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SCOPE

This manual contains the manufacturer's instructions for assembling, packing, maintaining, and operating the Strong Enterprises Dual Hawk Tandem parachute system.

DESCRIPTION

The Dual Hawk Tandem parachute system is designed for freefall and open canopy dual instructional applications. It is protected under U.S. patent numbers 4,399,969 and 4,746,084. It allows two people, a Strong Certified Tandem Instructor in the rear and a student in the front, to jump using one extra large main parachute while having the back up reliability of a compatible reserve parachute. The assembly consists of the Dual Hawk Tandem instructor harness and container assembly, and a "student" harness assembly for the student. A choice of three ram-air main parachutes are available: the 425 sq. ft. Master main canopy, the 520 sq. ft. T520 canopy, and the SET 400 elliptical canopy. Each main canopy utilizes a drogue stabilization chute with a deflation line and deployment bag. The reserve is the 425 sq. ft. Master ram-air reserve canopy, with Grabber pilot chute and free type deployment bag. Related components include main risers, ripcords, cutaway handle and accessories. The packed system, ready to jump measures 26 inches long by 16 inches wide by 8 inches thick. It weighs 53 1/2 lbs when packed with the 425 sq. ft. Master canopy, 55 1/2 lbs when packed with the 520 sq. ft. T520 canopy, and 54 lbs when packed with the 402 sq. ft. SET 400 elliptical canopy.

SYSTEM OVERVIEW

HARNESS AND CONTAINER ASSEMBLY. The Dual Hawk Tandem container is made of 1000 denier nylon Cordura material. The container has an elastic pouch built onto the bottom of the pack to house the drogue. The drogue is attached to the instructor's harness between the main and reserve containers. The harness is made with type VII webbing throughout. The main riser attachment point is a single piece, forged 3-D ring designed specifically for tandem applications. This 3-D ring allows for independent loading of the instructor and student harnesses under the main or reserve canopy. The assembly includes instructor main ripcord, student main ripcord, reserve ripcord, and cutaway handle. The system is fitted with automatic actuation device capabilities on the reserve. The use of an approved, functional AAD is mandatory as of July 1, 1995. At this printing, the CYPRES 2-pin is the only approved AAD.

STUDENT HARNESS. The student harness is made of type VII webbing throughout and utilizes two 5000 pound butterfly snaps for the primary attachment to the instructor harness and two 2500 pound adjustable quick ejector snaps for the side attachments. The harness is fully adjustable with nine points of adjustment. Ripcord pockets are provided for the student's main ripcord, a dummy reserve ripcord and dummy cut-a-way pillow for training purposes.

MAIN RIPCORDS. The Dual Hawk Tandem system comes with four main ripcords (two spares) made from 5/32 inch coated aircraft cable, 41 inches long. Two are made with a metal Martin Baker handle and two are made with a PVC handle. Both the Martin Baker and the PVC ripcords are interchangeable for instructor and student deployment. Both the main ripcords (instructor and student) are located on the instructor's right main lift web in an outboard configuration. The student's ripcord and ripcord cable housing is designed to be detached from the instructor's main lift web and attached to the student's main lift web after the student has been hooked up to the instructor.

RESERVE RIPCORD The reserve ripcord is a dual cable type utilizing a small angled "D" handle. It is located on the left main lift web for an outboard pull. The shorter cable is 25 1/4 inches while the longer cable is 26 1/2 inches. Both cables are terminated by a single locking ripcord pin.

BREAKAWAY/DROGUE RELEASE HANDLE. (Mandatory as of January 1, 1995) This breakaway handle has been designed to activate the drogue release ripcord in addition to releasing the main canopy. This is an important change, to ensure release of the drogue, prior to reserve activation. No modifications are required to the Dual Hawk in order to install this system. The soft cordura "pillow" attaches onto the right hand outboard main lift web of the instructor harness and has two uncoated 3/32" stainless steel cables protruding from it.

MAIN CANOPY OPTIONS:

SET 400. The Semi-Elliptical Tandem 400 (SET 400) is a high performance zero-porosity 9-cell elliptical canopy. The planform is a double taper elliptical with a leading edge that is essentially straight while the trailing edge tapers forward and the airfoil becomes thinner toward each wingtip. The five center cells have a single soft rib, while the four end cells each have two soft ribs. Using the maximum chord (the center cell), the canopy has an aspect ratio of 2.7; using the mean chord, the aspect ration is 2.9. The canopy is reefed with a flag slider, and features a combination of cascaded and continuous suspension lines. Materials include 1.18 oz, 0 cfm and 1.12 oz, 0-3 cfm ripstop nylon fabric, 1450 pound test Vectran® lines, Dacron® control lines, and a combination of 3/8-, 1/2- and 1-inch wide nylon reinforcing tapes.

MASTER. The 9-cell Master main ram-air canopy is a high performance parachute. The Master is specifically designed to handle two people and loads up to 500 pounds. The canopy has nine cells with a planform of 425 square feet. Fabric is 1.12 oz, 0-3 cfm ripstop nylon,ß with continuous suspension lines and upper control lines made of 525 pound test Dacron, lower control lines are 900 pound test Dacron; reinforcing tapes are 1 inch wide nylon; the canopy comes on # 6 rapide links. The canopy is reefed with a flag slider.

T520. The T520 main ram-air canopy is an 11-cell high performance parachute. The canopy has eleven cells with a planform of 520 square feet of surface area. Fabric is 1.12 oz, 0-3 cfm ripstop nylon, with cascaded suspension lines and upper control lines made of 940 pound test Spectra lower control lines are 900 pound test Dacron; reinforcing tapes are 1 inch wide nylon; the canopy is reefed with a flag slider. The T520 canopy is specifically designed to handle two

people and loads up to 500 pounds. It handles exceptionally well in no wind, high temperature and high humidity conditions and is especially suited for high field elevations.

MAIN BAG. The ALS (Anti-Line-Slump) bag eliminates line slump while allowing the use of rubber bands to stow the lines. One extra flap has been added to cradle the stowed lines during bag snatch.

DROGUE. The drogue is a hemispherical design with an open diameter of 3 feet. A deployment handle is located at the apex. The drogue bridle is 12 feet long, made of 1 1/2 inch Kevlar®, with a deflation system that runs from the apex of the drogue canopy to the main canopy bridle attachment point.

RESERVE CANOPY. The Master reserve ram-air canopy is virtually identical in design to the Master main with the following changes in the materials used: 550 pound Kevlar® tape is used for reinforcement; 700 pound test Kevlar® cord is used for suspension and upper control lines. Separable L-links are used to attach the canopy to the risers.

RESERVE DEPLOYMENT SYSTEM. The deployment bag is a wedge shaped “free” type bag made from ripstop nylon with four grommets on the locking flap and four stows on each side. The suspension lines are stowed with bungee and plastic chokers. The bridle consists of a 13 foot length of type XII nylon webbing. The reserve Grabber pilot chute is a spring type, 36 inch diameter, high drag pilot chute made of ripstop nylon with the lower portion meshed.

