

812

THE PARACHUTE SCHOOL

FORT BENNING, GA.

STUDENT TEXT

The following text is to be used in connection with the course in parachute packing. This is the only text to be issued and it is essential that each student know thoroughly the information contained herein. During the course oral examinations will be given on the subject matter contained in this text.

HANGAR REGULATIONS

1. No smoking in the packing hangar at any time.
2. A ten-minute break will be given at the end of each hour's instruction.
3. No student will be excused from class without proper authority of the Chief of Section or the Officer in charge of the Section.
4. No student will sit on the tables unless instructed to do so.
5. All students will wear the prescribed uniform and will have a neat appearance.
6. Students, under supervision of the instructors, are responsible for the policing of the packing room.
7. Students are held responsible for the care of the equipment they use.
8. During breaks the students will remain in immediate vicinity of hangar.
9. Inside the packing hangar all movements will be made on the double.
10. No food, gum, or drink will be brought into the hangar at any time.
11. Good posture is required at all times while in class.
12. All students are held responsible for the material within text.
13. Any student failing to comply with the above regulations will be subject to dismissal from the packing school.

A parachute properly packed and correctly jumped cannot fail, however there is sometimes "human" error. THINK! THINK! THINK!

Assignment No. 1

NOMENCLATURE

THE TM-1 CANOPY

1. Parachute Canopy

The parachute canopy constitutes the lifting surface of the parachute assembly which, when inflated, has the general appearance of a large umbrella. The covering is made of high grade silk or nylon. The life of the canopy is four years or 100 jumps.

2. Parachute Suspension Lines

The parachute suspension lines are braided cords which form the framework of the canopy. Each line is attached to a connector link and extends to the skirt of the canopy through the channel formed by seam joining of any two panels, over the apex and down the other side to a diametrically opposite connector link. Each line is continuous, having no breaks or ties. Suspension lines are arranged in four consecutive groups, each group containing an equal number of suspension lines. Each line is fastened to a connector link with two half hitches. The free end at the knot is stitched to the main line with a special zig-zag stitch. At the skirt the suspension line is attached by wrapping a length of 350 pound tensile strength linen tape around the line and zig-zag stitching it in place for three inches. These are known as "V" tapes. The line is again anchored in the seam channel six inches above the skirt by a three-inch length of zig-zag stitching. From here the line runs free in the channel to the apex where it is zig-zag stitched again for two inches. The line continues over the apex and down the other side where it is stitched in the same manner. Encircling all lines crossing the apex is a 2½-inch loop of lines known as the bridle loop to which the break cord is tied.

3. Panel

The area of material (silk or nylon) between any two consecutive suspension lines is a panel.

4. Panel Section

A panel section is a sub-division of the panel not crossed by a seam. Each section is cut on a bias with the lengthwise threads of the fabrics running at a 45° angle to the center line of the panel. This arrangement strengthens the completed canopy by reducing the danger of runs or tears extending parallel to the panel before being checked by a seam. The TM-1 panel is divided into four sections.

5. Lower Lateral Band

Completely circling the canopy at the skirt is a strip of fabric called the lower lateral band. On silk parachutes there is a single thickness of specially woven 300 pound tensile strength tape, on nylon parachutes there is a double thickness of the 300 pound tape. This tape is one inch wide and sewed within the seam forming the skirt of the canopy. It reinforces and strengthens the outer rim of the canopy.

6. Upper Lateral Band

The upper main lateral band is sewed within the seam that forms the rim of the apex vent. On silk parachutes that have an apex vent collar, the tape is a double thickness of 300 pound tensile strength silk tape. On nylon parachutes from which the apex vent collar has been omitted, the tape is a tubular nylon tape with a tensile strength of 3000 pounds. The upper lateral band absorbs the expanding strains on the canopy during the opening action.

7. Apex Vent

The apex vent is a seventeen-inch opening at the apex of the canopy. The apex vent relieves the strain of the opening shock on the pressure area of the canopy, and in normal descent allows air to escape through the inflated canopy thus reducing the tendency of the parachute to oscillate.

8. Apex Vent Collar

The apex vent collar is a strip eight inches wide sewed to the upper lateral band on silk parachutes, and containing within the seam at the top of the collar a molded rubber ring. The molded rubber ring is four inches in diameter, and will expand to a diameter of seventeen inches to relieve the strain on the pressure area of the canopy at the instant of opening. On the nylon parachutes, the apex vent collar has been omitted as being unnecessary.

