TECHNICAL MANUAL

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

FOR
PARACHUTE, CARGO TYPE:
26-FOOT DIAMETER, HIGH-VELOCITY
CARGO PARACHUTE
NSN 1670-00-872-6109

*TM 10-1670-276-23&P, along with TM 10-1670-275-23&P, TM 10-1670-277-23&P, TM 10-1670-278-23&P, TM 10-1670-279-23&P, TM 10-1670-280-23&P, TM 10-1670-281-23&P, TM 10-1670-282-23&P, in their entirety, supersede TM 10-1670-215-23, dated 7 December 1973, including all changes.

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENTS OF THE ARMY, AIR FORCE, AND NAVY
28 SEPTEMBER 1990

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 bums or DEATH could result.

WARNING

FIRST AID

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

TECHNICAL MANUAL

No 10-1670-276-23&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 28 September 1990

Unit and Intermediate Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for PARACHUTE, CARGO TYPE: 26-FOOT DIAMETER HIGH-VELOCITY CARGO PARACHUTE ASSEMBLY NSN 1670-00-872-6109

Current as of 23 May 1990

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help Improve this manual. If you find any mistakes or if you know of a way to Improve the procedures, please let us know Mall your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located In the back of this manual direct to Commander, U S Army Troop Support Command, ATTN. AMSTR-MCTS, 4300 Goodfellow Blvd, St Louis, MO 63120-1798. A reply will be furnished directly to you.

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply and forward to the address prescribed above the for Army. An Information copy of the prepared AFTO Form 22 shall be furnished to SA-ALC/MMI LRA, Kelly AFB, TX 78241-5000

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

In either case a reply will be furnished direct to you.

Approved for public release distribution Is unlimited

TABLE OF CONTENTS

*TM 10-1670-276-23&P, along with TM 10-1670-275-23&P, TH 10-1670-277-23&P, TM 10-1670-278-23&P, TM 10-1670-279-23&P, TM 10-1670-280-23&P, TM 10-1670-281-23&P, TM 10-1670-282-23&P, in their entirety, supersede TM 10-1670-215-23, dated 7 December 1973, including all changes.

TABLE OF CONTENTS (cont)

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS (cont)

LIST OF TABLES

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 1670-00-872-6109 This is a 26-Foot Diameter High-Velocity Cargo Parachute (figure 1-1). This manual also provides a Repair Parts and Special Tools List located at Appendix C.

b *Equipment Name* 26-Foot Diameter High-Velocity Cargo Parachute, hereinafter called the 26-Foot Cargo Parachute.

c *Purpose of Equipment.* The parachute provides high velocity air delivery of non-fragile supplies.

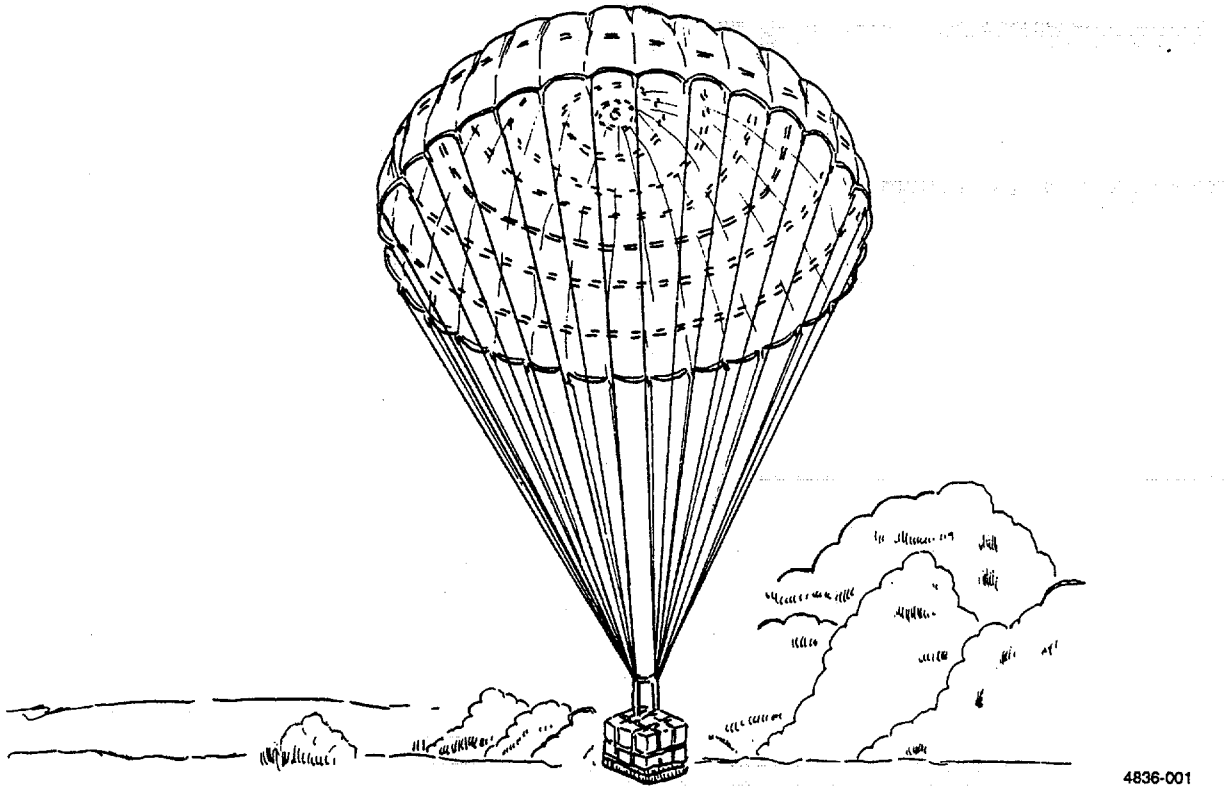


Figure 1-1. 26-Foot Diameter High- Velocity Cargo Parachute

1-2. Maintenance Forms and Records. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System and TB 750-126, Use of Material Condition Tags and Labels on Army Aeronautical and Air Delivery Equipment.

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). 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 SF 368 (Quality Deficiency Report) Mall it to us at Commander, U S Army Troop Support Command, ATTN: AMSTR-QP, 4300 Goodfellow Blvd, St Louis, MO 63120-1798 We will send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

Paragraph Page

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 high-velocity air delivery method.

b *Capabilities and Features.*

(1) Capable of supporting up to 2200 pounds.

(2) Increased accuracy.

(3) Low cost.

(4) Designed for decelerating and stabilizing high-velocity air delivery cargo.

(5) Components of the system.

*(*a) Canopy assembly.

*(*b) Static line.

*(*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. A cotton cloth cargo canopy of ringslot construction, 26 suspension lines, a riser assembly and a clevis to attach parachute assembly to cargo bundle.

b. Static Line. A 15-foot 3/4 Inch tubular nylon webbing with a large loop formed at one end and a small formed loop and clevis at the other end May be used In either breakaway or non-breakaway method of deployment.

c. Deployment Bag. A cotton cloth bag used to contain the cargo canopy.

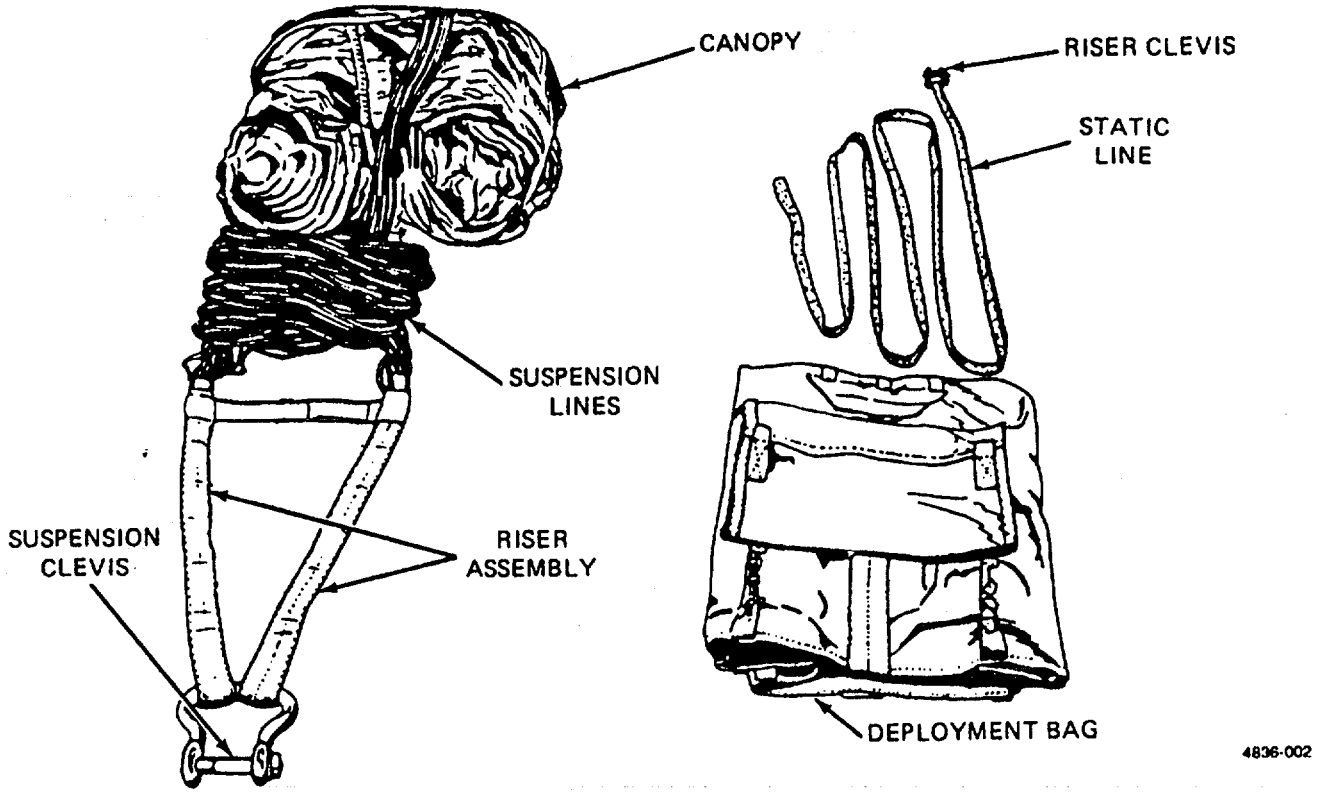


Figure 1-2. Major Components of Parachute Assembly

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 26-fool high-velocity cargo parachute.

a. *Weight* (packed for use)..... 22 lbs.(approx)

b. *Dimensions* *(packed* for use)..... 20 in. lg. by 17 in wd. by 10-in. h.

c. *Canopy Assembly*

Shape..... Flat-circular
Diameter ..... 26 feet
Design..... Ringslot
No of gores..... 26
No of sections per gore..... 8
Gore material ..... Type II111, 3 8 oz cotton muslin cloth
No of radial tapes 26
No of vent lines 13
Vent line material ..... Type II coreless nylon cord
No of pocket bands..... 26
Suspension line material..... Type II coreless nylon cord
Length of suspension line (riser suspension line attaching loop to canopy skirt)..... 26 ft.

Length of canopy (skirt reinforcement tape to vent reinforcement tape)..... 142-3/4 in

d Riser Assembly

Length .....30 In
Number of suspension devises used..... 1

e Deployment Bag

Bag length .....23 3/4 in
Bag width.....19 in

f Static Line

Length ..... 15 ft
Number of riser devises used 1

1-9. Functional Description of Major Components.

a. Canopy Assembly. Delivers supplies and equipment rigged for high-velocity air delivery on the drop zone.

b. Static Line. Deploys parachute as cargo bundle leaves the aircraft.

c. Deployment Bag. Retains the cargo parachute in preparation for deployment.

1-10. Safety, Care, and Handling.

a Safety. It Is imperative that you observe all safely 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 INTERMEDIATE DIRECT SUPPORT (DS) MAINTENANCE INSTRUCTIONS

OVERVIEW

This chapter contains Information necessary to maintain the 26-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

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 i**n** Appendix C of this manual

Section II. SERVICE UPON RECEIPT

Paragraph Page

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 DA PAM 750-126 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 held 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 to the riser 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 8/7 waxed cotton thread (item 31, 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 1 0-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.

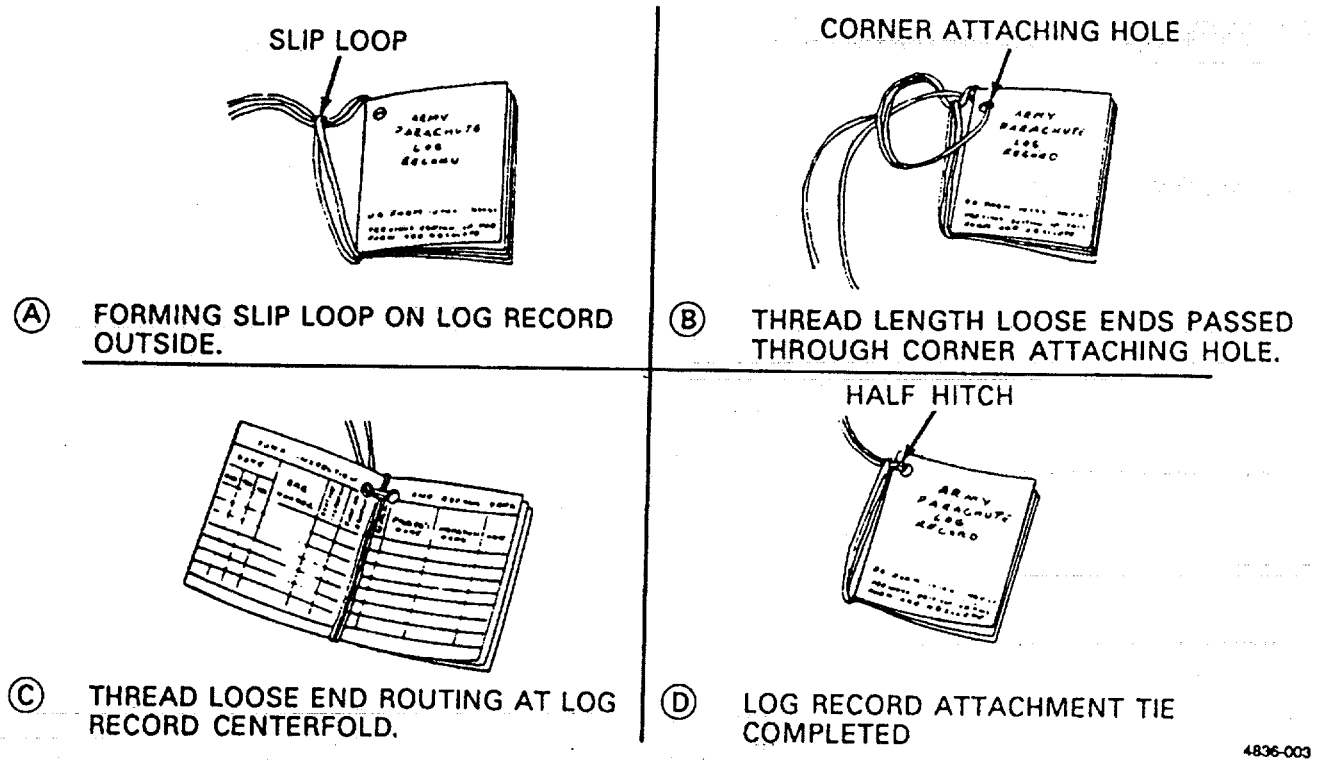


Figure 2-1. Installing Attachment Tie on Parachute Log Record.

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 ODR (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 lest 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.

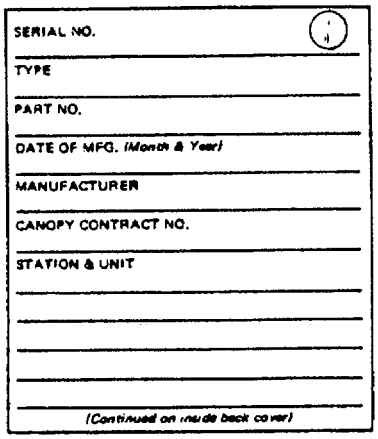


Figure 2-2. Inside Front Cover of Parachute Log Record.

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

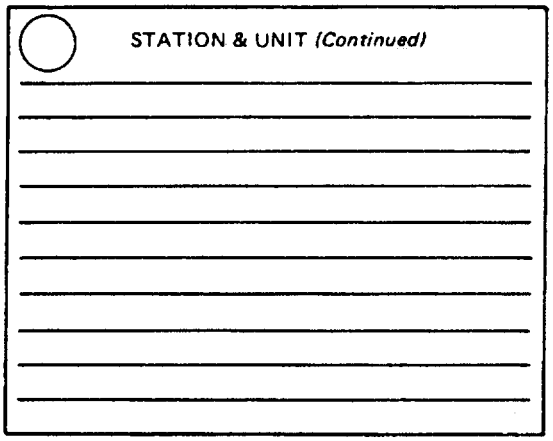


Figure 2-3. Inside Back Cover of Parachute Log Record

(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 "Compiled With" (2, figure 2-4), which signifies the applicable MWO has been compiled with.

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

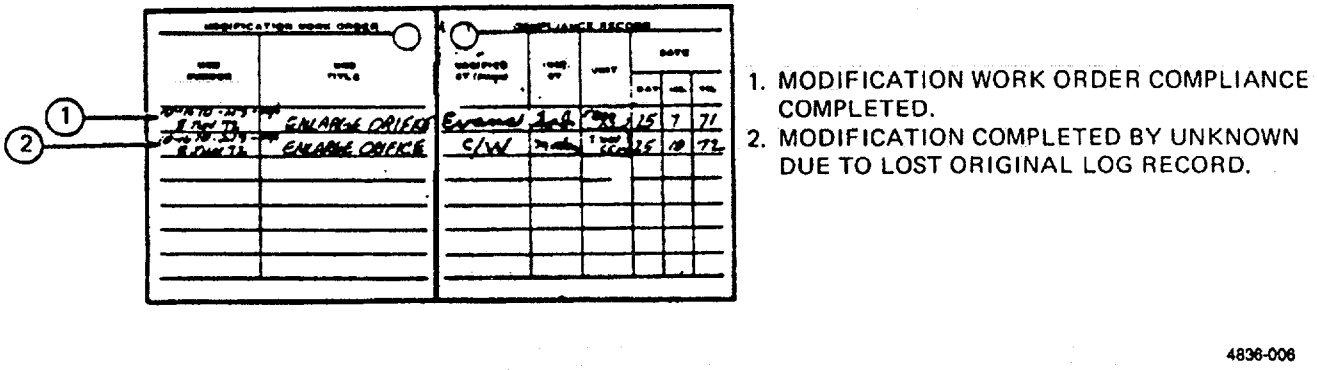


Figure 2-4. Log Record Entrees for the Modification Work Order Compliance Record Page.

(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 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.

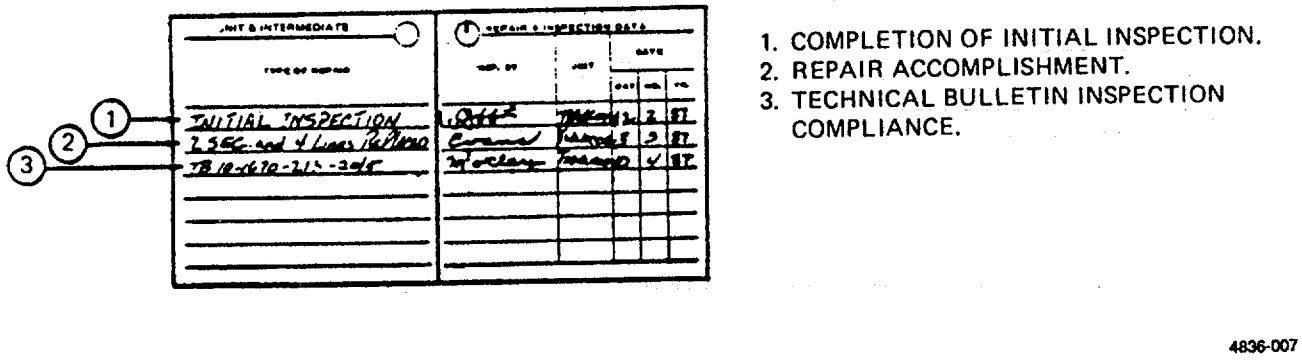


Figure 2-5. Log Record Entries for Unit and Intermediate Repair and Inspection Data Page.

(*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.

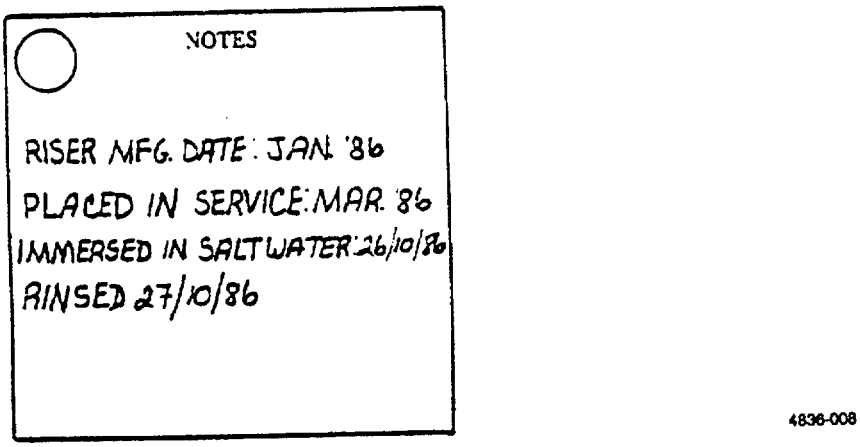


Figure 2-6. Data Entries for a Log Record Note Page

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 Form 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.

c. Check to see whether the equipment has been modified.

Section III. ASSEMBLY

Paragraph Page

2-8. Assembly of the 26-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)

Paragraph Page

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 26-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, TB 750-126, and TB 43-0002-43.

e. Overage Items. During any inspection or at any time that an item is found to be overage (shelf/service life has expired as specified in TB 43-0002-43), the Item will be removed from service, condemned and tagged in accordance with TB 750-126.

f. 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.

g. 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 detect 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 26-Foot Cargo Parachute	
1	•			Parachute Packed for Use	Visually check visible parts for serviceabilty and completeness without opening pack. Check parachute inspection data record for pack date.
2	•		•	Canopy	As canopy Is raised, suspended, and lowered during shakeout, check for dampness, fungus, acid, grease, oil, dirt, foreign material, holes, cuts, tears: broken lines and webbing.
	•		•	Fabric Material	Legibility of marking data, 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 and webbing.
	•		•	Hardware Components	Suspension clevis for corrosion, rough spots, burrs, breaks, cracks, bends, loose or missing screw or nut: damage to threads on screw or nut.
3	•		•	Deployment Bag and Static Line	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.
	•		•	Hardware Components	Riser clevis assembly for corrosion, rough spots, breaks, cracks, bends, missing tie cord, pin and safety pin.

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

Paragraph Page

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.

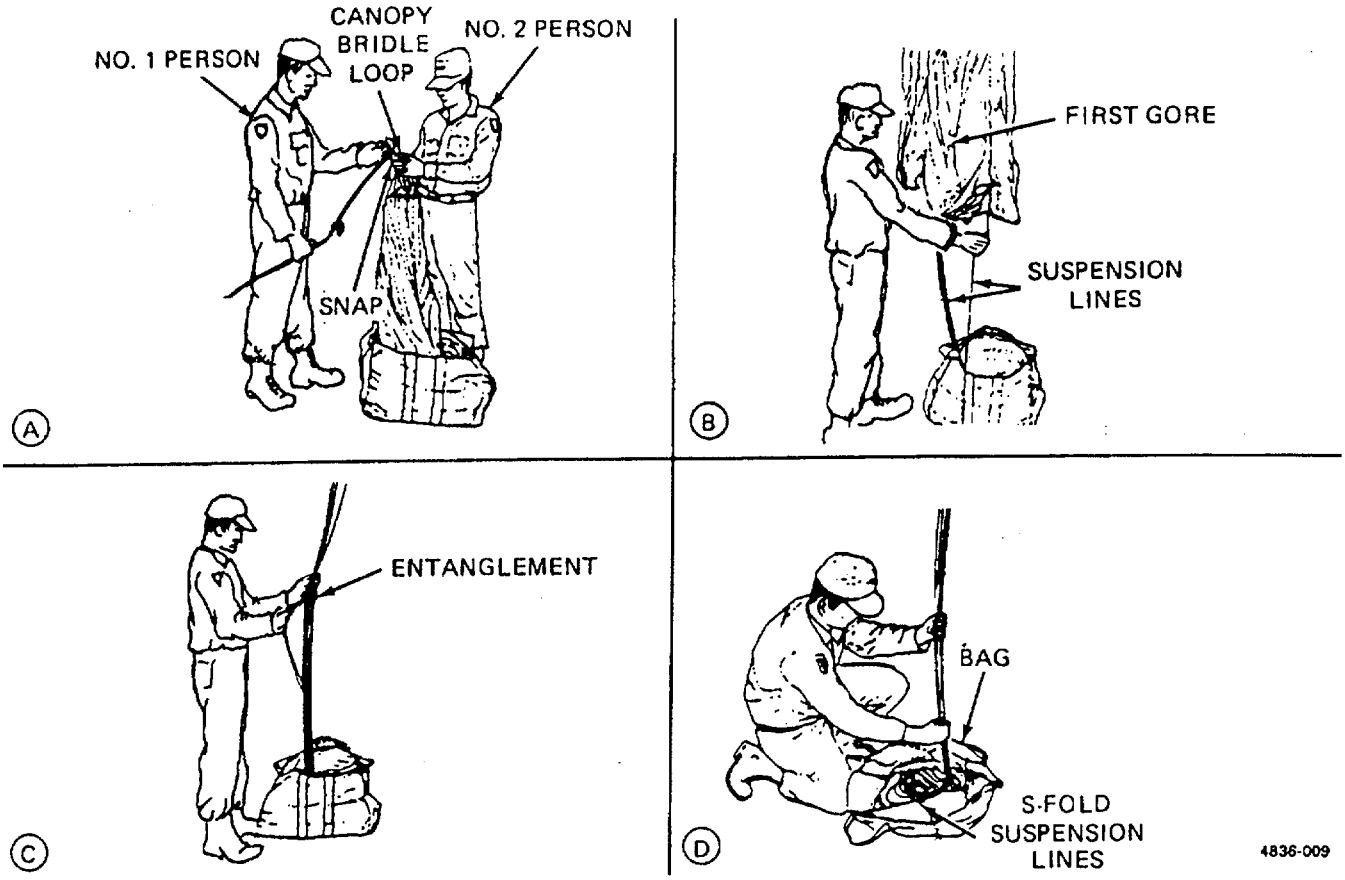


Figure 2-7. Shakeout

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 tor 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

Materials/Parts.

Tetrachloroethylene, Item 30, Appendix D
Dishwashing Compound, Item 14, Appendix D
Rag, Wiping, Item 24, Appendix D
Lubricant, Solid Film, Item 16, Appendix D
Cloth, Abrasive, Item 5, Appendix D
Brush, Scrub, Item 3, Appendix D

Equipment Condition

Layout on packing table or other suitable area.

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 fresh clean water.

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 Inspection	d. In-storage Inspection
	b. Pack-In-Process Inspection	e. Equipment Dispositlon
	c. Technical-Rigger Type Inspection	

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.

(4) After canopy is stowed.

(5) After suspension lines are stowed.

(6) After parachute Is completely packed.

c. Technical/Rigger-Type Inspection Procedures.

(*1) Overall inspection* An overall Inspection will be made on the 26-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 lagged In accordance with TB 750-126 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, SI 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 TB 750-126. 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	*Equipment Condition*
Packing Paddle, Item 9, Appendix B	Unpacked Layout on packing table or other suitable area
Materials/;Parts:	
Medicine Dropper, Item 18, Appendix D Three-Color pH Paper, Item 19, Appendix D Spool with Color Chart, Item 26, Appendix D	

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 welled 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 26-Foot Cargo Parachute.

This task covers:

a. Inspection
b. Orientation
c. Preparing Parachute for Proper Layout
d. Removing Inversion
e. Removing Turns
f. Removing Tangles
g. Removing Twists
h. Proper Layout
i. Assembly
j. Folding the Gores
k. Longfolding the Canopy
I. Preparing to Stow Canopy
m. Stowing the Canopy
n. Stowing Suspension Lines
o. Riser Securing Ties
p. Completing Pack

Tools.

Packing Weights, Item 10, Section III, Appendix B
Line Separator, Item 7, Section III, Appendix B

Materials/Parts:

Cord, Nylon, Type III, Item 12, Appendix D
Retainer Band, Rubber, Item 1, Appendix D
Tape, Pressure Sensitive, Item 29, Appendix D
Thread, Cotton, Ticket No 8/7, Item 31, Appendix D
Webbing, Nylon, Tubular, 3/4-In OD, Item 45, Appendix D

Materials/Parts (cont)

Webbing, Cotton, Type 1, 1/4-in, Item 41, Appendix D

Equipment Condition:

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

References:

TB 750-126
TB 43-0002-43

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 In accordance with TB 750-126. A rigger-type Inspection and a pack-in-process inspection must be performed in conjunction with each packing of a parachute (refer to para 2-13).

(1) Rigger-type inspection. Before each parachute Is packed for air delivery, it must be given a rigger-type inspection by the packer in accordance with paragraph 2-13.

(*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).

2-16. Packing the 26-Foot Cargo Parachute (cont).

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 at the tension plate end of the packing table facing the apex hook end of the table (figure 2-8).

(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 on the packing table Lay the canopy assembly lengthwise on the packing table, attach the bridal loop to the packing table apex hook (figure 2-9) and elongate canopy.

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 It canopy has been Inverted Canopy Is inverted when vent lines are located inside upper lateral band (see figure 2-9) Remove Inversion as follows:

*(*a) Detach bridal loop from apex fitting and pass vent through canopy.

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

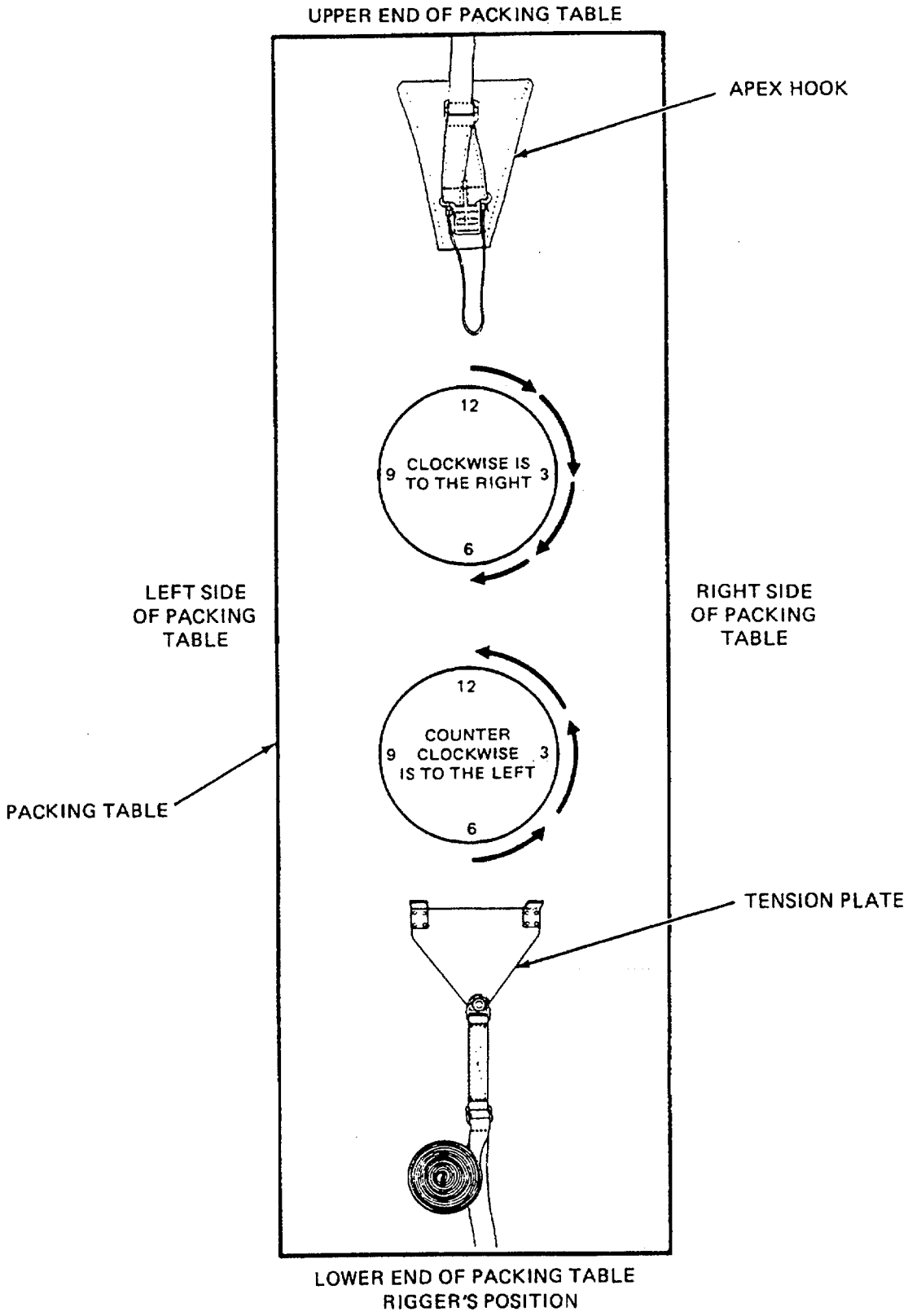


Figure 2-8. Rigger's Orientation

2-16. Packing the 26-Foot Cargo Parachute (cont).

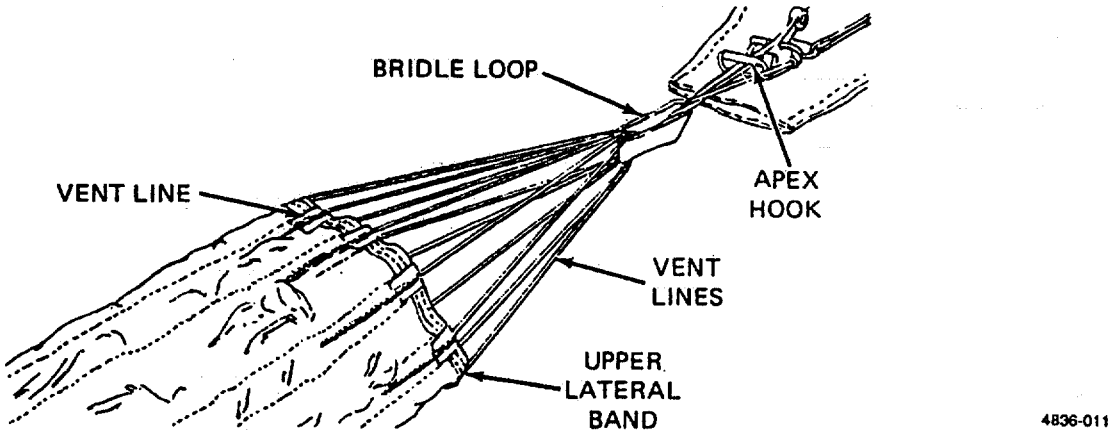


Figure 2-9. Canopy Attached to Packing Table Apex Hook.

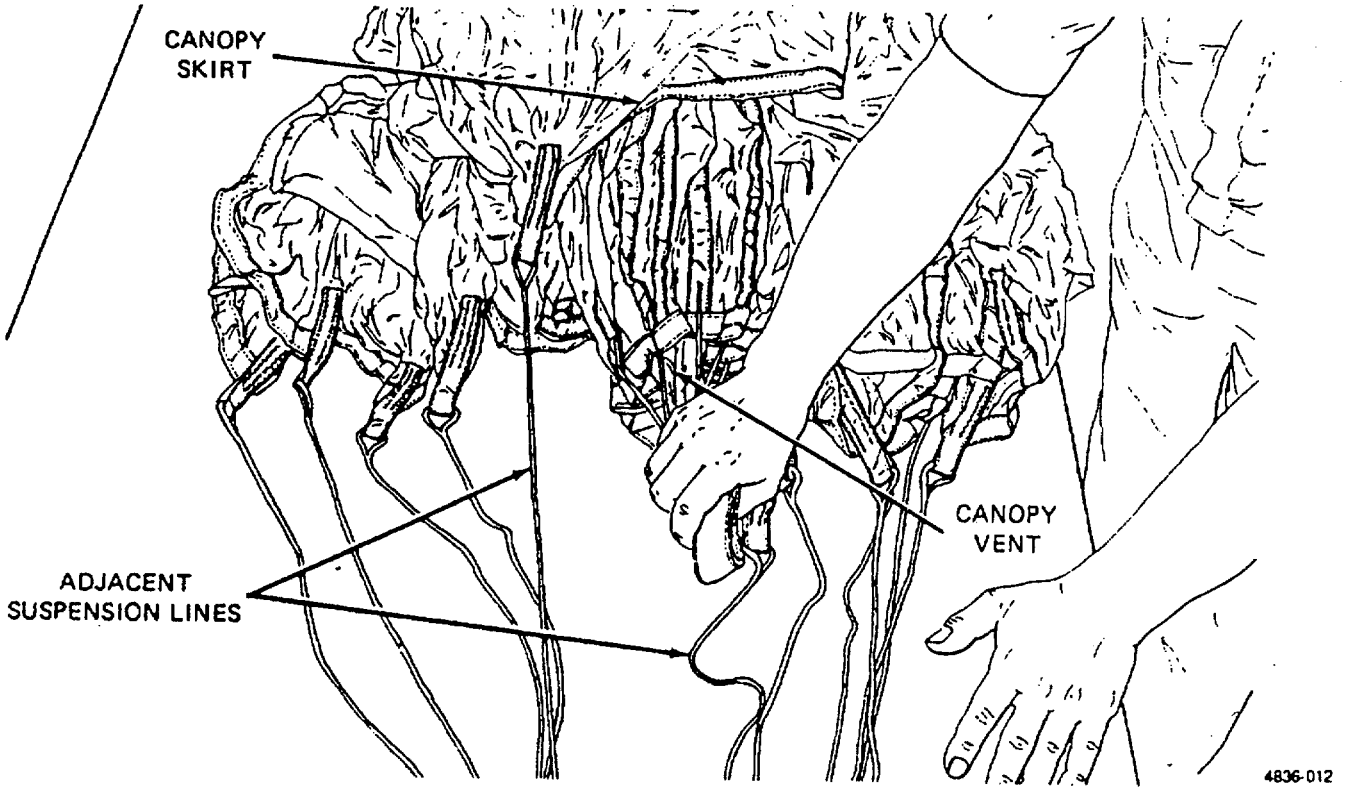


Figure 2-10. Removing Inversion.

(*2) Partial inversion* If vent lines are on outside of canopy and pocket bands are on Inside, or visa versa, a partial Inversion exists Remove a partial Inversion as follows:

*(*a) Detach bridle loop from apex fitting Trace radial and vertical tapes to annular ring where tapes turn under to inside canopy (figure 2-11).

*(*b) Pull canopy vent or risers through canopy and out through annular ring Attach bridle loop to apex fitting on packing table.