SYSTEM SPECIFICATIONS

System weight:	With SET 400 54 lbs	With Master-425 53 1/2 lbs	With T520 55 1/2 lbs
Canopies	SET 400	Master Main & Reserve	T 520 Main
Span	34 ft	31 1/2 ft	38 1/2 ft
Chord	12.6 to 10.4 ft	13 1/2 ft	13 1/2 ft
Area	402 sq ft	425 sq ft	520 sq ft
Aspect ratio		2.3	2.85
Weight (less risers)	15 lbs	main, 14 lbs reserve, 13 lbs	16 1/2 lbs
Canopy fabric	1.18 oz, 0 cfm +1.1oz 0-3 cfm	1.1 oz, 0-3 cfm	1.1 oz, 0-3 cfm
Slider dimensions	34" x 34"	33" x 33"	33" x 36"
Forward speed w/ 400 lbs	30 mph	26 mph	20 mph
Rate of descent	12-14 fps	12-14 fps	10-12 fps
Max suspended weight	500 lbs	500 lbs	500 lbs

COMPONENT LIST

QTY	COMPONENT	PART NUMBER
1 ea	Canopy, Reserve, Master	430085
1 ea	Canopy, SET 400	411540
1 ea	Canopy, Main, Master(Alternative)	410064
1 ea	Canopy, Main 'T520' (Alternative)	410077
1 ea	Instructor Harness/Container/Passenger Harness	114702
1 ea	Passenger Harness	240075
1 ea	Drogue w/Y Deflation line and flex pin	480022
1 ea	Reserve static line lanyard w/ring	780624
1 pr	Risers, Main, Type VII w/toggle pockets	834608
2 ea	Toggles, Master & SET 400, Yellow	866071
2 ea	Toggles, T520	866073
2 ea	Toggles, T520, (Flare), Red	866072
2 ea	Toggles, Reserve	866061
1 ea	Ripcord, Reserve	628264100.252100
2 ea	Ripcord, Main Drogue Release (MB)	67341000
2 ea	Ripcord, Main Drogue Release (PVC)	67841000
2 ea	Breakaway/Drogue Release Handle, 3-ring, red	862020
1 ea	Deployment Free Bag with bridle, Reserve	730324
1 ea	Pilot Chute, Grabber	790130
1 ea	Deployment Bag #2, Master Main and SET 400 ALS	720531
1 ea	Deployment Bag #3, T520 Main, ALS (alternative)	720532
1 ea	Dummy Release Handle, Red	862009
1 ea	Hesitater Loop w/washer	861035
1 ea	Closing Loop, Main 2", Spectra 1800#	861017
2 ea	Closing loop, reserve line w/Cypres washer	861014
5 ea	Drogue Riser through loops	861515
1 ea	Spare Y-Deflation Line	813016
1 ea	Pull up Cord	984119
1 ea	Kit Bag	816003
1 ea	Packing data card	580502
1 ea	Manual, DHT	510045
1 ea	Manual, Cypres	N/A
1 ea	AAD, Cypres	990063
2 ea	Chokers (Reorder: 2 yds tubing PN 974612)	

INSPECTION

GENERAL. We are justly proud of our quality control, but prior to assembly, just as with any canopy, the rigger should inspect the canopy inside and out for any flaws or mistakes in construction. Line lengths being especially critical in ram-air canopies, these should also be checked. See page 45-52 for line length and trim data. This includes the steering lines and brake settings.

LEFT-RIGHT REFERENCES. All references to left or right in this manual are based on the wearer/jumper's left or right unless otherwise specified.

SUSPENSION LINE REFERENCES. The "A" lines are at the leading edge (nose) of the canopy, with the "B", "C", and "D", identifying those lines progressing toward the trailing edge (tail). Upper and lower control lines are identified as "E" and "F" lines in that order, "G" lines connect the lower control lines to the toggles.

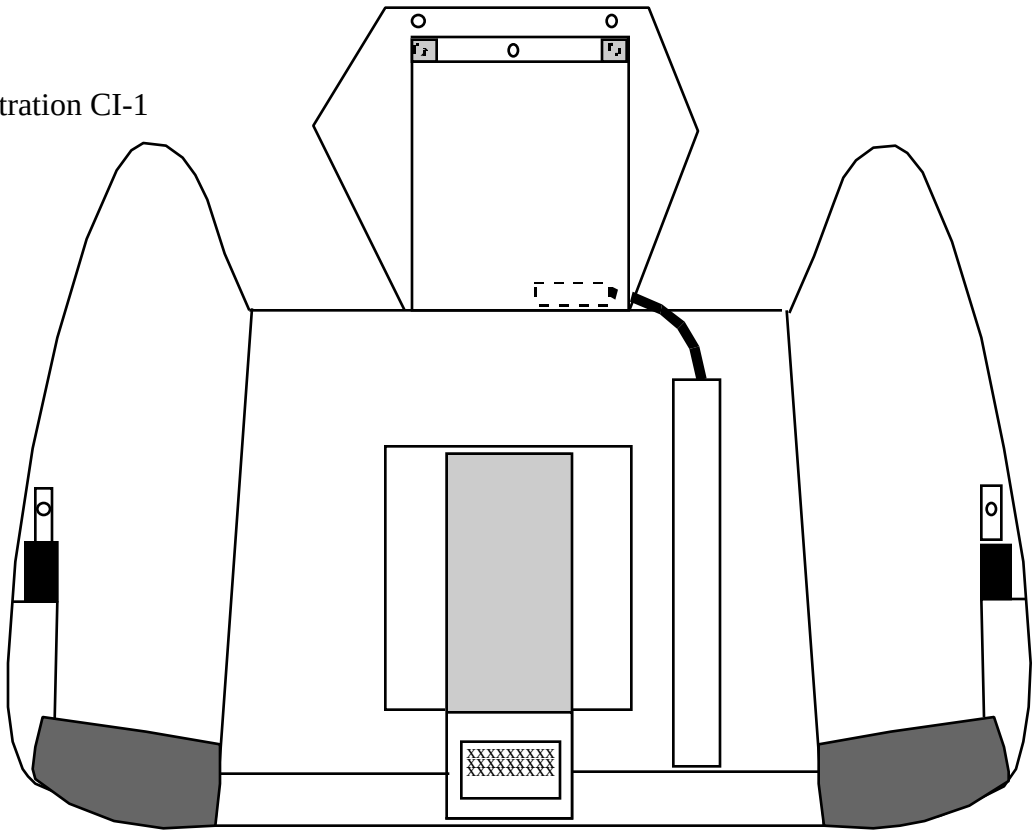
RESERVE PRE-PACKING INSPECTION. A thorough inspection is required at every repacking. This can be done by turning the complete system (harness and canopy) face up. Standing on a chair, hold the top leading edge (nose) of the canopy at shoulder height, spreading each cell apart to look inside. Inspect each seam and panel for damage. Check to make sure the risers are not twisted while verifying line continuity. The slider should be closely inspected for smoothness of the grommets.