9. Connector Links

The connector links are the metal fittings to which the groups of suspension lines are permanently fastened and connect the canopy to the parachute harness. The connector links are considered a part of the canopy.

Know your parachute as you do your weapon.

Assignment No. 2

THE TROOP TYPE HARNESS

1. Parachute Harness Assembly

The parachute harness assembly is an arrangement of cotton webbing which secures the parachute to the wearer. A single thickness of this webbing has a tensile strength of 3000 pounds. The principal element of the parachute harness assembly is the lift web, consisting of four thicknesses of webbing. It is a continuous piece of webbing beginning at the connector links and supports the wearer during descent.

2. Parachute Risers

The parachute risers are those four separate portions of the lift web between the connector links and the shoulder adapters. Each portion is a double thickness of webbing.

3. Parachute Harness Saddle

The parachute harness saddle is the wide part of the parachute harness lift web, where it passes under the seat of the wearer.

4. Parachute Harness Breast Strap

The parachute harness breast strap is attached at a point near the center of the chest to keep the lift web from slipping from the shoulders. It has a V-ring on one strap and a harness snap on the other to fasten together in the front of the wearer.

5. Parachute Harness Back Straps (Horizontal and Diagonal)

The parachute harness back straps are looped around the center bar of each shoulder adapter, diagonally across the back of the wearer and through the lift webs at a point in front of the hip to continue horizontally across the small of the back. Here they are interlocked and fitted so as to be adjustable for size. The pack is secured to the harness by four back strap keepers.

6. Parachute Harness Leg Straps

The parachute harness leg straps are two adjustable lengths of webbing secured at one end to the parachute harness saddle. They pass under the crotch and are attached to the back straps by means of V-rings and snap fasteners at the front of the hips.

7. Parachute Harness Fittings

There are two adapters on the lift web at the shoulder, two on the horizontal back strap and two on the leg straps all for making harness adjustment. There is a "V" ring and snap fastener assembly at the breast strap, on leg straps and on the looped extension of back straps. Two "D" rings are provided for fastening of the Reserve Parachute to the lift web at the chest. Parachute harness snap fasteners have a spring operated lip that holds the snap securely closed when fastened to the "V" rings.

Assignment No. 3

PACK ASSEMBLY

The pack assembly is the carrying case for the packed parachute designed to hold the folded canopy and stowed suspension lines until ready for use and consists of two parts:

1. Pack Tray Assembly

The pack tray assembly is attached to the back straps of the harness and forms the base of the pack assembly. The tray is designed to hold the stowed suspension lines and folded canopy.

a. Parachute Pack Frame

The parachute pack frame is a flexible steel wire frame that holds the base of the pack tray in a semi-rigid position.

b. Parachute Suspension Line Retaining Bands

The parachute suspension line retaining bands provide a means of holding the suspension lines in their stows.

2. Pack Cover Assembly

The pack cover assembly consists of the pack cover, the static line, and the anchor line snap fastener.

a. Pack Cover

The pack cover is a rectangular duck cover that is laced to the pack tray over the folded canopy.

b. Static Line

The static line is a fifteen-foot length of cotton webbing of 2900 pound tensile strength. One end of the static line is sewed to the pack cover, and has a loop called the "break cord attaching loop," extending to the underside of the pack cover. It is to this loop that the break cord is tied. On the other end of the static line is the anchor line snap fastener.

c. Anchor Line Snap Fastener

The anchor line snap fastener is permanently attached to the end of the static line which the jumper secures to the anchor cable in the plane. The anchor cable is a high tensile strength steel cable fastened at each end and running the entire length of the fuselage in the airplane.

Speed in packing is important, however, accuracy is paramount.

Assignment No. 4

PARACHUTE INSPECTION

THE PURPOSE OF INSPECTION IS TO PROLONG THE LIFE AND MAINTAIN THE RELIABILITY OF THE PARACHUTE.

The parachute assembly is thoroughly inspected previous to repacking. All inspections are to be made with the most careful observations and every consideration must be given to the inspection.

"THE FINDING OF A WEAKENED SEAM IS YOUR ADDED INSURANCE."

Call to the attention of the instructor anything that you are in doubt about or that is not true to form.