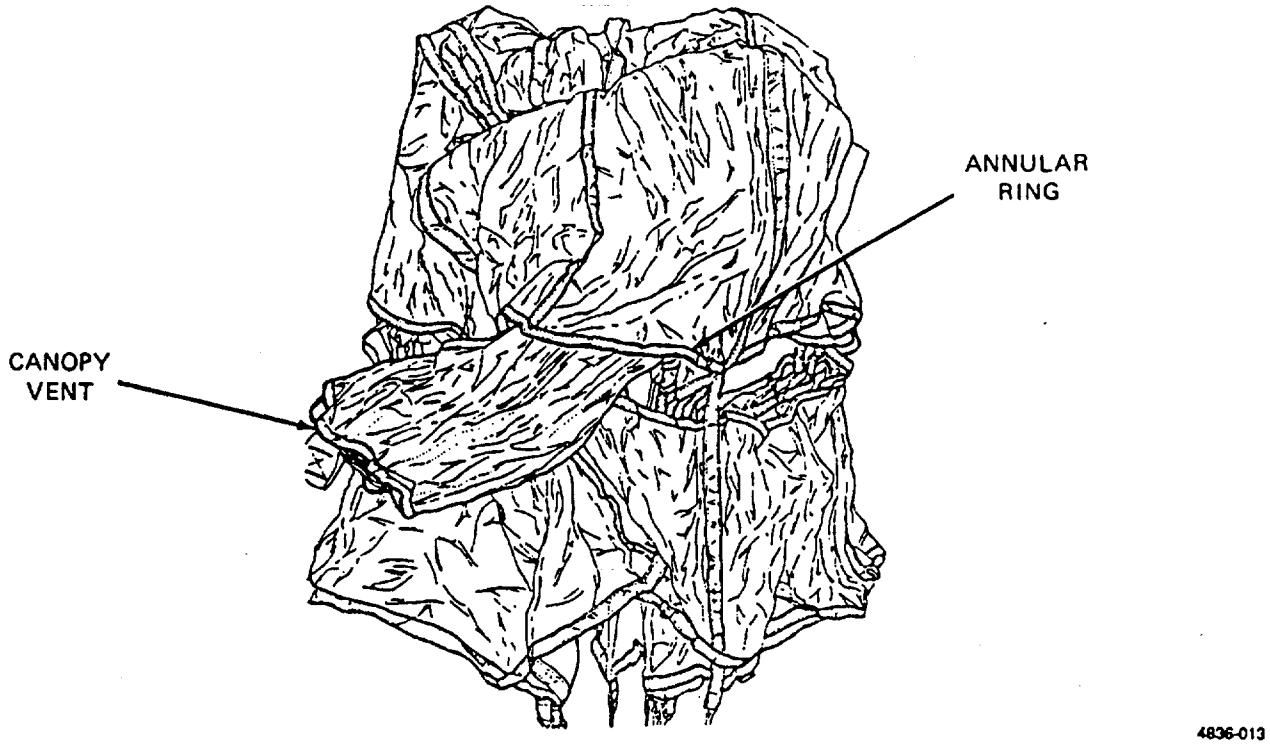


Figure 2-11. Removing Partial Inversion.

2-16. Packing the 26-Foot Cargo Parachute (cont).

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 2-12).

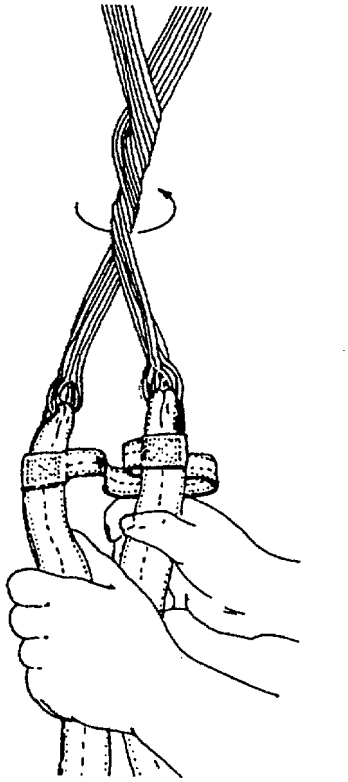
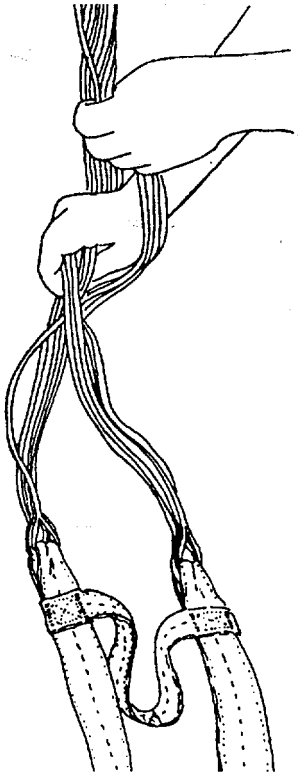


Figure 2-12. Removing Turns

f. *Tangles*. Maintain separation between two line groups and work tangle(s) to a point close to risers. With left hand, select top line(s) forming a tangle and lift them away from remaining lines. Reach through formed opening with right hand and pull risers through opening (figure 2-13).

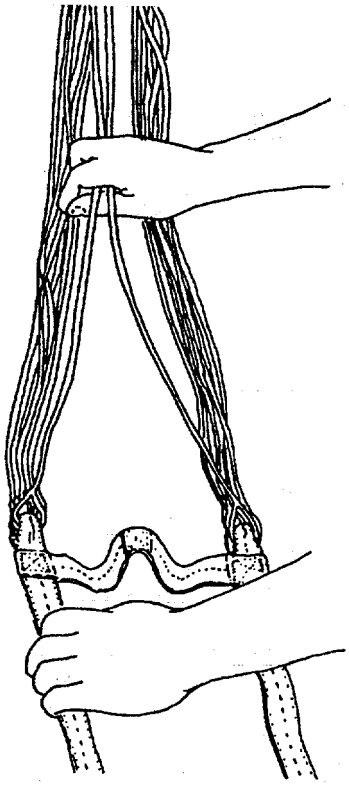


4836-015

Figure 2-13. Removing Tangles

g *Twists.* Grasp top inside suspension lines of canopy skirt and trace these lines down to risers (figure 2-14). Rotate risers between suspension line groups in a direction opposite to that of twist Attach risers to tension plate.

2-16. Packing the 26-Foot Cargo Parachute (cont).



4636.016

Figure 2-14. Removing Twists.

h. Proper Layout.

(1) Locate top center gore of canopy and divide suspension lines into two groups. Lines 1 thru 13 should be in left group, lines 14 thru 26 In right group, lines 1 and 26 should be located on top of their respective groups, lines 13 and 14 on the bottom (figure 2-15).

(2) Check canopy assembly for proper layout by raising top and bottom center gores, and tracing suspension lines to connector loops. Check lines 1, 26, 13 and 14 for proper position (figure 2-15).

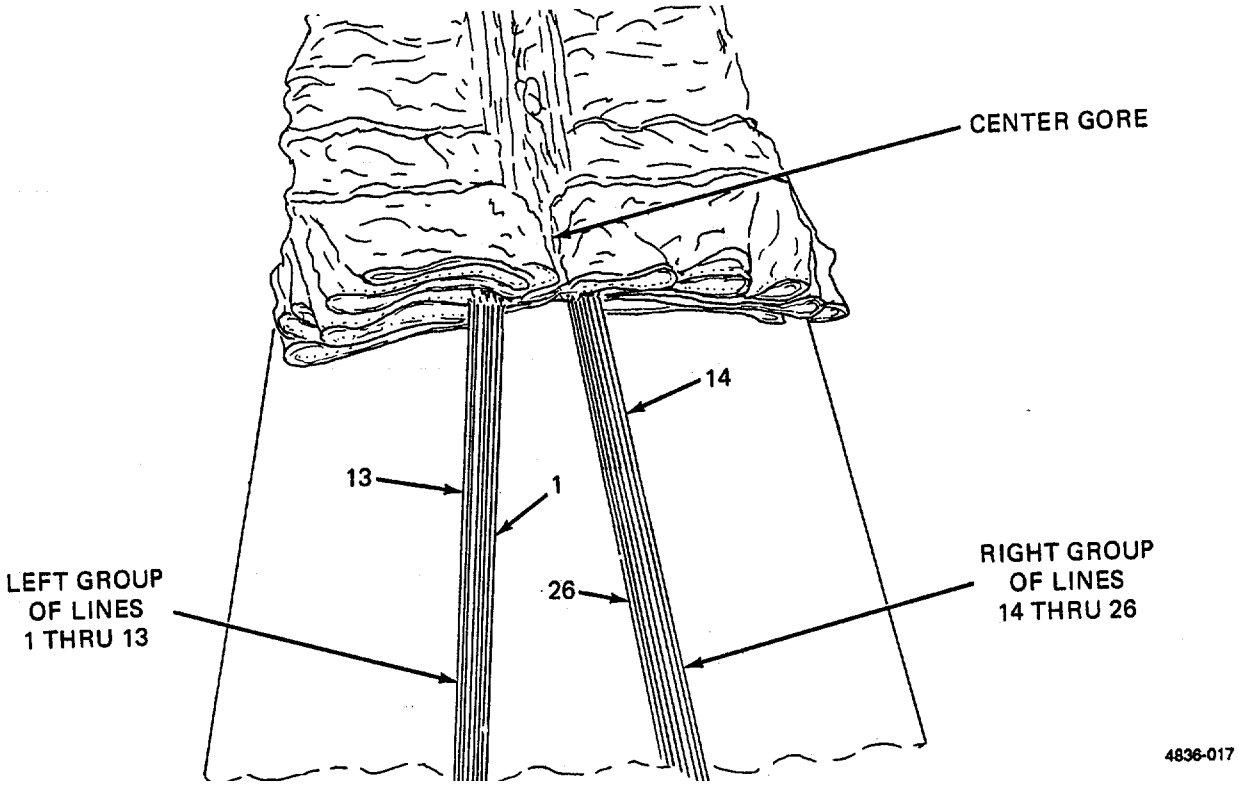


Figure 2-15. Suspension Line Separation

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 table and obtain proper layout of canopy assembly. Then assemble components In accordance with the following:

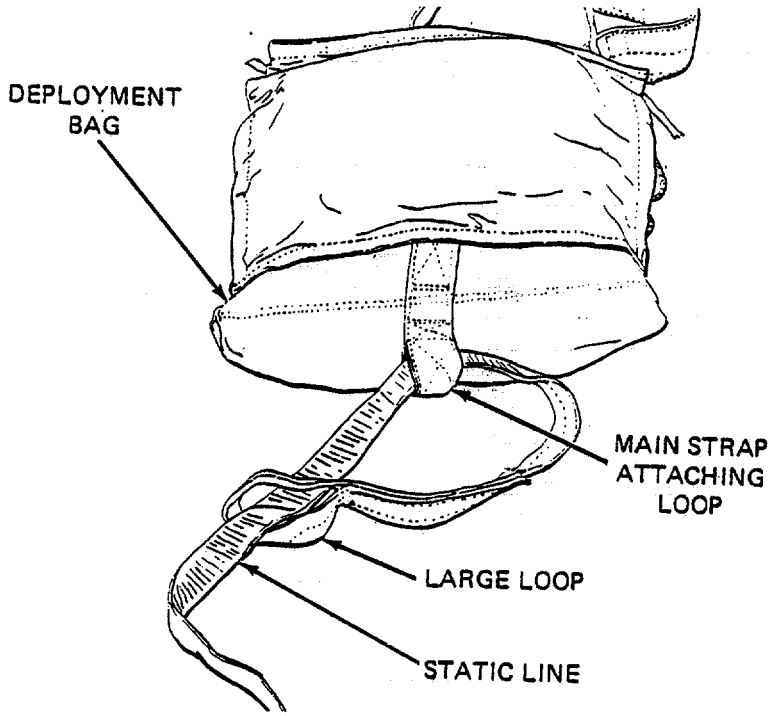
(*1*) *Attaching static line.*

(a) It applicable, remove riser clevis from small loop on 15-foot long static line.

(b) Pass large loop located on one end of static line through deployment bag main strap attaching loop (0, figure 2-16).

(c) Pass opposite end of static line through large loop and draw formed loop tight against main strap attaching loop.

2-16. Packing the 26-Foot Cargo Parachute (cont).



4836-020

Figure 2-16. Attaching Static Line to Deployment Bag.

(2) *Prepare deployment bag with rubber retaining bands.*

(a) Attach 8 rubber retaining bands at equally spaced intervals on each suspension line retaining strap located on top of the bag.

(b) Attach rubber retaining bands to the static line retaining straps, 4 on the upper left and 3 on the upper right side of the bag.

j. *Gore Folding and Flat Fold.*

(1) Apply tension to canopy assembly.

(2) Pick up right group of suspension lines with left hand. Holding top gore In position, flip right group of gores over left group of gores (figure 2-17).

(3) Beginning with line 14, told right group of gores.

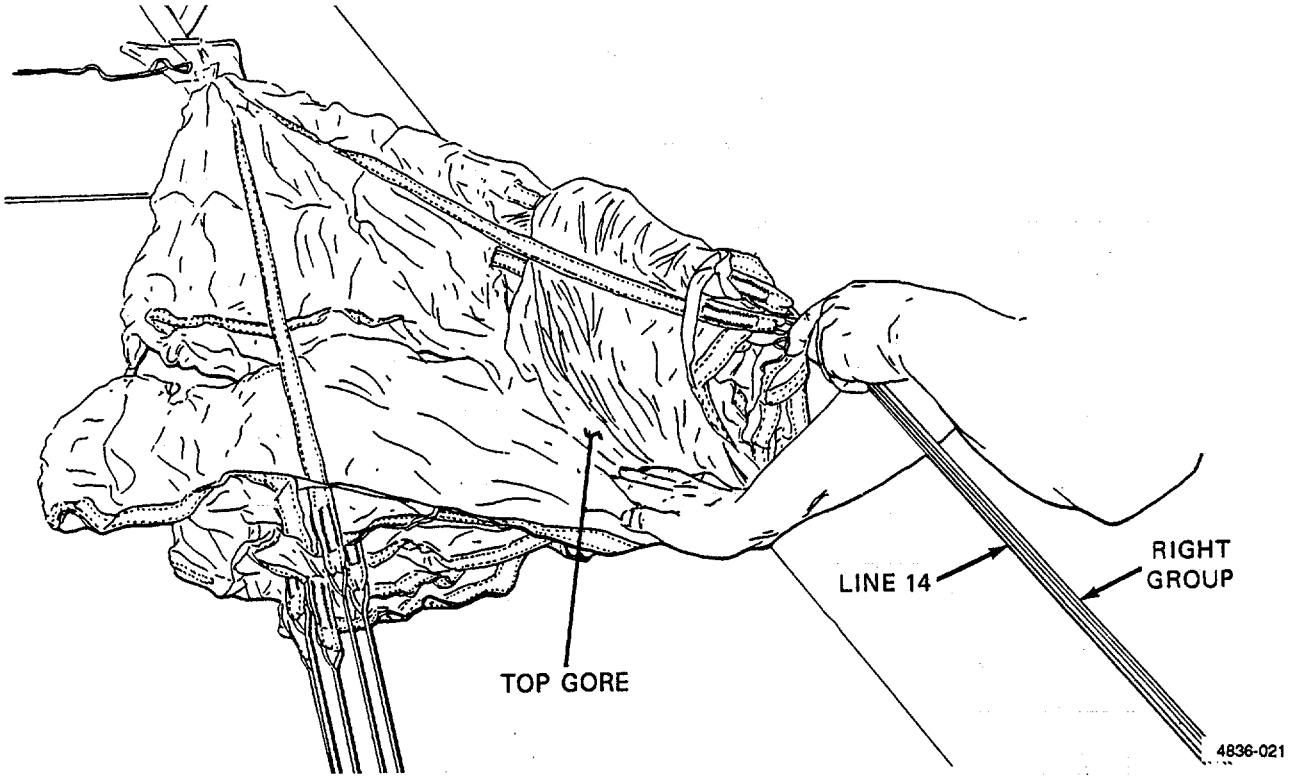


Figure 2-17. Flipping Right Gore Group.

(4) Using right hand scissor right group of suspension lines between middle and Index fingers. Rotate right group one-quarter turn clockwise (figure 2-15).

(5) Beginning with line 1, fold left group of gores, not including last two gores in group.

(6) Raise last suspension line of left gore group, drape last gore on left Drape next to last gore on right. Place last suspension line on top of other lines In left group.

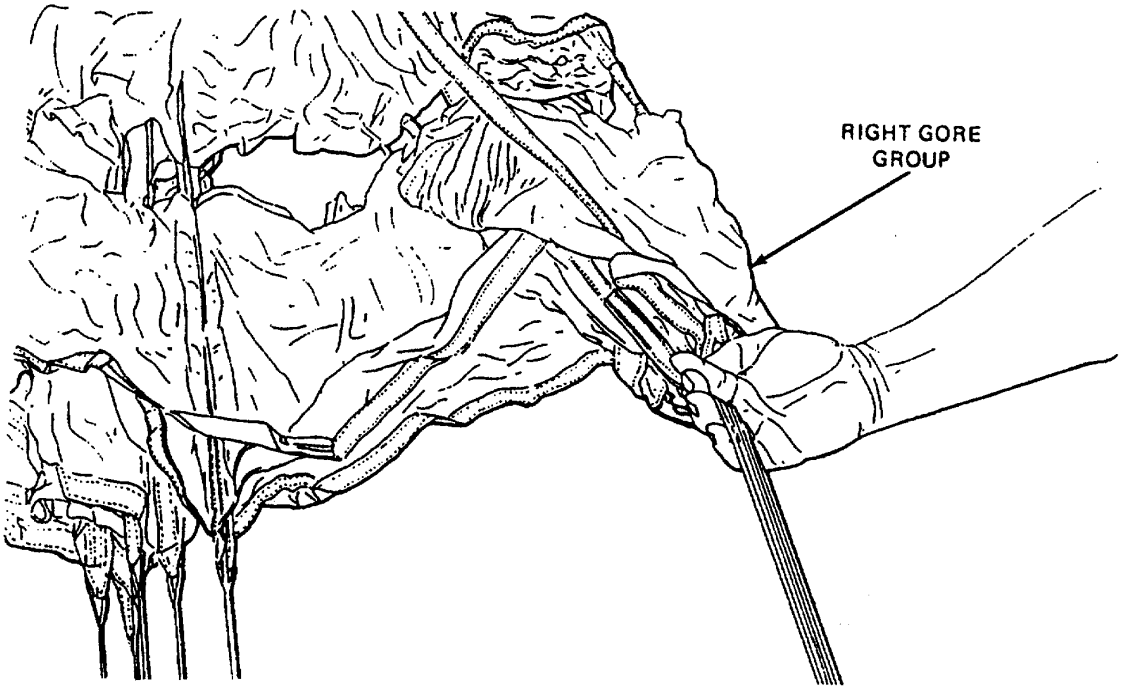
(7) Insert two suspension line groups into line separator, just below canopy skirt.

(8) Using left hand, hold line separator and separate suspension lines. Grasp canopy with right hand, pull canopy off right side of table allowing folded gores to drape to side of table (figure 2-19).

(9) Slide canopy back onto table and rotate suspension lines and line separator one-half turn counter-clockwise, allowing separator base to rest on table.

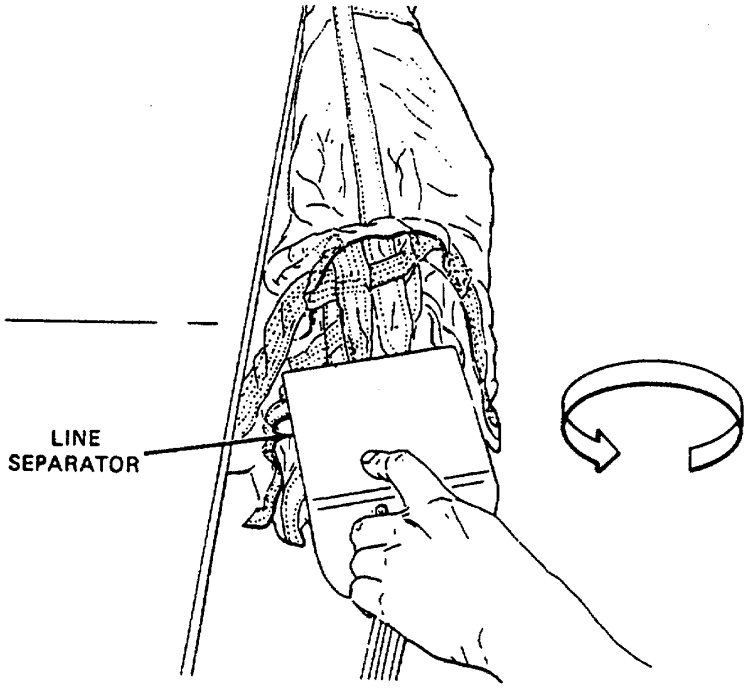
(10) Place packing weight below line separator and apply additional tension (figure 2-20).

2-16. Packing the 26-Foot Cargo Parachute (cont).



4836-022

Figure 2-18. Right Gore Group Fold Complete.



4836-023

Figure 2-19. Draping Folded Gores to Right Side of Table.

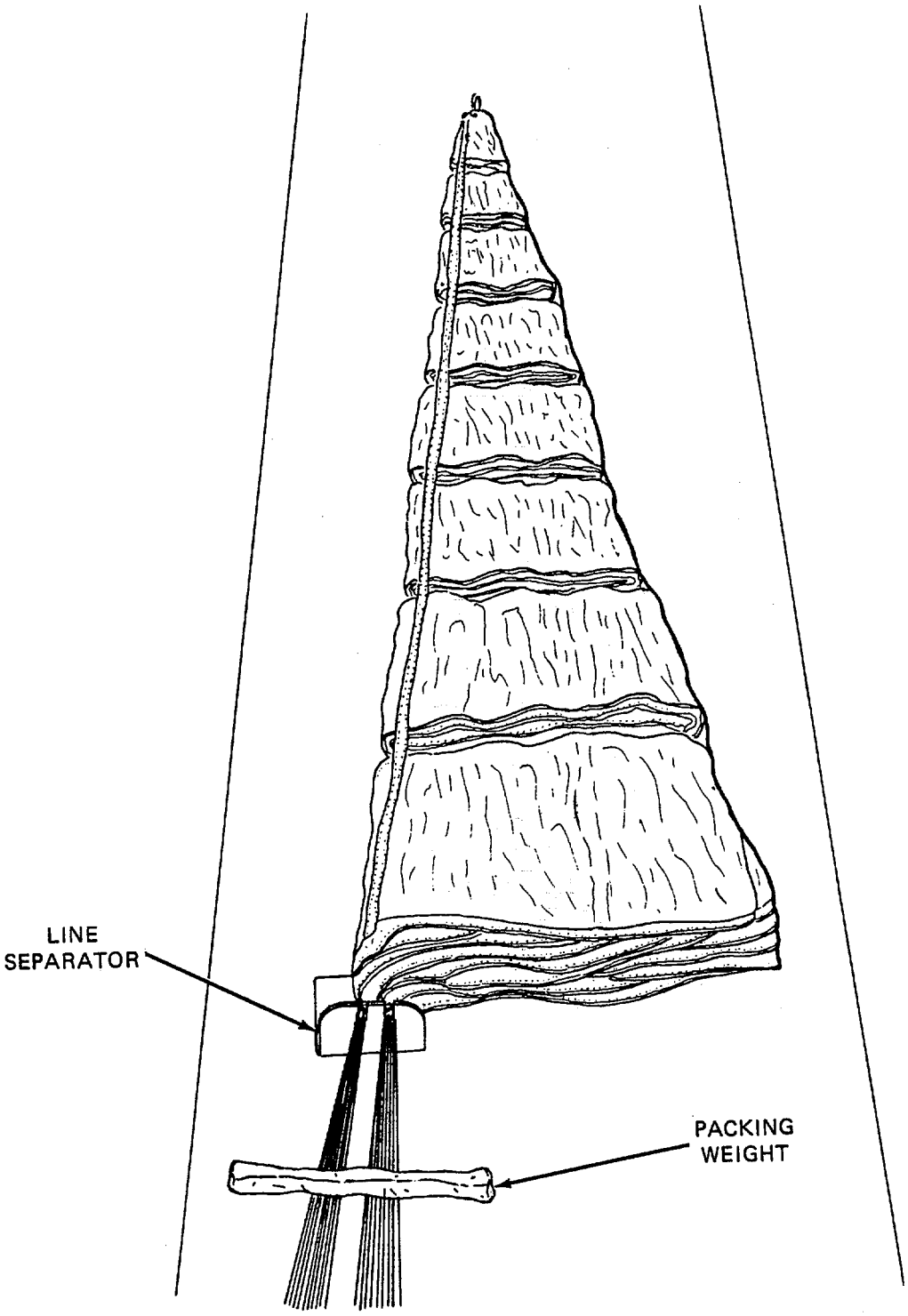


Figure 2-20. Folding Completed, Lines Separated.

2-16. Packing the 26-Foot Cargo Parachute (cont).

(11) To complete canopy flatfold, flip left group of gores to left side and dress gores and skirt reinforcement (lower lateral band). Insure correct number of gores are In each gore group and that a clear channel exists between the two gore groups (figure 2-21).

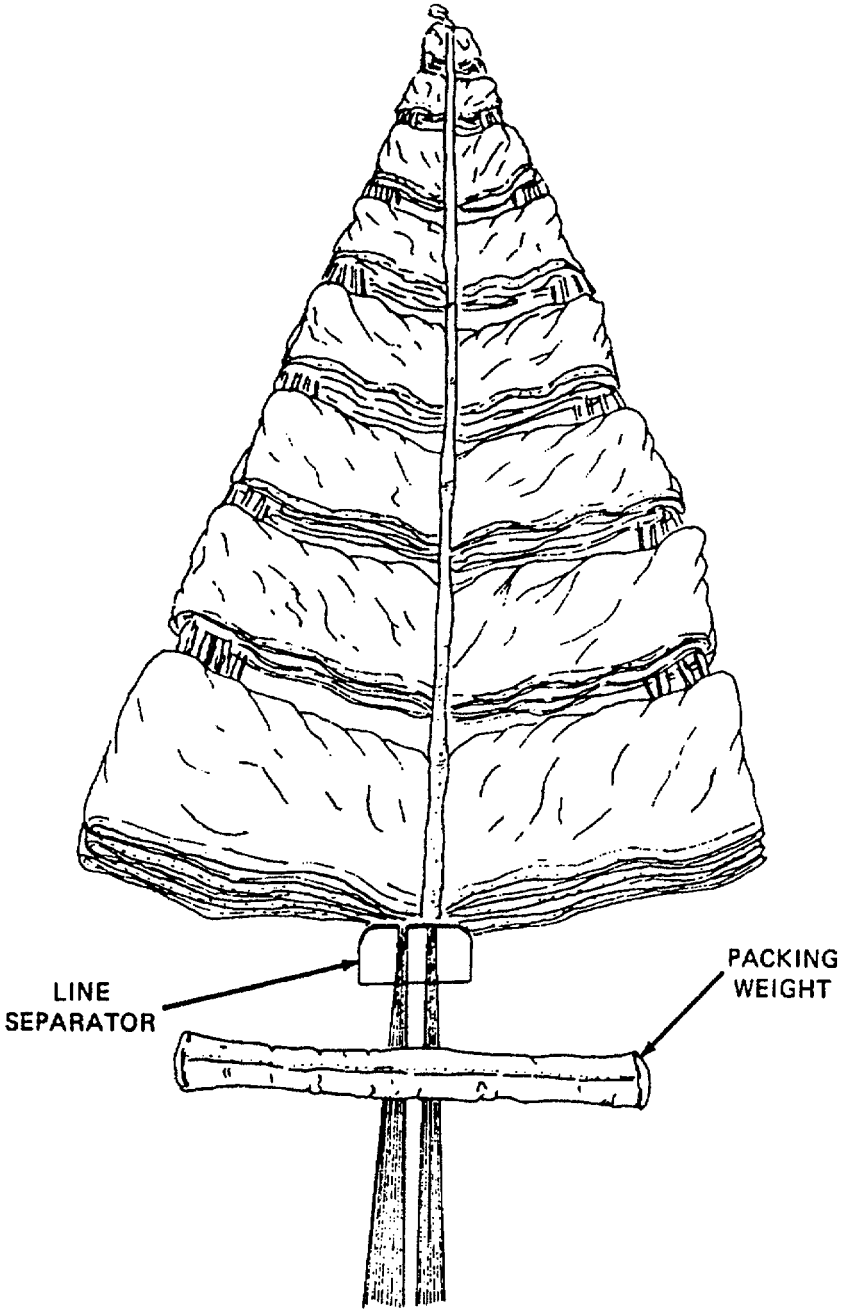


Figure 2-21. Canopy in Flat Fold.

k. *Longfolding the Canopy and Tying Breakcord.* After flatfolding, the canopy is ready for longfolding as follows:

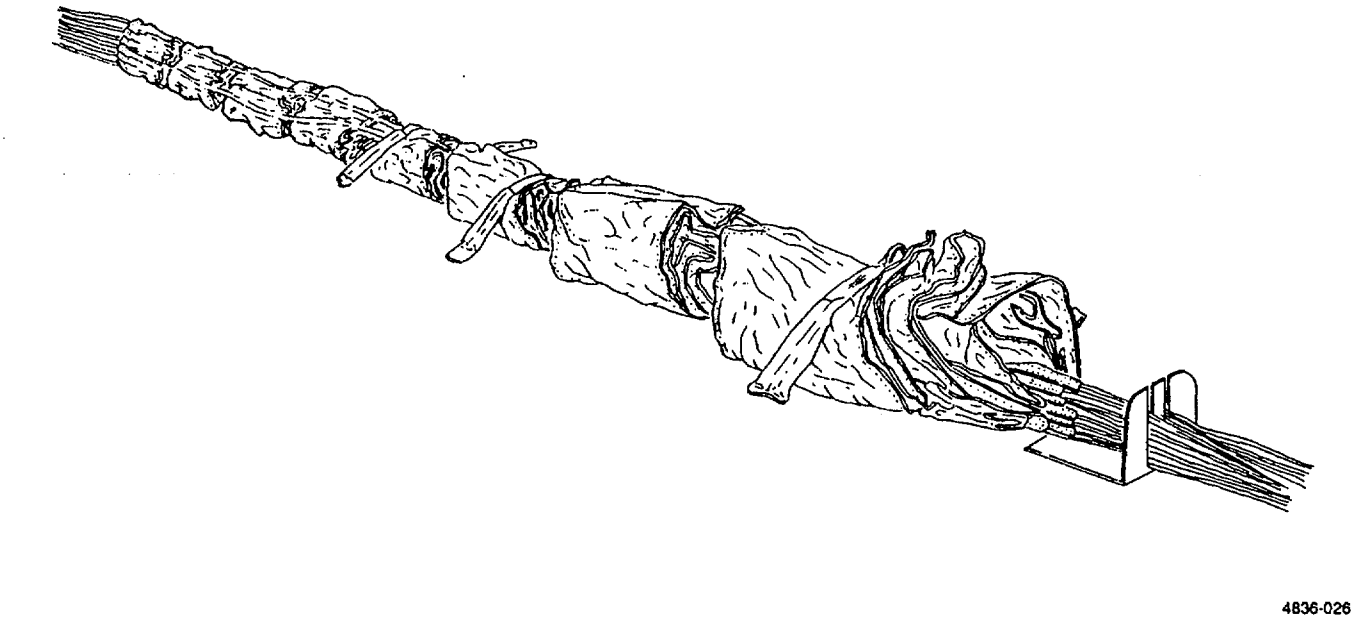
(1) Grasp the edges of the right group of gores with the left hand and the right hand approximately 2 feet from the left hand. Fold edges over the radial tape (approximately 2 inches). Secure the fold with a packing weight.

(2) Continue folding right group of gores, working toward the apex. Taper the fold until It breaks at a point approximately 36 inches from the apex Secure fold with packing weights.

(3) Fold the left group of gores in a similar manner, adjusting packing weight to hold both groups of gores (figure 2-22). Longfold is completed.

NOTE

After longfolding, the canopy should be the width of the deployment bag at the skirt (lower lateral band)



4836-026

Figure 2-22. Canopy Longfolded.

(4) *Attaching deployment bag with non-breakaway static line.*

(a) Cut a 36-inch length of 1/4-inch wide type I cotton webbing and double the webbing length. This length shall be used as a breakcord.

2-16. Packing the 26-Foot Cargo Parachute (cont).

(b) Position deployment bag attaching loop (located on inside of bag) adjacent to canopy bndle loop (figure 2-23).

(c) Pass one end of the doubled webbing length through bridle loop and draw the webbing through until center of breakcord length is reached. Pull both ends of centered breakcord taut.

(d) Working from opposite directions, pass each end of breakcord through deployment bag attaching loop and pull the webbing ends until a 3-inch loop is formed between the bridle loop and the bag attaching loop (A, figure 2-23).

*(*e) Secure two ends over deployment bag attaching loop (B, figure 2-23) with a surgeon's knot and locking knot (D, figure 2-23). Trim ends to two inches.

*(*f) Reattach riser clevis to small loop on static line running end and secure clevis with attached clevis pin and safety pin (C, figure 2-23).

(5) *Attaching deployment bag retaining tie and breakaway static line.*

(a) Cut a 30-inch length of 1/2 inch wide tubular nylon webbing for use as retaining tie.

(b) Position deployment bag attaching loop adjacent to canopy bndle loop.

(c) Pass retaining tie through canopy bridle loop and pull tie through until center of webbing is reached. Pull two ends of retaining tie taut.

(d) Working from opposite directions, pass each end of retaining tie through deployment bag attaching loop. Pull ends until 8-inch loop is formed in attaching tie between bridle loop and deployment bag attaching loop (A, figure 2-24).

*(*e) Secure two ends over deployment bag attaching loop with a surgeon's knot and a locking knot, as shown In B, figure 2-24). Make an overhand knot In each running ends. Trim ends 2 inches from knot.

*(*f) Using a 2 1/2-Inch length of pressure sensitive tape, make 1 1/2 turns through static line small loop and around small loop end (C, figure 2-24).

*(*g) Cut an 18-inch length of type III nylon cord and remove core threads.

*(*h) Pass one end of cord length through riser clevis body and pull through until center of cord is reached.

(i) Working from opposite directions, pass each end of cord through static line small loop. Pull cord ends to form a 4-inch loop.

(j) Secure cord ends around static line small loop with a surgeon's knot and locking knot. Make an overhand knot in each cord running end Trim ends 2 inches from knots (C, figure 2-24).

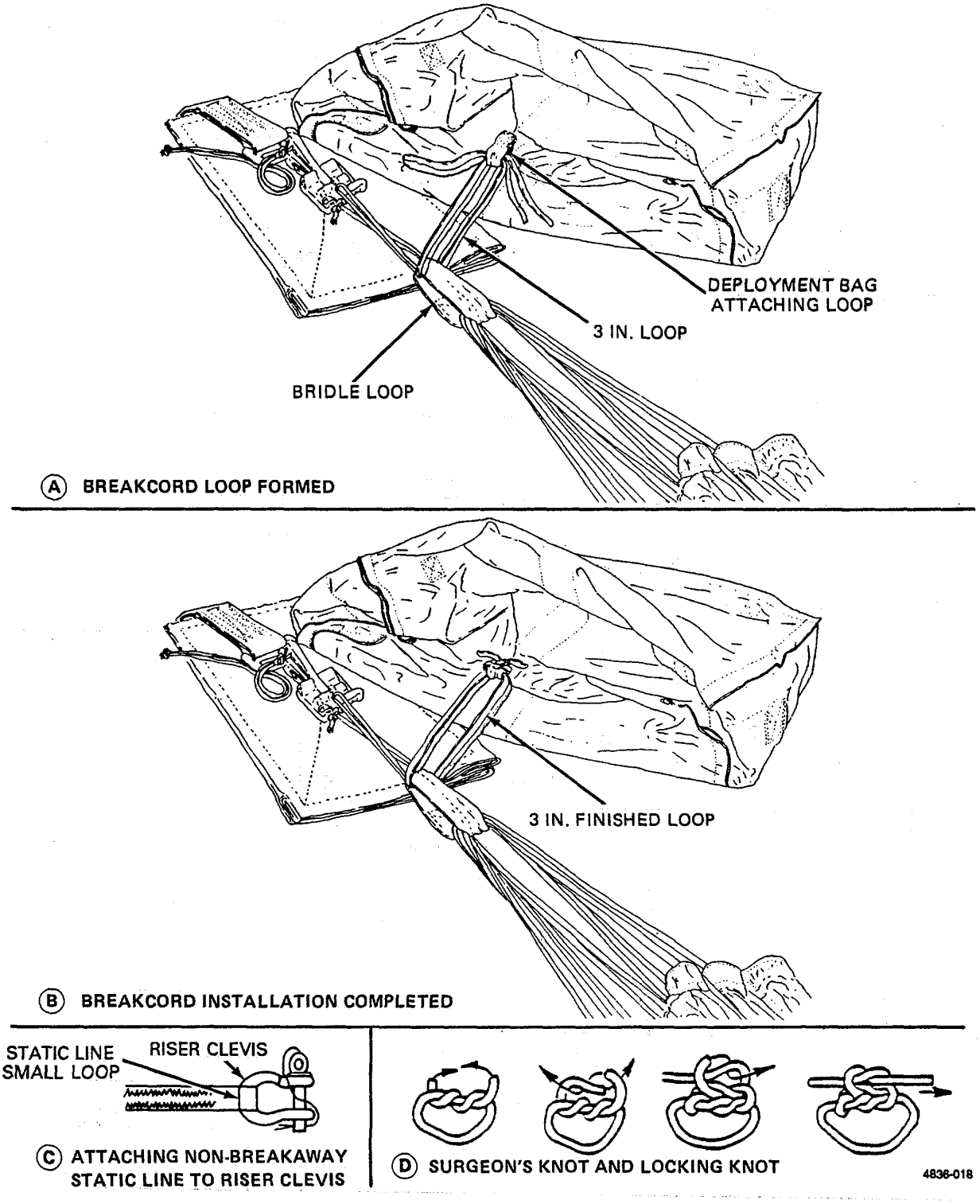


Figure 2-23. Attaching Deployment Bag for Non-Breakaway Static Line.

2-16. Packing the 26-Foot Cargo Parachute (cont).