PRE-JUMP INSPECTION. Prior to donning the system, each Strong Certified Tandem Instructor should inspect the complete system for airworthiness to include the harnesses and container, ripcords and cutaway handle, the drogue riser, 3-ring release assemblies, harness adjustments, reserve ripcord pins, and packing data card.

INSTALLING CYPRES AAD

1. Test the Cypres, following Airtec's instructions, before installation.
2. Place the processing unit in the pouch.
3. Route the control unit, out from the right side of the pouch, through the channel, up to the top of the container and place it in the clear pocket, on top of the reserve stiffener flap.
4. Route right and left release units, through the channels, under the Velcro® and place in the elastic keepers on each side flap (Illustration CI-1).

Illustration CI-1



ASSEMBLING AND PACKING THE MASTER RESERVE

NOTE. We require that the rigger packing these canopies be completely familiar with ram-air type parachutes. Although we do not require a special rating, the owner/jumper should be sure that the rigger thoroughly understands a ram-air parachute. Having a square reserve on backwards would be a serious matter!

REQUIRED RIGGING TOOLS:		PART NUMBER
A.	Seal thread	961020
B.	Lead seal	984205
C.	Screwdriver	984440
D.	Seal press	984190
E.	Packing paddle	984030
F.	Pull-up cords, 2 ea	984119
G.	Temporary pins, 2 ea	984068

ASSEMBLING RESERVE CANOPY. The Dual Hawk Tandem harness is built with four reserve risers to accommodate the Master reserve on “L” links. The back of each rear riser is equipped with a guide ring and Velcro® for steering toggles.

LAYOUT AND ASSEMBLY. Lay the harness and container on a smooth clean surface as if the wearer were face down, head toward the canopy. Lay the canopy out and straighten the line groups. The front “A” and “B” line groups go to the front risers, the “C” and “D” line groups go to the rear risers. The smooth side of the grommets in the slider goes toward the harness. Attach the connector links to the corresponding risers temporarily and do a complete continuity check on each link to insure proper sequence, then tighten the links (Illustration A-1R). Clear each set (left and right) of upper control lines (steering lines). Lower control lines should pass through the rear grommets of the slider (clear of the suspension lines) then through the Type I webbing guide loop located on the rear riser just below the L-link and then through their respective guide rings on the rear risers. Attach the steering toggles to the lower control lines by inserting the looped lower end of the lower control line through the grommet in the toggle from the Velcro® side, and then passing the bottom end of the toggle through the loop and cinching the loop snug around the toggle. If practical, the rigger should then carefully inflate the reserve as a final continuity and assembly check.

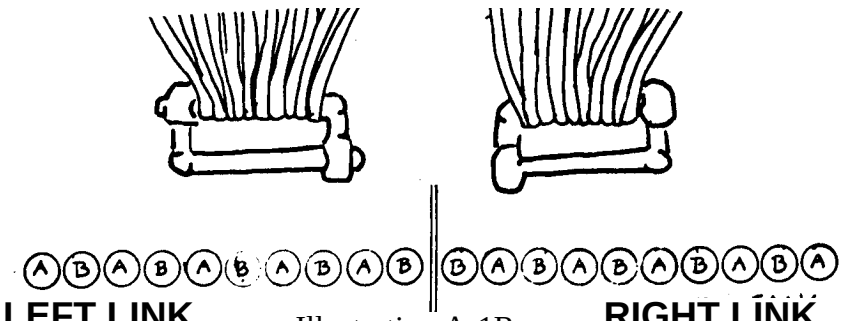


Illustration A-1R

BAG, BRIDLE AND PILOT CHUTE. Pass the 13-foot long bridle webbing through the deployment bag's loop, then pass the large loop end of the webbing through the smaller loop end and cinch snug. Next pass the large loop end of the bridle through the pilot chute's loop, and then pass the entire pilot chute through the large loop of the bridle.

WARNING! This bag assembly must not be attached to the reserve canopy.

PACKING THE MASTER RESERVE CANOPY. Parts of these packing instructions are similar to those shown in other manuals. This method has worked best under all speeds and conditions tested. The basic difference is that this method utilizes a combination of flopping and stacking the canopy.

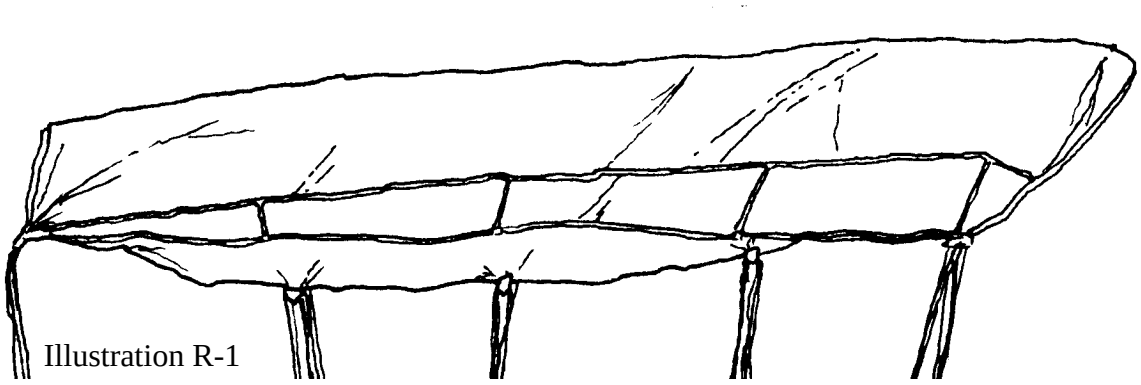


Illustration R-1

REPACK CYCLE. The repack cycle for this system is 120 days as required by FAR 105.43

LAY OUT. Lay the canopy out with the left or right side up (Illustration R-1). Orient the harness face down, head toward the canopy. Clear the lines of twists and tangles. Confirm suspension line continuity by tracing the lines from each quadrant of the canopy to their proper sequence on each riser. Insure that the control lines are clear of other lines and that they pass through the rear grommets of the slider as well as through the type I guide loop and the guide ring on each rear reserve riser. Position slider near connector links. Clear the nose with a combing motion, picking up the center seam of each cell and pleating each cell all the way to the tail.

FOLD THE CANOPY. Flake the entire canopy neatly making sure all the lines are straight. Fold the nose over up to the A-line group (Illustration R-2).

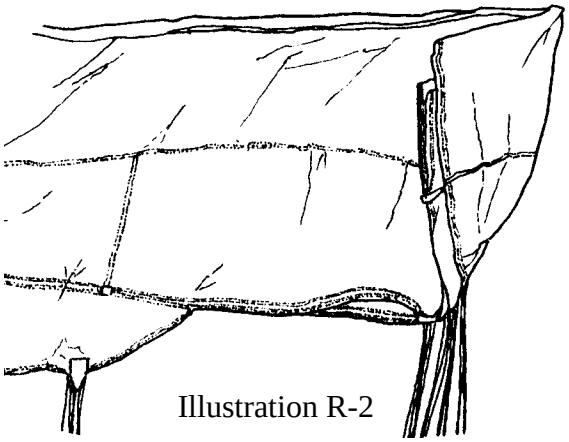


Illustration R-2

FOLD (do not stack) the canopy again half way between the A-line group and the B-line group (Illustration R-3). Continue with one more fold back to the B-line group.