THE INSPECTION SLIP

AN INSPECTION SLIP SHALL BE SIGNED BY YOU BEFORE THE PARACHUTE IS PACKED AND AFTER YOU HAVE THOROUGHLY INSPECTED IT. WHEN YOU SIGN THE INSPECTION SLIP YOU ARE CERTIFYING THAT THERE IS ABSOLUTELY NOTHING WRONG WITH THAT PARACHUTE.

INSPECTION SLIP

1. I, the undersigned certify that I have this date inspected this parachute #..... prior to packing as prescribed by the Student's Text, and that no defects were noted that require repair or adjustment.

Date Signed

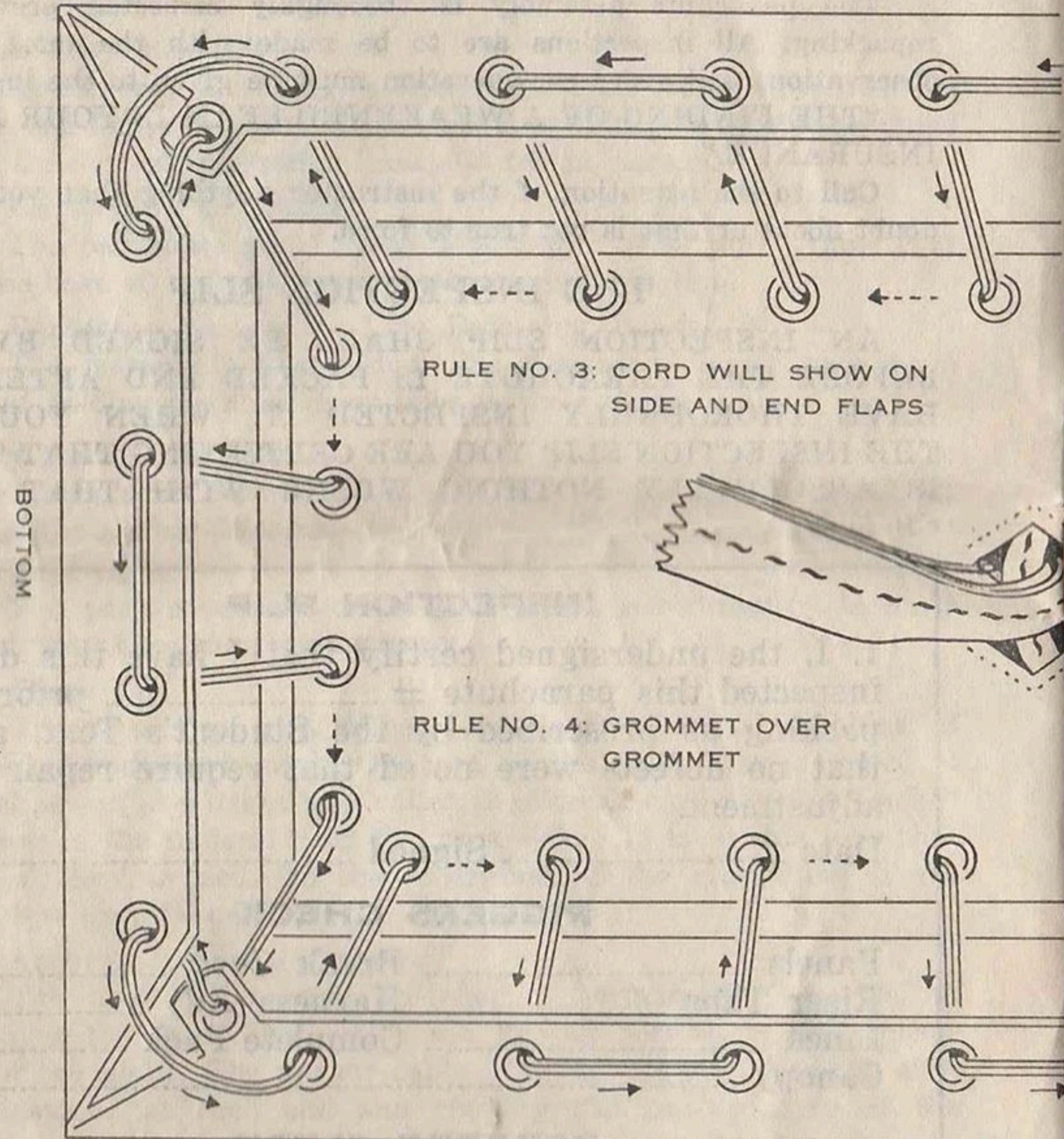
RIGGERS CHECK

Panels Break Cord
Riser Tabs Harness Adj
Lines Complete Pack
Canopy

RECORDS CLERK

I certify that the above student has signed his Form #46 in compliance with instructions and he has packed this parachute properly