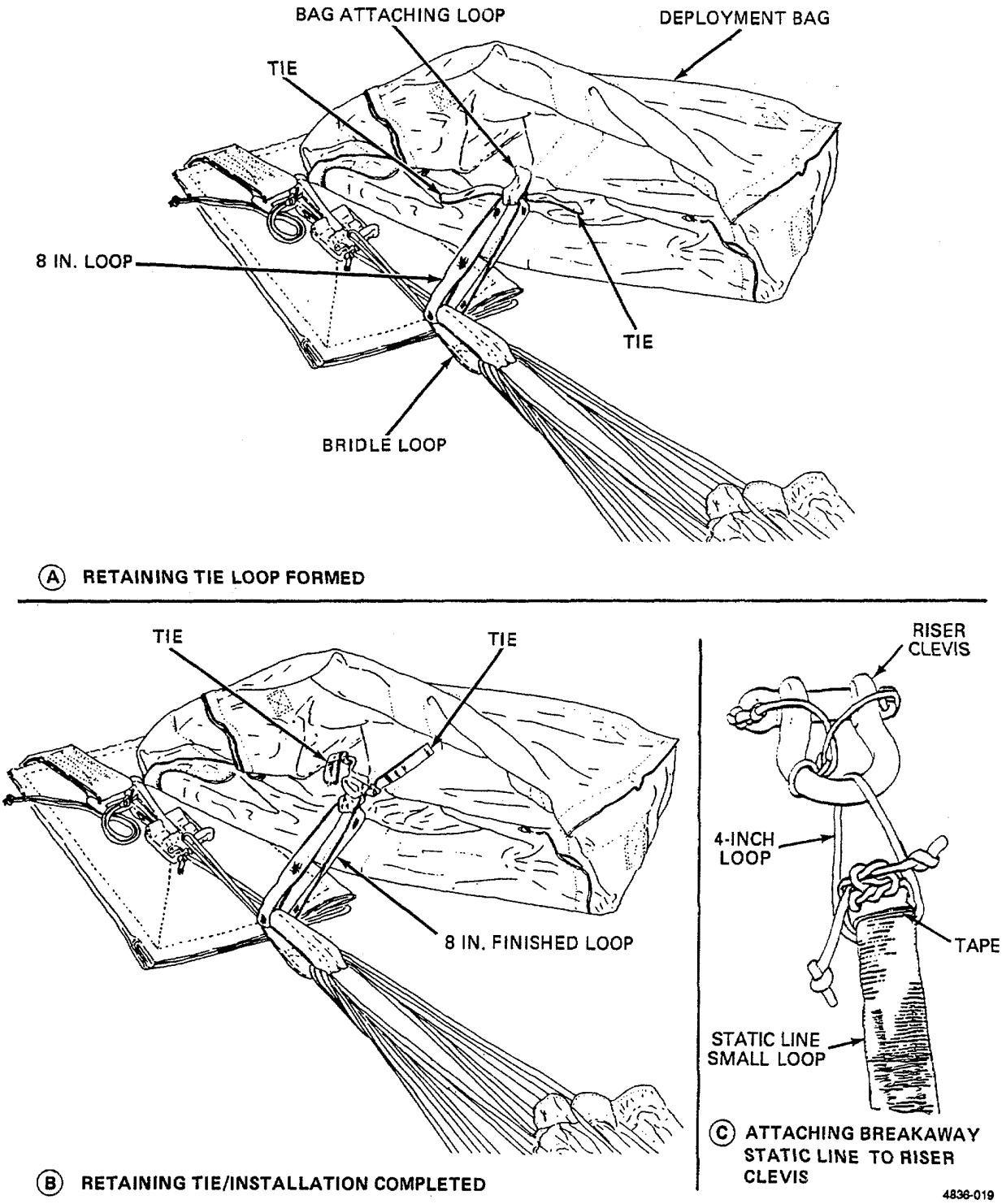


Figure 2-24. Attaching Deployment Bag Retaining Tie and Breakaway Static Line.

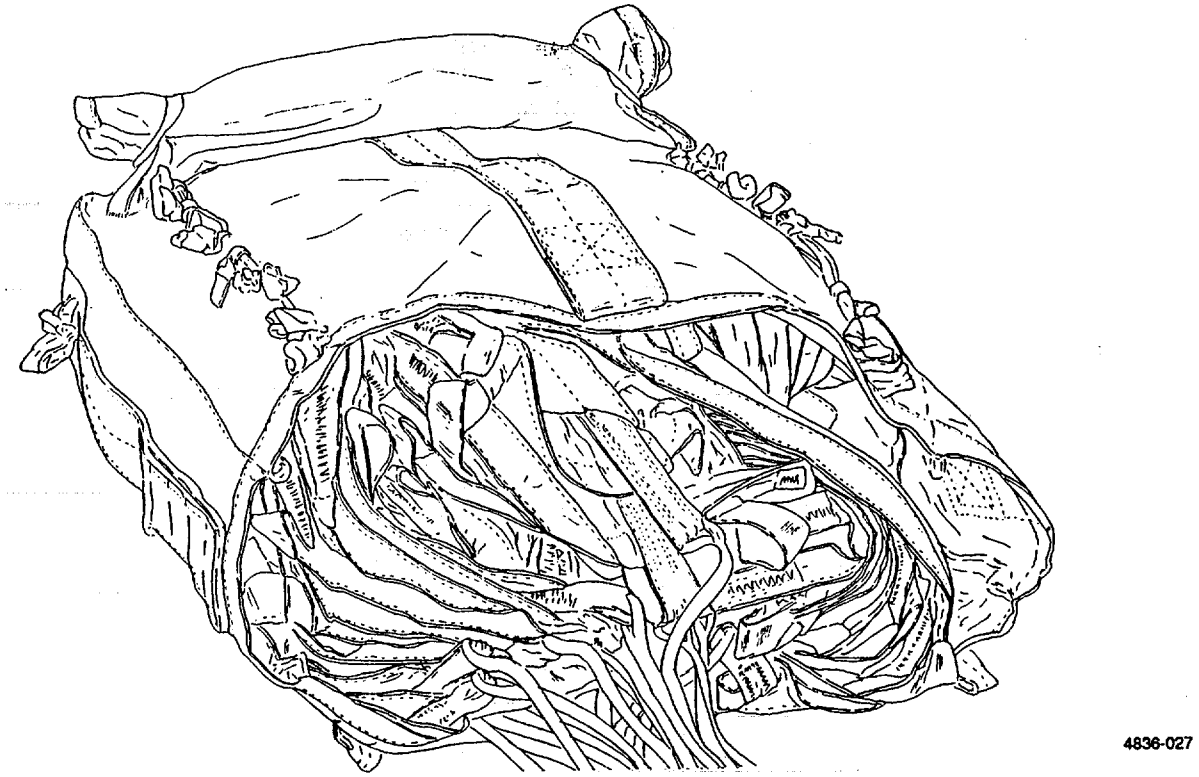


Figure 2-25. Canopy Stowage Completed.

l. Stowing the Canopy

(1) Release apex hook-up device.

(2) Grasp canopy just below upper lateral band with left hand. Insert canopy vent into upper right hand corner of deployment bag.

(3) S-fold the canopy into the deployment bag.

(4) Complete canopy stowage with suspension lines extending from center of bag open end (figure 2-25).

(5) Using a 24 Inch length of 1/4 inch wide Type I cotton webbing, make a one turn single bag closing tie by tying top and bottom center bag tie loops around extended suspension lines (figure 2-26).

(6) Secure tie with a surgeon's knot and a locking knot Trim ends to 2 Inches (figure 2-27).

(7) Flatten deployment bag.

2-16. Packing the 26-Foot Cargo Parachute (cont).

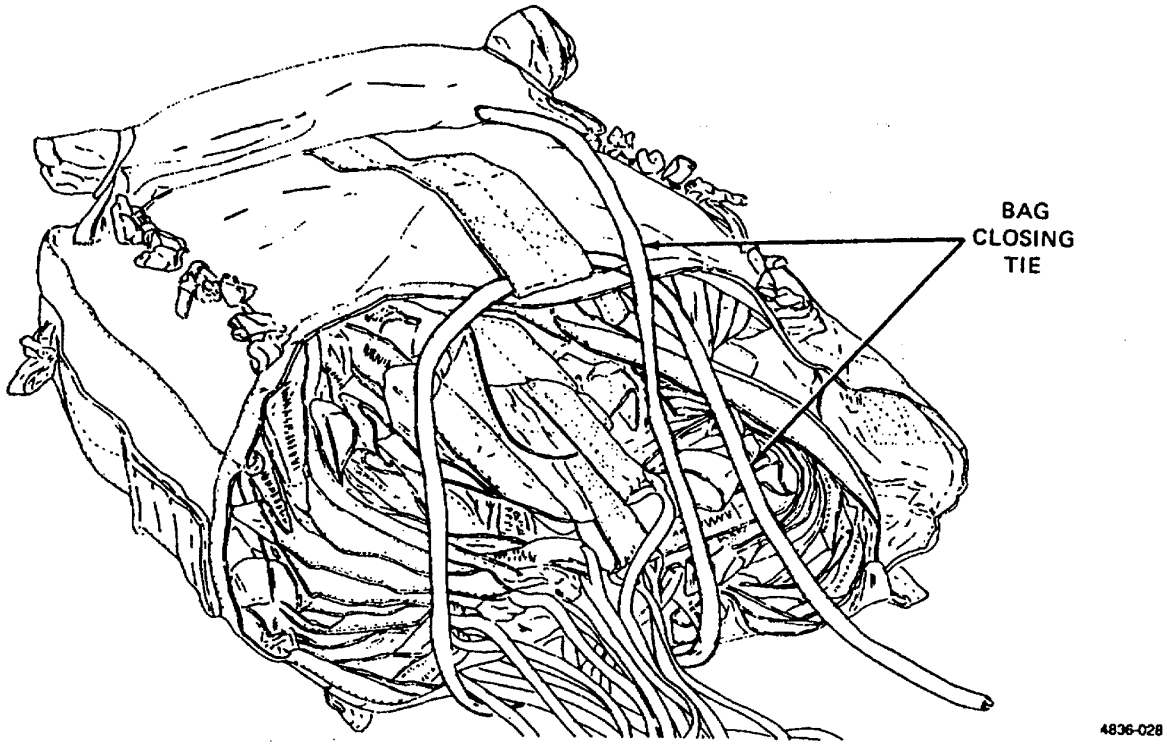


Figure 2-26. Installing Bag Closing Tie.

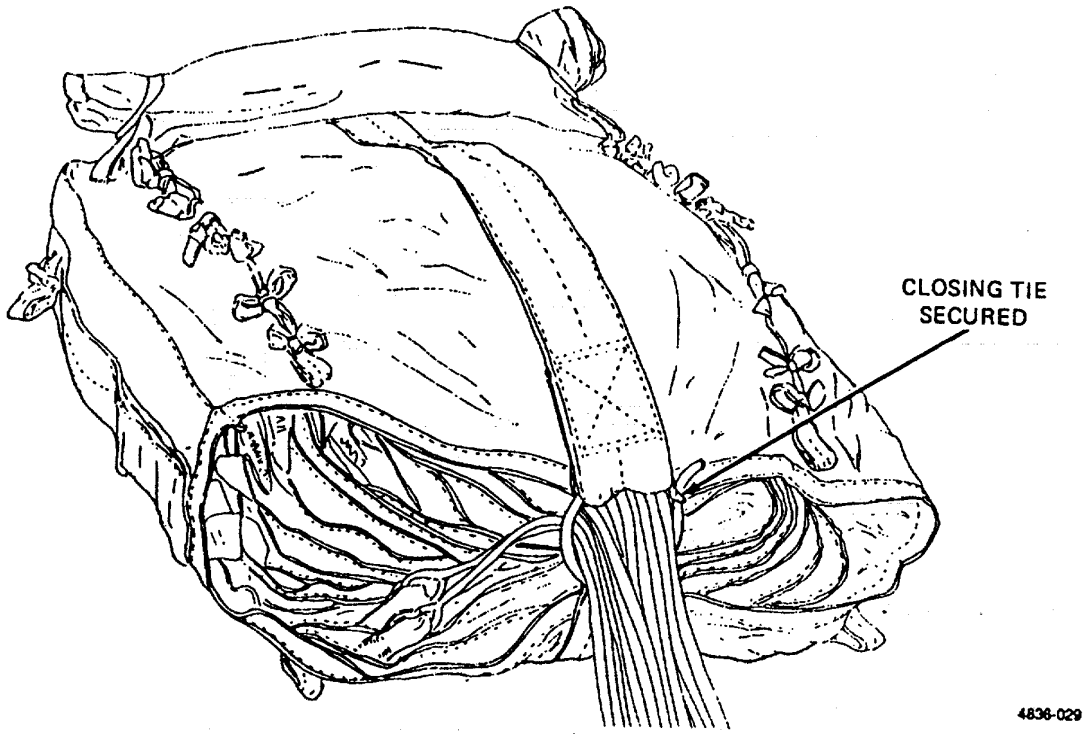


Figure 2-27. Bag Closing Tie Completed.

m *Stowing Suspension Lines.*

(1) Form and make the first suspension line stow at the upper right corner of deployment bag Secure all stows with a single wrap of the rubber retaining band (figure 2-28).

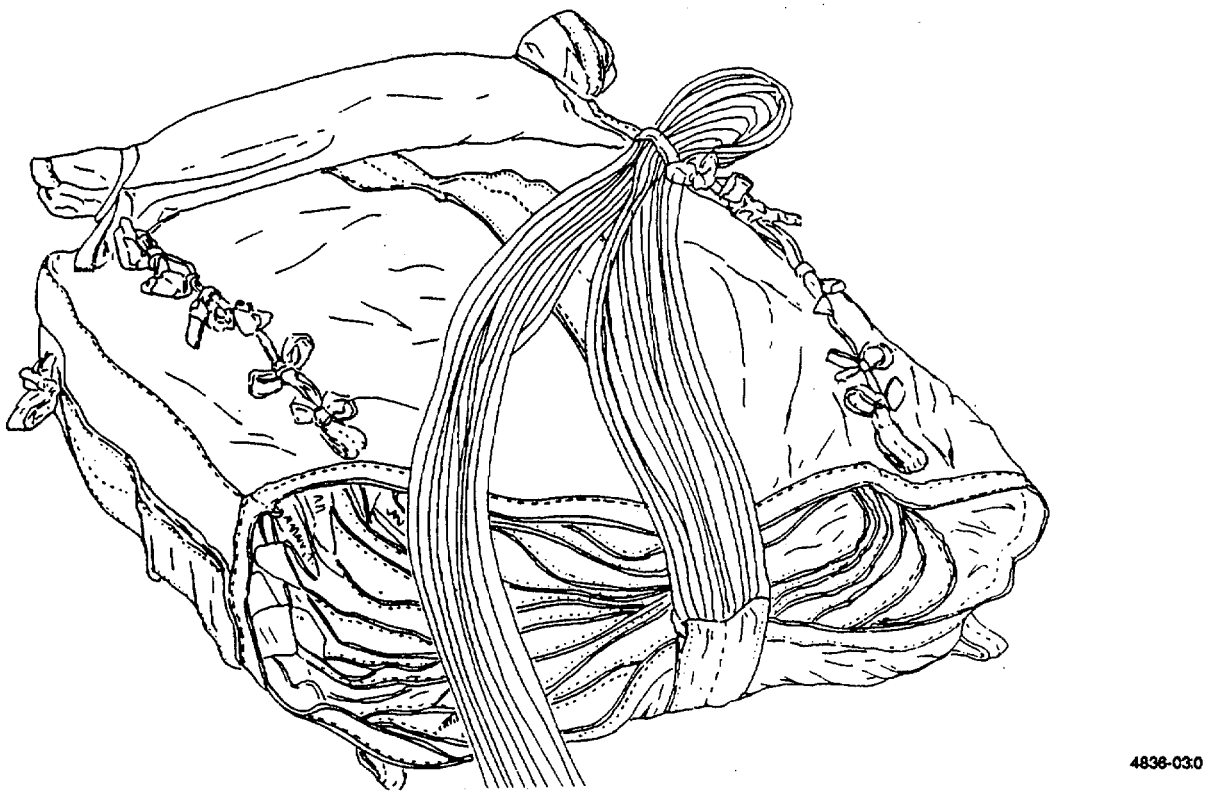


Figure 2-28. First Suspension Line Stow.

(2) Extend suspension lines to left side of bag. Form and make second suspension line stow at upper left corner of bag, simultaneously rotating bag one-quarter turn clockwise. Secure stow with a rubber retaining band (figure 2-29).

NOTE

The width of stows will not exceed the width of the suspension line protector flap.

(3) Working from right to left and moving bag toward tension plate, stow remaining suspension lines securing each stow with a rubber retaining band, making last stow at a point 5 inches from riser connector loops (figure 2-30).

2-16. Packing the 26-Foot Cargo Parachute (cont).

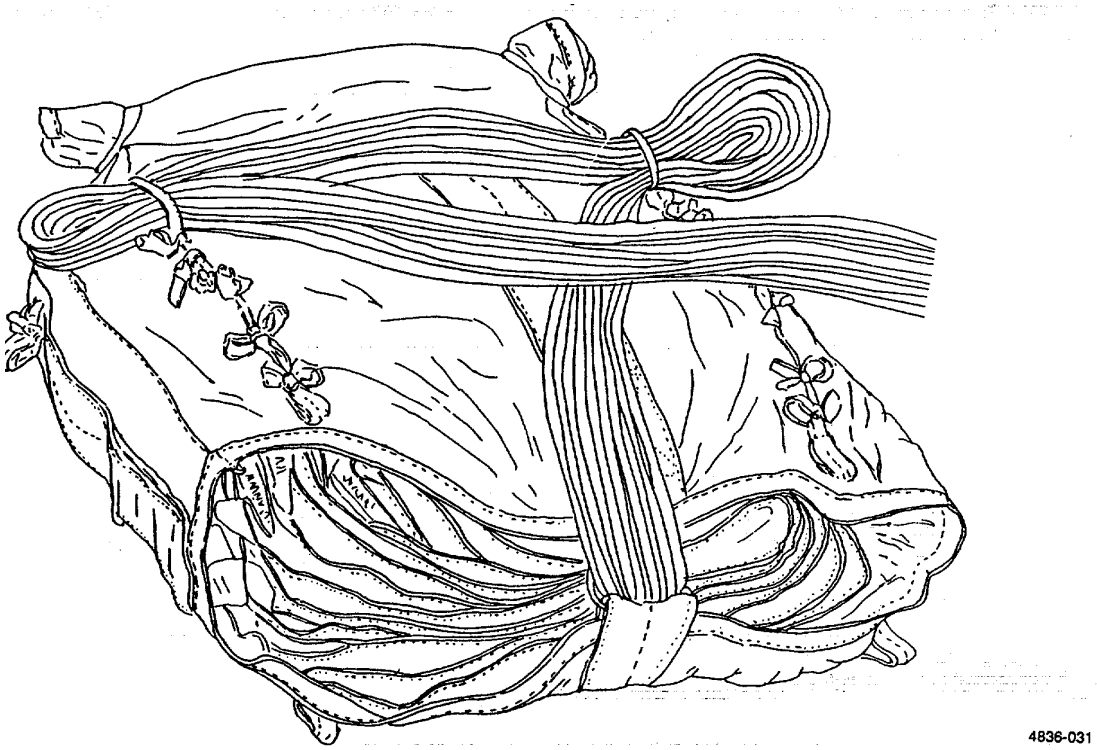


Figure 2-29. First and Second Suspension Line Stows Completed.

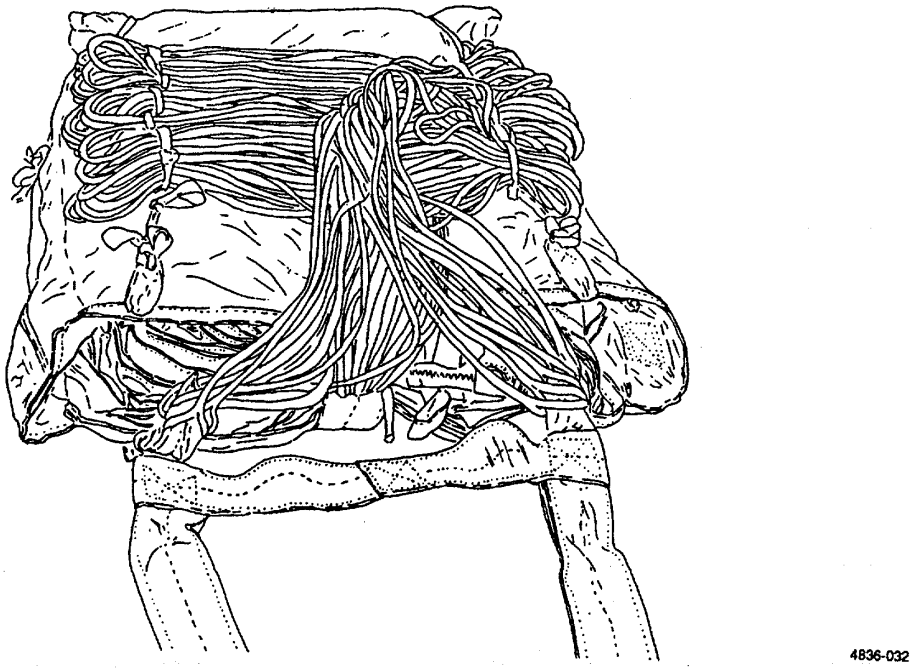


Figure 2-30. Suspension Line Stow Complete.

n. Riser Securing Ties.

(1) Position riser connector loops at a point immediately below open end of bag.

(2) Cut two 18-inch lengths of 1/4 inch wide Type I cotton webbing for use as tie material.

(3) Working In a counterclockwise direction, thread one 18-inch webbing length through the left bottom bag tie loop, through the left riser connector loops and through the left top bag tie loop (figure 2-31).

(4) Working in a clockwise direction, thread second 18-inch length through right bottom bag tie loop, through right riser connector loops and through right top bag loop.

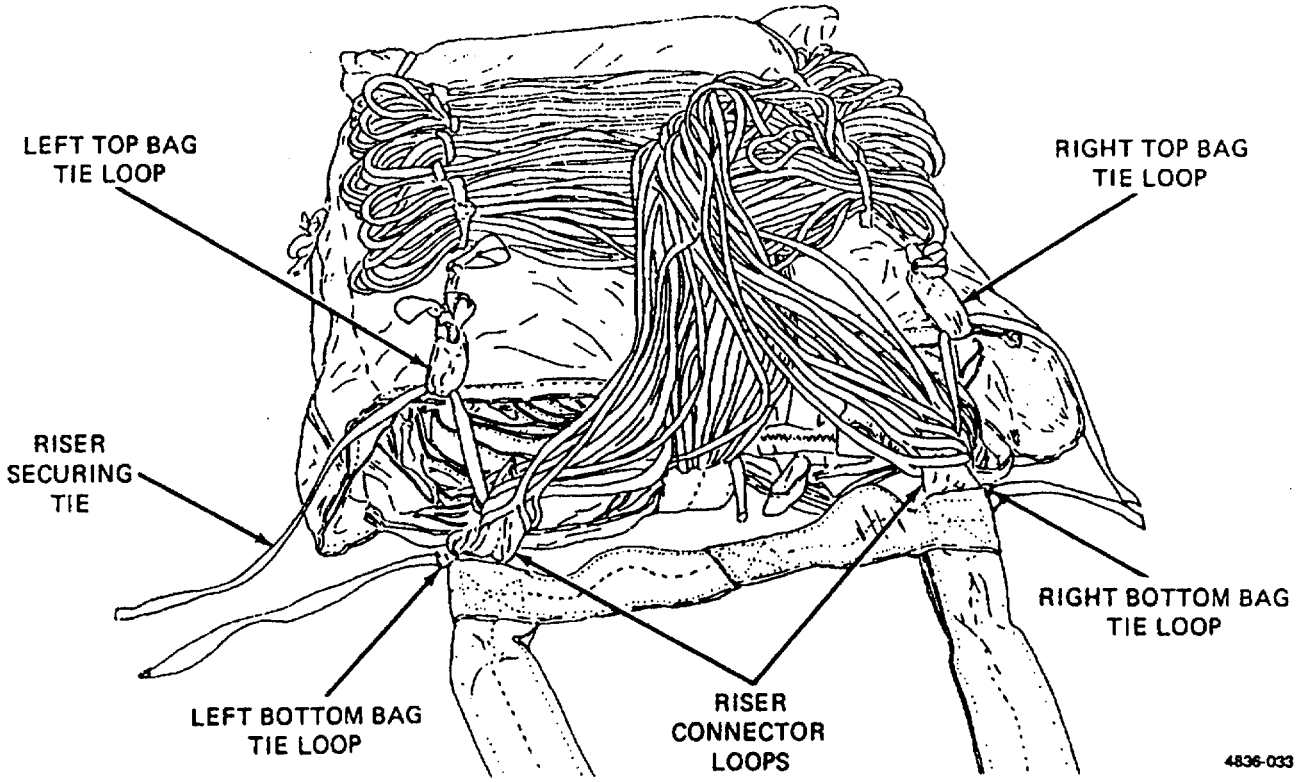


Figure 2-31. Riser Securing Ties Positioned.

(5) Secure each tie installed in (3) and (4), above, with a surgeon's knot and a locking knot (figure 2-32). Ensure the knots are located to the outside of the bag tie loops.

(6) Close suspension line protector flap over stowed suspension lines.

(7) Pass one running end of left riser securing tie through protector flap left tie loop and secure riser securing tie running ends with a surgeon's knot and a locking knot Trim ends to 2 inches (figure 2-33).

(8) Secure protector flap right tie loop using procedures In (7) above.

2-16. Packing the 26-Foot Cargo Parachute (cont).

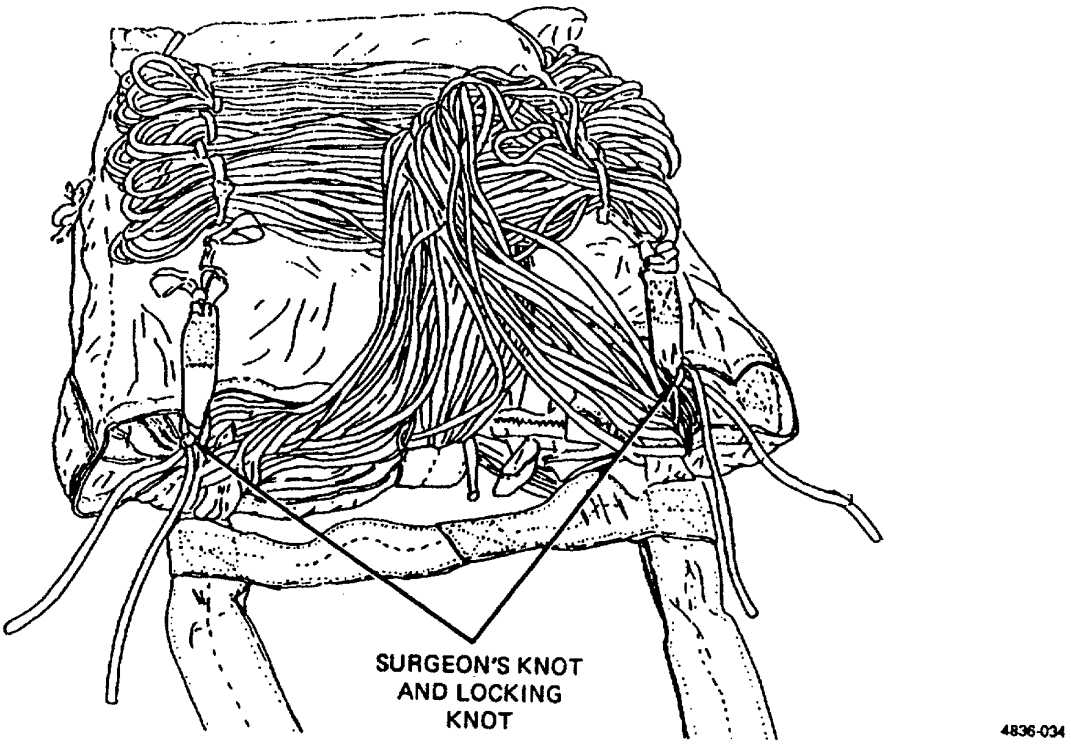


Figure 2-32. Riser Securing Ties Completed.

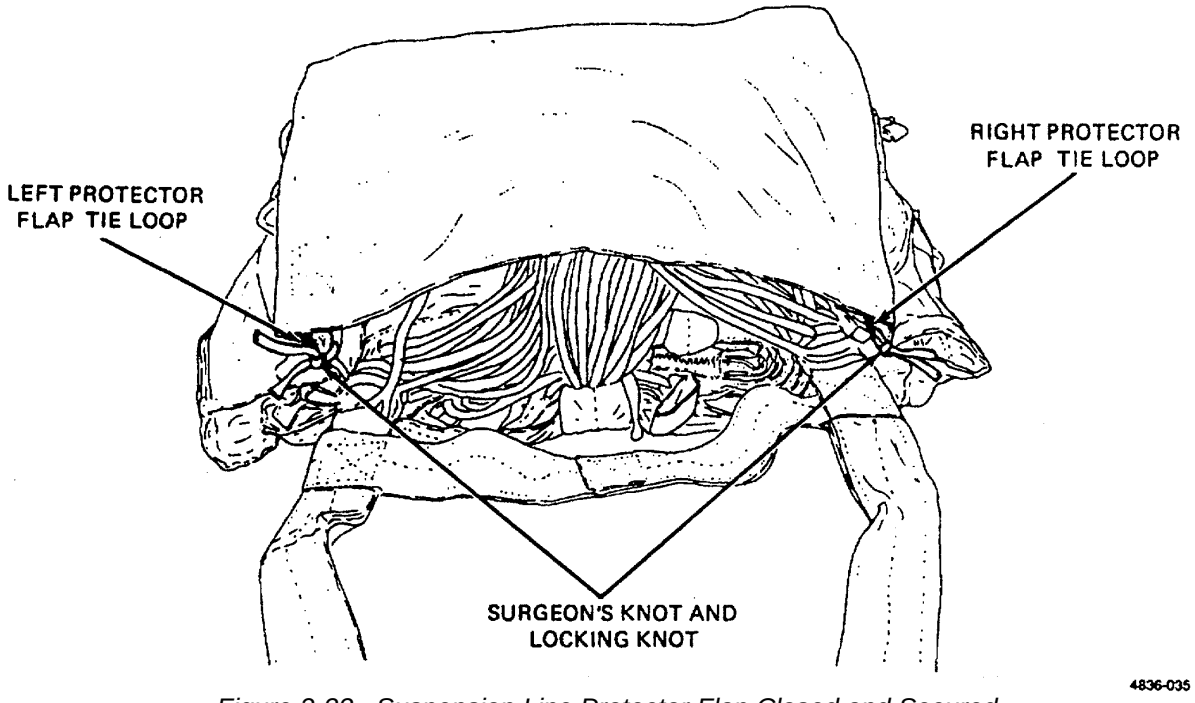


Figure 2-33. Suspension Line Protector Flap Closed and Secured.

o *Completing the Pack.*

(1) Stow the static line by forming the first stow at the upper left corner of the deployment bag and secure the stow with a double wrap of the rubber retainer band attached to the static line retaining strap.

NOTE

Make the first stow and each succeeding stow to extend 2 inches beyond the outer edges of the static line retaining straps Secure all stows with a double wrap of the rubber retainer bands.

(2) Form the second static line stow at the upper-right corner of the bag and secure the slow with a rubber retainer band as in (1), above.

(3) Continue stowing the remaining static line length from left to right alternately until the line is completely stowed and secured (figure 2-34).

(4) Remove log record (DA Form 10-42 or DA Form 3912) from the parachute inspection data pocket (log record pocket) located on the riser.

(5) Make entries on the "Jump, Inspection and Repack Data" page as follows:

(a) *Date.* Enter the day, month and year of each packing action.

(b) *Bag number.* Indicate whether breakaway or non-breakaway static line attachment.

(c) *Routine inspection.* No entry required.

(d) *Jumps or dropped.* No entry required.

(e) *Repack.* For Initial packing, enter "IN", there after, enter a checkmark in the column each time the parachute is repacked.

(f) *Packer's name.* The packer performing the packing will sign this entry.

(g) *Inspector's name.* The inspector who has performed the pack-in process inspection will sign this entry.

(h) *Unit.* Enter the unit designation to which the packer and/or inspector are assigned.

(6) Return the log record to the log record pocket upon completion of the entries.

(7) Extend risers and clevis across the stowed static line toward the upper edge of bag and fold the clevis back against the extended risers.

(8) Using two 10-inch lengths of 1/4-inch wide, Type I cotton webbing, make a first temporary tie using a bow knot to secure the clevis body to the deployment bag main strap attaching loop. At a point near the clevis screw, make a second temporary tie using a bow knot to secure the clevis body to the two risers (figure 2-35).

2-16. Packing 26-Foot Cargo Parachute (cont).

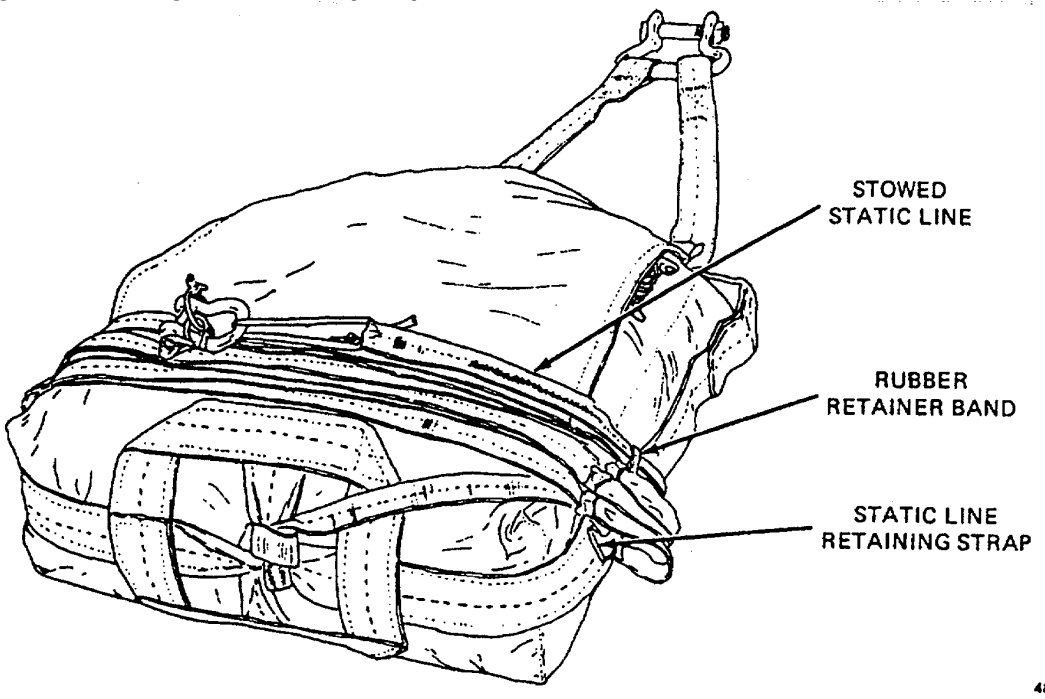


Figure 2-34. Static Line Stowed and Secured.

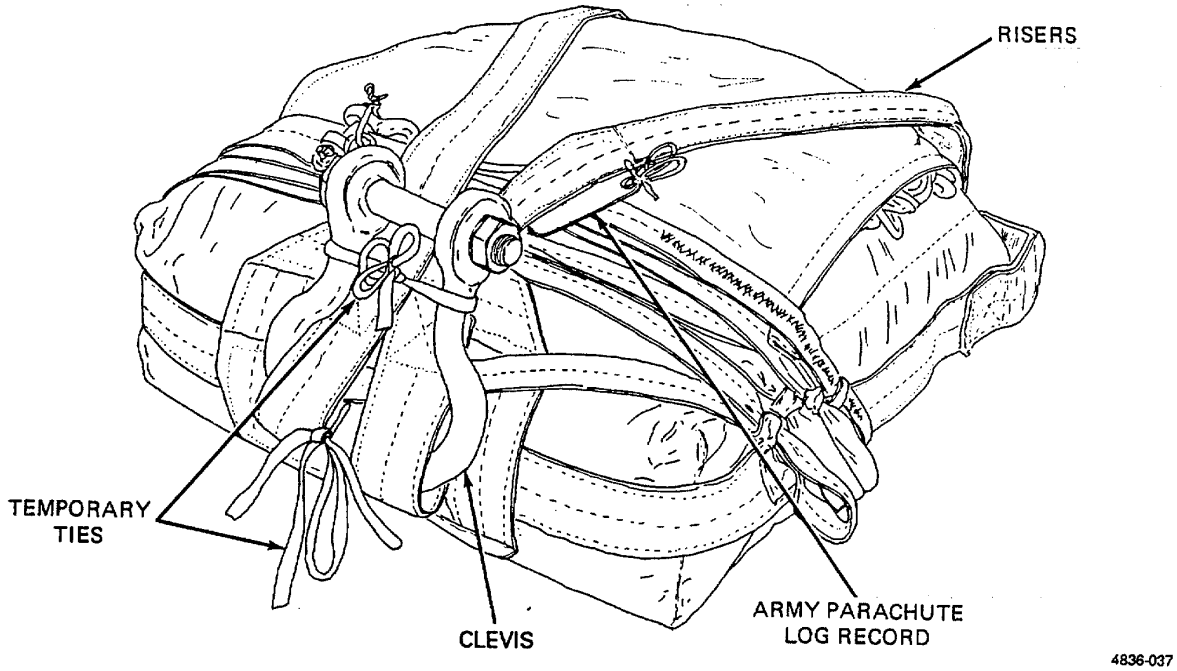


Figure 2-35. Parachute Pack Completed.

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
e 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.

(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 assembles 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 ¼ 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.
MDZZ	SEWING MACHINE, INDUSTRIAL Zig-zag, 308 stitch, medium duty, NSN 3530-01-181-1421.
LDZZ	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.

2-17. Sewing Procedures (cont).

Table 2-3. Stitching and Restitching Specifications.

Component	Recommended sewing machine (code symbol)	Stitches per Inch	Thread size
Canopy			
Gore Section	LD	7 to 11	E
	DN	Darn	E/A
Skirt reinforcement tape (lower lateral band)	LD	7 to 11	E
Radial tape	LD	7 to 11	E
Suspension line	ZZ	7to 11	E
Bridle loop	HD	5 to 8	6
Suspension Line	LD	7 to 11	E
attaching loop	ZZ	7 to 11	E
Vent line	ZZ	7 to 11	E
Pocket band	ZZ	7 to 11	E
Riser	HD	5 to 8	3
Buffer	HD	5 to 8	3
Riser webbing	HD	5 to 8	3
Spreader	HD	5 to 8	3
Suspension line attaching loop	MD	7 to 11	E
Vent reinforcement tape (upper lateral band)	LD	7 to 11	E
Vertical tape	LD	7to 11	E
Deployment bag			
Attaching loop	LD	7 to 11	E
Main strap	LD	7to 11	E
Static line stow loop	LD	7 to 11	E
Stow loop retaining strap	LD	7 to 11	E
Protector flap lie loop	LD	7 to 11	E
Side main strap tie loop	LD	7 to 11	E
Panels and flaps	LD	7 to 11	E
Static Line	ZZ	7 to 11	FF

(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 2-36).

(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 2-36).

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

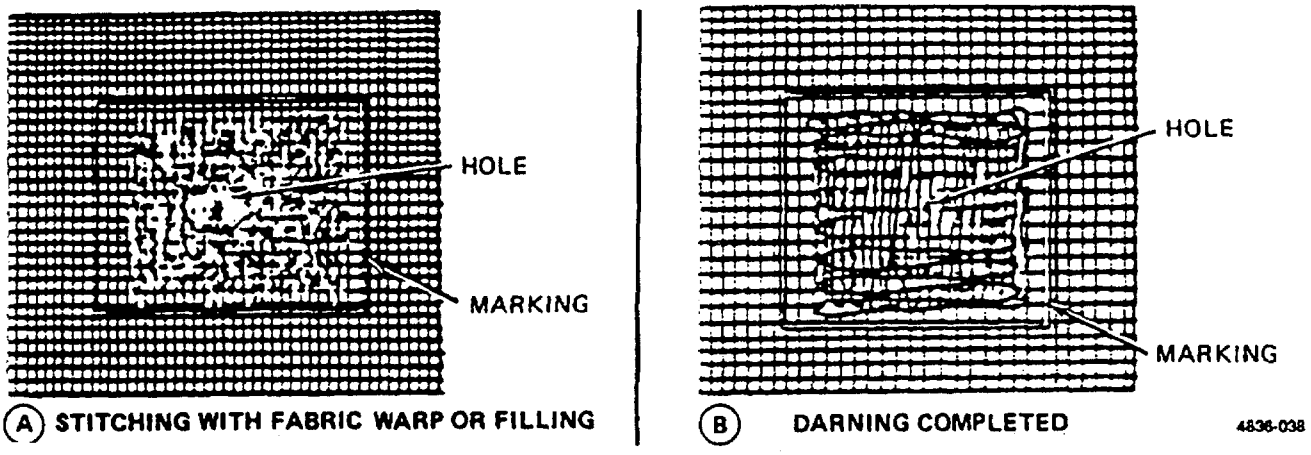


Figure 2-36. Darning Method Using a Darning Sewing Machine.