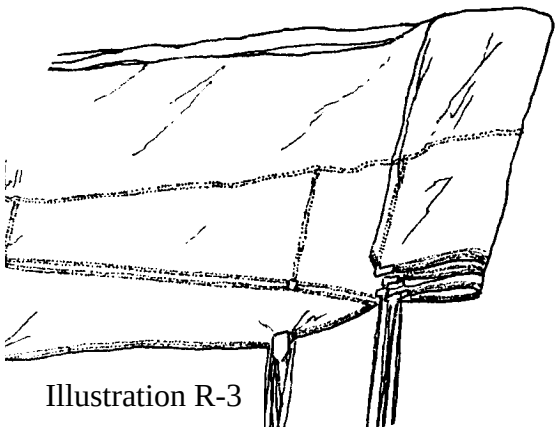


Illustration R-3

At this point the A-line group should be laying directly on top of the B-line group (Illustration R-4).

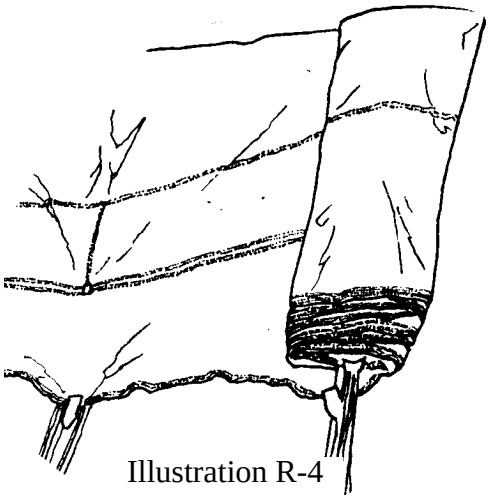


Illustration R-4

Go to the tail section of the canopy and STACK (do not fold) the tail section of the canopy over to the D-line group (Illustration R-5). When doing this, the tail section should be stacked so that the control line attachment points are placed on top of the D-line slider stops. This is done so when the brakes are set, pulling down on the control lines will not distort or "mess up" your neat pack job. Smooth out the canopy.

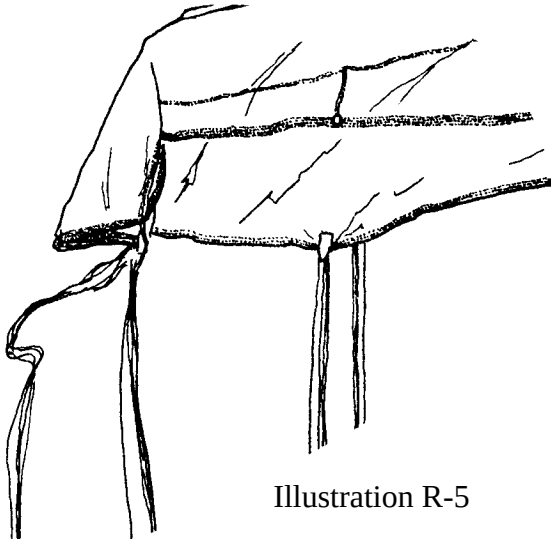


Illustration R-5

SETTING THE BRAKES. Pull the control line through the steel guide ring located on the rear riser until both brake loops (built into lower control lines) are just below the ring. Bring the locking loop (located on the riser behind the steel ring) up through both brake loops and pass it through the guide ring (Illustration R-6). Insert the tip of the toggle (the portion of the toggle above the grommet) through the locking loop up to the grommet.

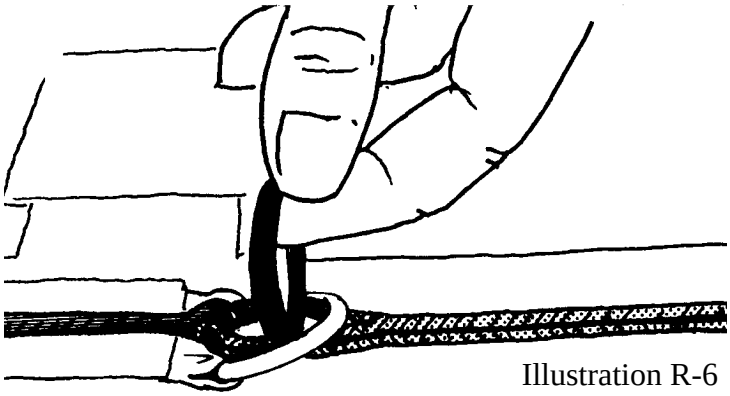


Illustration R-6

Mate the toggle to the Velcro® on the riser and place the tip of the toggle in the elastic keeper. S-fold the excess line and lay it next to the toggle. Mate the Velcro® on the toggle keepers (Illustration R-7). Repeat procedure on the opposite riser. Visually check the lines, they should all be straight, with no slack between the canopy and the harness.

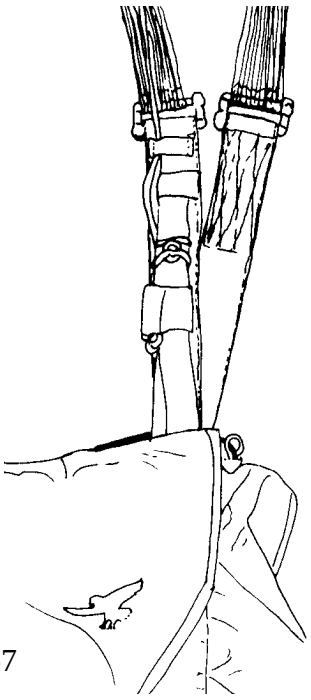


Illustration R-7

CONTINUE STACKING THE TAIL. Place the control lines and D lines on top of the C lines, stacking the canopy neatly (Illustration R-8).

Move the slider up to the base of the stabilizers making sure any twists in the lines are ABOVE the slider (Illustration R-9).