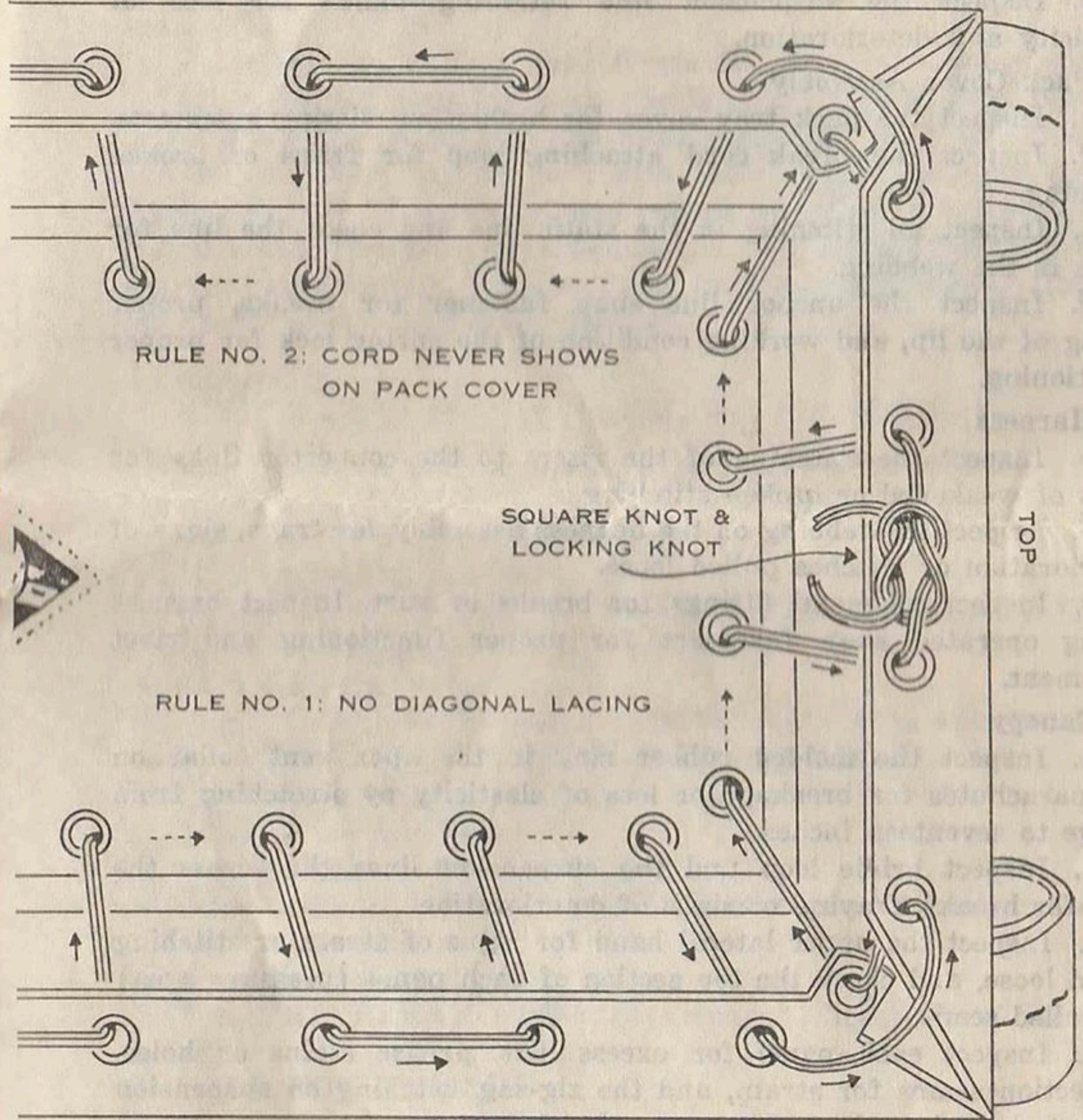
PACK



BOTTOM

RIGHT SIDE

LACING



TOP

OF PACK

INSPECTION OF TM-1

1. Pack Tray Assembly
 - a. Inspect steel wire pack frame for breaks or bends.
 - b. Inspect the general condition of the duck in the pack tray assembly for tears, and broken or missing grommets.
 - c. Inspect the suspension line retaining bands for loss of elasticity and deterioration.
2. Pack Cover Assembly
 - a. Inspect the pack tray cover for broken or missing grommets.
 - b. Inspect the break cord attaching loop for frays or broken stitching.
 - c. Inspect all stitching in the static line and check the line for frays in the webbing.
 - d. Inspect the anchor line snap fastener for breaks, proper fitting of the lip, and working condition of the spring lock for proper functioning.
3. Harness
 - a. Inspect the stitching of the risers to the connector links for signs of weakened or broken stitching.
 - b. Inspect all webbing on the harness assembly for frays, signs of deterioration or stitches pulled loose.
 - c. Inspect all metal fittings for breaks or rust. Inspect harness spring operated snap fasteners for proper functioning and rivet placement.
4. Canopy
 - a. Inspect the molded rubber ring in the apex vent collar on silk parachutes for breakage or loss of elasticity by stretching from twelve to seventeen inches.
 - b. Inspect bridle loop and the suspension lines that cross the apex for breaks, fraying or signs of deterioration.
 - c. Inspect the upper lateral band for signs of strain or stitching pulled loose, and check the top section of each panel (pressure area) for pulled seams.
 - d. Inspect each panel for excess dirt, grease stains or holes, the section seams for strain, and the zig-zag stitching on suspension lines at the point where they enter the skirt.
 - e. Inspect the suspension lines for breaks and frays, zig-zag stitching, and the tying of the suspension lines to the connector links. Check links for rust or breaks.