(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.

(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 corner of the marked area is reached (A, figure 2-37).

2-17. Sewing Procedures (cont).

(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 2-37).

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

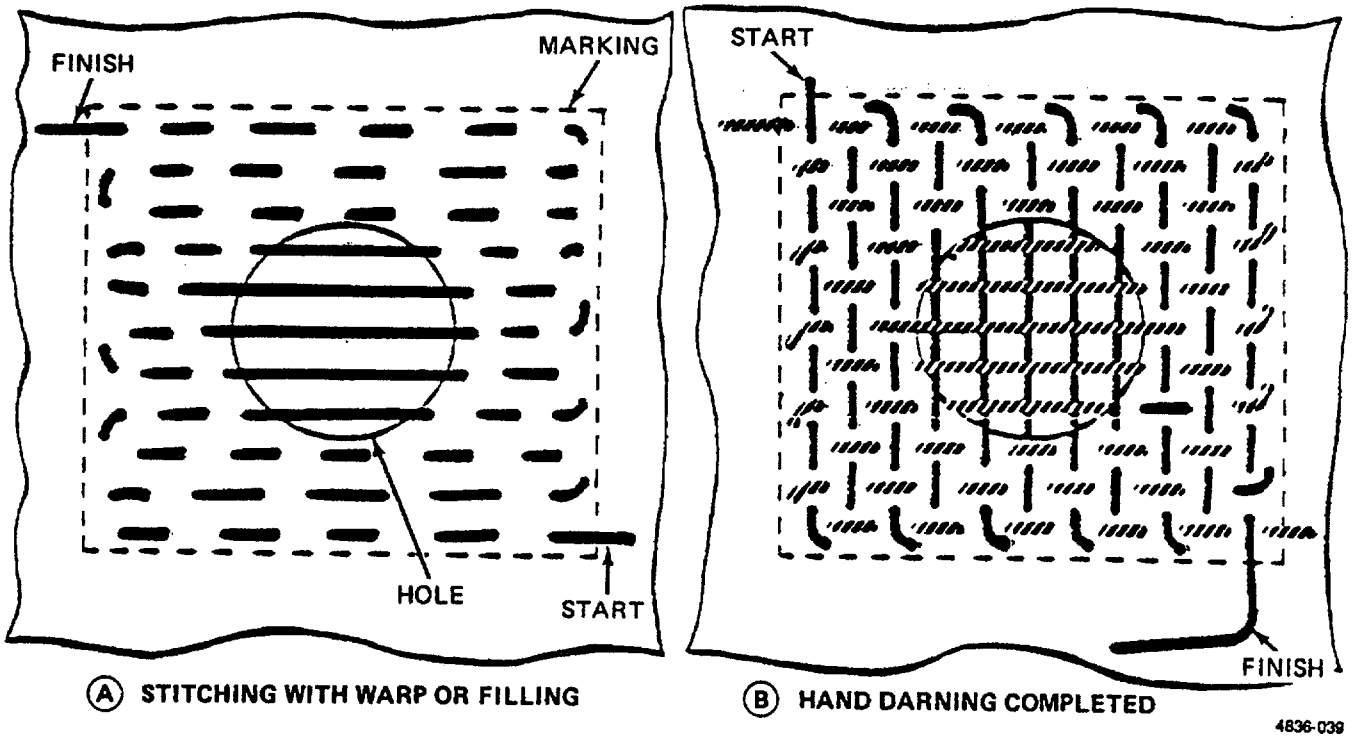


Figure 2-37. Hand Darning Method.

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 2-38). The cited stitching procedure will also apply to an L-shaped cut or tear (B, figure 2-38).

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

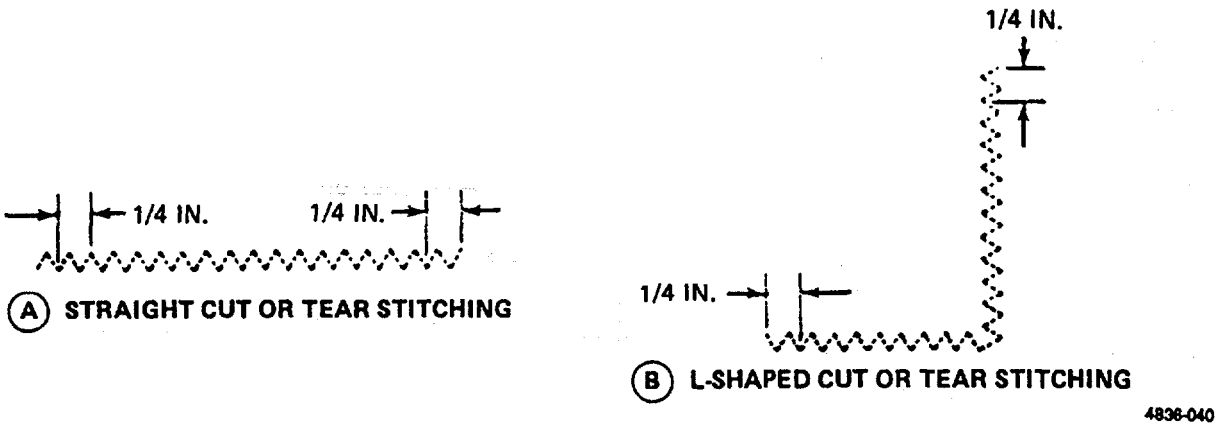


Figure 2-38. Repair Method Using a Zig-Zag Sewing Machine.

2-18. Searing and Waxing.

This task covers: a. Searing b. Waxing

Tools:

Knife, Hot Metal, Item 6, Appendix B
Pot, Melting, Electric, Item 11, Appendix B

Equipment Condition:

Unpacked

Materials/Parts:

Beeswax, Item 2, Appendix D
Wax, Paraffln, Item 40, 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:

Brush, Stenciling, Item 4, Appendix D
Ink, Marking, Item 15, Appendix D
Marker, Felt Tip, Black, Item 17, Appendix D
Pen, Ball Point, Item 20, Appendix D
Stencllboard, Oiled, Item 25, Appendix D

Equipment Condition:

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 device, such as a ballpoint pen or fell 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 restenclled.

(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, restencll original marking.

2-20. Parachute Canopy.

This task covers: Repair

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, canopy laid flat

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

2-21. Bridle Loop.

This task covers: a. Repair b. Replace

Tools:

Sewing Machine, Heavy Duty, Item 15, Appendix B

Materials/Parts:

Thread, Nylon, Size 6, Item 38/39, Appendix D
Webbing, Cotton, Type VIII, Item 43, Appendix D

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, canopy laid flat

a. Repair. Repair a bndle 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 6 overstitch 1/2 Inch to lock stitches.

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

(1) Cut a 10-Inch length of cotton webbing, type VIII 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 2-inch overlap (figure 2-39).

(3) Begin at a point 1/4 Inch from one overlapped webbing end Use a heavy duty sewing machine to secure overlapped ends With nylon thread, size 6, stitch a 1-1/2 Inch long, single-X box stitch, 5 to 8 stitches per inch.

(4) Cut and remove damaged bndle loop.

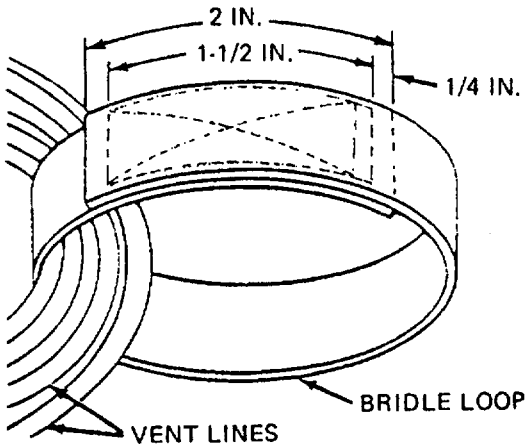


Figure 2-39. Bridle Loop Replacement Details.

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, Zig-Zag Item 14, Appendix B
Yardstick, Item 20, Appendix B

Materials/Parts:

Cord, Nylon, Type II, Item 13, Appendix D
Pencil, Marking Aid, Item 21/22, Appendix D
Thread, Nylon, Size E, Items 33/34, Appendix D

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, canopy In proper layout

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

(1) Use a zig-zag sewing machine to restitch any loose or broken stitches

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

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 14-inch length of type II, nylon cord Sear or dip ends of cord (para 2-18).

(4) Position one end of new vent line In exact location formerly occupied by end of old line (figure 2-40).

NOTE

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

(5) Using a zig-zag sewing machine and nylon thread, size E, stitch new line In place Begin stitching on line 1/4 inch above upper edge of vent reinforcement tape and sew to 1/4 Inch beyond end of line, 7 to 11 stitches per inch and 1/8 wide (figure 2-40).

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

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

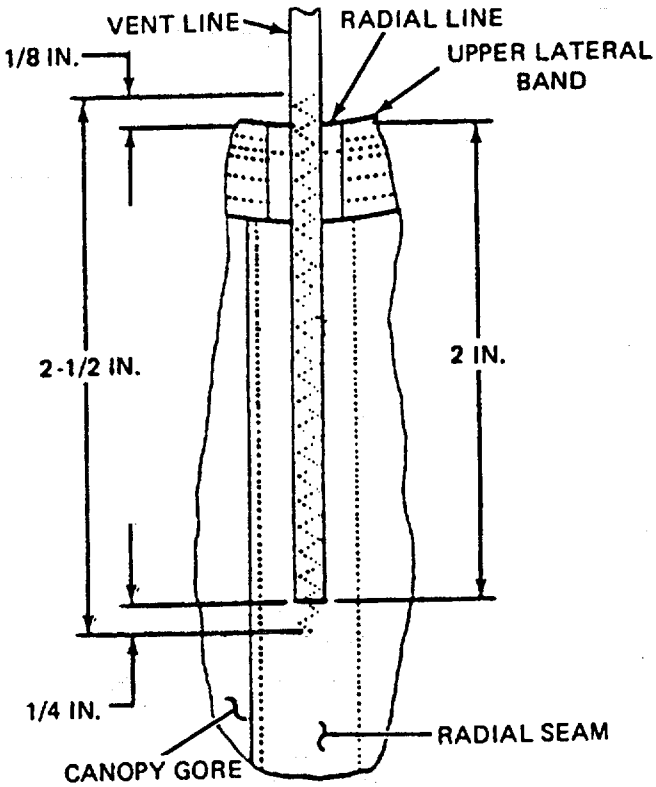


Figure 2-40. Vent Line Replacement Details.

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

This task covers: Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked (canopy laid flat)

Materials/Parts:

Pencil, Marking Aid, Item 21/22, Appendix D
Tape, Nylon, Type III, 3/4-inch, Item 28, Appendix D
Thread, Nylon, Size E, Item 33/34, 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

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

b. *Damage Between Radial Seams.* Repair as follows:

(1) Mark vent line position and cut stitching of two vent lines on each side of damaged area. Move lines to one side.

(2) Smooth canopy around damaged area

(3) Cut a piece of 3/4 Inch nylon tape, long enough to extend 1 inch beyond outside edge of second radial seam on each side of damaged area. Sear or dip ends of tape (para 2-18).

(4) Position webbing on damaged area Use a light duty sewing machine and size E nylon thread to stitch. Sew webbing in place with two continuous rows of stitching 1/8 Inch from edge of tape, 7 to 11 stitches per inch. Overstitch ends of webbing 2 inches (A, figure 2-41).

(5) Reposition vent lines and sew them in place according to original construction.

c. *Damage Extending Into Radial Seam.* Repair as follows:

(1) Mark vent line position and cut stitching of vent line attached to damaged radial seam and the stitching of two vent lines on each side of damaged seam Move lines to one side.

(2) Smooth canopy around damaged area.

(3) Cut a piece of 3/4 inch nylon tape long enough to extend 1 inch beyond outside edge of second radial seam on each side of damaged area. Sear or dip ends of tape (para 2-18).

(4) Position tape on damaged area. Use a light duty sewing machine and size E nylon thread to stitch. Sew webbing In place with two continuous rows of stitching, 1/8 Inch from edge of tape, 7 to 11 stitches per inch. Overstitch ends of tape 2 inches (B, figure 2-41).

(5) Reposition vent lines and sew in place according to original construction.

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

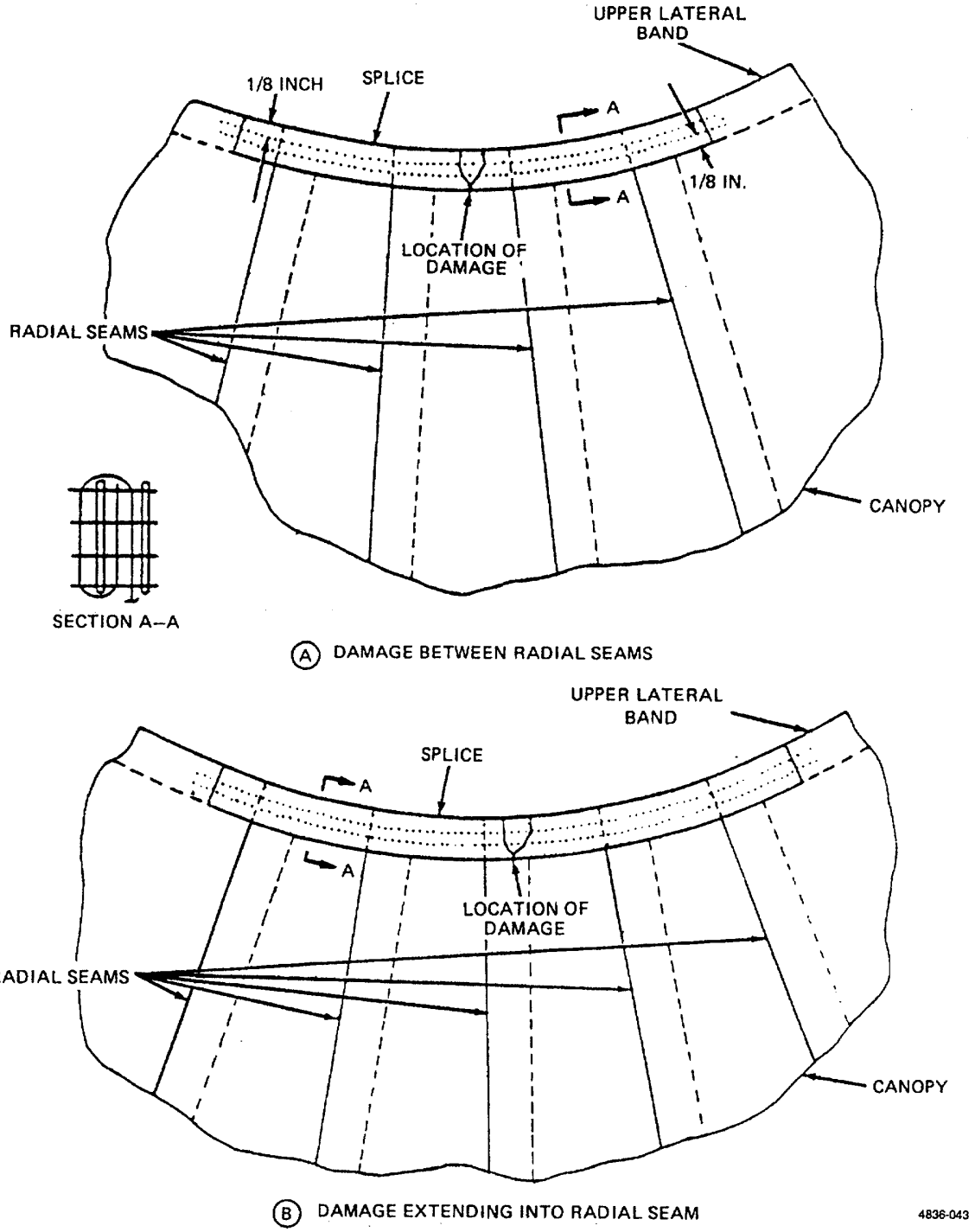


Figure 2-41. Vent Reinforcement Tape Splicing Details.

2-24. Gore Section.

This task covers: a. Repair b. Replace

Tools:

Shears, Item 12, Appendix B
Iron, Household, Item 4, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Sewing Machine, Zig-zag, Item 14, Appendix B
Yardstick. Item 20, Appendix B

Materials/Parts:

Pencil, Marking Aid, Item 21/22, Appendix D
Cloth, Cotton, Item 8/9, Appendix D
Cloth, Cotton Balloon, Coated, Item 6, Appendix D

Materials/Parts (cont):

Thread, Nylon, Size E, Item 33/34, Appendix D
Thread, Nylon, Size A, Item 32, Appendix D

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Parachute laid out on table

NOTE

Repair and/or replacement of a gore section is accomplished at the Intermediate (DS) maintenance level only, In accordance with the Maintenance Allocation Chart (MAC), Appendix B, Section II.

a. *Repair.*

(1) *Restitching.* Stitching and restitching made on parachute canopies should be accomplished with size E or A nylon thread that is contrasting In color to the fabric being stitched or the original thread 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 should be locked by at least two inches at each end of a stitch row, when possible. Zig-zag restitching should extend at least 1/4-inch into undamaged stitching at each end, when possible. Restitch directly over the original stitching and follow the original stitch pattern as closely as possible.

(2) *Darning.* Darn a hole or tear In a gore section which does not exceed 3/4 Inch In length or diameter as prescribed in para 2-17, using size E or A nylon thread. There is no limit to the number of darns which may be made on a gore section.

(3) *Patching.* Use a patch to repair holes which exceed 3/4 inch In length or diameter using either the sewn patch or the pressure sensitive patch (Iron-on) methods.

(a) Limitations. The following limitations apply to the 26-foot cargo parachute.

WARNING

The limitations prescribed for parachute canopy patching will be stringently adhered to under all circumstances and without any deviations.

2-24. Gore Section (cont).

1 A patch will not be applied to a damaged area that has been previously patched.

2 There is no limitation to the number of patches or size of patch to each canopy gore section or gore panel. However, determination should be made as to the most economical method to be used, i.e., two or more patches versus one large patch or one large patch versus a section replacement. A patch applied to a parachute canopy may extend from radial seam to radial seam.

(b) Sewn patches. There are two types of sewn patches authorized, the basic and miscellaneous. A basic patch is used to repair damaged cloth when the affected area is no closer than 1 inch from a radial tape, vent reinforcement tape or skirt reinforcement tape. Should a damaged area be closer than 1 inch to the cited areas, a miscellaneous patch will be made.

NOTE

Sewn patches on the canopy will be applied to the inside and may be square or rectangular In shape

When a miscellaneous canopy patch is used, cut stitching and remove or lay aside items which may Interfere with patch application. Refer to applicable item repair paragraph for proper procedures.

1 Using an authorized marking aid of contrasting color, mark a square or rectangle around area to be patched and insure one side of marked square or rectangle is parallel to warp or filling of fabric.

2 Cut damaged area fabric along lines made In 1 above. Further cut fabric diagonally at each corner to allow a 1/2 Inch foldback In raw edges. Cut stitching and lay aside or remove any Item which will interfere with miscellaneous patch application.

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

4 Using 3 8 ounce muslin cloth, mark and cut a patch 2-1/2 inches wider and longer than inside measurements of prepared hole. Insure patch material is marked and cut along warp or filling of fabric.

5 Center patch material over prepared hole and insure warp or filling of patch material matches warp or filling of fabric being patched. Pin patch material in position.

6 Make 1/2 Inch foldunder on each edge of patch material and baste patch to prepared area. Basting will be performed using procedures In paragraph 2-17a.

7 Remove pushpins securing item to the repair table and secure patch by stitching, using the applicable details in figure 2-42 and stitching specifics outlined in table 2-3. Make first row of stitching completely around patch invert canopy and make a second row of stitching around prepared hole. Stitching will be performed in accordance with paragraph 2-17.

8 Replace items removed for miscellaneous patch. as required, In accordance with applicable item procedures.

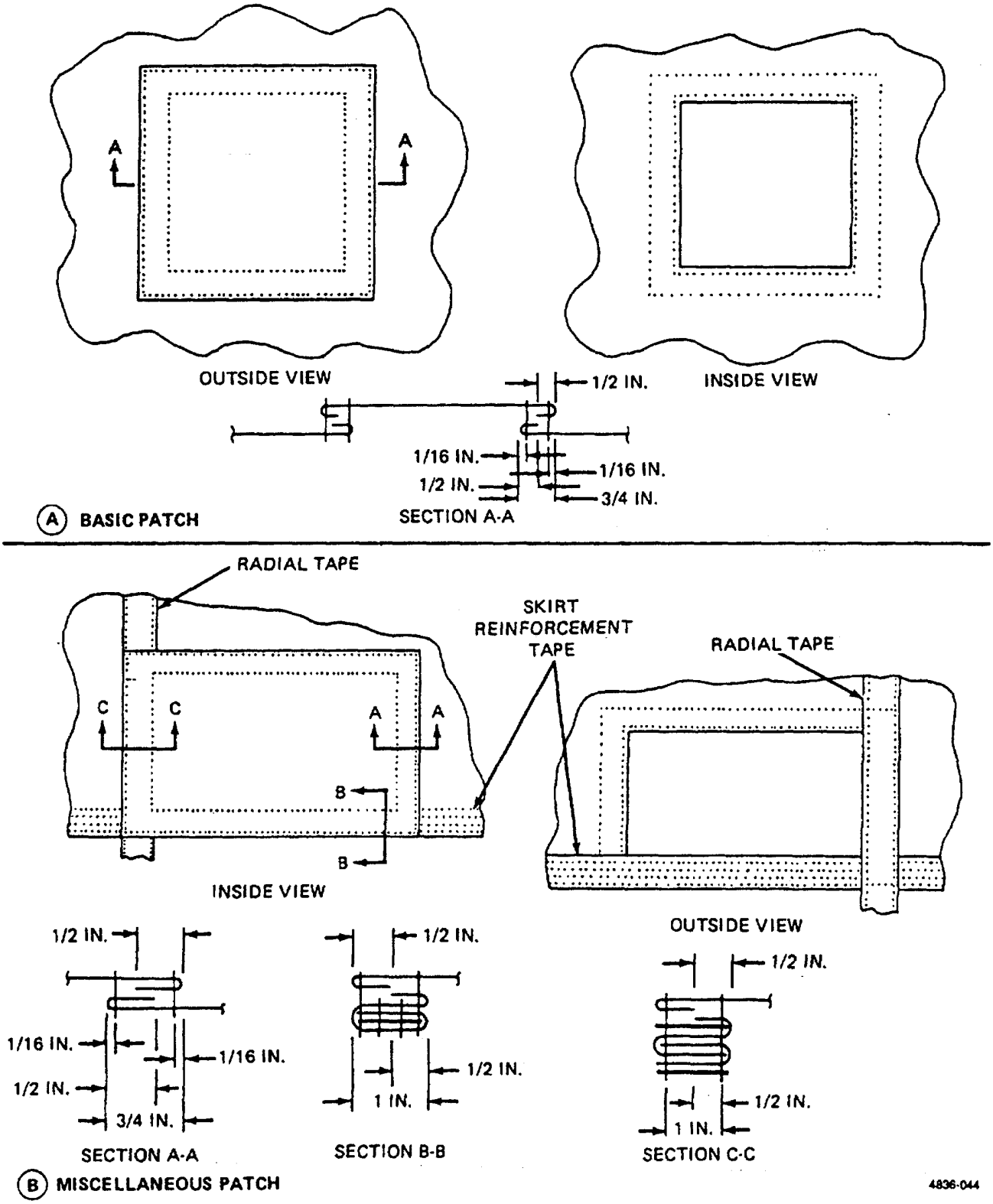


Figure 2-42. Patch Application, Stitch Method.

2-24. Gore Section (cont).

(c) Pressure-sensitive (iron-on) patch. This method of applying a basic patch is a heat and pressure (iron-on) technique using pressure-sensitive-coated cotton balloon cloth. This method is limited to use on the cotton muslin canopies such as the 26-foot cargo parachute. A complete canopy section replacement will be performed when an individual section has been patched extensively with the pressure-sensitive patch material and an apparent stiffening of the section occurs. The stiffening effect may adversely affect the proper layout and packing of a parachute canopy. Apply a pressure-sensitive (Iron-on) patch as follows:

1 Smooth all wrinkles from material surrounding the damaged area.

2 Cut a piece of pressure-sensitive-coated cotton balloon cloth large enough to extend 1 Inch beyond all edges of the damaged area If damaged area extends to a point within 1 inch of upper lateral band, only a sewn patch as outlined In (b), above, will be allowed.

3 Place coated cloth patch over damaged area with adhesive side facing down. If damaged area has no material missing, patch will be applied to the Inside of canopy only. Whenever damaged area has a space between the edges of material which indicates that material is missing, patch will be applied to both inside and outside of canopy (figure 2-43).

4 Using a household-type electric iron with heat regulated for cotton material, apply heat and pressure simultaneously to patch material for at least 30 seconds. Insure that all of patch material is subjected to heat and pressure, and that all edges of patch have adhered to canopy material. Also Insure that temperature of iron remains constant during patch application effort and that no other part of canopy is underneath area being patched.

(4) *Restenciling.* As required, restencil identification markings using procedures in paragraph 2-19.

b. Replacement. When replacing gore sections, use 3.8 ounce cotton muslin cloth of same color as that being replaced. If the same color cloth is not available, another color may be used. When replacing section 1 of gore 1, restencil gore number and information data block on replacement section. For other gores, stencil gore numbers as necessary using procedures in paragraph 2-19. A gore section which is damaged beyond repair will be replaced as follows:

(1) *Gore section 1.*

(a) Cut a piece of 3 8 ounce cotton muslin cloth 2-1/2 inches longer and 1-1/2 inches wider than original gore section (figure 2-44)

(b) Place cut material over damaged area and using a suitable marking device, trace outline of original gore section, including width of radial tapes on each side of damaged area and width of skirt reinforcement tape (lower lateral band) at bottom. Allow material to extend 1 inch beyond original gore section upper edge, 1-1/2 Inches below lower skirt reinforcement tape, and 3/4 inch beyond outside edge of each of the radial tapes Trim excess material, as required.

(c) On upper end of cut material, make a double 1/2 inch-wide foldunder. Secure foldunder with a single row of stitching sewn through foldunder center across width of material. Stitching will be 7 to 11 stitches per inch.

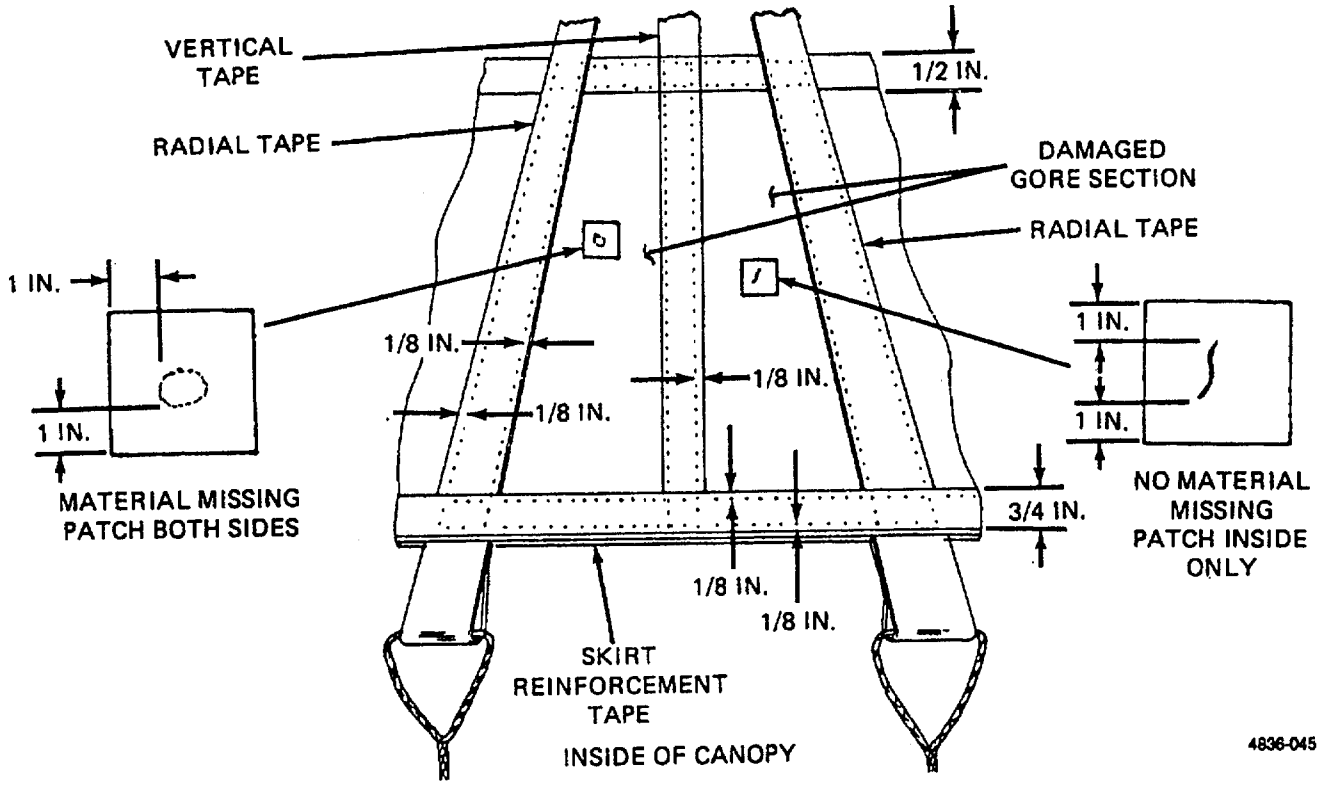


Figure 2-43. Pressure Sensitive Patch.

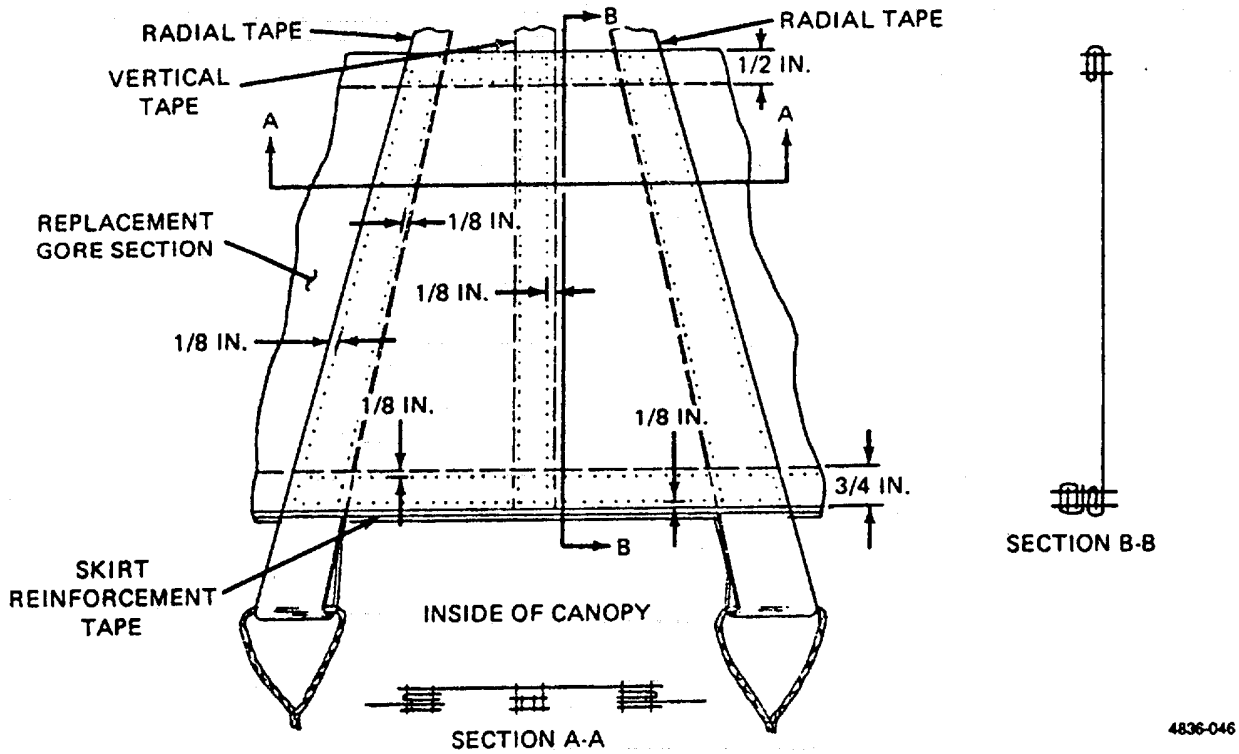


Figure 2-44. Gore Section 1, Replacement Details.

2-24. Gore Section (cont).

(d) Cut and remove original stitching which secures pocket band ends to skirt reinforcement tape (lower lateral band) In original gore section area. Fold pocket band loose ends away form repair area

(e) Invert canopy to inside and aline upper edge of foldunder made in (d), above, with upper edge of original gore section. Allow each side of replacement gore section material to extend 3/4 inch beyond outside edges of original gore section radial tapes. Insure 1/2-inch wide foldunder faces down. Temporarily secure replacement gore section to original gore section upper edge with pushpins

(f) On each side of replacement gore section, make a 3/4-inch wide foldunder and aline material folded edge with outside edge of each original gore section radial tapes. Temporarily secure each of side foldunders with pushpins.

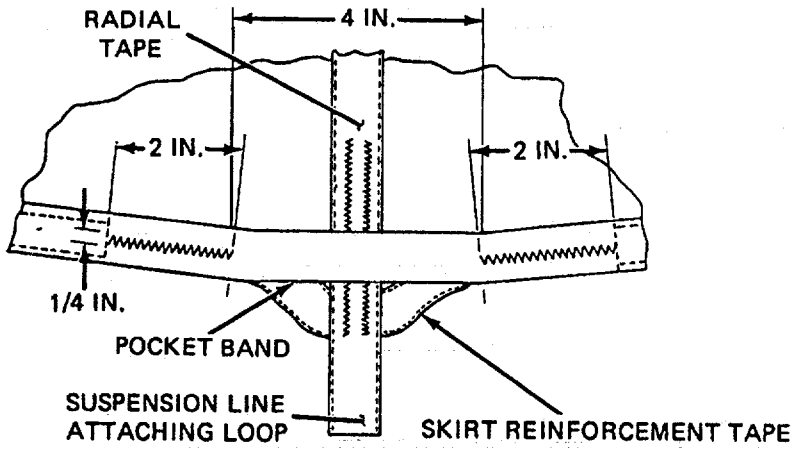
(g) At lower end of replacement gore section, make a doubled 3/4-inch wide foldunder and aline lower edge of fold with lower edge of skirt reinforcement tape (lower lateral band). Temporarily secure foldunder with pushpins.

(h) Baste edges of replacement gore section in accordance with paragraph 2-17a and remove pushpins.

(i) Using a light duty sewing machine and size E thread secure replacement gore section to original gore section radial tapes, vertical tape, and skirt reinforcement tape (lower lateral band) with two rows of stitching, using 7 to 11 stitches per inch. Insure lower edge of replacement gore section does not extend beyond bottom of skirt reinforcement tape (lower lateral band).

(j) Remove basting, reinvert canopy to outside, and remove original gore section material by cutting down inside of each applicable radial tape, down both sides of vertical tape, and across upper edge of skirt reinforcement tape (lower lateral band).

(k) Using a zig-zag sewing machine and size E nylon thread, reinstall pocket band loose end in original location with a two-inch long, 1/4-inch wide row of stitching (figure 2-45). Stitching will be 7 to 11 stitches per inch.



4836-047

Figure 2-45. Reinstalling Pocket Band.

(2) Gore section 2.

(a) Place canopy on a repair table with damaged gore section facing up.

(b) Cut a piece of 3 8 ounce cotton muslin cloth 2 inches longer and 1-1/2 inches wider than damaged gore section (figure 2-46).

(c) Place cut material over damaged area and using a suitable marking device, trace outline of original gore section, including width of radial tapes on each side of damaged area. Allow material to extend 1 inch beyond top and bottom of original gore section and 3/4 inch beyond outer edge of each radial tape. Trim excess material, as required.

(d) On upper and lower edges of the replacement material, make a doubled 1/2-inch wide foldunder. Secure each foldunder with a single row of stitching sewn through the center of foldunder, across width of material. Stitching will be 7 to 11 stitches per inch, using size E thread.

(e) Invert canopy to inside. Position replacement gore section material over the damaged area with upper and lower edges of material alined with respective edges of original gore section. Insure foldunders face down and that sides of material extend 3/4 inch beyond outside edge of each radial tape.

(f) On each side of replacement gore section material, make a 3/4-inch wide foldunder and aline the folded edge with the outside edge of the damaged area radial tape. Temporarily secure foldunders with pushpins.

(g) Baste edges of replacement gore section in accordance with paragraph 2-17a, and remove pushpins.

(h) Using a light duty sewing machine and size E thread, secure replacement gore section to original gore section radial tapes and vertical tape with two rows of stitching, using 7 to 11 stitches per inch.

(i) Remove basting, reinvert canopy to outside and remove original gore section material by cutting down inside of each of the original gore section radial tapes and on either side of vertical tape from upper edge through lower edge of section.

2-24. Gore Section (cont).

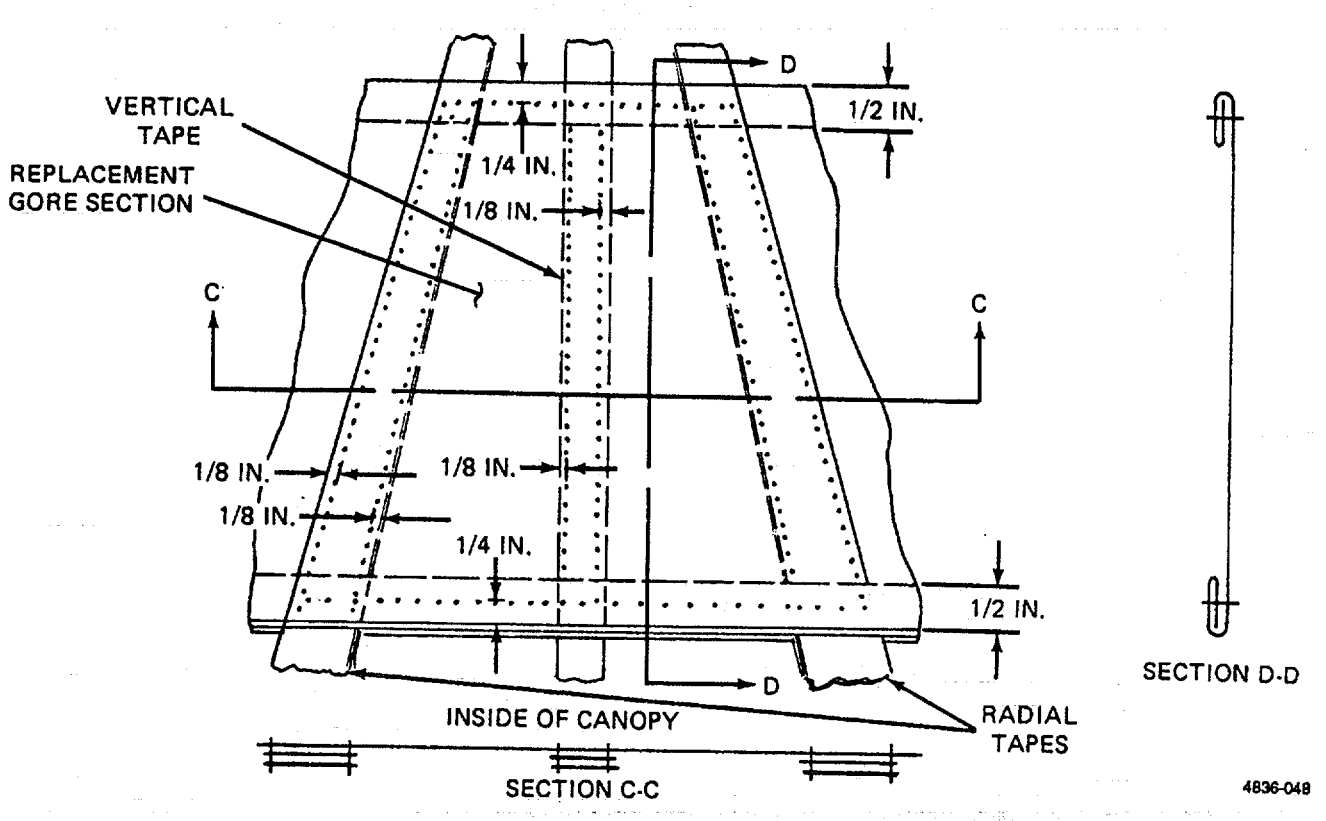


Figure 2-46. Gore Section 2, Replacement Details.