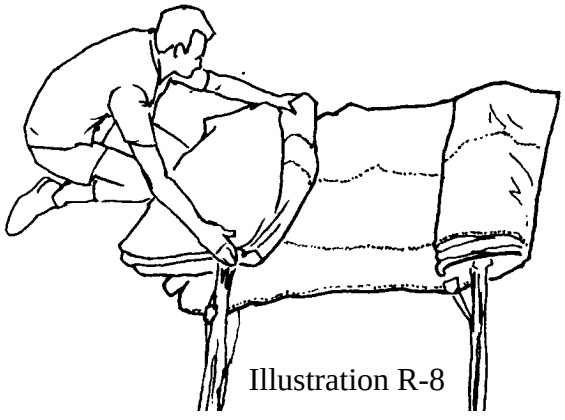


Illustration R-8

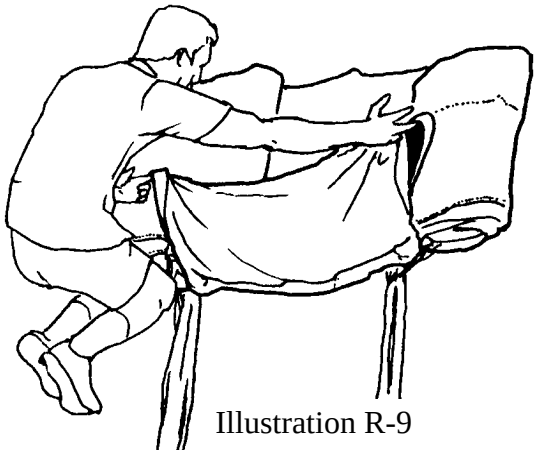


Illustration R-9

Spread the slider out flat (it will be folded in half spanwise) and stow it between the two stabilizers (Illustration R-10). Make one more stack with the tail section placing it on top of the nose section.

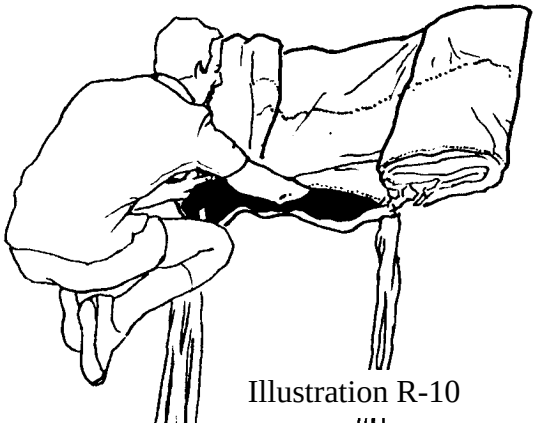


Illustration R-10

The C, D, and control lines should be placed on top of the A and B lines (Illustration R-11). Smooth out the canopy making sure all the air is compressed out.

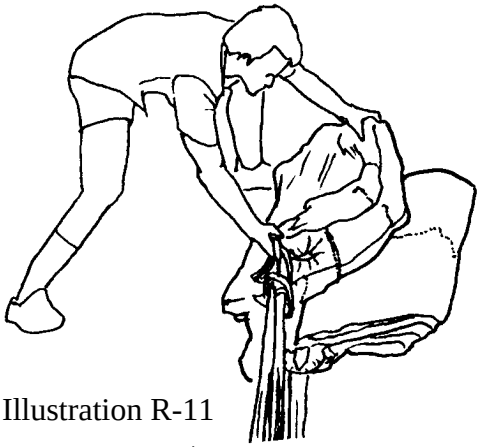


Illustration R-11

DRESS THE TAIL. Dress the tail, half on one side and half on the other so that the center of the tail is on top. Care should be taken when doing this to insure that the steering lines stay neatly stacked on top of the D lines and do not fan out over the canopy fabric. The trailing edge (four needle seam) should be placed over the slider (Illustration R-12).

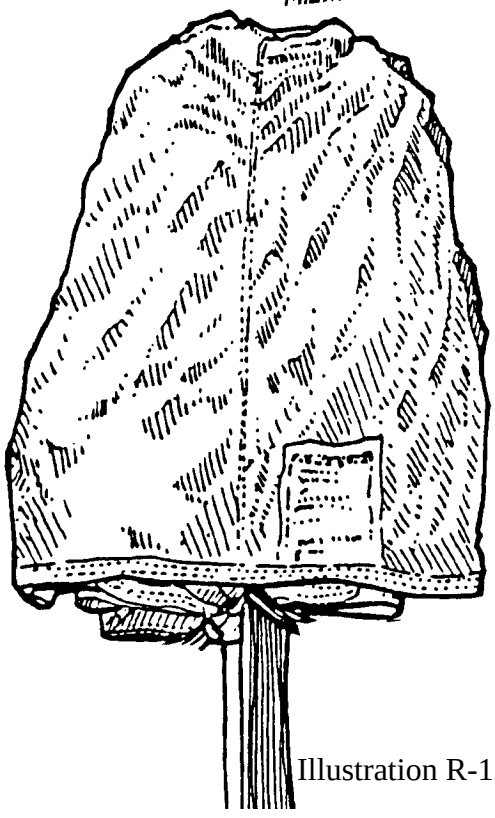


Illustration R-12

Illustration R-13

Wrap the tail around each side to make a smooth roll. Gauge the width of the canopy before bagging. It should be slightly wider than the deployment bag (Illustration R-13).

PLACE THE CANOPY IN THE BAG. Fold the lower portion of the canopy approximately 12 inches on top of itself (Illustration R-14).

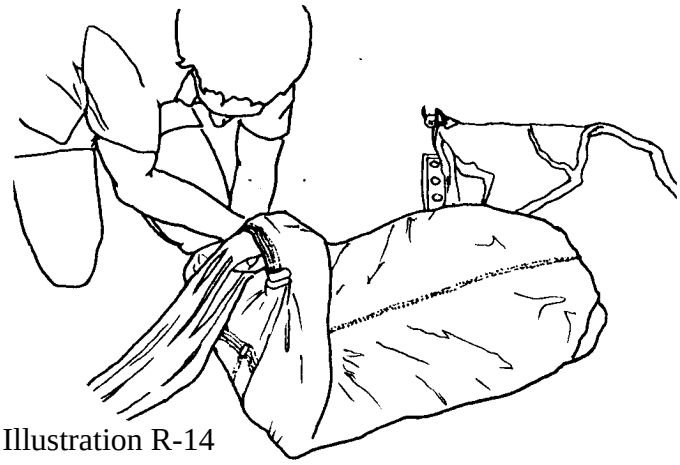


Illustration R-14

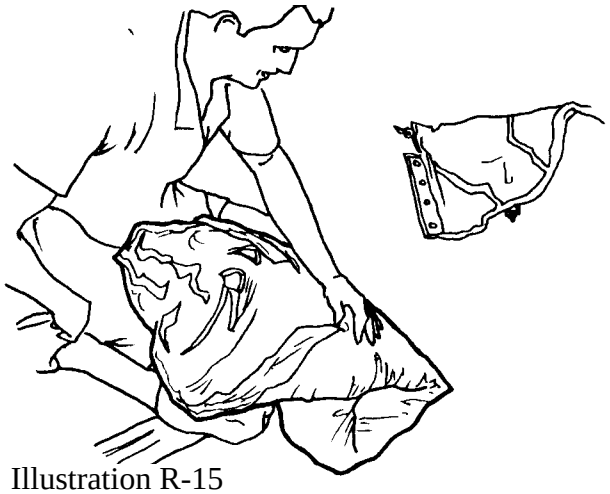


Illustration R-15

Fold the canopy back over the first fold, (Illustration R-15).