INSPECTION OF RESERVE

1. Chest Pack
 - a. Inspect the canopy as described in paragraph 4 (Canopy) of TM-1 inspection.
 - b. Inspect the pilot parachute for holes or tears and check the spring-operated quick-opening device for "spacer clip" and proper functioning.
 - c. Inspect the reserve pack frame for breaks or bends, general condition of the duck for tears, broken or loosened grommets and cones. Check the suspension line retaining bands for loss of elasticity and deterioration, the rip cord grip pocket for tears, pack opening elastics for loss of elasticity, and sewing of eyelets for pack opening elastic hooks. Check rip cord locking pins for breaks, cuts and bends, rip cord cable for cuts or frays. Check the spring in the snap fasteners for proper tension and rivet placement.

Assignment No. 5

PARACHUTE PACKING SEQUENCE

The following are the steps to be followed in packing the T-5 parachute assembly:

1. Lay out the parachute assembly.
2. Remove tangles and twists.
3. INSPECT THE ENTIRE PARACHUTE ASSEMBLY CAREFULLY (Including pack cover assembly).
4. Sign inspection slip.
5. If any tacking on the pack tray is necessary do it now. Use 5 cord waxed. NEVER TACK A PACKED PARACHUTE.
6. Fold both groups of panels.
7. CALL FOR RIGGER!
8. Long fold the panels.
9. Tack risers in, and tie riser tabs, (one turn of 5 cord, unwaxed).
10. Stow suspension lines.
11. Accordion fold the panels.
12. TIE THE BREAK CORD (3 turns of Ticket No. 5 cord, unwaxed).
13. CALL FOR RIGGER!
14. Lace pack cover to pack tray.
15. Stow static line.
16. Sign Form 46.
17. Make necessary adjustments to harness to insure snug fit.
18. Call rigger for final check.

Assignment No. 6

HARNESS ADJUSTMENT

Harness adjustment is the procedure of tightening or loosening the harness so as to provide a SNUG FIT to the body.

1. Shoulder Adjustment

When a man is in a sitting position, the shoulder adapters should be located at the forward part of the shoulder.