(3) Gore section 3.

(a) Place canopy on a repair table with damaged gore section facing up.

(b) Cut a piece of 3 8 ounce cotton cloth 2-1/2 inches longer and 1-1/2 inches wider than damaged gore section (figure 2-47).

(c) Place cut material over damaged area and using a suitable marking device, trace outline of original gore section, including width of radial tapes on each side of damaged area and width of skirt reinforcement tape (lower lateral band) at bottom. Allow material to extend 1 inch beyond original gore section upper edge, 1-1/2 inches below skirt reinforcement tape (lower lateral band), and 3/4 inch beyond outside edge of each radial tape. Trim excess material, as required.

(d) On lower end of cut material, make a double 1/2 inch-wide foldunder. Secure foldunder with a single row of stitching sewn through foldunder center across width of material. Stitching will be 7 to 11 stitches per inch, using size E nylon thread and a light-duty sewing machine.

(e) Invert canopy inside and aline lower edge of foldunder made in (d) above with lower edge of the original gore section. Allow each side of replacement gore section material to extend 3/4 inch beyond outside edges of original gore section radial tapes. Insure 1/2-inch wide foldunder faces down. Temporarily secure replacement gore section to original gore section lower edge with pushpins.

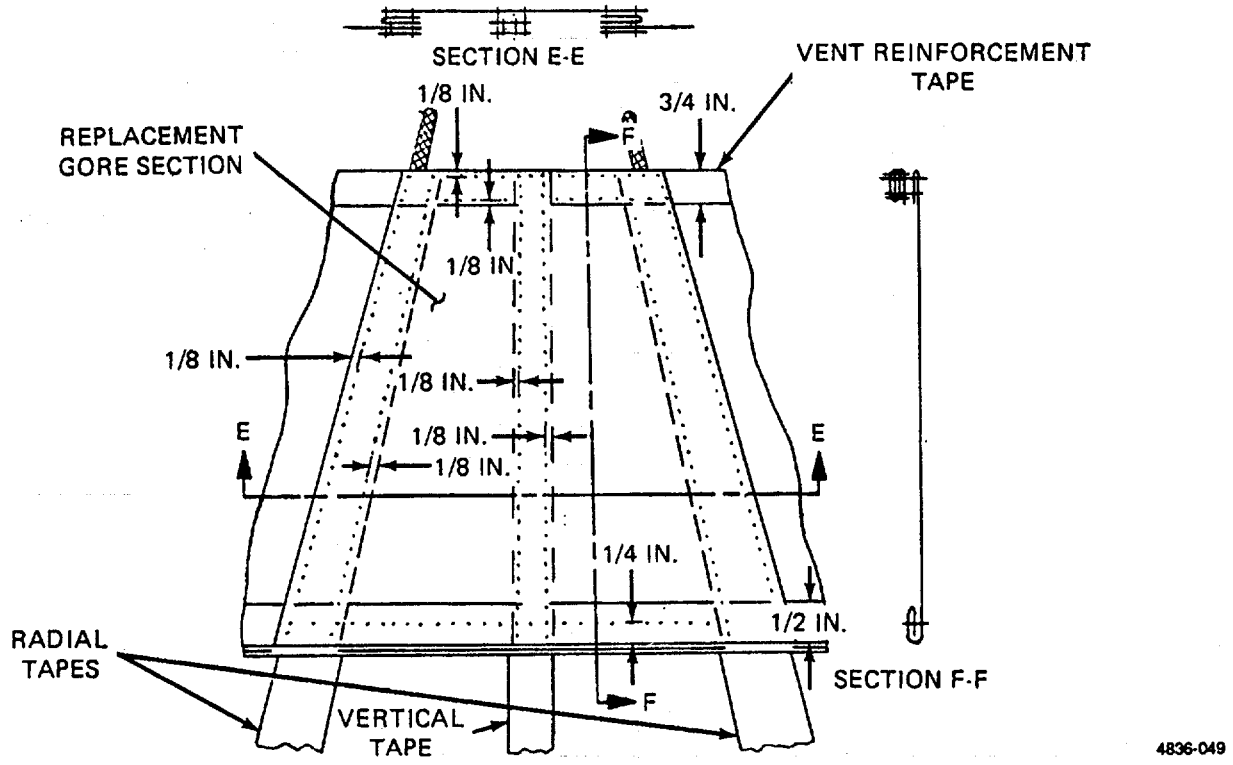


Figure 2-47. Gore Section 3, Replacement Details.

(f) On each side of replacement gore section material, make a 3/4-inch wide foldunder and aline folded edge with outside edge of each original gore section radial tapes. Temporarily secure each of side foldunders with pushpins.

(g) At upper end of replacement gore section, make a doubled 3/4-inch wide foldunder and aline upper edge of fold with upper edge of vent reinforcement tape (upper lateral band). Temporarily secure foldunder pushpins.

(h) Baste edges of replacement gore section in accordance with paragraph 2-17a and remove pushpins.

(i) Using a light duty sewing machine and size E nylon thread, secure replacement gore section to original gore section radial tapes, vertical tape and vent reinforcement tape (upper lateral band) with two rows of stitching, using 7 to 11 stitches per inch.

(j) Remove basting, reinvert canopy to outside, and remove original gore section material by cutting up inside of each applicable radial tape, up both sides of vertical tape, and across lower edge of vent reinforcement tape (upper lateral band).

2-25. Radial Tape.

This task covers: Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, laid flat

Materials/Parts:

Tape, Nylon, Type III, 3/4-inch Wide, Item 28, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D
Pencil, Marking Aid, Item 21/22, Appendix D

a. Restitching. Restitch radial tape. 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 tape 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 spices 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 3/4-inch wide nylon tape long enough to extend 4 inches beyond each side of damaged area and sear ends as specified in paragraph 2-18.

(3) Center tape length over damaged area. Using a light duty sewing machine and size E nylon thread, secure spice by stitching a box-stitch formation along full length of splice (figure 2-48).

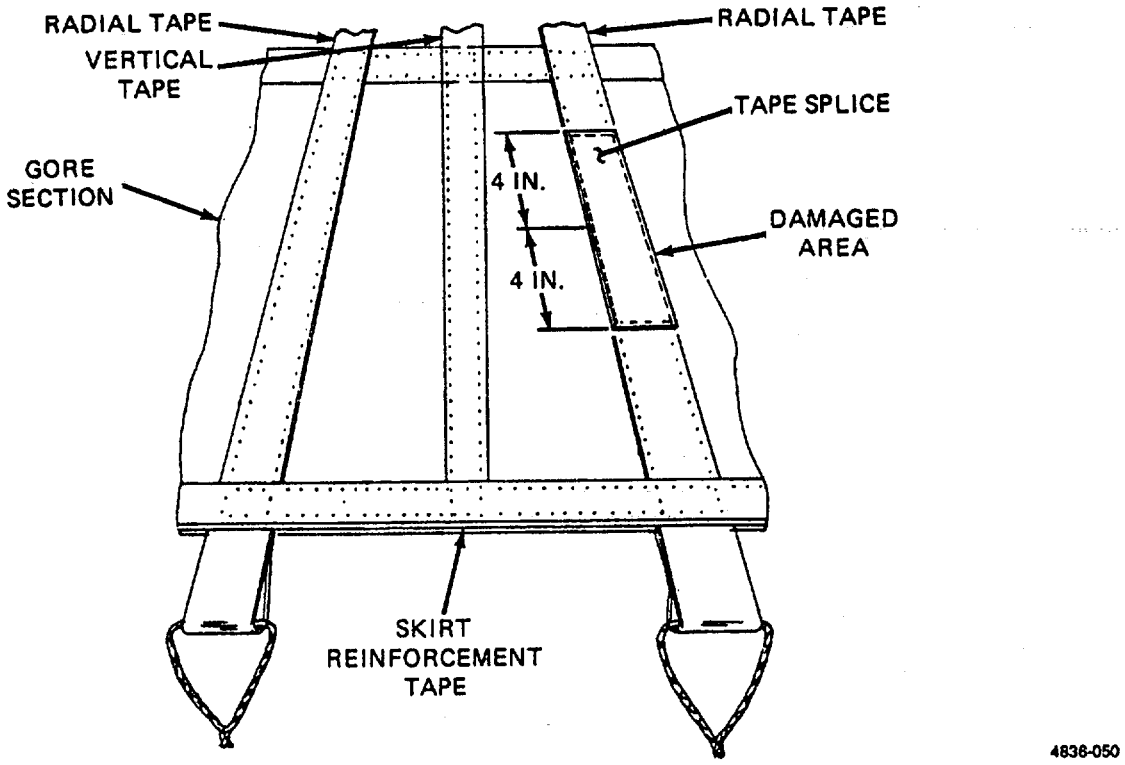


Figure 2-48. Radial Tape Splicing Details.

2-26. Vertical Tape.

This task covers: Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspection (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid-out on work table

Materials/Parts:

Pencil, Marking Aid, Item 21/22, Appendix D
Tape, Nylon, Type III, 1/2-inch Wide, Item 27, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D

a. *Stitching.* Stitch and restitch (para 2-17) with thread size E nylon which matches the color of the original stitching, when possible. Lock all straight stitching by backstitching at least 1/2 inch. Restitch directly over the original stitch, following the original stitch pattern as closely as possible.

b. *Splicing.* Splice vertical tape as follows:

NOTE

There is no limit to the number of spices allowed on the radial tape.

(1) Cut a length of 1/2 inch nylon tape long enough to extend 4 inches beyond each side of damaged area and sear the ends

(2) Center doubled tape length over damaged area (figure 2-49).

(3) Using a light duty sewing machine and size E nylon thread, secure splice by stitching a box-stitch formation the full length of spice material. Stitching will be 1/8 inch from edges of splice material, 7 to 11 stitches per inch.

2-26. Vertical Tape (cont).

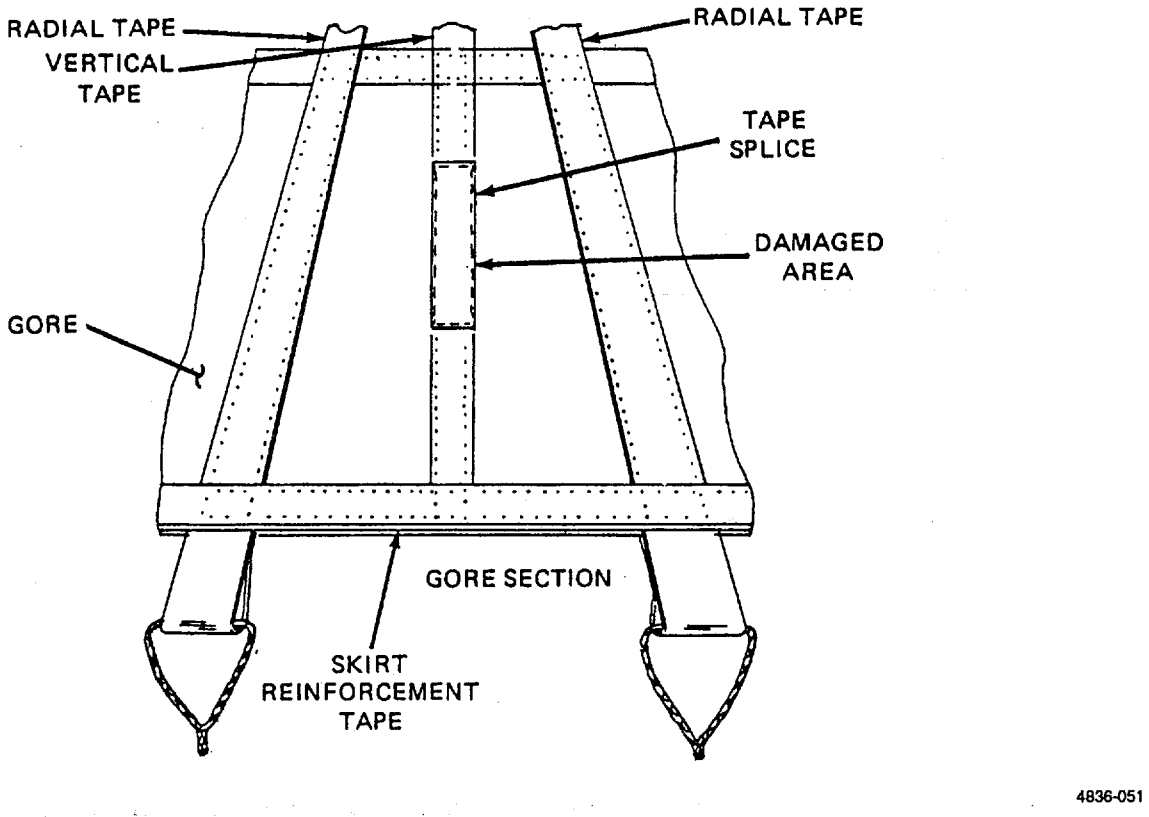


Figure 2-49. Vertical Tape Splicing Details.

2-27. Skirt Reinforcement Tape (Lower Lateral Band).

This task covers: Repair

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Sewing Machine, Zig-Zag, Item 14, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, lying flat on repair table

Materials/Parts:

Tape, Nylon, Type III, 3/4 inch Wide, Item 28, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D

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, which contrasts the color of the original stitching and material when possible. Lock all straight stitching by back stitching al least 2 inches. Zig-zag restitching should extend 1/4 inch into undamaged stitching at each end. 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 tape. Fold pocket band loose end away from repair area.

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

(4) Center tape length over damaged area (figure 2-50) and secure spice by making four rows of continuous stitching 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) Using a zig-zag sewing machine and size E nylon thread, reinstall pocket band loose end in original location with a two-inch long, 1/4-inch wide row of stitching. Stitching will be 7 to 11 stitches per inch (figure 2-51).

(6) Replace pocket band, if required (para 2-28).

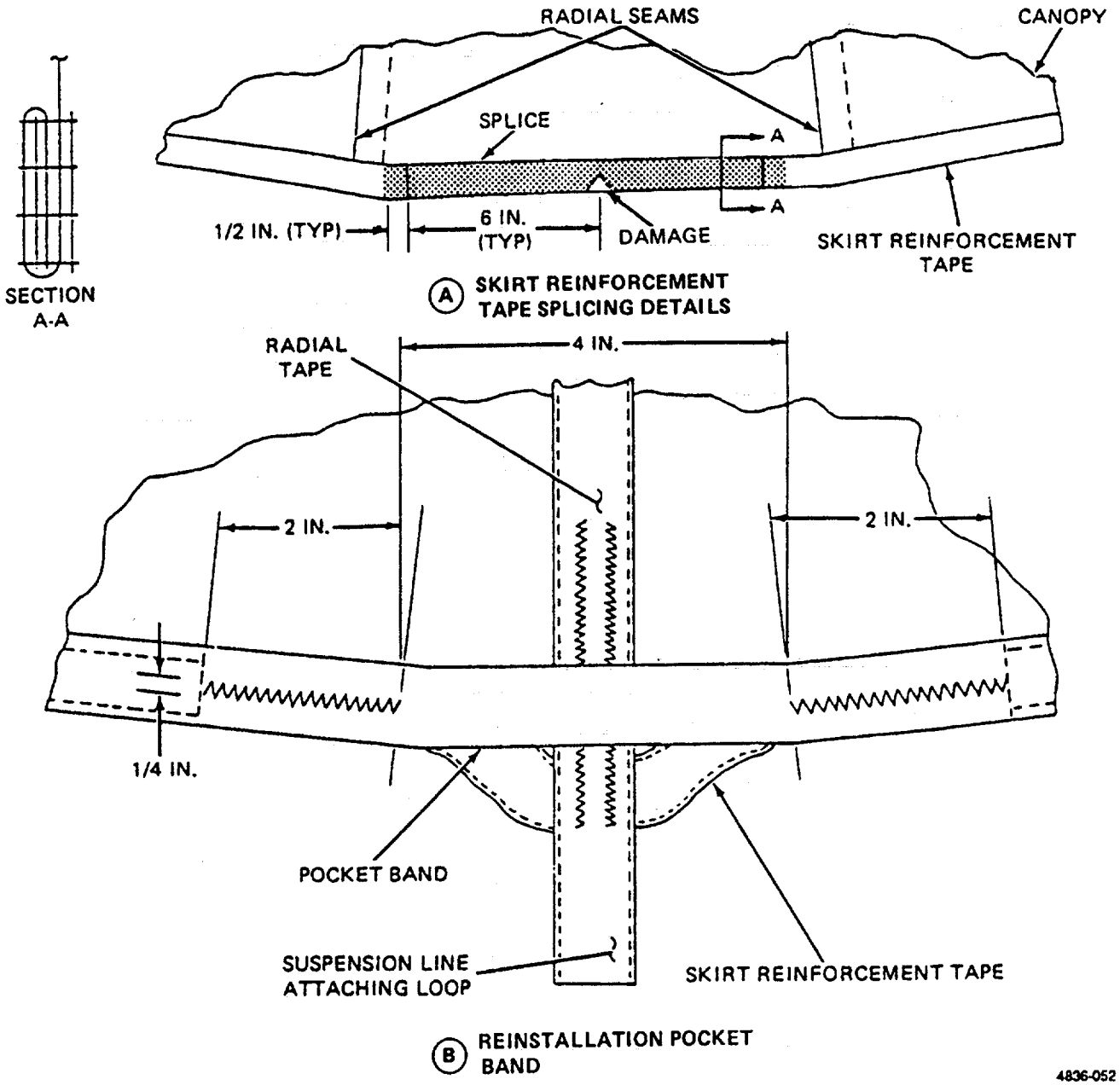


Figure 2-50. Skirt Reinforcement Tape Splicing Details.

2-28. Pocket Band.

This task covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Zig-Zag, Item 14, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, laid flat on repair table

Materials/Parts:

Pencil, Marking Aid, Item 21/22, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D
Tape, Nylon, Type III, 3/4 inch, Item 28, Appendix D

a. Repair. Stitch and restitch (para 2-17) with size E nylon thread which matches the color of the original stitching, when possible. Lock all zig-zag stitching by overstitching at least 1/2 inch. Restitch 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 an 8-inch length of 3/4-inch wide nylon tape, sear ends (para 2-19)

(4) Position tape length in original pocket band location.

(5) Using a zig-zag sewing machine and size E nylon thread, secure each end of replacement pocket band with a two-inch long, 1/4-inch wide row of stitching. Stitching will be 7 to 11 stitches per inch (figure 2 51).

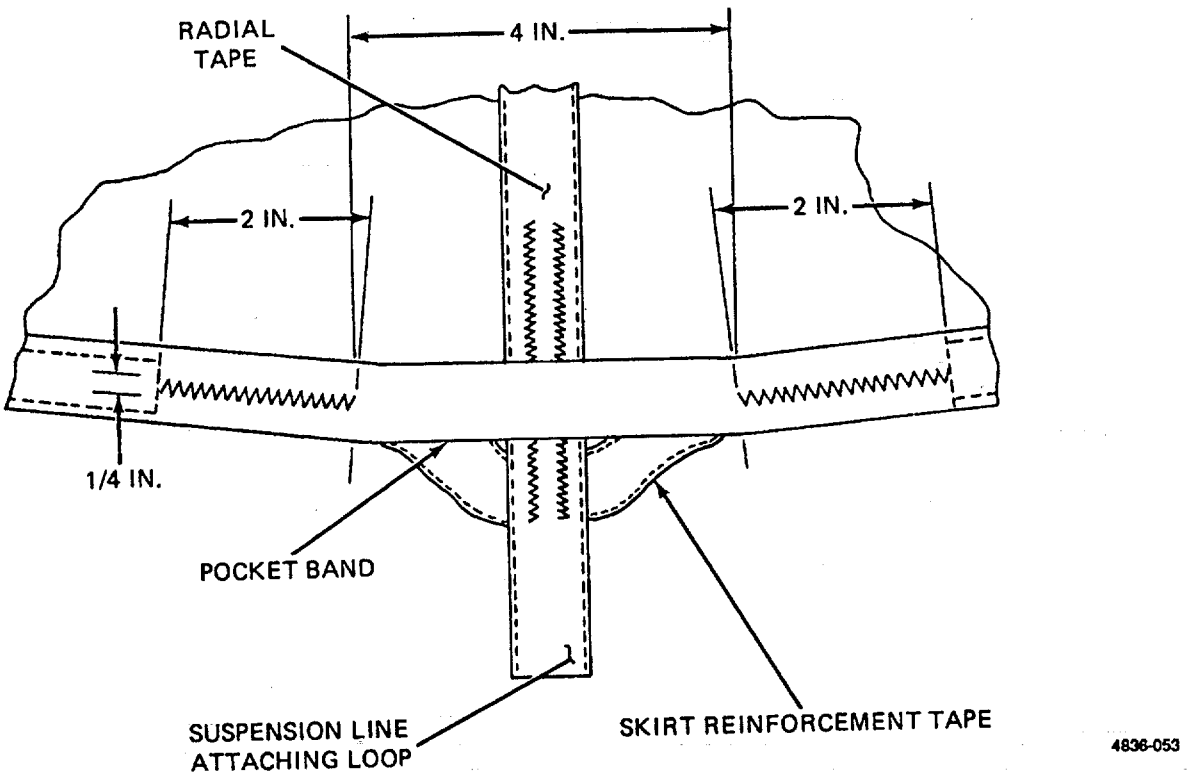


Figure 2-51. Pocket Band Replacement Details.

2-29. Suspension Line Attaching Loop.

This tasks covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Sewing Machine, Zig-Zag, Item 14, Appendix B
Yardstick, Item 20, Appendix B

Materials/Parts:

Pencil, Marking Aid, Item 21/22, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D
Tape, Nylon, Type III, 3/4 inch Wide, Item 28, Appendix D

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Canopy laid out on repair table

a. Repair. Stitch and restitch (para 2-17) with thread which matches the 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.

NOTE

Replacement of suspension line attaching loops is accomplished at the Intermediate (DS) Maintenance level only, in accordance with the Maintenance Allocation Chart (MAC), Appendix B

b. Replace. A damaged suspension line attaching loop shall be replaced by fabricating as follows:

(1) Remove original suspension line attaching loop by cutting original radial tape at a point immediately below lower edge of skirt reinforcement tape (lower lateral band).

(2) Cut a 19-inch length of 3/4-inch wide nylon tape and sear ends. Double tape and aline ends.

(3) Using a light duty sewing machine and size E nylon thread, stitch a single row of stitching 1/8 inch In from each side along doubled tape length (figure 2-52). Stitching will be 7 to 11 stitches per inch.

(4) Using a suitable marking aid, mark doubled tape length at a point 3 inches from each end.

(5) Center doubled tape length In top loop of suspension line and aline both ends of tape above suspension line.

(6) Position one end of tape length under, and opposite end of tape length over, applicable radial tape and aline two 3-inch marks made In (4), above, with lower edge of the skirt reinforcement tape to form a loop below canopy skirt.

(7) Using a zig-zag sewing machine and size E nylon thread, secure ends of formed loop to radial tape by stitching two 3/16-inch wide by 3-inch long rows of stitching, 1/8 inch from tape edges. Stitching will be 7 to 11 stitches per inch

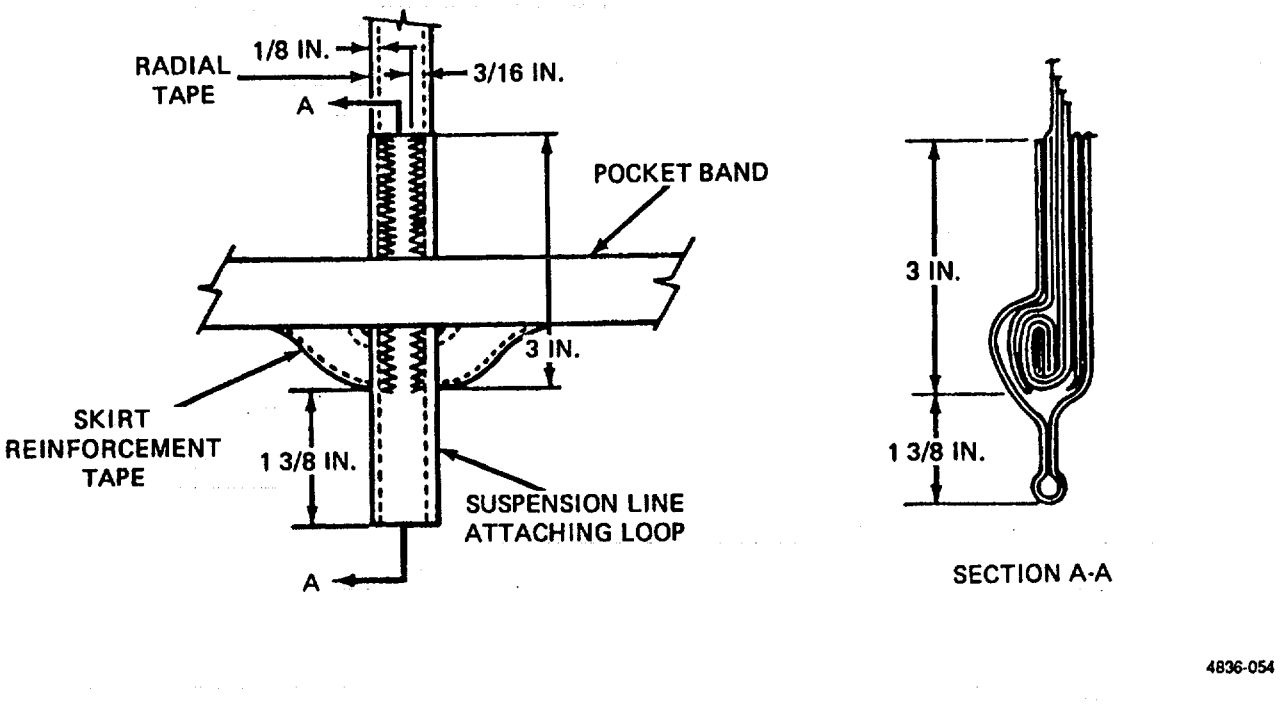


Figure 2-52. Suspension Line Attaching Loop Replacement Details.

2-30. Suspension Line.

This tasks covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Zig-Zag, Item 14, Appendix B
Splicing Aid, Item 21, Appendix B
Yardstick, Item 20, Appendix B

Materials/Parts:

Cord, Nylon, Coreless, Item 13, Appendix D
Thread, Nylon, Size E, Items 33/34, Appendix D

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Canopy laid flat on repair table

a. *Repair*

(1) *Restitching.* Stitch and restitching with thread, nylon, size E, that Is contrasting in color to the fabric being stitched or original thread 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 should be locked by at least two inches at each end of a stitch row when possible. Zig-zag restitching should extend at least 1/4 inch into undamaged stitching at each end, when possible. Restitch directly over the original stitching and follow the original stitch pattern as closely as possible.

(2) *Splicing* A suspension line may be spliced one time as follows:

NOTE

Splicing of the line on the 26-ft cargo parachute (high-velocity) is an exception to the splicing of coreless cord.

(a) Cut a length of coreless nylon cord long enough to extend 3 inches beyond each side of damaged area. Sear or wax each end of cord 1/2 inch in accordance with paragraph 2-18.

(b) Center cord length over damaged area. Using a zig-zag sewing machine and size E nylon thread, secure spice by stitching a 1/8-inch wide row of stitching full length of splice, extending stitching 1/2-inch beyond each end (figure 2-53). Stitching will be 7 to 11 stitches per inch (para 2-17).

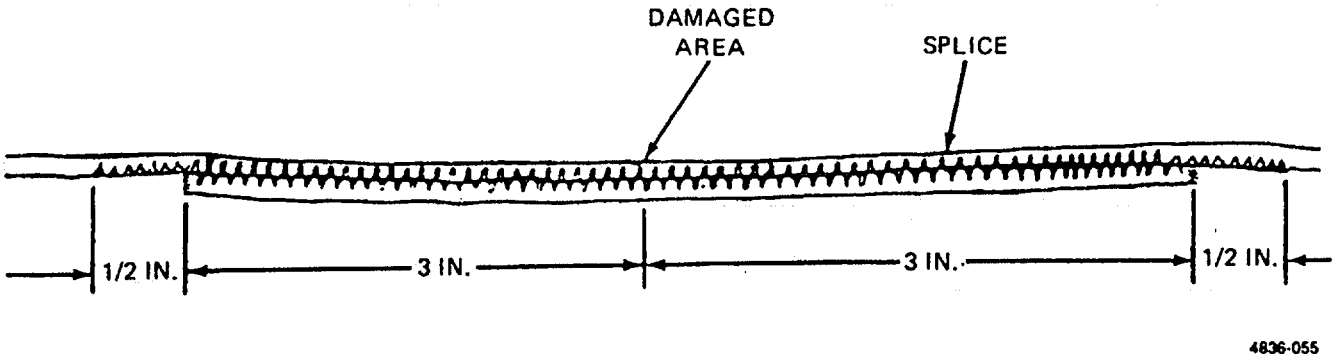


Figure 2-53. Suspension Line Splicing Details.

NOTE

Replacement of suspension lines is accomplished at the Intermediate (DS) Maintenance level only, in accordance with the Maintenance Allocation Chart (MAC), Appendix B.

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

(1) Place canopy assembly in proper layout on inspection table

(2) Apply partial tension to suspension lines and trace defective suspension line from the riser to suspension line attaching loop at canopy skirt. Upon completion of line tracing, release line tension.

(3) Remove original suspension line from canopy and applicable riser by cutting formed loop located on each end of suspension line.

(4) Cut a 27-foot length of coreless nylon cord and taper-cut each end.

(5) Using a suitable marking aid, mark the cord at points 4-1/2, 6-1/2, and 11 inches from one tapered end (figure 2-54).

(6) Pass 5 3/4 inches of marked cord through original suspension line attaching loop on canopy skirt.

(7) Insert a suitable splicing aid into the cord casing at 11-inch mark and work spicing aid up through cord casing and to outside at the 6 1/2-inch mark (figure 2-55).

(8) Insert cord tapered end into eye of the splicing aid.

(9) Pull spicing aid and cord tapered end down inside cord casing until 4 1/2- and 6 1/2-inch marks are alined (figure 2-55).

(10) Hold alined marks together, pull splicing aid and cord tapered end down and to outside at 11-inch mark.

2-30. Suspension Line (cont).

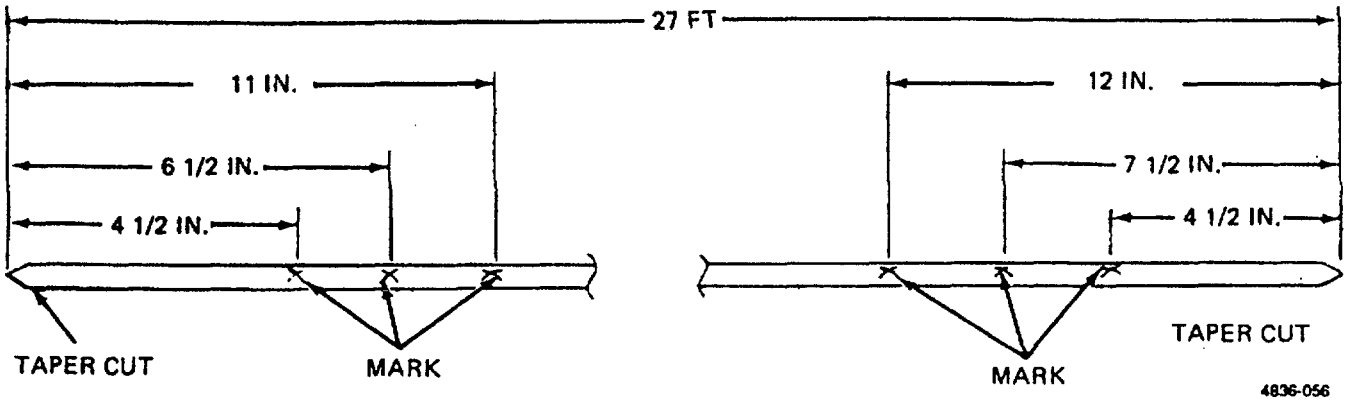


Figure 2-54. Replacement Suspension Line Construction Details.

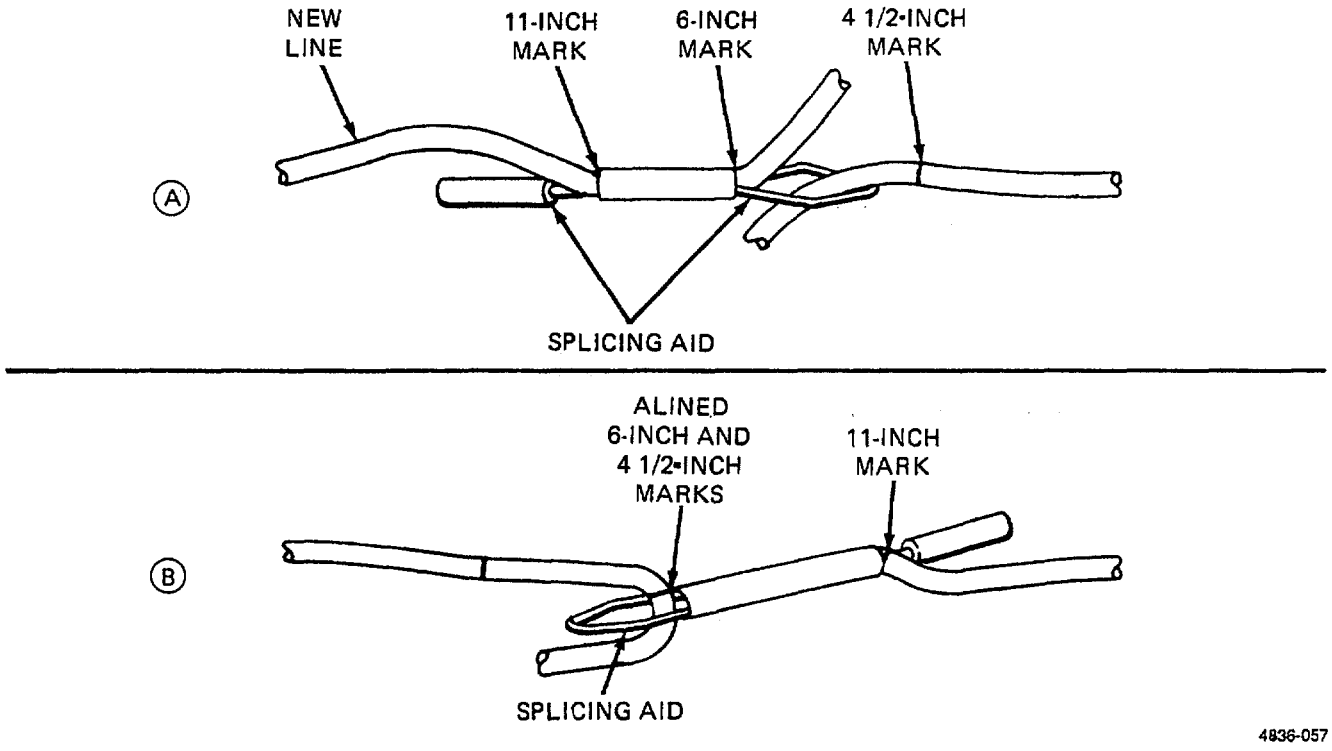


Figure 2-55. Inserting Splicing Aid into Cord Casing.

(11) Remove cord tapered end from splicing aid and while holding 4 1/2- and 6 1/2-inch marks together, pull cord at a point below 11-inch mark to allow cord tapered end to withdraw into cord casing.

(12) Beginning at a point 1/2 inch below alined 4 1/2- and 6 1/2-inch marks, secure formed loop by stitching a 1/8-inch wide, 2-inch long row of double-throw zig-zag stitching using size E nylon thread. Stitching will be 7 to 11 stitches per inch (figure 2-56).

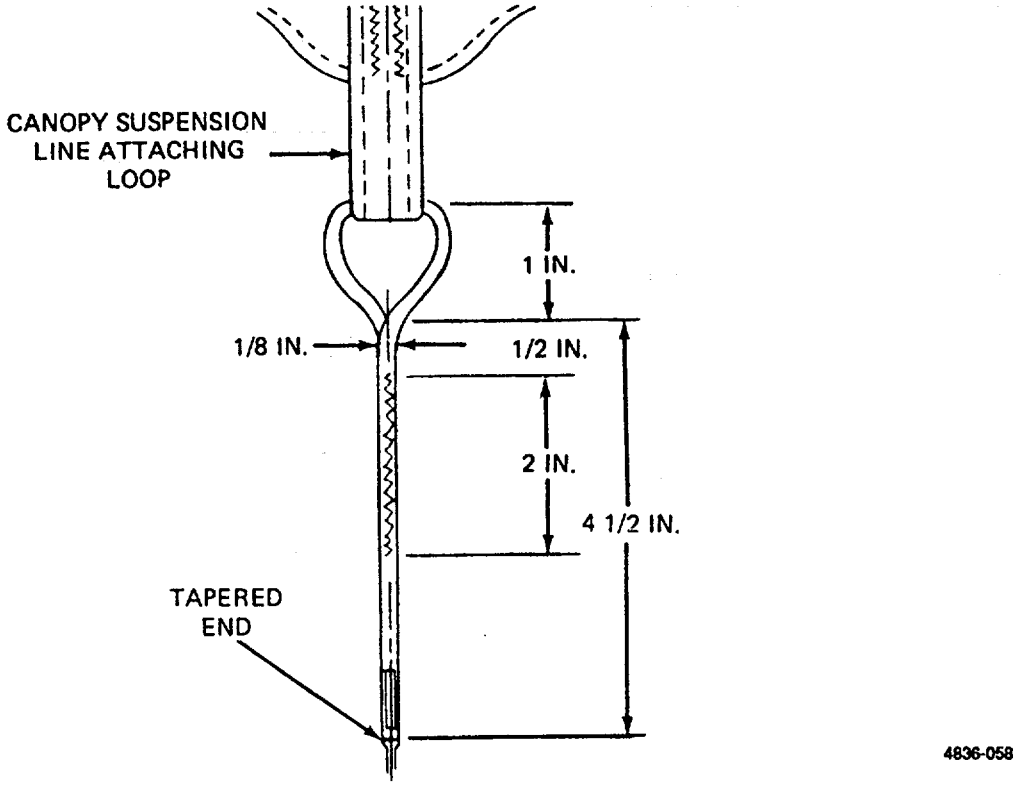


Figure 2-56. Securing Suspension Line at Suspension Line Attaching Loop.