Making one S-fold the same length as the first fold. Fold the remaining 4 to 6 inches of canopy in front of the previous S-folds to create a wedge shape (Illustration R-16).

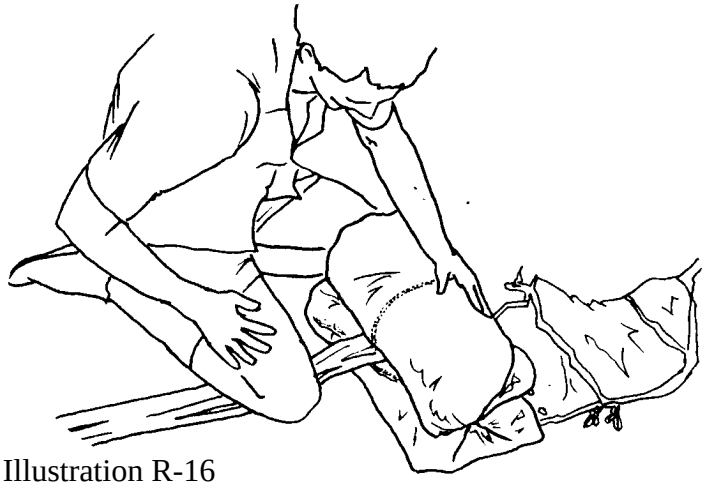


Illustration R-16

Slide the canopy directly into the bag filling both corners (Illustration R-17).

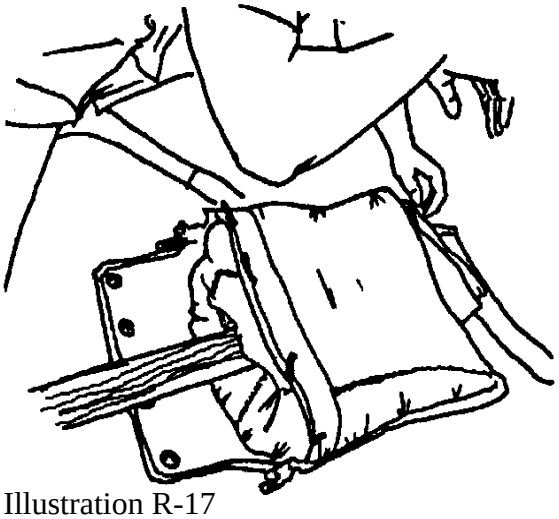


Illustration R-17

STOWING THE LINES. Close the mouth of the bag by routing the two center locking stow bungees through their respective grommets and lock with a 1 1/2" bight of suspension line (Illustration R-18).

The next two stows will be the outer locking stows.

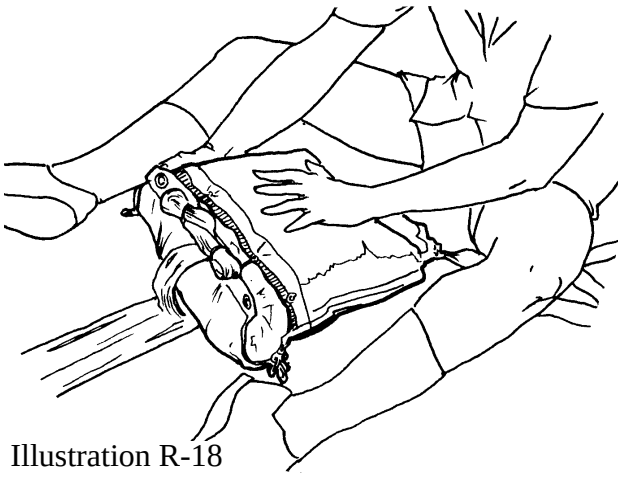


Illustration R-18

Stow the remainder of the lines to within 12 inches of the connecter links (Illustration R-19) compressing the bag with an open hand at the top of the bag (near the bridle attachment) will help create a wedge shape. Make sure the plastic sleeves are installed properly by stretching the bungee to its fullest capacity then sliding the plastic sleeve up as close to the bight of suspension line as possible

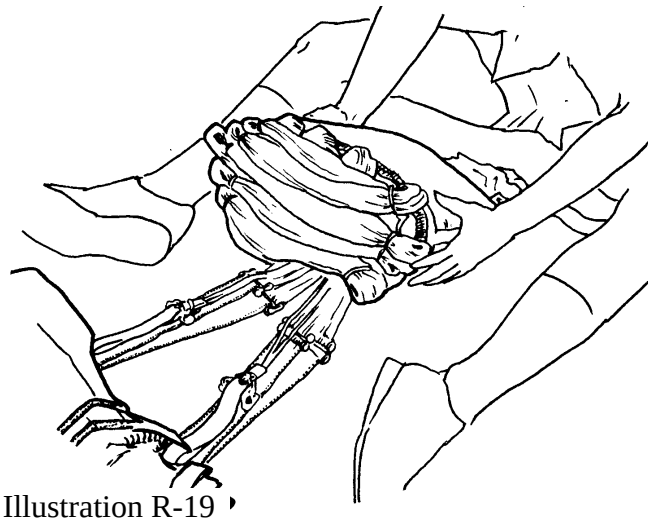


Illustration R-19

CLOSING THE CONTAINER. Place the risers and bag into the container and mate the Velcro® that secures the riser covers (Illustration R-20).

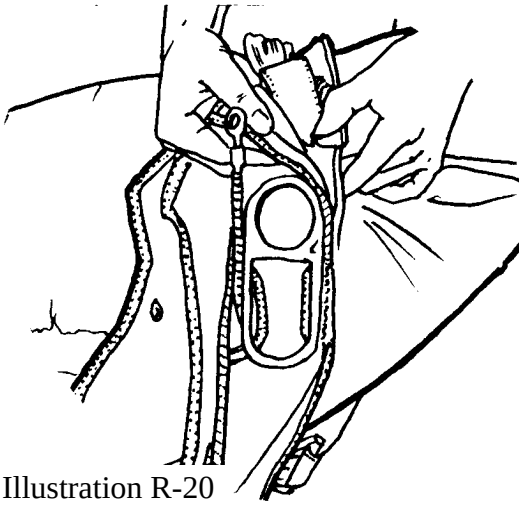


Illustration R-20

Mate the Velcro® at each lower corner of the container (Illustration R-21).

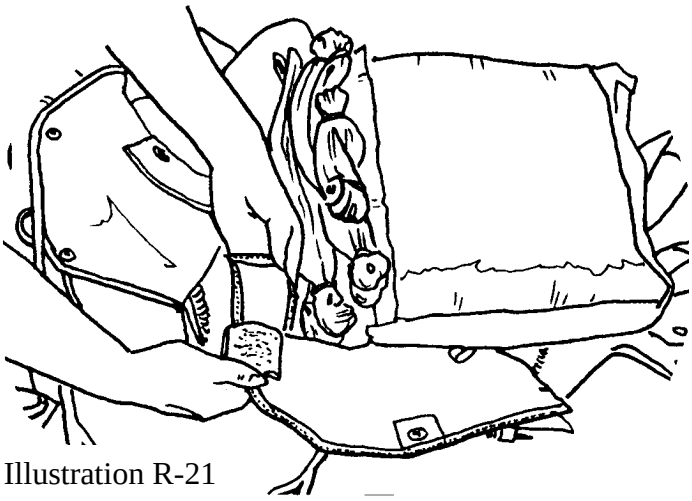


Illustration R-21

Place the bag into the container bottom corners first, one corner at a time. Tuck in the top corners by pushing down on the bag while pulling the side flap up and over the bag (Illustration R-22).