2. Leg Strap Adjustment

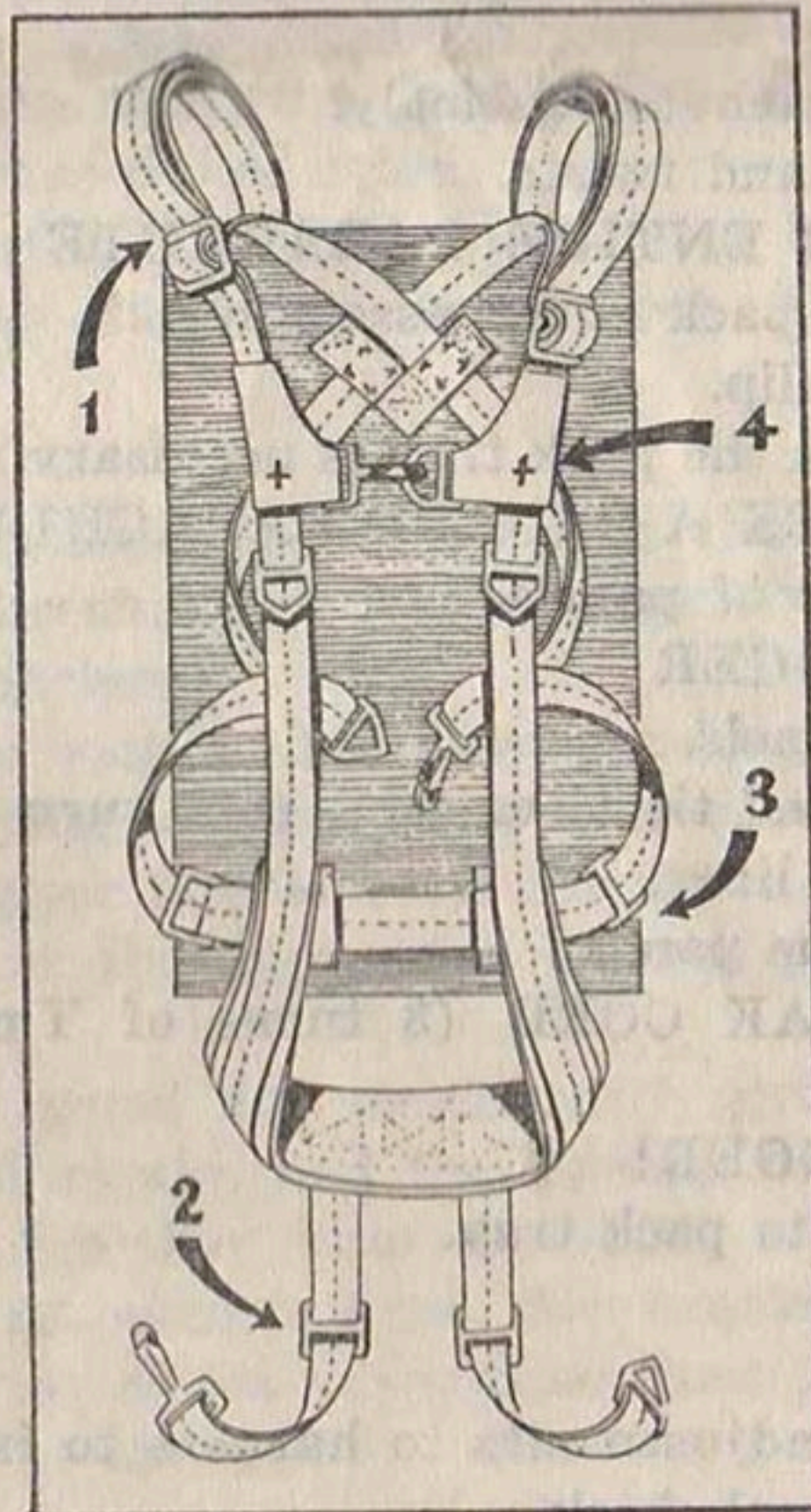
The leg strap adapters should be located centrally on the leg straps so that minor adjustments can be made to either tighten or loosen the harness.

3. Back Strap Adjustment

This adjustment is made by moving the two double adapters on the horizontal back straps.