(13) On the running end of the cord length, mark the cord at points 4 1/2, 7 1/2 and 12 inches from the tapered end (figure 2-54).

(14) Trace replacement suspension line from canopy skirt down to applicable riser suspension line attaching loop.

(15) Apply tension to replacement suspension line equal to that of an adjacent suspension line to ascertain that marks made on the replacement line are located correctly.

(16) Release tension on suspension line and attach line length to applicable riser suspension line attaching loop by passing 6 3/4 inches of marked cord through original suspension line attaching loop on riser. Suspension lines shall be attached to riser in numerical sequence (figure 2-57).

(17) Insert a suitable splicing aid to cord casing at the 12-inch mark and pass inserted aid down through the cord casing and to outside at the 7-1/2-inch mark, in a manner similar to that shown in figure 2-55 but in the opposite direction.

(18) Insert cord tapered end into eye of splicing aid.

(19) Pull spicing aid and cord tapered end up inside cord casing until the 4 1/2- and 7 1/2-inch marks are alined.

(20) Hold alined marks together and pull splicing aid and cord tapered end up and to outside at 12-inch mark.

2-30. Suspension Line (cont).

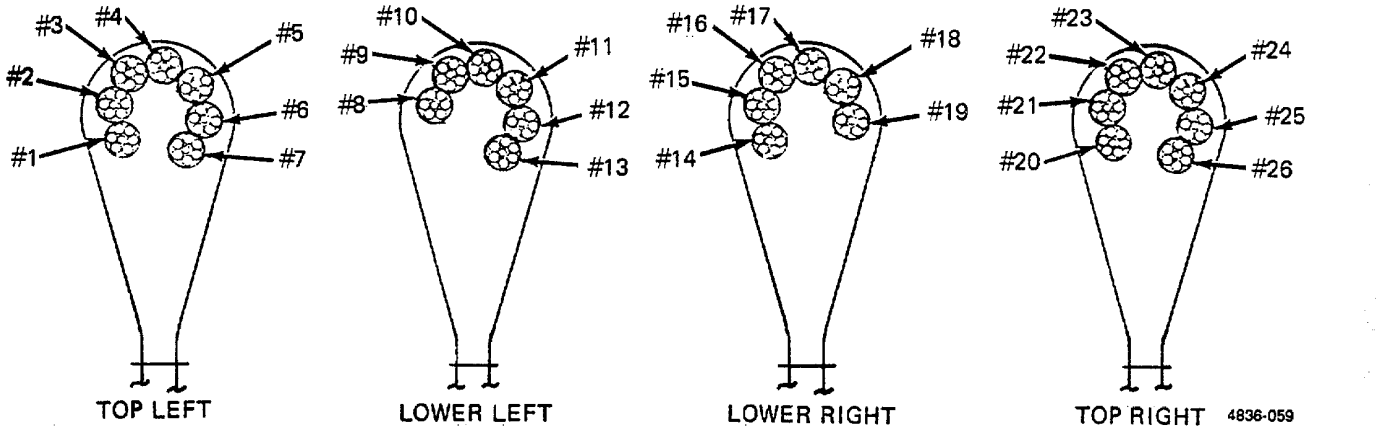


Figure 2-57. Suspension Line Numerical Sequence.

(21) Remove cord tapered end from splicing aid and while holding 4 1/2- and 7 1/2-inch marks together, pull cord at a point above the 12-inch mark to allow cord tapered end to withdraw into cord casing.

(22) Beginning at a point 1/2 inch above alined 4 1/2- and 7 1/2-inch marks, using a zig-zag sewing machine and size E nylon thread, secure formed loop by stitching a 1/8-inch wide, 2-inch long row of stitching. Stitching will be 7 to 11 stitches per inch (see figure 2-58).

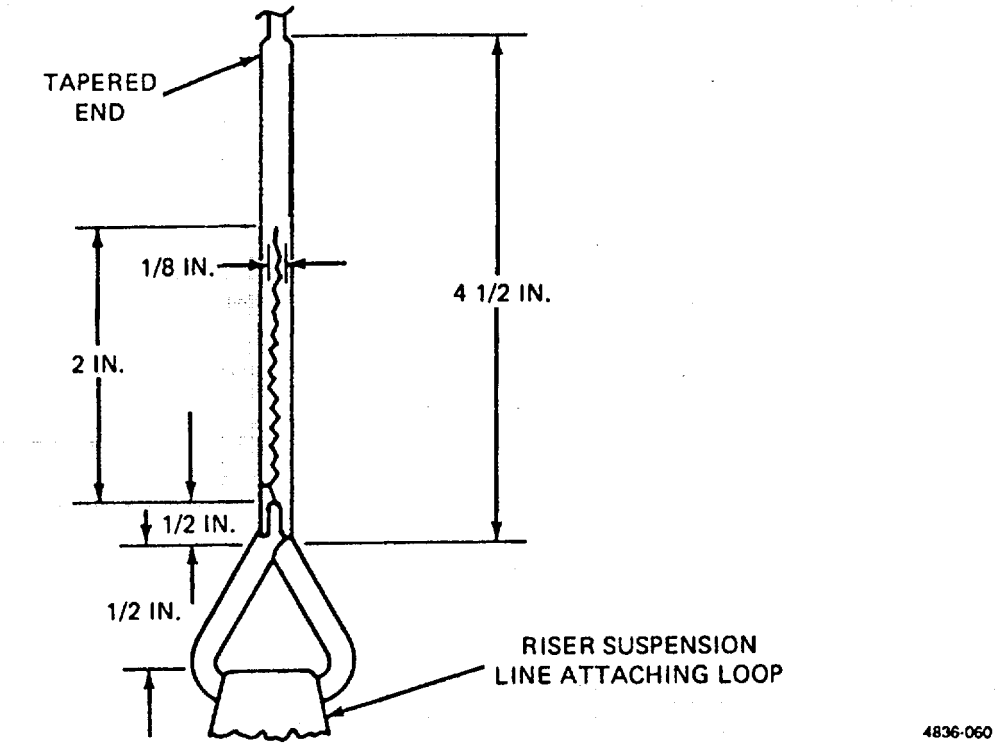


Figure 2-58. Securing Suspension Line at Riser Suspension Line Attaching Loop.

2-31. Riser.

This task covers: a. Repair b. Replacement

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Pot, Melting, Item 11, Appendix B
Sewing Machine, Heavy Duty, Item 15, Appendix B
Tacking Needle, Item 8, Appendix B
Yardstick, Item 20, Appendix B

Materials/Parts:

Beeswax, Item 2, Appendix D
Pencil, Marking Aid, Item 21/22, Appendix D
Tape, Pressure-Sensitive, 1-inch Wide, Item 29, Appendix D
Thread, Nylon, Size 3, Item 36/37, Appendix D
Webbing, Cotton, 1/4 inch Wide, Item 41, Appendix D

Materials/Parts (cont):

Webbing, Nylon, Type VIII, Item 44, Appendix D
Webbing, Cotton, Type VIII, Item 43, Appendix D
Wax, Paraffin, Item 40, Appendix D

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Unpacked, laid flat on repair table

a. *Repair.*

(1) *Stitching.* Stitch and restitch with size 3 nylon thread which matches the 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.

(*2) Retaping attachment loop.* Before retaping, insure remains of all original tape have been removed. Retape rolled portion of suspension line attaching loop using five spiral turns of 1-inch wide, type I pressure sensitive tape (figure 2-59).

(3) *Restencil.* As required, restencil identification marking using procedures in paragraph 2-19.

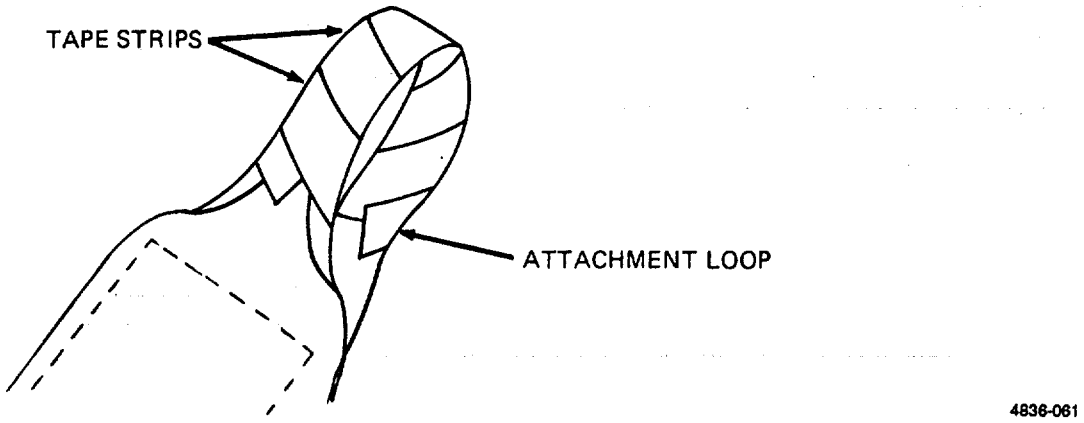


Figure 2-59. Retaping Attaching Loop.

(4) *Splicing.* Each of the two riser straps and the spreader may be spliced one time as follows:

NOTE

Splicing will be performed on a left riser when the damaged area extends into the parachute inspection data pocket (log record pocket). When this occurs, a log record pocket from stock will be installed in this location in accordance with procedures in paragraph 2-33.

*(*a) Cut a length of 1 23/32-inch wide Type VIII nylon webbing long enough to extend 4 inches beyond each side of damaged area and sear ends (para 2-18)

*(*b) Center webbing length over damaged area (figure 2-60). Using a heavy duty sewing machine and size 3 nylon thread, secure each end of splice by stitching a 3-inch long, three-point WW stitch formation, 1/8 inch in from each side edge of splice material. Overstitch each end of splice material by one stitch on each point of stitch formation. Stitching shall be 5 to 8 stitches per inch.

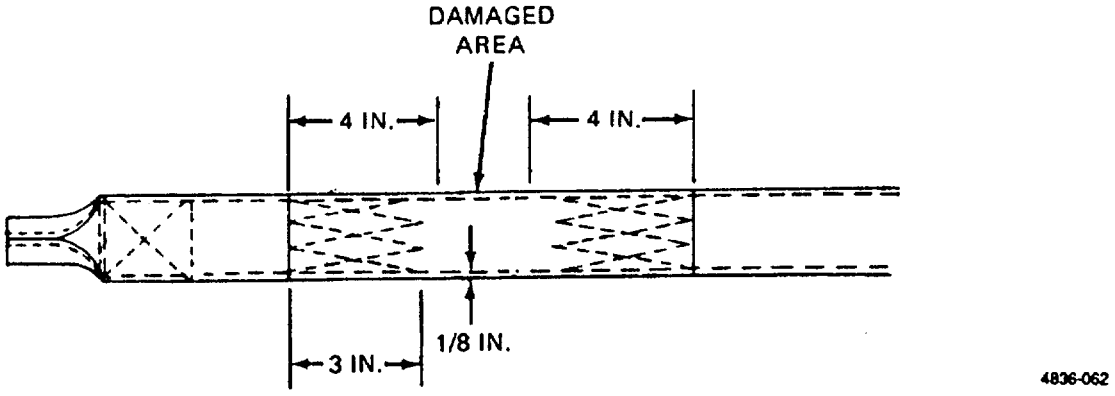


Figure 2-60. Riser Splicing Details.

2-31. Riser (cont).

b. *Replacement.* Replace an unserviceable individual riser strap, a spreader, or the entire riser assembly by fabricating as follows (refer to figure 2-61):

NOTE

Prior to disconnecting a riser strap from the suspension lines, temporarily secure the applicable suspension line groups to prevent disarrangement by passing a suitable length of 1/4 inch type I cotton webbing through the loops on the lower end of the suspension lines and tying the webbing ends together.

(1) *Left riser strap.*

(a) Disconnect the riser strap from the suspension lines by cutting the two suspension line attaching loops at the strap top Insure the suspension lines are not damaged during the cutting process. Also insure the two groups of suspension lines are separated

(b) Cut and remove the stitching which secures the spreader webbing around the riser strap and remove the strap from between the spreader webbing plies. Also, remove the parachute inspection data record (log record) from the record pocket on the riser strap and retain the record for further use, if serviceable.

(c) Cut a 71 1/2-inch length of 1 23/32-inch-wide, type VIII nylon webbing and sear the ends.

(d) Using a suitable marking aid, mark the webbing length at points 6 inches from one end and 5 1/2 inches from the opposite end.

(e) On each side of the 6- and 5 1/2-inch marks, roll 2 inches of the webbing edges in to the center of the webbing width (figure 2-61). Secure each rolled edge by stitching a 4-inch-long row of stitching 1/8 inch from edges. Also make a row of stitching laterally across the webbing width at each end of the rolled edges. Stitching will be 5 to 8 stitches per inch using size 3 nylon thread and a heavy-duty sewing machine.

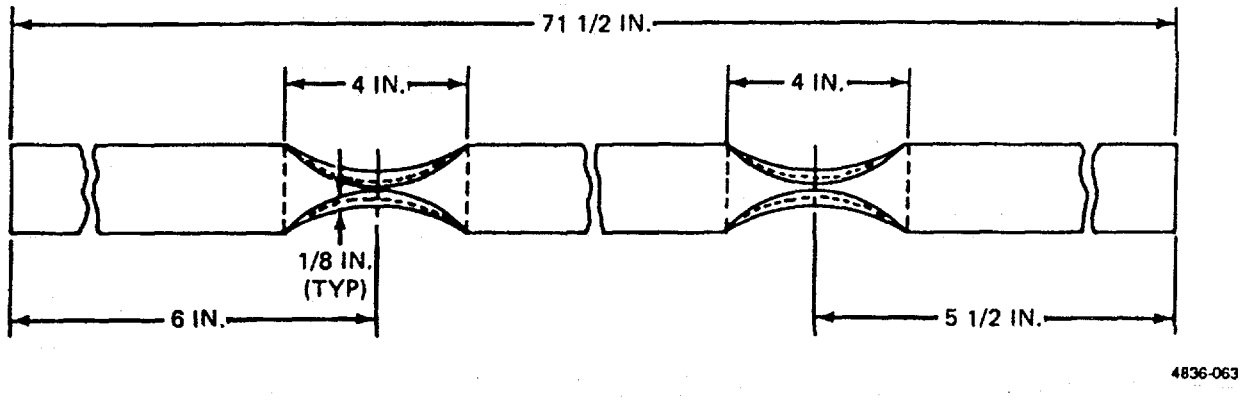


Figure 2-61. Riser Suspension Line Attaching Loops Construction Details.

(f) Tape each of the 4-inch-long rolled edge areas with five spiral turns of 1-inch-wide, type I pressure-sensitive tape (figure 2-59).

(g) Invert the webbing length with the rolled edges facing down. Using a suitable marking aid, mark the webbing at points 31 inches from each end.

(h) Cut a 9 1/2-inch length of 1 3/4-inch-wide, type VIII cotton webbing for use as a buffer and wax the ends.

(i) Place the webbing length between the two marks made in (g), above, and secure the webbing to the riser strap by stitching a 9 1/2-inch-long row of stitching, 1/8-inch In from each webbing side edge, using the details In figure 2-62. Stitching will be 5 to 8 stitches per inch using size 3 nylon thread and a heavy duty sewing machine.

(I) Form the riser strap suspension line attaching loops by passing each end of the riser strap through the end loops of the original suspension line groups according to original attachment details (figure 2-57) and center each of the strap taped rolled edges in the applicable end loops. Then fold the strap ends as shown in figure 2-62, allowing a 1/2-inch overlap on one end.

(k) Beginning at a point 2 inches below the tops of the formed strap suspension line attaching loops, secure the riser strap piles together by stitching with a heavy-duty sewing machine, using size 3 nylon thread, 5 to 8 stitches per inch, following the details In figure 2-62. Insure the parachute inspection data pocket (log record pocket) is formed between the strap piles by omitting 3 1/2 inches of stitching down along the strap outer edge, beginning at a point 11 inches above the lower end of the strap clevis attaching loop.

(l) Pass the strap running end down between the spreader webbing piles to a point 2 inches below the strap top. Secure the spreader webbing plies to the strap by stitching with a heavy-duty sewing machine, using size 3 nylon thread, 5 to 8 stitches per inch, following the details in figure 2-62. Remove the temporary tie made on the lower end loops of the suspension line group.

(m) Stencil the parachute inspection data pocket (log record pocket) identification markings on the riser straps according to original stenciling details, using the procedures in paragraph 2-19. Reinstall the parachute inspection data record (log record), if serviceable, in the strap record pocket in accordance with paragraph 2-4f.

2-31. Riser (cont).

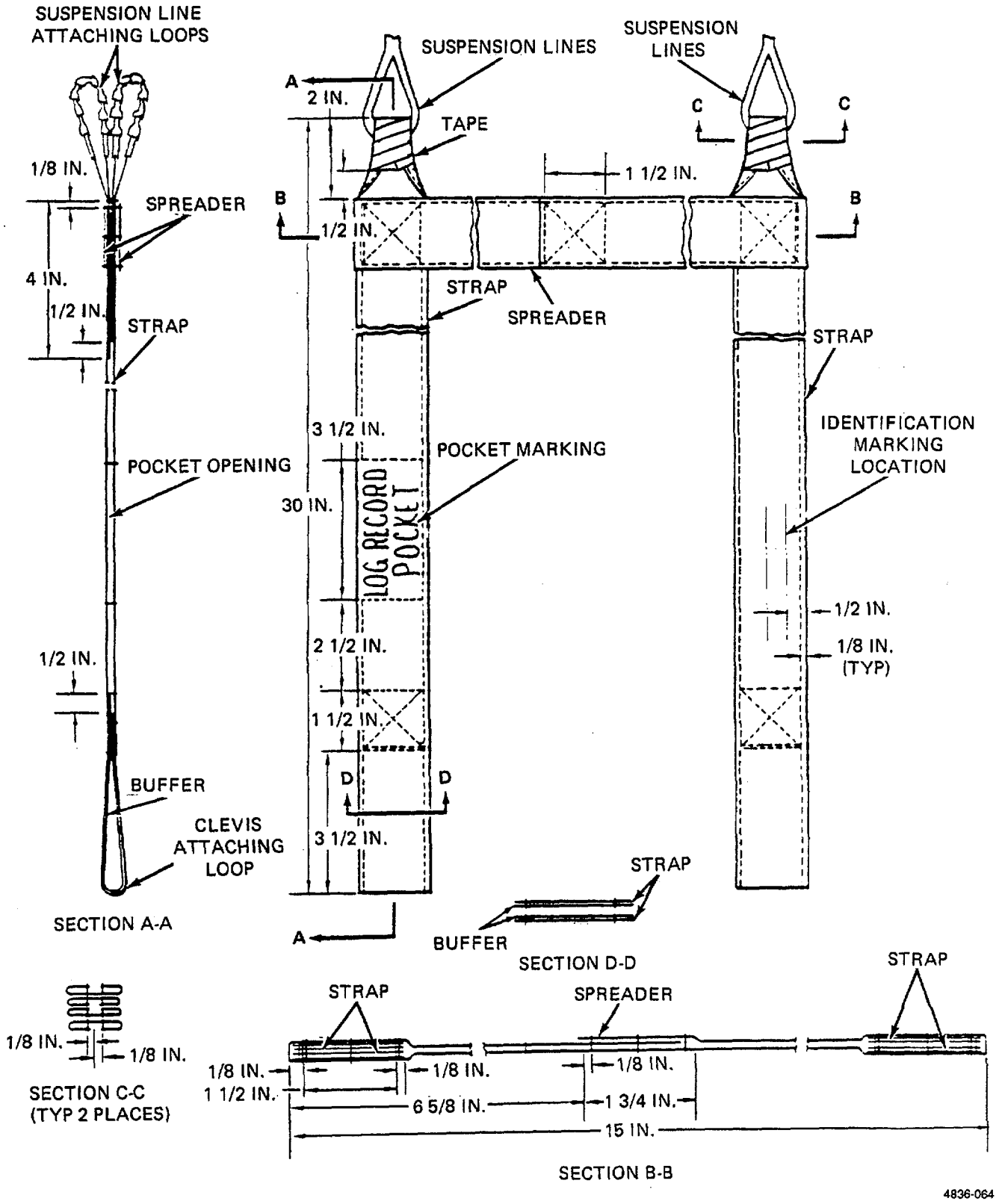


Figure 2-62. Riser Assembly Construction Details.

(2) Right riser strap. Replace a right riser strap using the procedures In paragraph (1), above. However, details for forming the parachute inspection data pocket (log record pocket) do not apply to the right riser strap in addition, only the riser identification markings will be stenciled on the right riser strap. The stenciling will be performed according to original stenciling details, using the procedures in paragraph 2-19.

(3) Spreader

(a) Cut and remove the stitching which secures the spreader webbing around each of the riser straps. Remove the spreader from the riser assembly by cutting the spreader webbing.

(b) Cut a 31-3/4-inch length of 1-23/32-inch-wide, type VIII nylon webbing and sear the ends.

(c) Fold the webbing length around each of the riser straps according to original construction details and make a 1 3/4-inch overlap of the webbing ends at the center between the two riser straps. Secure the spreader webbing plies together and also attach the webbing in the original location on each riser strap by stitching according to the details in figure 2-62. Using the same details, secure the overlapped spreader webbing ends by stitching a 1 1/2-inch-wide single X-box-stitch formation. Stitching will be made with a heavy-duty sewing machine, using size 3 nylon thread, 5 to 8 stitches per inch.

2-32. Deployment Bag.

This task covers: a. Repair b. Replace

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Detached from canopy and static line

a. Repair Refer to individual repair procedures in the following paragraphs

CAUTION

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

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

2-33. Deployment Bag Attaching Loop.

This task covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Pot, Melting, Item 11, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid out on work table

Materials Parts:

Beeswax, Item 2, Appendix D
Thread, Nylon, Size E, Items 33/34, Appendix D
Webbing, Cotton, Type II, 1-inch, Item 43, Appendix D
Wax, Item 40, Appendix D

a *Repair*

(1) Stitch and restitch with size E thread which matches the 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.

(2) Mark and restencil in accordance with paragraph 2-19.

b. *Replacement*. Replace a damaged attaching loop by fabricating as follows.

(1) Remove original attaching loop from bag inside by cutting and removing stitching securing loop.

(2) Cut a 16 inch length of 1-inch wide cotton webbing and wax ends (para 2-18).

(3) Fold webbing length according to original construction details and figure 2-63.

(4) Place folded webbing in original attaching loop location and secure webbing loop by stitching a 2-7/8 inch-long three-point-WW stitch formation according to details In figure 2-63. Stitching will be made with a light duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

2-33. Deployment Bag Attaching Loop (cont).

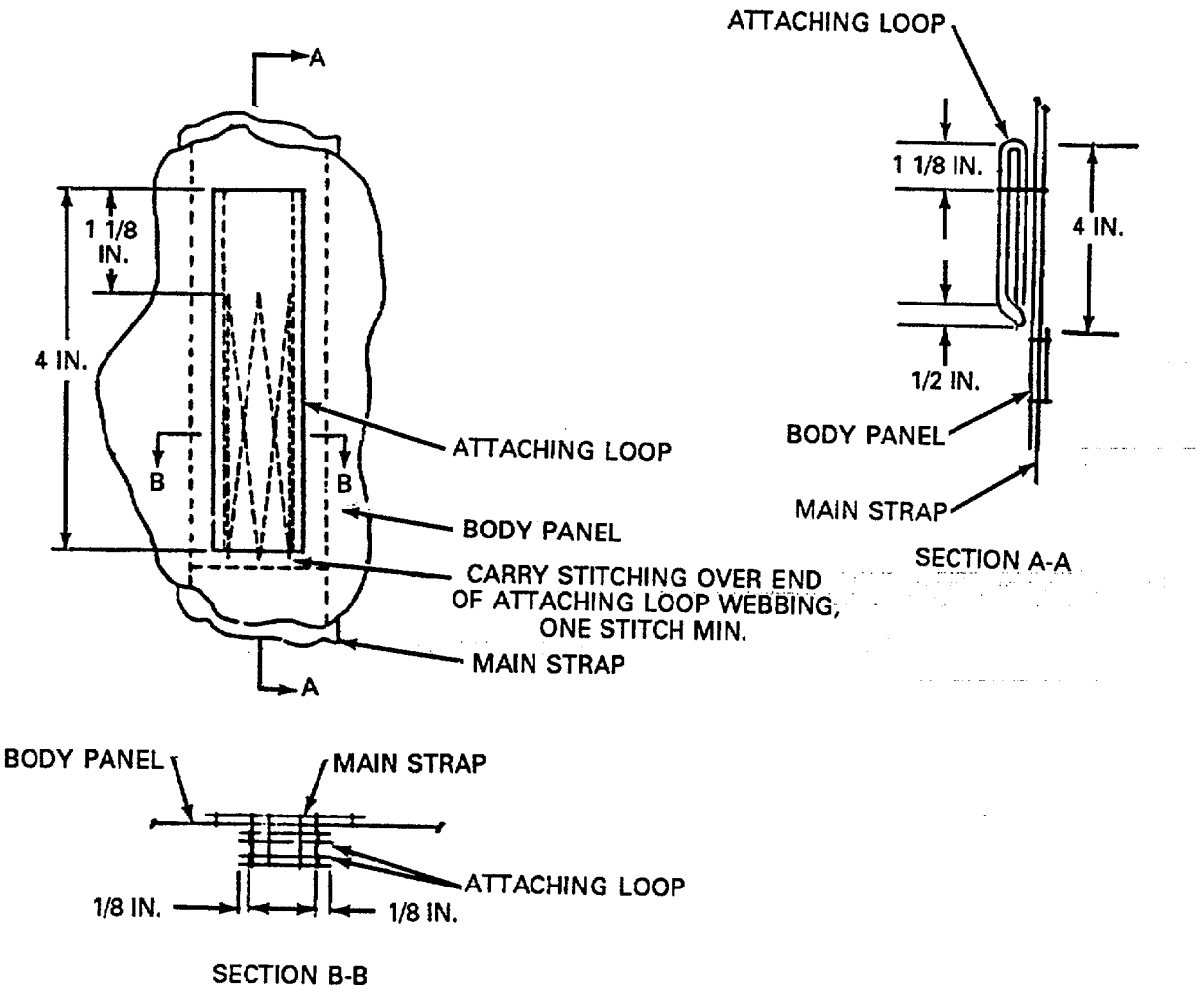


Figure 2-63. Attaching Loop Fabrication Details.

2-34. Deployment Bag Main Strap (Side and Center).

This task covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid out on work table

Materials/Parts:

Beeswax, Item 2, Appendix D
Pencil, Marking Aid, Item 21/22, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D
Webbing, Cotton, Type VIII, 1-3/4 inch Wide, Item 43, Appendix D
Wax, Paraffin, Item 40, Appendix D

a. *Repair.* Repair a side or center main strap as follows:

(1) *Stitching.* Stitch and restitch with size E nylon thread which matches the 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 (reference paragraph 2-17).

(2) *Splicing.* A deployment bag side or center main strap may be spliced an unlimited number of times as follows.

(a) As applicable, according to location of damaged area, cut and remove original stitching which secures tie loop on bag outside, attaching loop on bag inside, or 1 inch of stitching on each side of the center main strap which secures suspension line protector flap.

(b) Cut a length of 1 3/4-inch wide, type VIII cotton webbing long enough to extend 4 inches beyond each side of damaged area Wax ends in accordance with paragraph 2-18.

(c) Center webbing length over damaged area (figure 2-64) and secure each end of splice webbing by stitching a 2-inch long, single-X box-stitch formation with one double end Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(d) As applicable, reinstall items removed in (a), above, by restitching according to original construction details and paragraph 2-17.

2-34. Deployment Bag Main Strap (Side and Center) (cont).

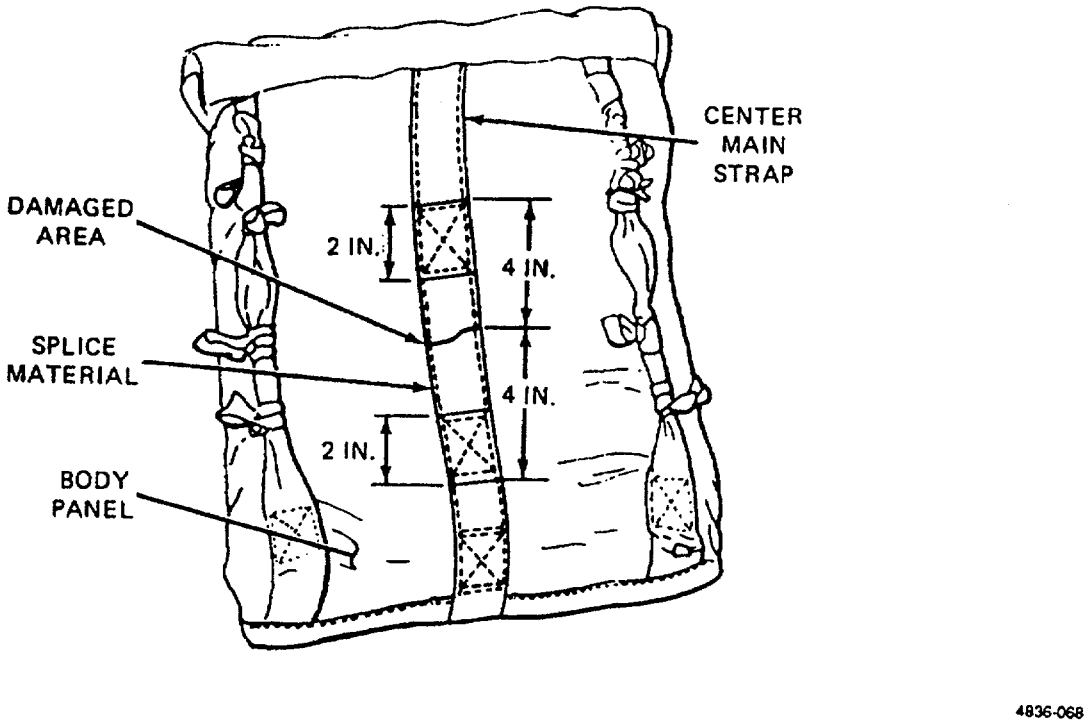


Figure 2-64. Main Strap Splicing Details.

c *Replacement.* Replace a side or center main strap that Is damaged beyond repair by fabricating as follows

(1) *Center main strap.*

(a) Remove the attaching loop from the bag inside by cutting the stitching which secures the attaching loop to the center main strap.

(b) Remove the suspension line protector flap by cutting the stitching which secures the flap to the bag body.

(c) Cut the stitching which secures the bag upper end reinforcement over the center main strap at two points for a distance of 3 inches on each side of the strap.

(d) Remove the original center main strap by cutting the stitching which secures the strap to the bag main panel.

(e) Cut a 53-inch length of 1 3/4-inch-wide, type VIII cotton webbing and wax the ends.

(f) Using a suitable marking aid, mark the webbing length at the center. On each side of the center mark, roll 2 1/4 inches of the webbing edges to the center of the webbing width (figure 2-65). Secure the rolled edges by making three rows of stitching laterally across the center of the rolled webbing. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch

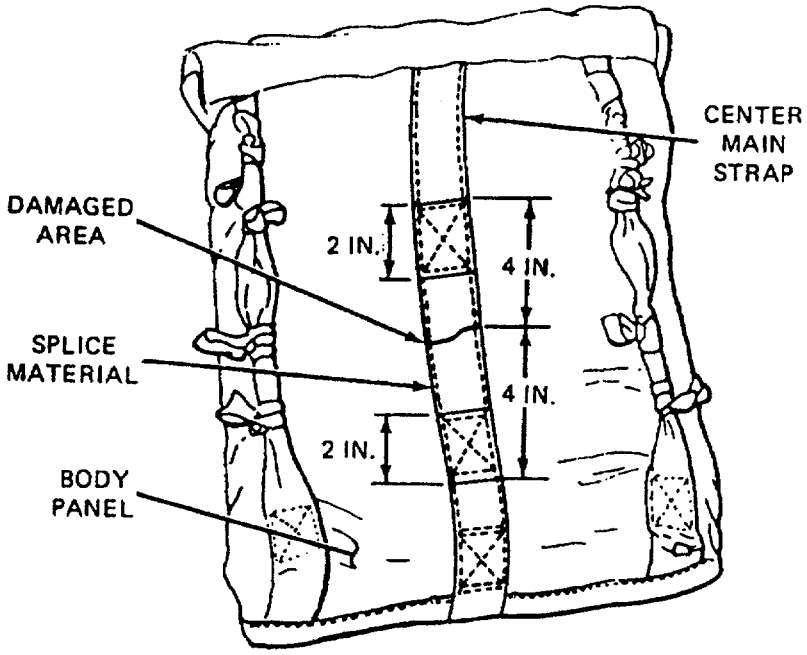


Figure 2-65. Center Main Strap Construction Details.

(g) Position the webbing strap in the original center main strap location, with the rolled edges at the bag upper end, and make a 3 1/4 inch-long turnunder on each webbing end. Secure the strap to the bag body by stitching according to original construction details and the details in figure 2-66. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch. When positioning a replacement center main strap insure the strap rolled edges are located under the side main strap rolled edges at the bag upper end.

(h) Reposition the loose sides of the bag upper end reinforcement removed In (c), above, and restitch according to original construction details with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(l) Position the suspension line protector flap removed in (b), above, in the original location and secure the flap by stitching according to original construction details. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(j) Position the attaching loop removed In (a), above, In the original location on the bag inside and secure the loop by stitching according to original construction details. Stitching will be made with a light-duty sewing machine, using size E nylon thread, 7 to 11 stitches per inch.

2-34. Deployment Bag Main Strap (Side and Center) (cont).

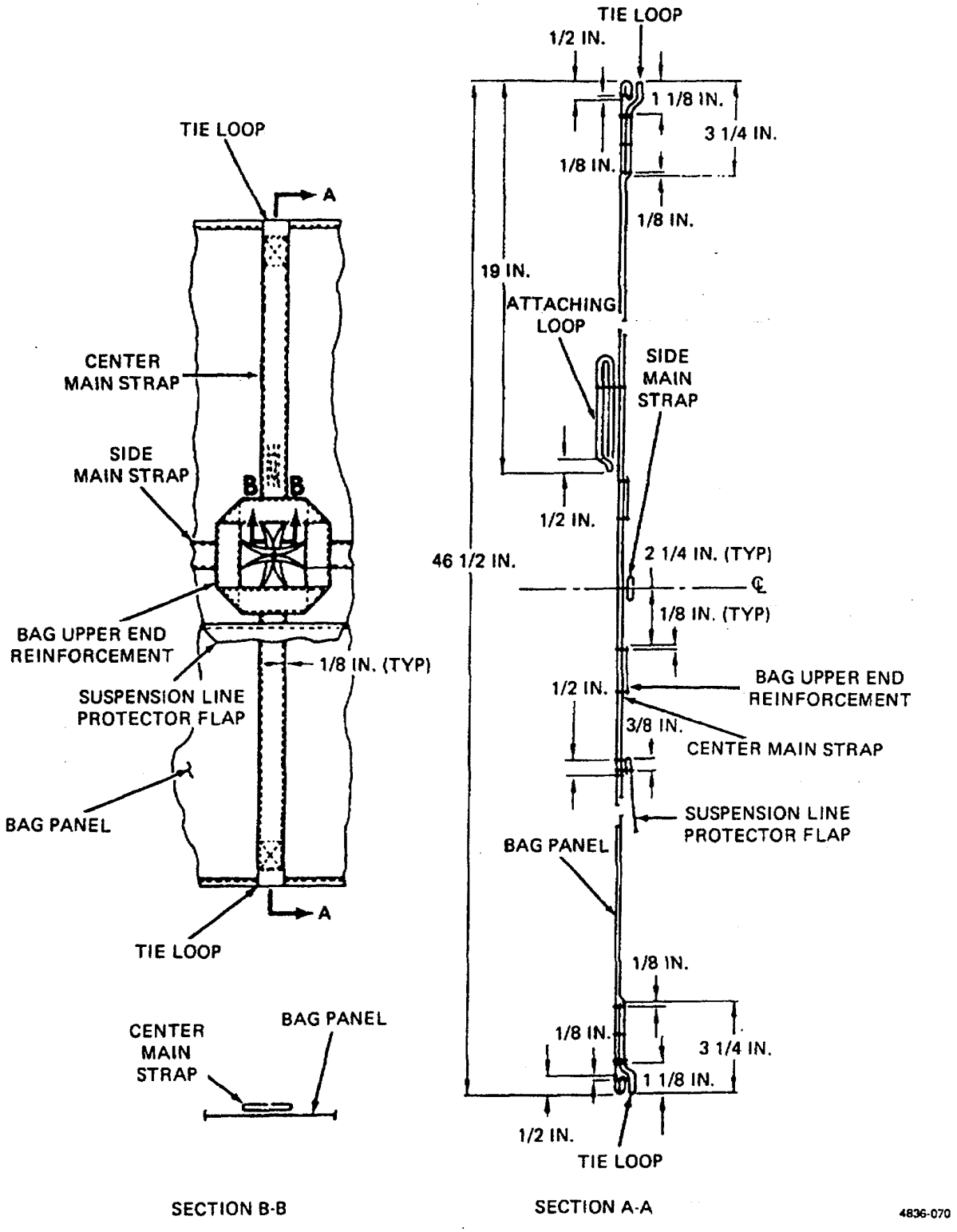


Figure 2-66. Center Main Strap Installation Details.

(2) Side main strap.

(a) Remove each of the static line retaining straps and tie loops from the bag side main strap by cutting the stitching securing each loop.

(b) Cut the stitching which secures the bag upper end reinforcement over the side main strap at two points for a distance of 3 inches on each side of the strap.

(c) Cut a suitable amount of stitching which secures the folded lower edge of each side gusset panel over each of the side main strap ends.

(d) Remove the original side main strap by cutting the stitching which secures the strap to the bag main panel and side gusset panels.

(e) Cut a 72-inch length of 1 3/4-inch-wide, type VIII cotton webbing and wax the ends.

(f) Using a suitable marking aid, mark the webbing length at the center. On each side of the center mark, roll 2 1/4 inches of the webbing edges to the center of the webbing width. Secure the rolled edges by making three rows of stitching laterally across the center of the rolled webbing according to original construction details. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(g) Position the webbing strap In the original side main strap location with the rolled edges located at the bag upper end, on top of the center main strap rolled edges Secure the strap to the side gusset panels and the bag main panel by stitching according to original construction details and the details in figure 2-67. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(h) Retold the lower edge of each side gusset panel and restitch according to original construction details with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(i) Reposition the loose sides of the bag upper end reinforcement removed in (c), above, in the original location and restitch according to original construction details with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(j) Position each of the static line retaining straps and tie loops removed in (a), above, in the original location and secure each item by stitching according to original construction details. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

2-34. Deployment Bag Main Strap (Side and Center) (cont).