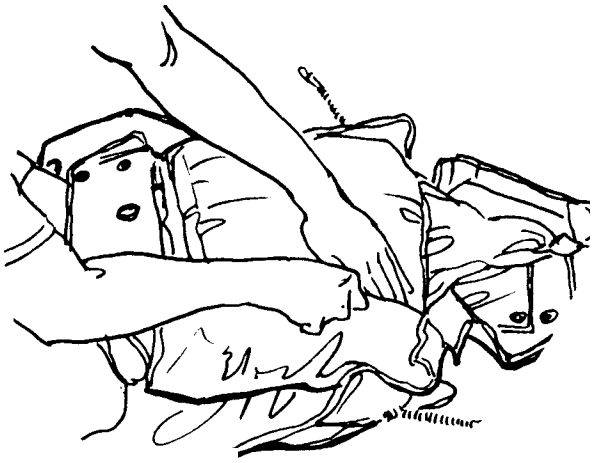


Illustration R-22

Fold the top part of the bag (bridle attachment) back on top of the bag.
The subflaps are closed by inserting closing loops (using pull-up cords) through the upper subflap, then the lower subflap, routing the bridle out between the grommets. Insert the elastic hesitater loop through the center grommet and secure the subflaps with a bight in the bridle. Form this bight six inches from the bag by doubling the bridle back onto itself, then fold the end across to half the width of the webbing. Insert no more than 1 1/2" through the elastic hesitater loop (Illustration R-23).

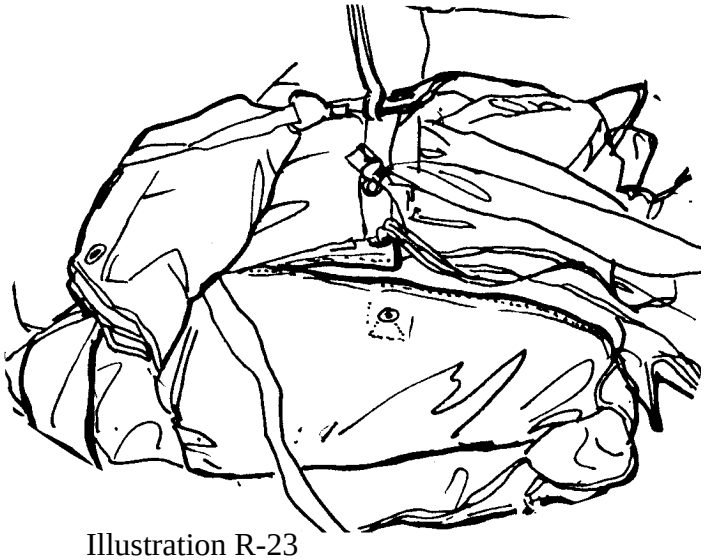


Illustration R-23

Close the side flaps next, making sure the closing loops are routed through the Cypres release units (cutters) and insert the temporary pins (Illustration R-24).

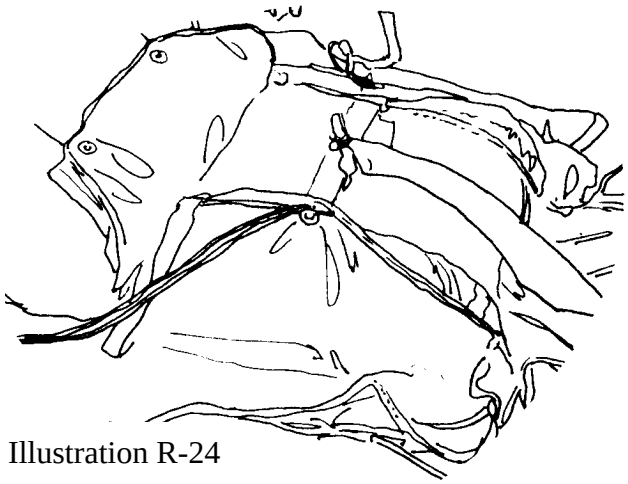


Illustration R-24

S-fold the bridle on top of the bottom subflap vertically using seven inch (approximately) folds fanning it out on both sides of the hesitater loop (Illustration R-25).

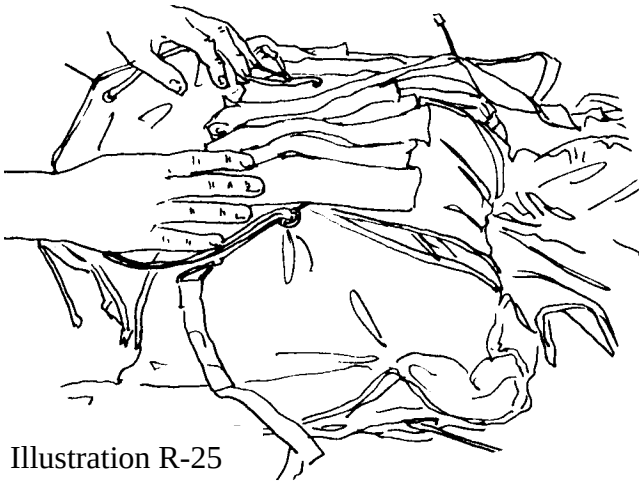


Illustration R-25

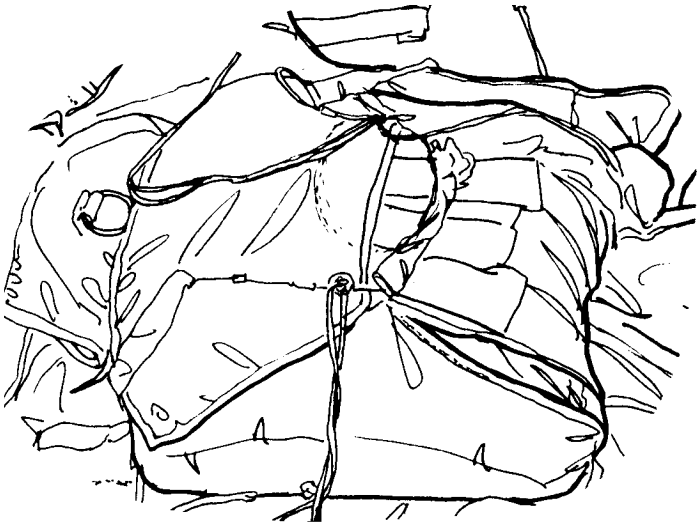


Illustration R-26

Position the pilot chute in the center of the lower subflap, below the grommets, and compress. Thread the pull-up cords through the grommets in the bottom flap. Close and insert the temporary pins (Illustration R-26).