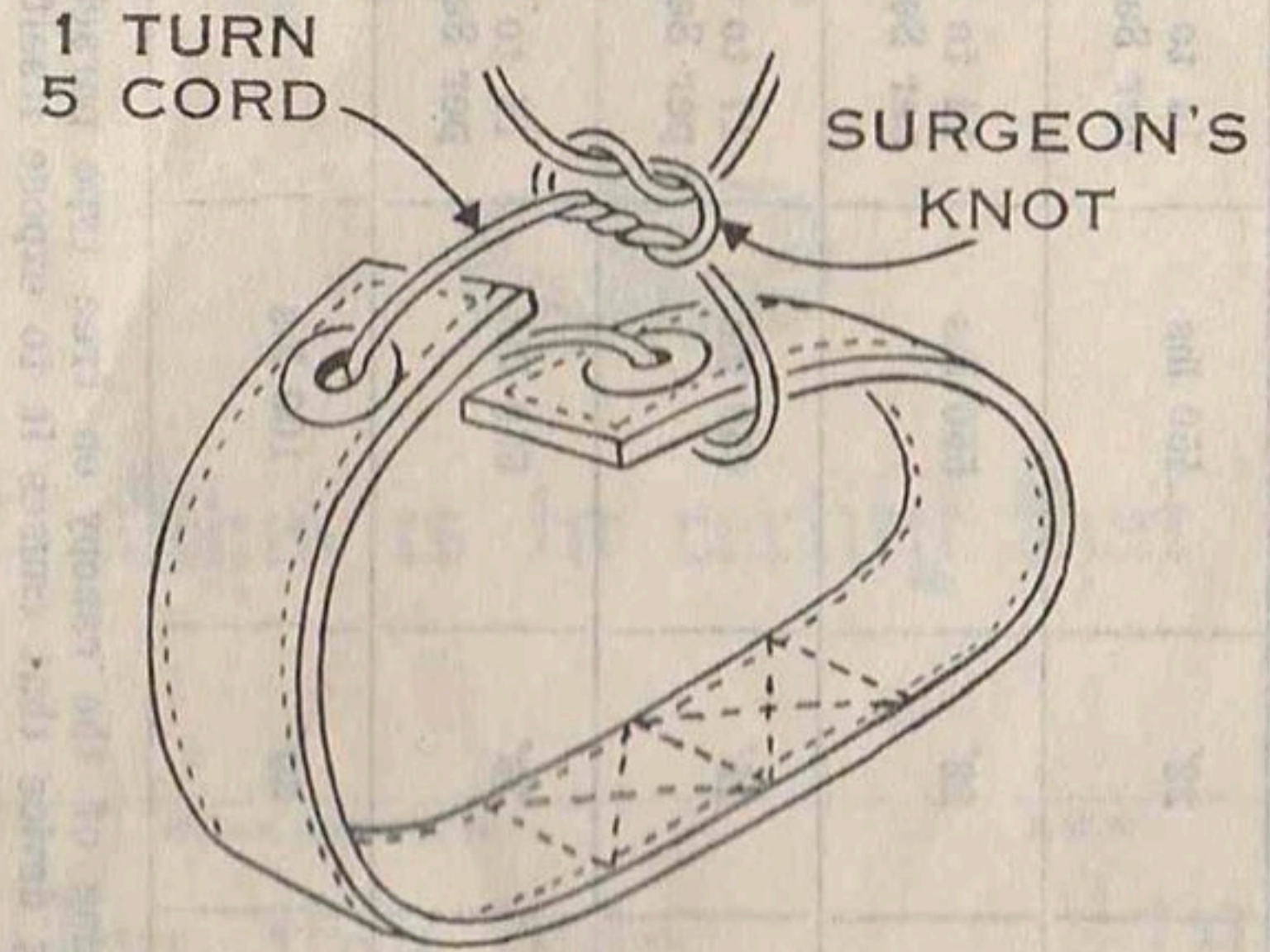
4. Breast Strap Adjustment

The only adjustment of the breast strap is the movement up or down on the lift web. It should be located and tacked so the fasteners are approximately twelve inches below the wearer's chin.