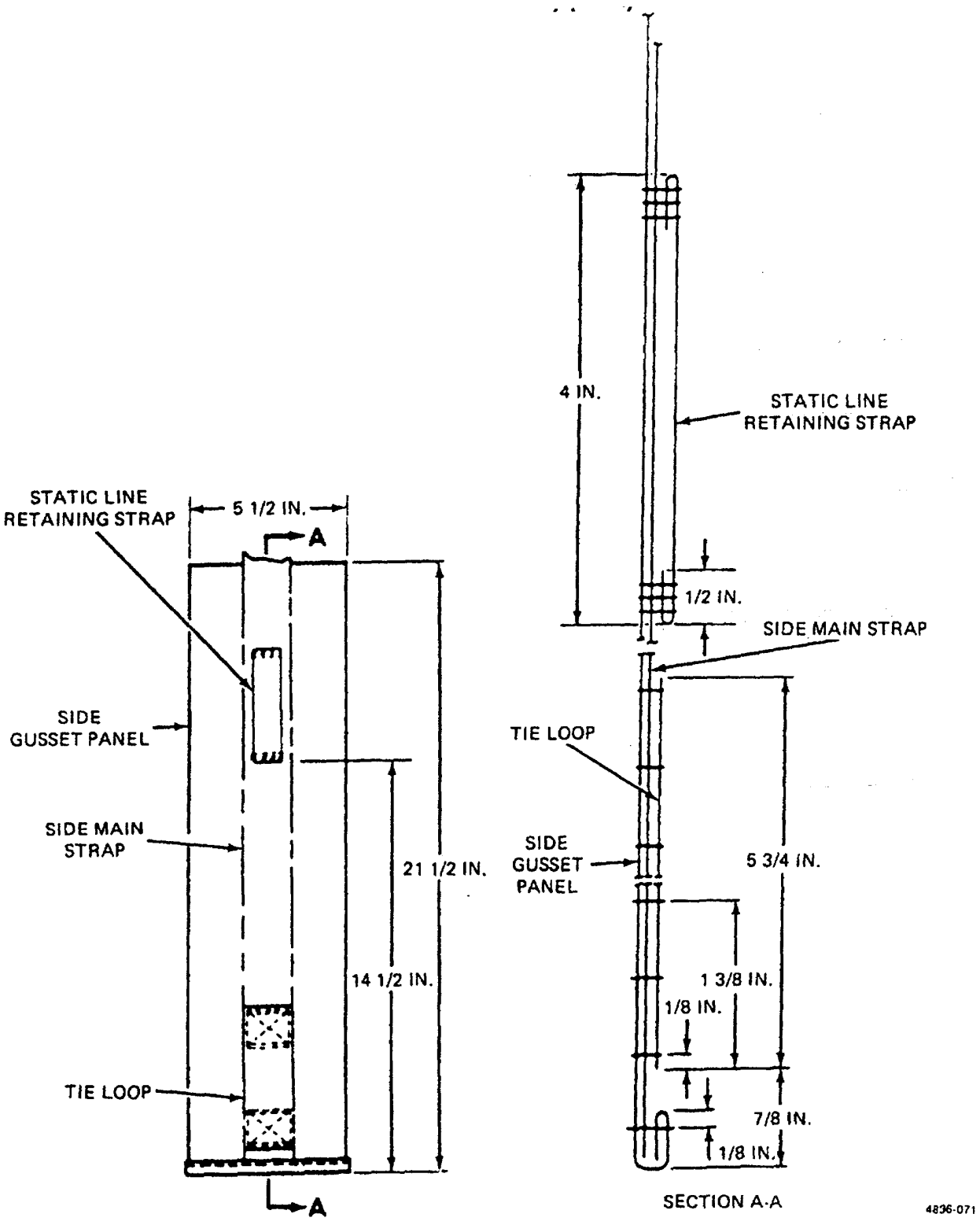


Figure 2-67. Side Main Strap Replacement Details.

2-35. Deployment Bag Static Line Retaining Strap.

This task covers: a. Repair b. Replace

Tools:

Pot, Melting, Item 11, Appendix B
Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid out on work table

Materials /Parts:

Thread, Nylon, Size E, Item 33/34, Appendix D
Beeswax, Item 2, Appendix D
Wax, Paraffin, Item 40, Appendix D
Webbing, Cotton, Type II, 1-inch, Item 42, Appendix D

a Repair. Stitch and restitch broken or loose stitching with size E nylon thread which matches the 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.

b Replacement. Replace a damaged static line retaining strap located on the side main strap by fabricating as follows:

(1) Remove the original retaining strap by cutting the stitching which secures the strap to the side main strap.

(2) Cut a 5-inch length of 1 -inch-wide, type II cotton webbing and wax the ends.

(3) Make a 1/4-inch-long turnunder on each end of the webbing length and position the webbing in the original retaining strap location with the turnunders facing down. Secure the replacement strap by making three rows of stitching across each strap according to original construction details and the details in figure 2-69. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

2-36. Deployment Bag Suspension Line Retaining Strap.

This task covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Pot, Melting, Item 11, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Deployment bag laid out on work table

Materials/Parts:

Beeswax, Item 2, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D
Webbing, Cotton. Type II, 1-inch, Item 42, Appendix D
Wax, Paraffin, Item 40, Appendix D

a. *Repair* Stitch and restitch broken or loose stitching with size E nylon thread which matches the 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.

b. *Replacement.* Replace a damaged suspension line retaining strap by fabricating as follows:

(1) Cut 3 inches of stitching on each end of the suspension line protector flap upper edge and fold the loose sides of the flap in toward the bag center.

(2) Remove the original suspension line retaining strap by cutting the strap webbing flush with each side of the original single-X-box-stitch formations Insure the tie loop formed on the lower end of the strap is also removed by cutting the loop material flush with the adjacent X-box-stitch formation.

(3) Cut a 20 3/4-inch length of 1-inch-wide, type II cotton webbing and wax the ends.

(4) Make a 2 1/4-inch-long foldunder on one end of the webbing length to form a tie loop, and position the webbing in the original strap location with the foldunder facing down and alined with the lower end of the bag panel. Using the remaining original stitch formations as reinforcements, secure the replacement strap by stitching according to original construction details and the details in figure 2-68. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(5) Position the sides of the suspension line protector flap in the original location and restitch the flap upper end according to original location and restitch the flap upper end according to original construction details with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

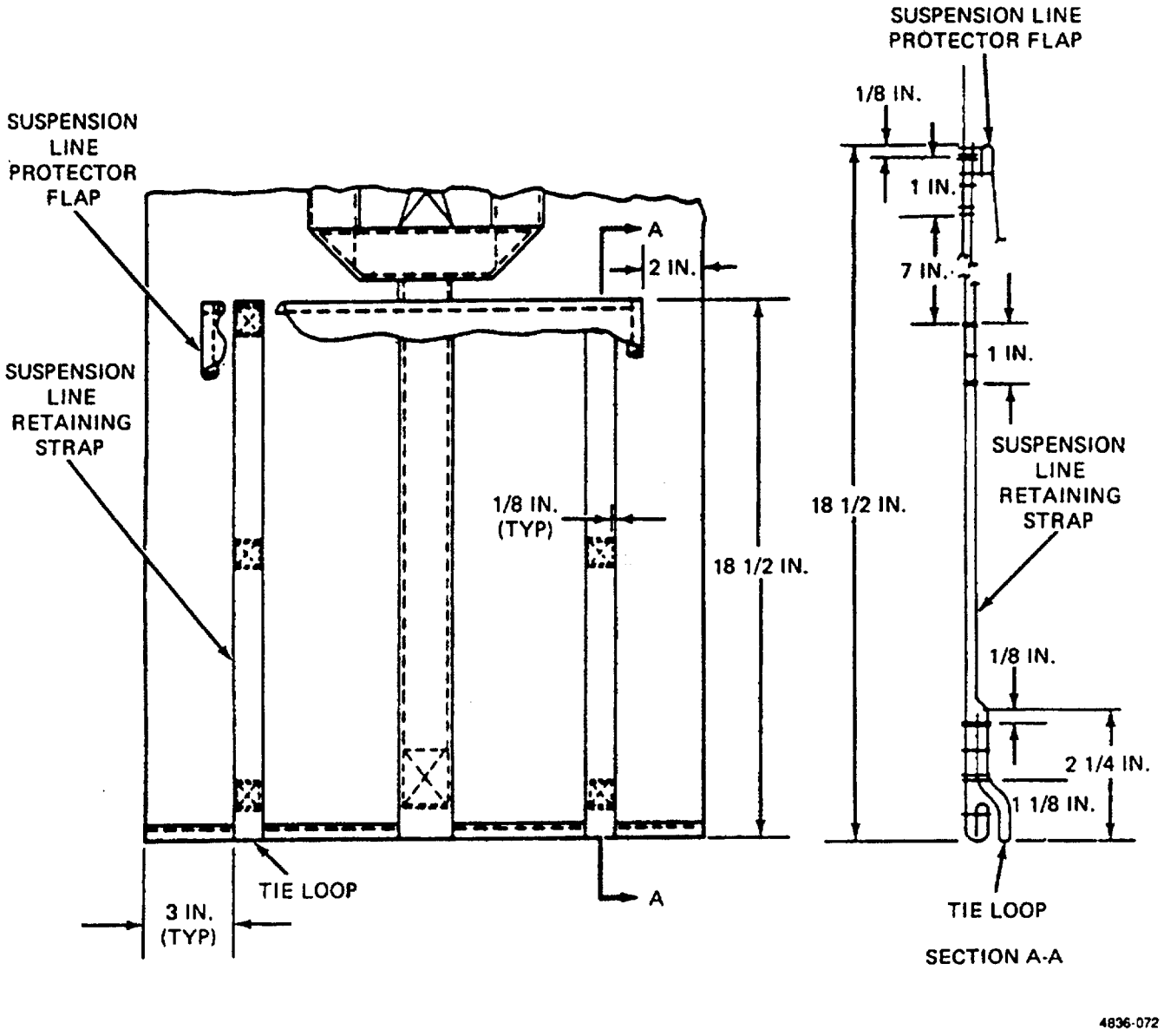


Figure 2-68. Suspension Line Retaining Strap Replacement Details.

2-37. Deployment Bag Tie Loops.

This task covers: a. Repair b. Replace

Tools

Knife, Item 5, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid out on work table

Materials/Parts

Thread, Nylon, Size E, Item 33/34, Appendix D
Webbing, Cotton, Type II, 1-inch, Item 42, Appendix D
Webbing, Cotton, Type VIII, Item 43, Appendix D

a Repair. Stitch and restitch broken or loose stitching according to original construction details with thread which matches the 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, in accordance with paragraph 2-17b.

b. Replacement.

(1) *Protector flap tie loop* Replace a damaged protector flap tie loop by fabricating as follows

(a) Remove the original tie loop by cutting the stitching which secures the loop to the suspension line protector flap

(b) Cut a 6 1/2-inch length of 1-inch-wide, type II cotton webbing and fold the webbing length according to the details in figure 2-69 to form a 3 1/4-inch-long tie loop.

(c) Position the formed tie loop in the original tie loop location and secure the loop by stitching according to original construction details and the details in figure 2-69. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

(2) *Side main strap tie loop.* Replace a damaged side main strap tie loop by fabricating as follows:

(a) Remove the original tie loop by cutting the stitching which secures the loop to the side main strap and the side gusset panel.

(b) Cut a 5 3/4-inch length of 1 3/4-inch-wide, type VIII cotton webbing and wax the ends.

(c) Position the webbing length in the original loop location and secure the webbing by stitching according to original construction details and the details in figure 2-67. Stitching will be made with a light-duty sewing machine using size E nylon thread, 7 to 11 stitches per inch.

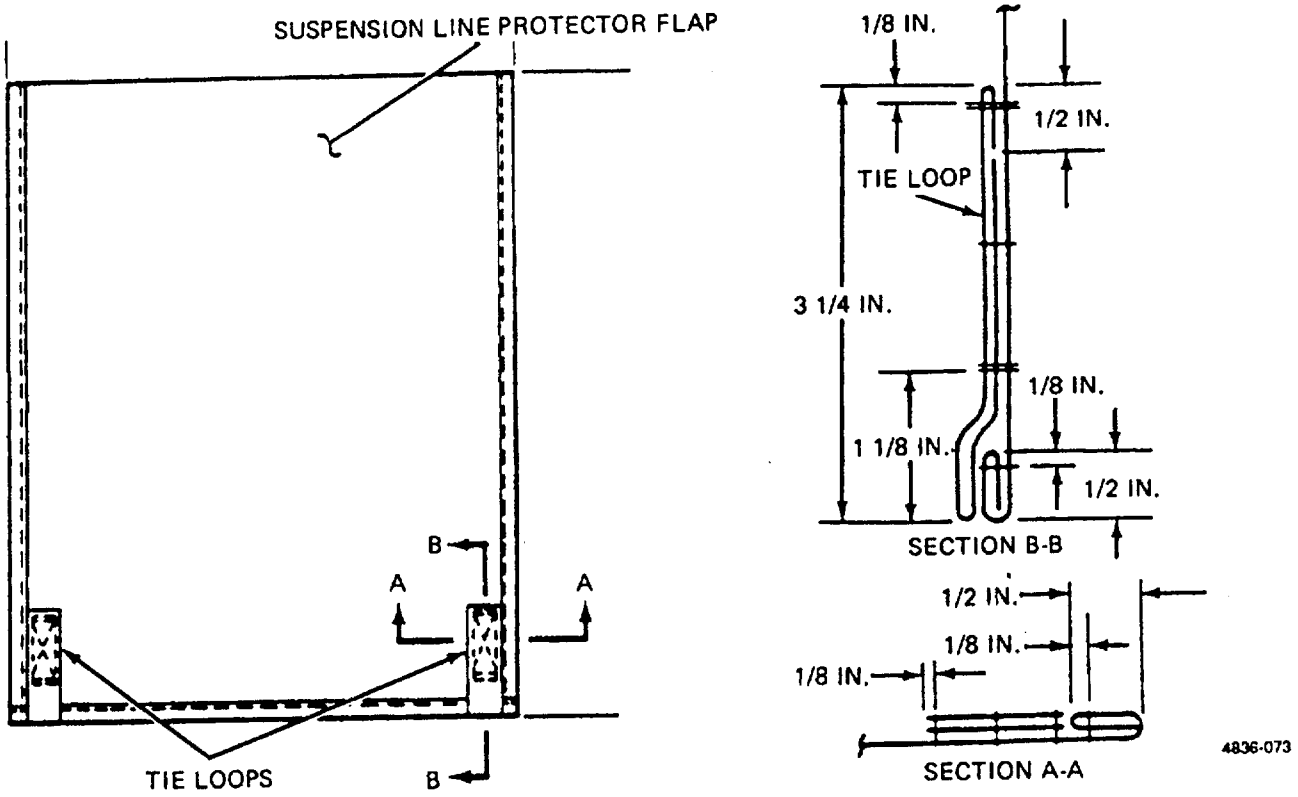


Figure 2-69. Protector Flap Tie Loop Replacement Details

2-38. Deployment Bag Panels and Flaps.

This task covers: Repair

Tools:

Shears, Item 12, Appendix B
Knife, Item 5, Appendix B
Sewing Machine, Darning, Item 17, Appendix B
Sewing Machine, Light Duty, Item 13, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition

inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid out on work table

Materials/Parts

Cloth, Cotton, Duck, 12.29 Oz, Item 7, Appendix D
Thread, Nylon, Size E, Item 33/34, Appendix D
Pencil, Marking Aid, Item 21/22, Appendix D

Repair:

(1) *Stitching.* Stitch and restitch broken or loose stitching with thread which matches the color of the original stitching, when possible. Use a light-duty sewing machine and size E nylon thread, 7 to 11 stitches per inch 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, in accordance with paragraph 2-17b.

(2*) Darning.* Darn a hole or tear which does not exceed 3/4 inch in length or diameter according to procedures in paragraph 2-17c, using a darning sewing machine with size E nylon thread, 7 to 11 stitches per inch. 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 12.29 ounce cotton duck cloth, a light-duty sewing machine and size E nylon thread, 7 to 11 stitches per inch 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 Proceed as follows

NOTE

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

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

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

(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 paragraph 2-17a.

(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 insure 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 paragraph 2-17.

(h) Remove pushpins securing the item to repair table and secure the patch by stitching, using applicable details in figure 2-70 and stitching with a light-duty sewing machine, size E nylon thread, 7 to 11 stitches per inch. Make first row of stitching completely around patch. Turn deployment bag inside out and make a second row of stitching around prepared hole. Stitching will be performed in accordance with paragraph 2-17b.

(*4) Restenciling.* As required, restencil Identification markings on the suspension line protector flap using procedures in paragraph 2-19.

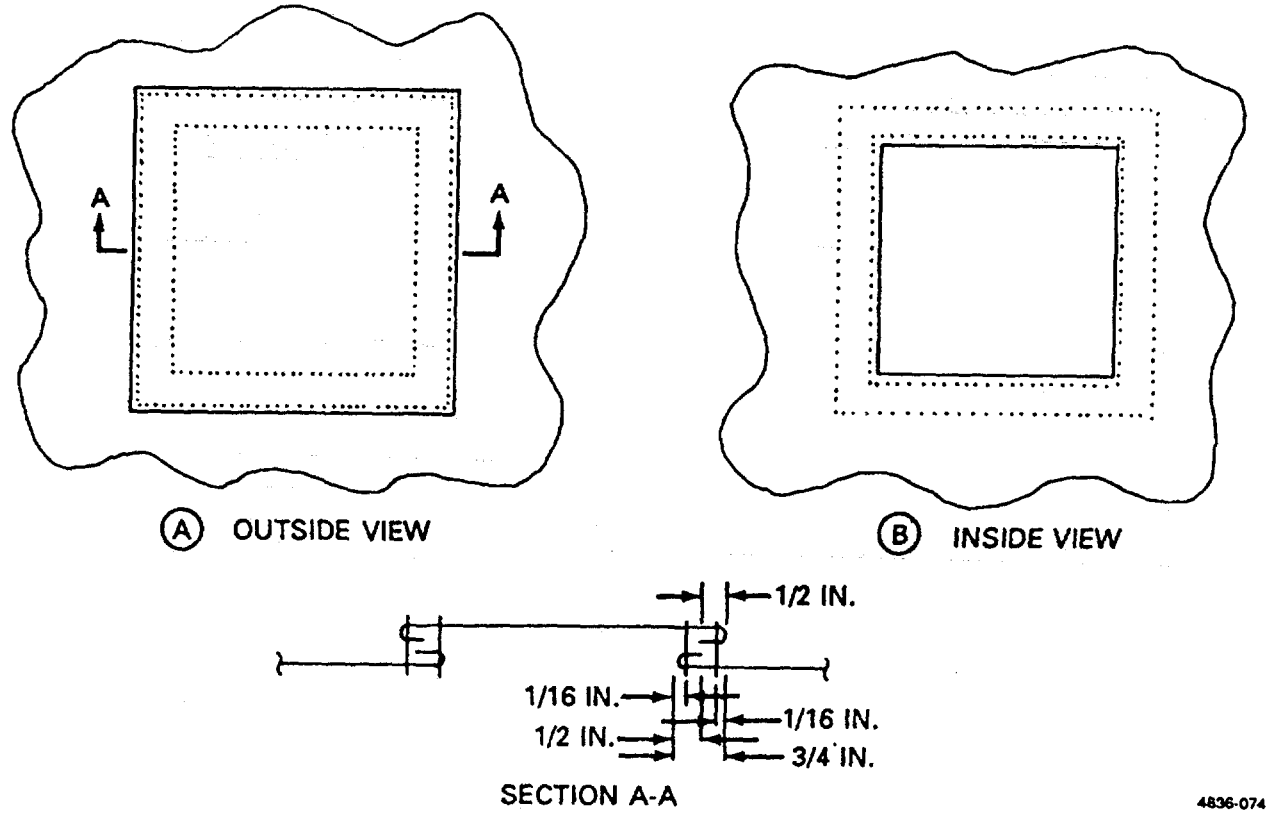


Figure 2-70. Patching Deployment Bag Panels and Flaps.

2-39. Static Line.

This task covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Sewing Machine, Zig-Zag, Item 14, Appendix B
Yardstick, Item 20, Appendix B

Equipment Condition:

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)
Laid out on work table

Materials Parts:

Pencil, Marking Aid, Item 21/22, Appendix D
Tape, Pressure Sensitive, Item 29, Appendix D
Thread, Nylon, Size FF, Item 35, Appendix D
Webbing, Nylon, Tubular, 3/4-inch, Item 45, Appendix D

a. Repair

(1) *Stitching.* Stitch and restitch broken or loose stitching using zig-zag sewing machine with size FF nylon thread which matches the color of the original stitching, when possible. 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.

(2) *Marking and Restenciling.* As required, restencil identification marks using the procedures in paragraph 2-19.

(3) *Retaping.* As required, retape static line clevis attaching loop located on one end of static line length as follows:

(a) Remove the remains of the original tape from the static line clevis attaching loop.

(b) Using a 2 1/2-inch length of 1-inch wide, pressure-sensitive tape, serve static line clevis attaching loop with one and a half turns (figure 2-71).

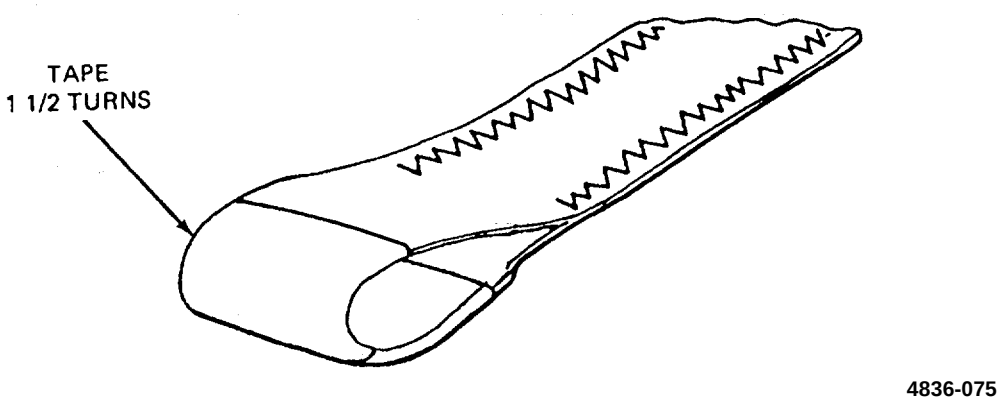


Figure 2-71. Retaping Static Line Clevis Attaching Loop.

b. *Replacement.* Replace an unserviceable static line by fabricating as follows:

(1) Remove static line clevis from clevis attaching loop and further remove static line length from attaching loop on deployment bag. Retain static line clevis for further use, if serviceable.

(2) Cut a 192 1/2-inch length of 3/4-inch wide tubular nylon webbing and sear ends.

(3) Place a mark 14 inches from end and make a 7-inch long foldback on one end of the webbing length (figure 2-72). Beginning at seared edge, secure foldback by stitching two 3/16-inch wide by 4-inch long rows of double-throw zigzag stitching using size FF nylon thread, 7 to 11 stitches per inch.

(4) On opposite end of webbing length, mark 11 inches from end and make a 5 1/2-inch long foldback. Secure foldback using procedure in (3), above

(5) Using a 2 1/2-inch length of 1-inch wide, type I pressure-sensitive tape, serve the 1 1/2-inch long loop with one and a halt turns (see figure 2-71).

(6) Cut a 7 1/2-inch length of 3/4-inch wide tubular nylon webbing and sear ends.

(7) Place a mark 10 inches from the 3-inch loop end, opposite side of fold back.

(8) Fold webbing on 4-inch mark, position seared end at 10-inch mark and secure by stitching two 3/16 inch wide by 2 1/2-inch long rows of double-throw zig-zag stitching, using size FF nylon thread, 7-11 stitches per inch.

(9) Stencil part numbers 11-1-219 on static line webbing using procedures in paragraph 2-19.

(10) If required, reattach the static line to static line attaching loop on deployment bag as outlined in paragraph 2-8.

(11) Install a serviceable riser clevis on 1 1/2-inch long clevis attaching loop according to original riser clevis installation details.

2-39. Static Line (cont).

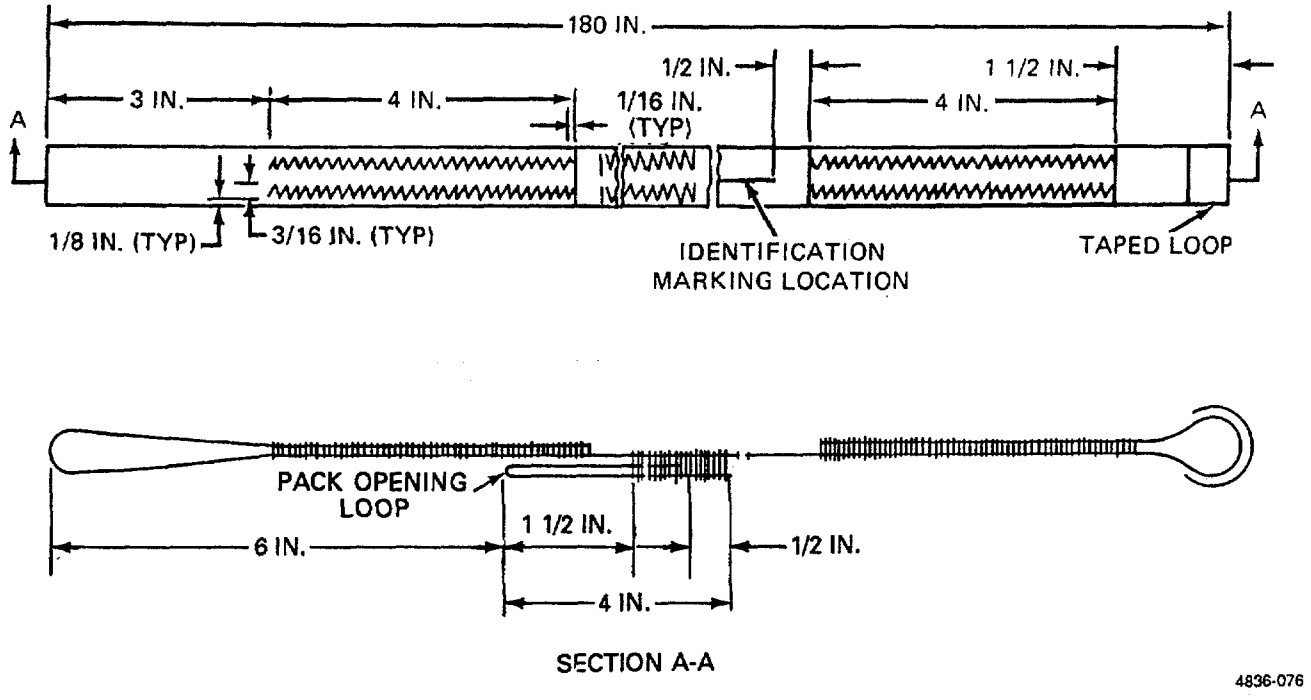


Figure 2-72. Static Line Construction Details.

2-40. Static Line Clevis.

This task covers: a. Repair b. Replace

Tools:

Knife, Item 5, Appendix B
Knife, Hot Metal, Item 6, Appendix B
Laid out on work table

Equipment Condition

Inspected (paragraph 2-9)
Cleaned (paragraph 2-12)

Materials Parts:

Cord, Nylon, Type I, Item 11, Appendix D
Pin, Cotter, Item 23, Appendix D

a. Repair. Repair a static line clevis using the following procedures:

(1) Replacing a clevis pin retaining cord

(a) Cut and remove original clevis pin retaining cord from static line clevis body. clevis pin and safety pin (figure 2-73).

(b) Cut a 16-inch length of type I nylon cord and sear ends.

(c) Pass one half of cord length around static line clevis body, join ends and make a square knot snug against clevis body (figure 2-73).

(d) Pass one tie running end through the eye of clevis pin and secure the tie end snug with a square knot, leaving a 3/8-inch long running end.

(e) Make an overhand knot in the remaining running end at a point within 3/16 inch of the square knob.

(f) Secure opposite cord running end to the eye of safety pin using procedures in (d) and (e) above.

(2) *Replacing a clevis safety pin.*

(a) Remove original safety pin from clevis assembly by untying overhand knot and square knot which secure pin to clevis.

(b) Replace cotter pin from stock.

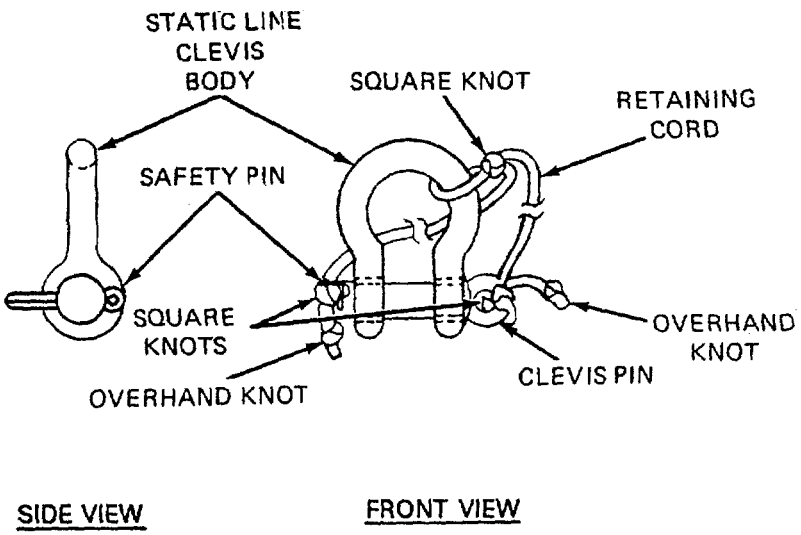
(c) Reinstall safety pin in clevis pin.

(d) Pass tie running end through eye of safety pin. Make an overhand knot in running end (figure 2-73).

(e) Secure tie end against safety pin with a square knot, leaving a 3/8-inch running end.

b. Replacement. Replace an unserviceable or missing static line clevis with a serviceable item from stock.

2-40. Static Line Clevis (cont).



4836-065

Figure 2-73. Replacing Clevis Pin Retaining Cord

Section VII. PREPARATION FOR STORAGE OR SHIPMENT

2-41. 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 healed 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.

2-42. 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.

2-43. 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, Packaging of Materials, or TM 38-230-1 and TM 38-230-2, Preservation, Packaging, Packing of Military Supplies and Equipment (Vols. 1 and 2).

2-44. Accordion Folding and Rigger Rolling.

a. Accordion Folding. Parachute canopy assemblies that are not packed for use should be accordion folded prior to entry into storage To accordion fold a parachute canopy assembly, perform the following:

(1) Place the parachute canopy in proper layout under partial tension and dress the outside edges of both gore groups.

(2) Fold the left group of gores over the right group of gores (A, figure 2-74). Release tension.

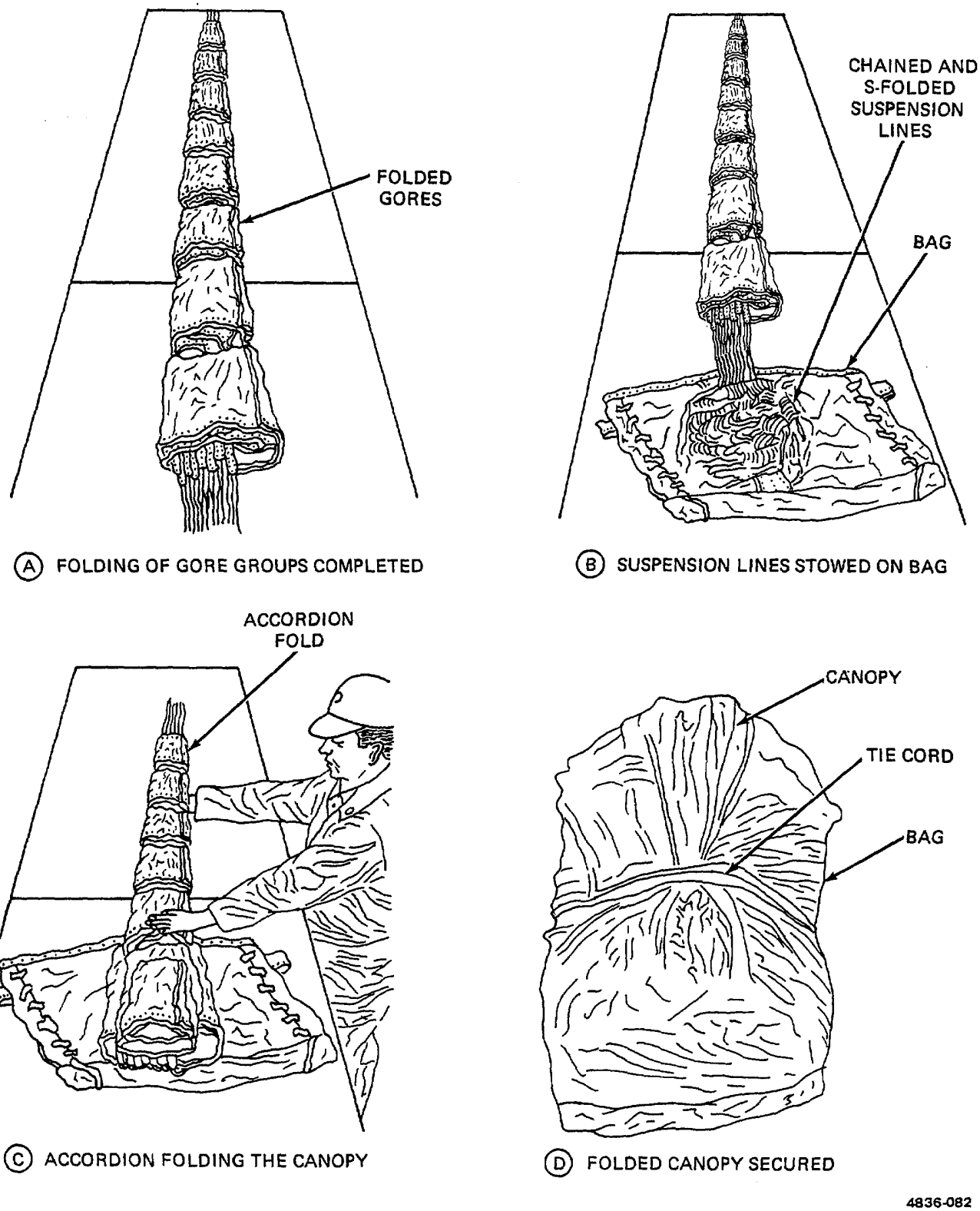
(3) "Chain" the suspension lines and S-fold the "chained" lines on top of the deployment bag (B, figure 2-74).

(4) Place the lower end of the canopy on top of the S-folded suspension lines and locate the lower edge of the canopy skirt at the lower end of the deployment bag.

(5) Accordion fold the remaining canopy length neatly on top of the canopy lower end (C, figure 2-74). Turn the canopy vent under the last fold.

(6) Temporarily secure the folded canopy to the deployment bag with available webbing (D, figure 2-74).

(7) Upon completion of the accordion folding process, place the folded parachute assembly in a suitable type container for storage.



(A) FOLDING OF GORE GROUPS COMPLETED

(B) SUSPENSION LINES STOWED ON BAG

(C) ACCORDION FOLDING THE CANOPY

(D) FOLDED CANOPY SECURED

Figure 2-74. Accordion Folding a Parachute Canopy Assembly.

b. Rigger Rolling. Parachute assemblies will be rigger rolled prior to being sent to or returned from a parachute repair activity for ease of handling to prevent suspension line entanglement. Rigger roll a parachute as follows:

(1) Place the parachute in proper layout and apply partial tension.

(2) Grasp the right and left suspension line groups. Using a fast circular motion, flip each of the two gore groups up and to the center radial seam. Tighten each gore group roll by hand, bring both rolled gore groups together at the center radial seam (A, figure 2-75).

(3) Release tension and disconnect the canopy vent from the vent attaching device.

(4) Fold the canopy vent down between the rolled gore groups to a point within 18 inches of the canopy skirt lower edge.

(5) Beginning at the folded upper end of the canopy, roll the canopy tightly toward the canopy skirt (B, figure 2-75) Ensure the width of the rolled canopy does not exceed the width of the parachute deployment bag.

(6) Continue rolling the canopy toward the lower end of the suspension lines and risers, locating the lines and riser webbing around the center of the roll (C, figure 2-75).

(7) Disconnect the suspension lines/risers from the attaching device and place the rolled canopy assembly on top of the deployment bag.

(8) Secure the rolled canopy assembly within the confines of the bag using a suitable type cord (D, figure 2-75).

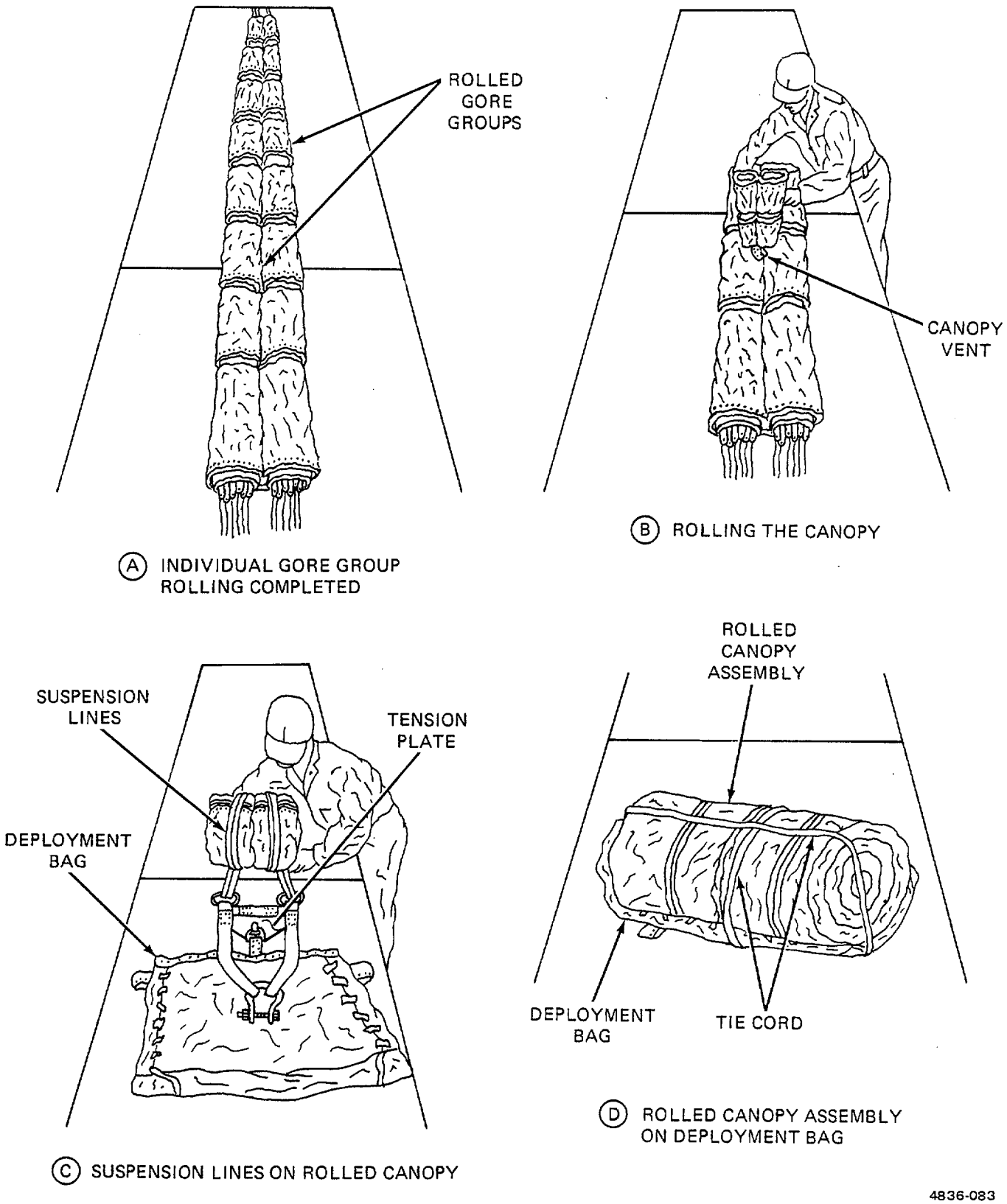


Figure 2-75. Rigger Rolling a Parachute Canopy Assembly.

