Nylon, Size 3, OD (81348) V-T-295	tu
27	O	8310-00-262-3324	Thread, Nylon, Size A (81348) V-T-295	tu
28	O	8310-00-248-9715	Thread, Nylon, Size 5, Nat. (81348) V-T-295	tu
29	O	8310-00-262-2777	Thread, Nylon, Size 5, OD (81348) V-T-295	tu
30	O	8310-00-248-9716	Thread, Nylon, Size FF, Nat White (81348) V-T-295	tu
31	O	8310-00-262-2780	Thread, Nylon, Size FF, OD (81348) V-T-295	tu
32	O	9160-00-285-2044	Wax, Paraffin, Technical, Type I, Grade A, 1 Lb (81348) VV-W-95	lb
33	O	8305-00-268-2411	Webbing, Cotton, Type I, 1/4 Inch, OD (81349) MIL-T-5661	ft
34	O	8305-00-260-2564	Webbing, Cotton, Type VIII, Class 2B, OD (81349) MIL-W-5665	ft
35	O	8305-00-281-3013	Webbing, Nylon, Type VI, 1 3/4 Inch, OD (81349) MIL-W-4088	ft
36	O	8305-00-261-8585	Webbing, Nylon, Type VIII, OD (81349) MIL-W-4088	ft
37	O	8305-00-260-4586	Webbing, Nylon, Type XIII, OD (81349) MIL-W-4088	ft
38	O		Webbing, Nylon, Tubular, 1-Inch, OD, MIL-W-5625	ft
39	O	8305-00-261-8584	Webbing, Nylon, Type X, OD, MIL-W-5625	ft

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INDEX (cont)

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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

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .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

Liquid Measure

1 centiliter = 10 milliters = .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

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 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
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

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