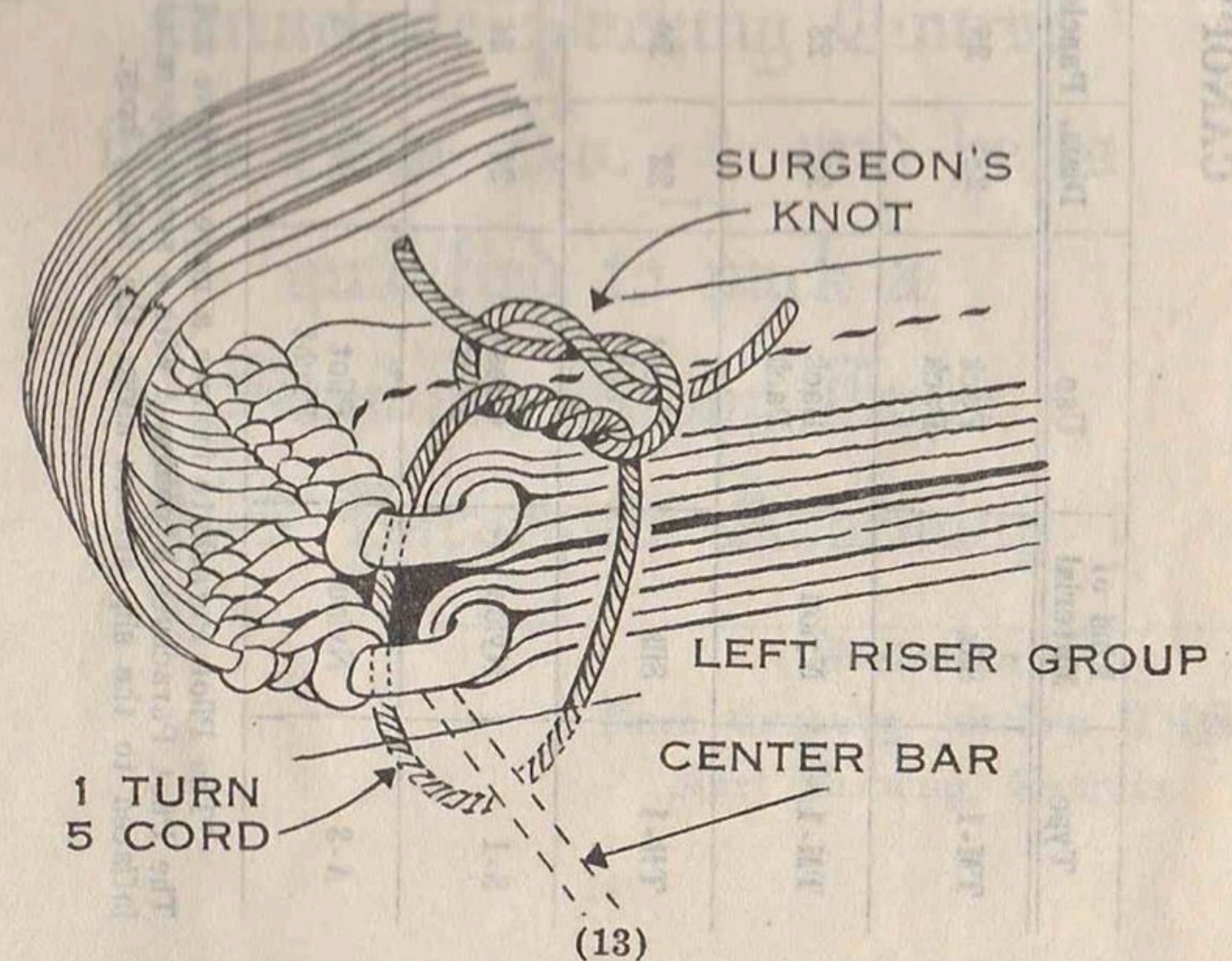


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RISER TABS



CONNECTOR LINKS



(13)

CANOPY TABLE

Type	Kind of Material	Use	Diam.	Panels	Panel Sec.	Sus. Lines	Length of Sus. Lines	Tensile Strgth. of Sus. Lines	Rate of Descent
TM-1	Silk	Back Pack	28'	28	4	28	22'	450 lbs	14 to 20' per Sec.
TM-1	Nylon	Back Pack	28'	28	4	28	22'	550 lbs	14 to 20' per Sec.
TR-1	Silk	Chest Pack	22'	20	3	20	15'	450 lbs	17 to 26' per Sec.
S-1	Nylon	Chest Pack	24'	24	4	24	16'	550 lbs	16 to 24' per Sec.
A-3	Nylon	Pilot Prcht	30"	8	0	8	30"	100 lbs	*

*The Pilot Parachute insures a more positive and quicker opening of the canopy on free type parachutes. The Pilot Parachute is equipped with a spring operated quick opening device that causes it to expose itself fully inflated to the slip stream about the falling body.

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Certificate



This is to certify that

NAME AND RANK _____ ASN _____

has this date, _____ 19 _____

successfully completed the
Parachute Packing Course
with Class No. _____ and he is
qualified to pack a
Standard Troop Type
T-5 Parachute Assembly

Instructor
Pack Training Section TPS
Fort Benning, Georgia

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