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) (TAMMS)A ..... DA PAM 738-751

A-3. Technical Manuals.

Preservation, Packaging, Packing of Military Supplies and Equipment (Vols 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 Material 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 (FSC Class 1670) ..... TB 43-0002-43

Use of Material Condition Tags and Labels on Army Aeronautical and Air Delivery Equipment ..... TB 750-126

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

A-8. Forms.

Army Parachute Log Record	DA Form 10-42 DA Form 3912
Equipment inspection and Maintenance Worksheet	DA Form 2404
Packing Improvement Report	SF Form 364
Quality Deficiency Report	SF Form 368

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 al 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, sealing 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 lime 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 26-FOOT DIAMETER HIGH-VELOCITY CARGO PARACHUTE ASSEMBLY

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIP	(6) REMARKS
			Unit		Intermediate		Depot		
			C	O	F	H	D		
00	The 26-Foot Diameter High-Velocity Cargo Parachute								
01	Canopy	Inspect Service Repair		0.8 0.3 0.3				1,2,3,4	A,B,C,D,E
0101	Bridle Loop	Replace Repair		0.3 0.1				5,6	 D
0102	Vent Line	Replace Repair		0.4 0.1					

26-FOOT DIAMETER HIGH-VELOCITY CARGO PARACHUTE ASSEMBLY (cont)

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIP	(6) REMARKS
			Unit		Intermediate		Depot		
			C	O	F	H	D		
0103	Vent Reinforcement Tape (upper lateral band)	Repair		0.2					
0104	Gore Section	Replace			1.0			15,17	E
		Repair		0.1					
0105	Radial Tape	Repair		0.1					
0106	Vertical Tape	Repair		0.2					
0107	Skirt Reinforcement Tape (lower lateral band)	Repair		0.1					
0108	Pocket Band	Replace		0.4					
		Repair		0.1					
0109	Suspension Line Attaching Loop	Replace			0.5				
		Repair		0.1					
0110	Suspension Line	Replace			0.5				
		Repair		0.3					
0111	Riser	Replace		0.5					
		Repair		0.2					
02	Deployment Bag	Inspect		0.2					A,B,D
		Service		0.1					
		Replace		0.1					
		Repair		0.2					
0201	Upper End Reinforcement	Repair		0.3					
		Replace		0.1					
0202	Attaching Loop	Replace		0.3					
		Repair		0.1					
0203	Main Strap (Side and Center)	Replace		0.3					
		Repair		0.1					

26-FOOT DIAMETER HIGH-VELOCITY CARGO PARACHUTE ASSEMBLY (cont)

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIP	(6) REMARKS
			Unit		Intermediate		Depot		
			C	O	F	H	D		
0204	Static Line Retaining Strap	Repair Replace		0.3 0.1					
0205	Suspension Line Retaining Strap	Replace Repair		0.3 0.1					
0206	Tie Loops	Replace Repair		0.3 0 1					
0207	Panels and Flaps	Repair		0.2					
03	Static Line	Inspect Service Replace Repair		0.1 0.1 0.3 0.1					
0301	Static Line Clevis	Replace Repair		0.1 0.1					

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REF CODE (1)	MAINTENANCE LEVEL (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, 10-in	5110-00-249-2850	GGG-F-325
4	O	Iron, Household	7290-00-634-2010	(CID) A-A-632
5	O	Knife	5110-00-162-2205	MIL-K-818C
6	O	Knife, Hot Metal	3439-01-197-7656	4025
7	O	Line Separator	1670-00-092-8661	11-1-17-1
8	O	Needle, Tacking	8315-00-262-3733	FF-N-180
9	O	Packing Paddle	1670-00-764-6381	11-1-152
10	O	Packing Weight	1670-00-375-9134	66C38599
11	O	Pot, Melting, Electric	5120-00-242-1276	WG441
12	O	Shears	5110-00-223-6370	GGG-S-278
13	O	Sewing Machine, Light-Duty	See Table 2-2	
14	O	Sewing Machine, Zig-Zag	See Table 2-2	
15	O	Sewing Machine, Heavy-Duly,	See Table 2-2	
16	O	Sewing Machine, Medium-Duty	See Table 2-2	
17	O	Sewing Machine, Darning	See Table 2-2	
18	O	Sewing Machine, Very Heavy-Duty	See Table 2-2	
19	O	Tension Plate	1670-00-032-2705	11-1-99
20	O	Yardstick	5120-00-985-6610	GGG-Y-0035
21	O	Spicing Aid	See Appendix E	

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 spare and repair parts, special tools, special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of unit and intermediate direct support (DS) maintenance of the 26-Foot Diameter High-Velocity Cargo Parachute. 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 name sequence Items listed are shown on the associated illustration/figure.

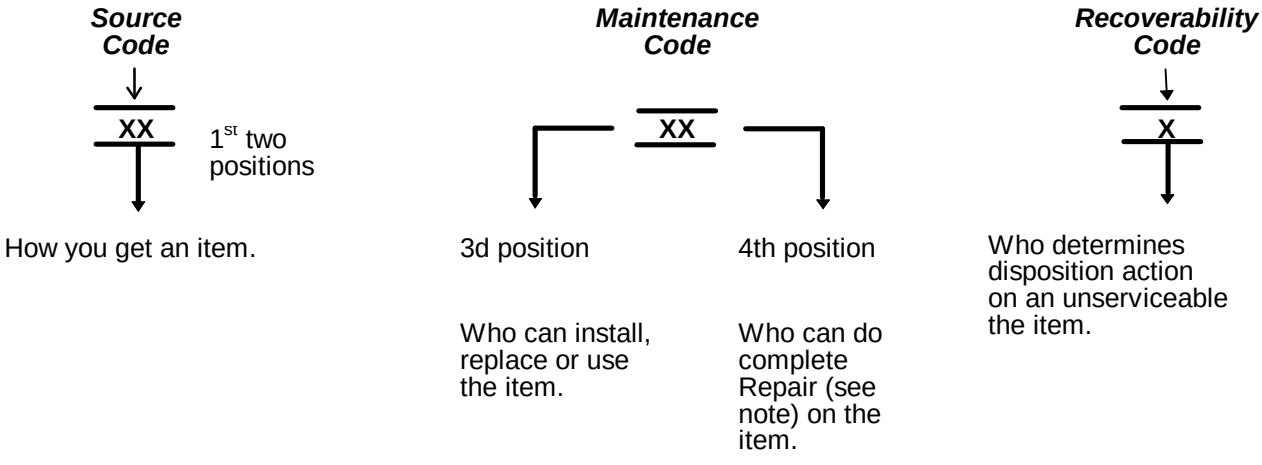
b. *Section III. Special Tools List.* (Not Applicable) No special tools are required to assemble the 26-foot diameter parachute Common tools are listed in Appendix B, Section II because they are required for performance of packing and maintenance procedures/tasks These tools are authorized under Chapter 2, paragraph 2-1 of this manual

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 listings, 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 (Sections II).

a. *Item No (Column (1)).* indicates the number used to identity 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 instructions, as shown in the following breakout.



*Complete Repair: Maintenance capacity, capability, and authority to perform all the 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. Explanations of source codes follows:

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.

Code	Explanation
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They re 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.

Code		Explanation
MO-	(Made at Unit/AVUM Level)	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 this 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.
MF-	(Made at DS/AVUM Level)	
MH-	(Made at GS Level)	
ML-	(Made at Specialized Repair Activity (SRA))	
MD-	(Made at Depot)	

Code		Explanation
AO-	(Assembled by Unit/AVUM Level)	Items with these codes are not to be requested/ requisitioned individually. The puts 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 items are assembled at a higher level, order the item from the higher level of maintenance.
AF-	(Assembled by DS/AVIM Level)	
AH-	(Assembled by GS Category)	
AL-	(Assembled by SRA)	
AD-	(Assembled by Depot)	

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 al 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 digit 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 C-4, 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 identifies/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 used in this manual are listed in MIL-STD-12.

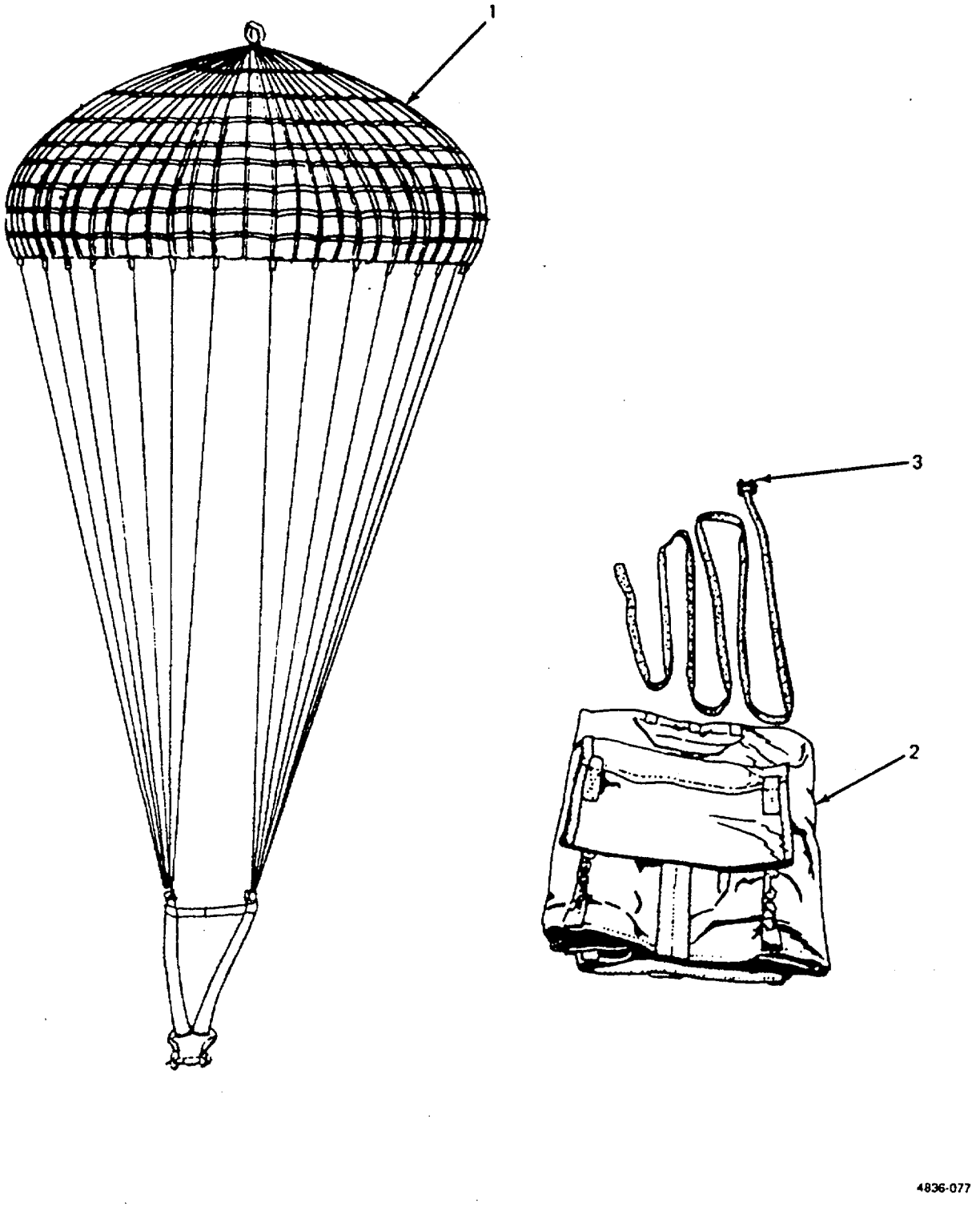


Figure C-1. 26-Foot Diameter High- Velocity Cargo Parachute.

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, HIGH-VELOCITY, 26-FOOT, RING-SLOT, COTTON	
				FIG. C-1 26-FOOT HIGH-VELOCITY CARGO PARACHUTE P/N 11-1-555	
1	XAOOO	81337	11-1-556	CANOPY, CARGO PARACHUTE, 26-FOOT	1
2	PAOOO	81337	11-1-561	DEPLOYMENT BAG, PARACHUTE	1
3	MOOOZ	81337	11-1-219	STATIC LINE, CARGO	1
				END OF FIGURE	

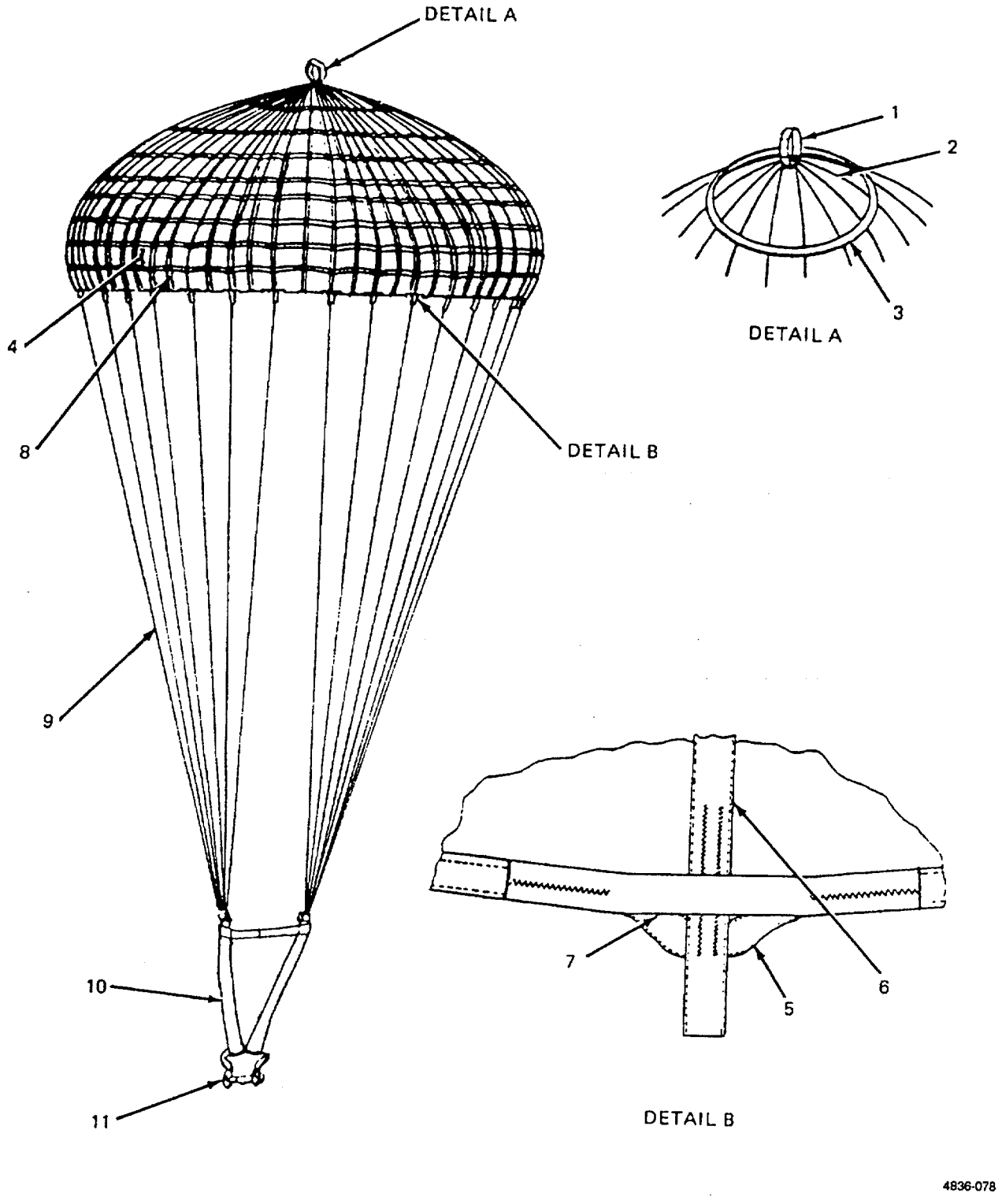


Figure C-2. 26-Foot Cargo Parachute Canopy.

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, 26-FOOT	
				FIG. C-2 26-FOOT CARGO PARACHUTE CANOPY, PIN 11-1-556	
1	MOOOO	81337	11-1-556-15	BRIDLE LOOP, CANOPY, MAKE FROM, WEBBING, COTTON, TYPE VIII, CLASS 2B, OD P/N MIL-W-5665 & THREAD, NYLON, TYPE I, CLASS A, SIZE 6, P/N V-T-295	1
2	MOOOO	81337	11-1-556-10VL	VENT LINE, MAKE FROM, CORD, NYLON, CORELESS, TYPE II, OD, P/N MIL-C-7515 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295	13
3	MOOOO	81337	11-1-556-12VR	VENT, REINFORCEMENT, MAKE FROM, TAPE, NYLON, TYPE III, 3/4-IN WD, OD, P/N MIL-T-5038 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295	1
4	MOOOO	81337	11-1-560-1 thru 8	PANEL, GORE, MAKE FROM CLOTH, SHEETING, POLYESTER & COTTON, TYPE III, CLASS I, STYLE G, 65/35 BLEND, #128, OG & THREAD, NYLON, TYPE 1, CLASS A, SIZE E, P/N V-T-295	208
5	MOOOO	81337	11-1-556-12SR	SKIRT REINFORCEMENT, MAKE FROM TAPE, NYLON, TYPE III, 3/4-IN W, OD, P/N MIL-T-5038 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, PIN V-T-295	1
6	MOOOO	81337	11-1-556-12RT	RADIAL TAPE, MAKE FROM WEBBING, NYLON, TYPE lll, 3/4-IN W, OD, P/N MIL-T-5038 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295	26
7	MOOOO	81337	11-1-556-12PB	POCKET BAND, MAKE FROM TAPE, COTTON, TYPE III, 3/4-IN W, OD, P/N MIL-T-5038 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295	26
8	MOOOO	81337	11-1-556-11	VERTICAL TAPE, MAKE FROM TAPE, NYLON, TYPE III, 1/2-IN W, OD, P/N MIL-T-5038 & THREAD, NYLON, TYPE I, CLASS A, SIZE E, P/N V-T-295	26
9	MOOOO	81337	11-1-556-10SL	SUSPENSION LINE, MAKE FROM CORD, NYLON, CORELESS, TYPE II, OD, P/N MIL-C-7515	26

SECTION II.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) OTY
				GROUP 01 CANOPY, PARACHUTE, CARGO, 26-FOOT	
				FIG. C-2 26-FOOT CARGO PARACHUTE CANOPY, PIN 11-1-556	
10	MOOOO	81337	11-1-559	RISER, MAKE FROM WEBBING, NYLON, TYPE VIII, CLASS R, OD, P/N MIL-W-4088 & THREAD, NYLON, TYPE I, CLASS A, SIZE 3, P/N V-T-295.....	1
11	PAOZZ	96906	MS70086-1	SHACKLE.....	1
				END OF FIGURE	

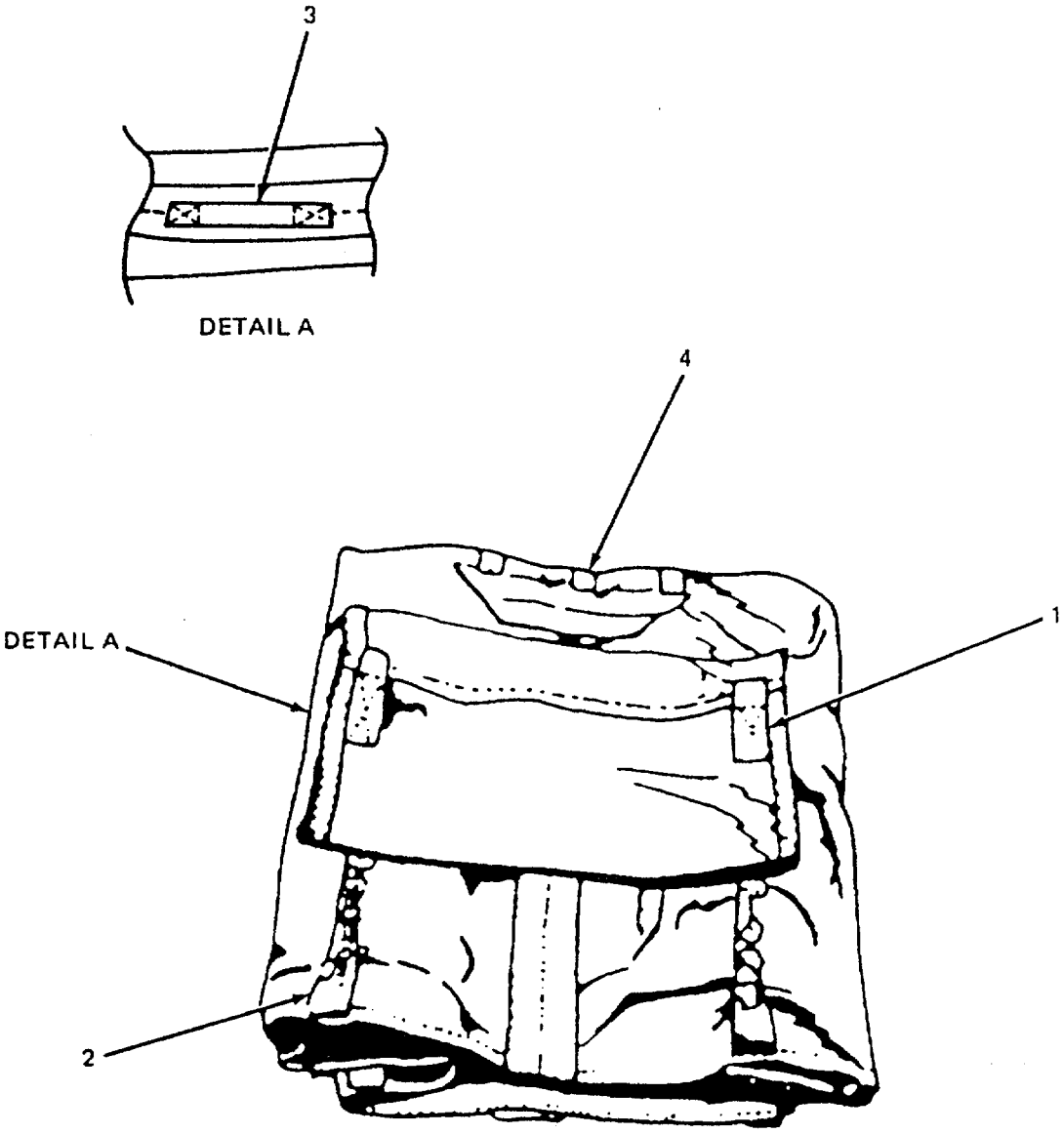
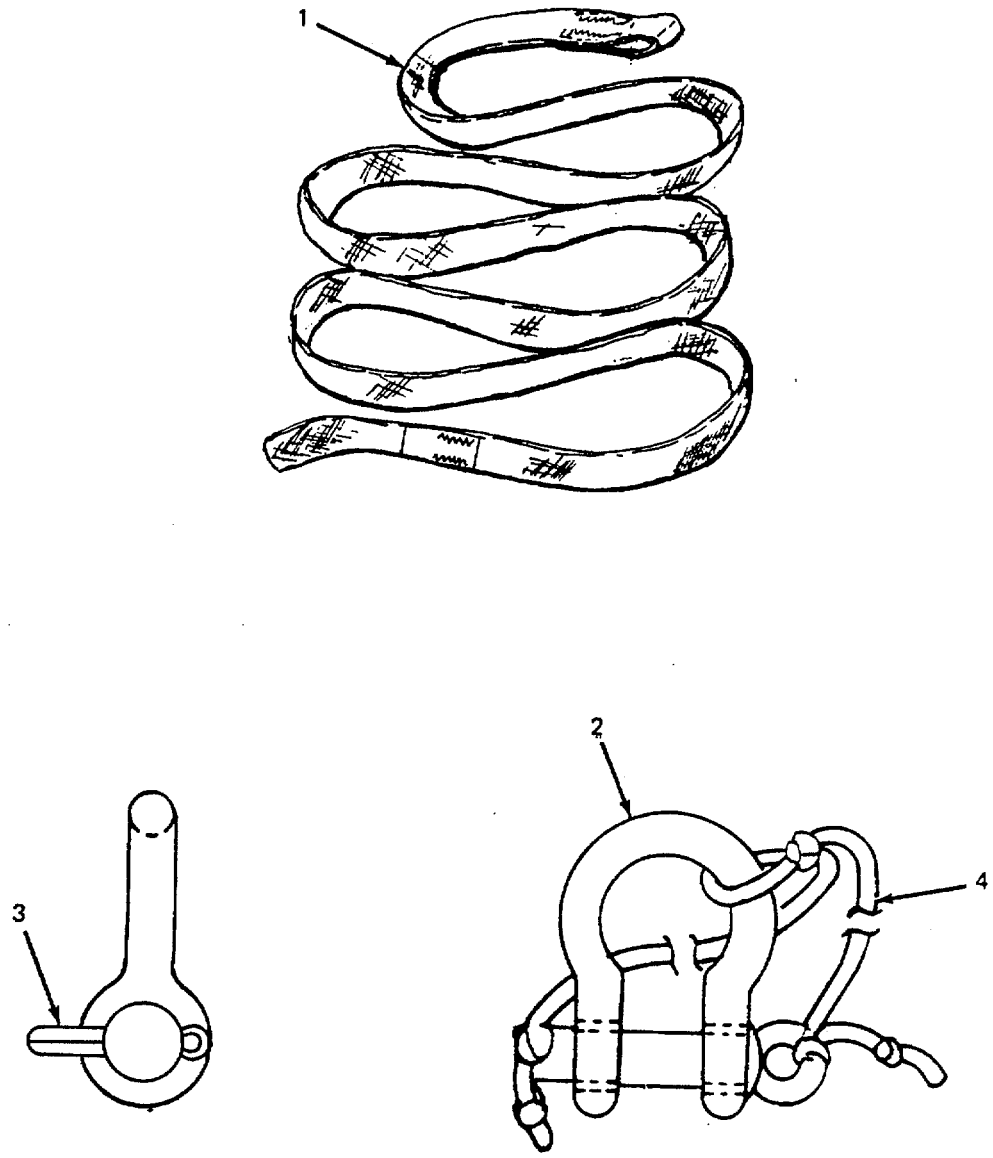


Figure C-3. Deployment Bag.

SECTION II.

(1) ITEM NO.	(2) SMR CODE	(3) FSCM	(4) PART NO.	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 02 DEPLOYMENT BAG, PARACHUTE	
				FIG. C-3 DEPLOYMENT BAG P/N 11-1-561	
1	MOOOO	81337	11-1-561E-E	TIE LOOP, PROTECTOR FLAP, MAKE FROM WEBBING, COTTON, TYPE II, CLASS 2B, P/N MIL-W-5665	2
2	MOOOO	81337	11-1-561B-B	SUSPENSION LINE RETAINING STRAP, MAKE FROM WEBBING, COTTON, TYPE II, CLASS 2B, P/N MIL-W-5665	2
3	MOOOO	81337	11-1-561J-J	STATIC LINE RETAINING STRAP, MAKE FROM WEBBING, COTTON, TYPE II, CLASS 2B, P/N MIL-W-5665	2
4	MOOOO	81337	11-1-561VIEWG	ATTACHING LOOP	1
				END OF FIGURE	

SECTION II.



4836-080

Figure C-4. Static Line.

SECTION II.

(1) ITEM NO.	(2) SMR CODE	(3) FSCM	(4) PART NO.	(5) DESCRIPTION AND USABLE ON CODES	(6) QTY
				GROUP 03 STATIC LINE, CARGO PARACHUTE	
				FIG. C-4 CARGO PARACHUTE STATIC LINE PN 11-1-219	
1	MOOOZ	81337	11-1-219	STATIC LINE, CARGO PARACHUTE, MAKE FROM WEBBING, NYLON, TUBULAR, 3/4-INCH, P/N MIL-W-5625	
2	PAOOZ	96906	MS70086-1	CLEVIS, STATIC LINE	
3	PAOZZ	96906	MS24665-355	PIN, COTTER	
4	MOOZZ	96906	MS70086C	CORD, CLEVIS RETAINING MAKE FROM CORD, NYLON, TYPE I, P/N MIL-C-5040	
				END OF FIGURE	

SECTION II

(1) ITEM NO.	(2) SMR CODE	(3) FSCM	(4) PART NO.	(5) DESCRIPTION AND USABLE ON CODES	(6) QTY
				GROUP 04 BULK MATERIALS	
				FIG.. BULK	
1	PAOZZ	81349	MIL-C-4279	CLOTH, COTTON, SHEETING, POLYESTER & COTTON 65/35 BLEND, TYPE II, CLASS I, STYLE G. 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-5038	TAPE, NYLON, TYPE III, 1/2 IN W, OD	YD
5	PAOZZ	81349	MIL-T-5038	TAPE, NYLON, TYPE III, 3/4 IN W , OD	YD
6	PAOZZ	81348	V-T-295	THREAD, NYLON, TYPE I, CLASS A, SIZE E, OD	TU
7	PAOZZ	81348	V-T-295	THREAD, NYLON, TYPE I, CLASS A, SIZE FF, 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 6, OD	TU
10	PAOZZ	81349	MIL-W-5665	WEBBING, COTTON, TYPE VIII, CLASS 2B, OD	YD
11	PAOZZ	81349	MIL-W-5665	WEBBING, COTTON, TYPE II, CLASS 2B, OD	YD
12	PAOZZ	81349	MIL-W-27265	WEBBING, NYLON, TYPE VIII, CLASS R, OD	FT
13	PAOZZ	81349	MIL-T-5625	WEBBING, NYLON, TUBULAR, 3/4-IN W, OD	YD
14	PAOZZ	96906	MS24665-355	PIN, COTTER	EA
				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
5315-00-012-0123	BULK	14	8305-00-281-3315	BULK	11
8315-00-176-8083	BULK	6	4083-00-678-8560	C-2	11
8305-00-260-2564	BULK	10	1670-00-872-6109	C-1	-
8310-00-262-2772	BULK	7	1670-00-933-9522	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	MS24665-355		BULK	14
96906	MS70086P		C-4	3
96906	MS70086-1	4030-00-678-8560	C-2	11
81348	V-T-295	8310-00-262-2772	BULK	7
81348	V-T-295	8310-00-267-3027	BULK	8
81348	V-T-295	8310-00-262-2780	BULK	9
81348	V-T-295	8310-00-227-1244	BULK	7
81337	11-1-219		C-1	1
81337	11-1-555	1670-00-872-6109	C-1	-
81337	11-1-556		C-1	1
81337	11-1-556-10		C-2	9
81337	11-1-556-11		C-2	8
81337	11-1-556-12PB		C-2	11
81337	11-1-556-12RT		C-2	6
81337	11-1-556-12SR		C-2	5
81337	11-1-556-12VR		C-2	3
81337	11-1-566-15		C-2	1
81337	11-1-559		C-2	10
81337	11-1-560-1 thru 8		C-2	4
81337	11-1-561	1670-00-933-9522	C-3	
81337	11-1-561B-B		C-3	2
81337	11-J-561E-E		C-3	1
81337	11-1-561J-J		C-3	3
81337	11-1-561VIEWG		C-3	4

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 26-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	1670-00-568-0323	Band, Retaining, Rubber (81349) MIL-B-1832	bx
2	O	9160-00-253-1171	Beeswax, Technical, 1 Lb (81348) C-B-191	lb
3	O	7920-00-282-2490	Brush, Scrub, Household (81348) H-B-1490	ea

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (cont)

(1) Item number	(2) Level	(3) National stock number	(4) Description	(5) U/M
4	O	7520-00-248-9285	Brush, Stenciling (81348) H-B-00621	ea
5	O	5350-00-221-0872	Cloth, Abrasive, Ferric Oxide & Quartz (81348) P-C-458	sh
6	O	8305-00-460-4200	Cloth, Cotton, Balloon, Coated (81349) MIL-C-43677	yd
7	O	8305-00-185-9731	Cloth, Cotton, Duck, Type 111, 12 29 Oz OD (81348) CCC-C-419	yd
8	O	8305-01-014-1318	Cloth, Cotton, Muslin, Type III, 3 6 Oz OD (81349) MIL-C-4279	yd
9	O	8305-00-433-5986	Cloth, Cotton, Muslin, Type III, 3 8 Oz OD (81349) MIL-C-4279	yd
10	O	8305-00-940-8326	Cloth, Cotton. Sateen, Class 1, 8 2 Oz OD (81349) MIL-C-10296	yd
11	O	4020-00-240-2154	Cord, Nylon, Type I, Natural (81349) MIL-C-5040	yd
12	O	4020-00-246-0688	Cord, Nylon, Type III, OD (81349) MIL-C-5040	yd
13	O	4020-00-782-5415	Cord, Nylon, Type II, Coreless, Natural (81349) MIL-C-7515	yd
14	O	7930-00-281-4731	Dishwashing Compound, Hand, Flake (81348) P-D-410	lb
15	O	7510-00-286-5362	Ink, Marking, Parachute, Strata Blue (81349) MIL-1-6903	Pt
16	O	9150-00-168-2000	Lubricant, Solid Film	
17	O	7520-00-230-2734	Marker, Felt Tip, Black (81348) GG-M-0014	ea
18	O		Medicine Dropper	ea
19	O		Paper, Three Color, PH	ea

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (cont)

(1) Item number	(2) Level	(3) National stock number	(4) Description	(5) U/M
20	O	7520-00-491-2917	Pen, Ballpoint (81348) GG-B-0060	ea
21	O	7510-00-240-1525	Pencil, Marking Aid, White (81348) A-A-87	ea
22	O	7510-00-264-4612	Pencil, Marking Aid, Yellow (81348) A-A-87	ea
23	O	5315-00-012-0123	Pin, Cotter, MS24665-355 (96906)	ea
24	O	7920-00-205-3570	Rag, Wiping (81348) DDD-R-30	be
25	O	9310-00-160-7858	Stencilboard, Oiled (81348) UU-S-625 Type II	Sh
26	O	6630-00-442-8000	Spool W/Color Chart	ea
27	O	8315-00-255-7673	Tape, Nylon, Type III, 1/2 Inch (81349) MIL-T-5038	yd
28	O	8315-00-176-8083	Tape, Nylon, Type III, 3/4 Inch (81349) MIL-T-5038	yd
29	O	7510-00-663-0199	Tape, Pressure Sensitive, 1 Inch (81348) PPP-T-60	yd
30	O	6810-00-270-9982	Telracloroethylene, Technical (81348) O-T-236	dr
31	O	8310-00-917-3945	Thread, Cotton, Ticket No 8/7 (81348) V-T-276	tu
32	O	8310-00-262-3324	Thread, Nylon, Size A, Natural (81348) V-T-295	tu
33	O	8310-00-262-2770	Thread, Nylon, Size E, Natural (81348) V-T-295	tu
34	O	8310-00-262-2772	Thread, Nylon, Size E, OD (81348) V-T-295	tu
35		8310 00-227-1244	Thread, Nylon, Size FF, 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
36	O	8310-00-248-9714	Thread, Nylon, Size 3, Nat White (81348) V-T-295	tu
37	O	8310-00-267-3027	Thread, Nylon, Size 3, OD (81348) V-T-295	tu
38	O	8310-00-248-9716	Thread, Nylon, Size 6, Nat White (81348) V-T-295	tu
39	O	8310-00-262-2780	Thread, Nylon, Size 6, OD (81348) V-T-295	tu
40	O	9160-00-285-2044	Wax, Paraffin, Technical, Type I, Grade A, 1 Lb (81348) VV-W-95	lb
41	O	8305-00-268-2411	Webbing, Cotton, Type 1, 1/4 Inch, OD (81349) MIL-T-5661	ft
42	O	8305-00-281-3315	Webbing, Cotton, Type II, Class 2B, OD, MIL-W-5665	ft
43	O	8305-00-260-2564	Webbing, Cotton, Type VIII, Class 2B, OD (81349) MIL-W-5665	ft
44	O	8305-00-261-8585	Webbing, Nylon, Type VIII. OD (81349) MIL-W-4088	fl
45			Webbing, Nylon, Tubular, 3/4 Inch, OD (81349) MIL-W-5625	ft

APPENDIX E

ILLUSTRATED LIST OF MANUFACTURED ITEMS

Complete instructions for making items authorized to be manufactured or fabricated are located In Chapter 2, Section VI of this manual. Fabricate a splicing aid in accordance with figure E-1.

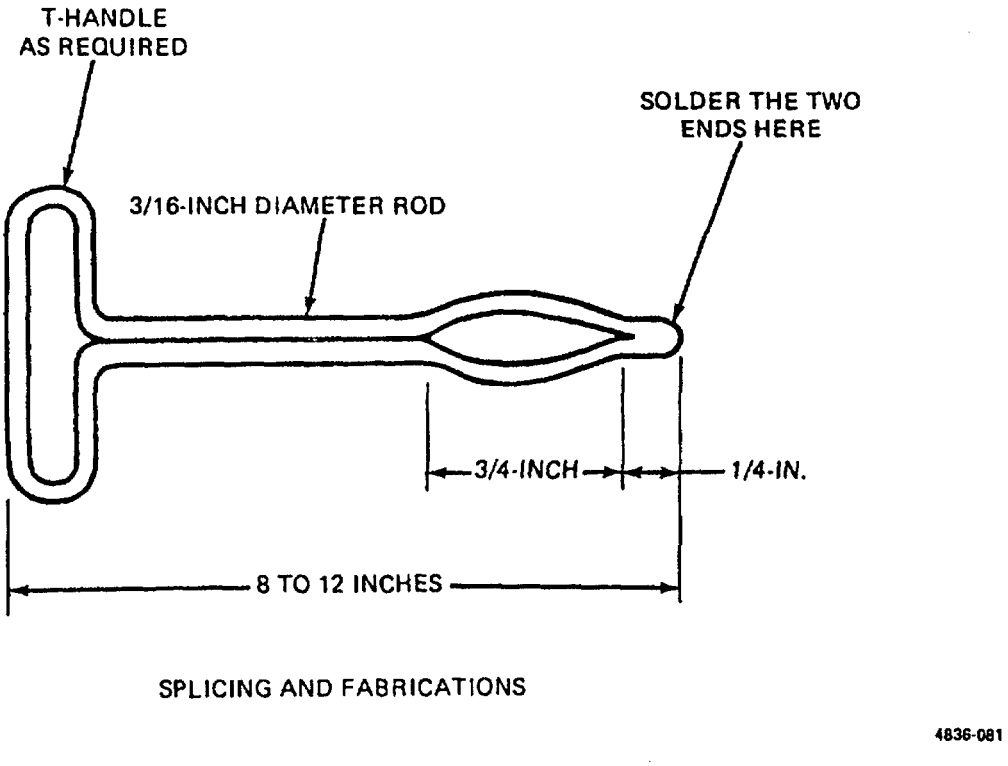


Figure E-1. Splicing Aid Fabrication.

INDEX

Subject Paragraph

INDEX (cont)

INDEX (cont)

ARMY TM 10-1670-276-23&P
AIR FORCE T.O. 13C5-29-2
NAVY NAVAIR 13-1-21

By Order of the Secretaries of the Army, Air Force and Navy:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN, II
Brigadier General, United States Army
The Adjutant General

LARRY D. WELCH, General USAF
Chief of Staff

Official:

ALFRED G. HANSEN
General, USAF, Commander, Air Force
Logistics Command

B. F. MONTOYA
Rear Admiral, CEC, US Navy
Commander
Navy Facilities Engineering Command

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25E, (qty rqr no. 5061).

☆U. S GOVERNMENT PRINTING OFFICE 1994 300-421/02382

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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

SOMETHING WRONG WITH PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

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

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

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 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 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

PIN: 068099-000