The top flap is closed last but before this is done the reserve static line lanyard must be installed. To do this, route both ripcord cables through the top guide ring (the one located closer to the ripcord cable housing) then through the ring on the reserve static line lanyard and last, through the bottom guide ring on the top closing flap. (Illustration R-27).

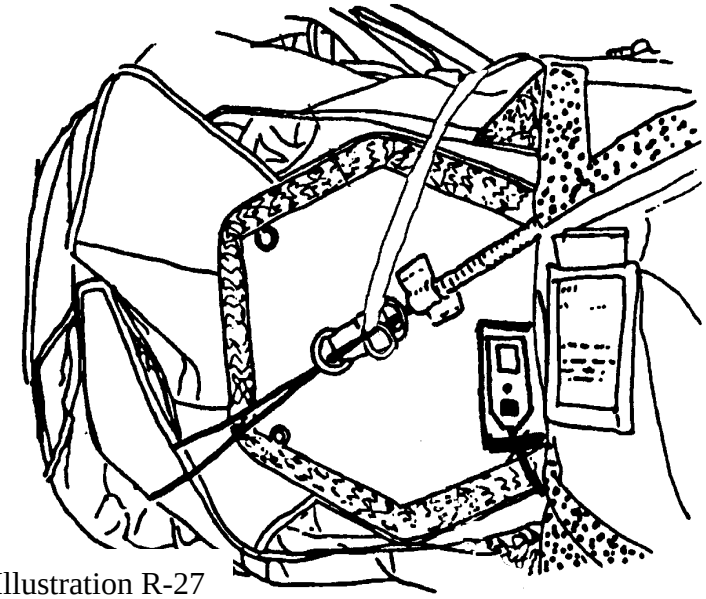


Illustration R-27

The left closing loop is secured with the shorter ripcord cable while the right is secured with the longer cable. Seat the pins through the loops. Remove the temporary pins and the pull-up cords (Illustration R-28).

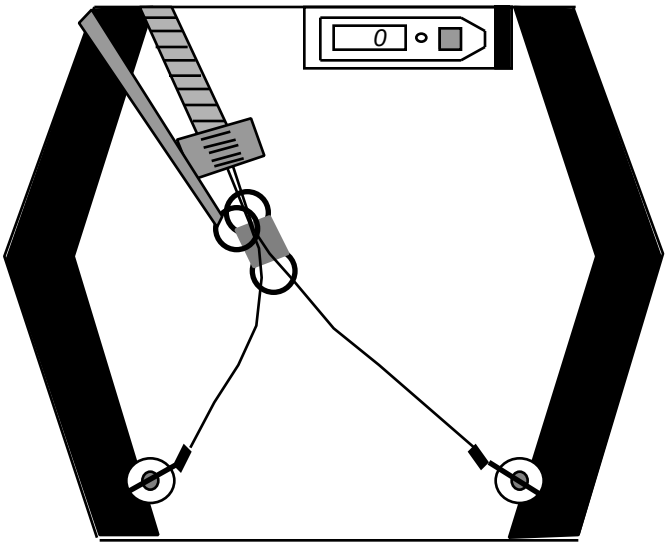


Illustration R-28

Dress the container. Mate the hook Velcro® located on the reserve static line lanyard with the pile Velcro® located on the left reserve riser cover (Illustration R-29). Seal the furthest pin from the cable housing (right). Fill out the data card and personal log, close the pin protector flap. Inspect the complete container and **count your tools.**

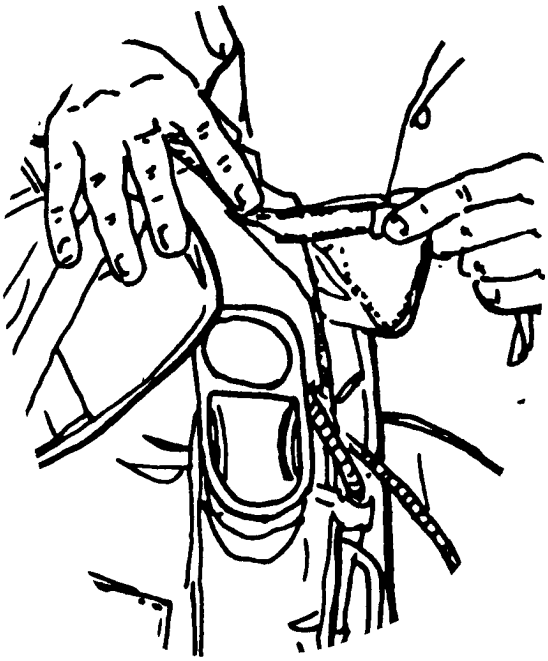


Illustration R-29

ASSEMBLING THE MASTER, T520 & SET 400 MAIN

GENERAL. The person packing this parachute must be completely familiar with ram-air type parachutes and preferably be checked out as a Strong Certified Tandem Instructor. The Master, the T520, and the SET 400 main parachutes will be jumped by two people; therefore, the reliability/confidence levels dictate that the parachute be packed according to the instructions by competent riggers/packers thoroughly trained in this procedure.

ASSEMBLING THE MAIN CANOPY. Lay the canopy on left or right side. Note: To assure even wear on the canopy alternate left and right side up during packing. Attach the canopy risers to harness and container (Illustration A-1).

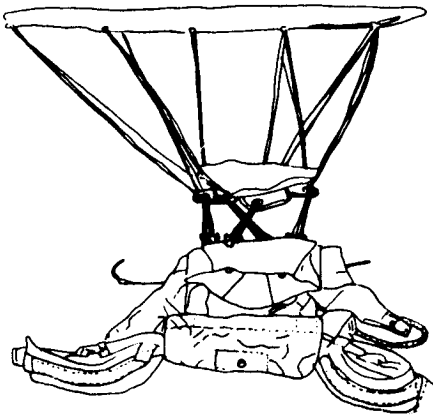


Illustration A-1

Do a complete continuity check. Connect the reserve static line lanyard to the stainless steel snap located on the left riser (Illustration A-2).

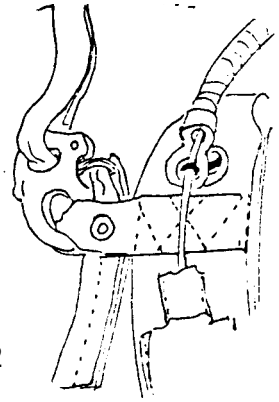


Illustration A-2

ASSEMBLE AND PACKING THE ALS BAG

ASSEMBLY INSTRUCTIONS

1. Attach Kevlar® drogue bridle to #6 Rapide link on top of the bag. Tighten nut, finger tight plus 1/4 turn with a wrench.
2. Feed Y-lines through #4 grommet on either side of the Rapide link and attach them to the link on top of the canopy (Illustration AN-3).

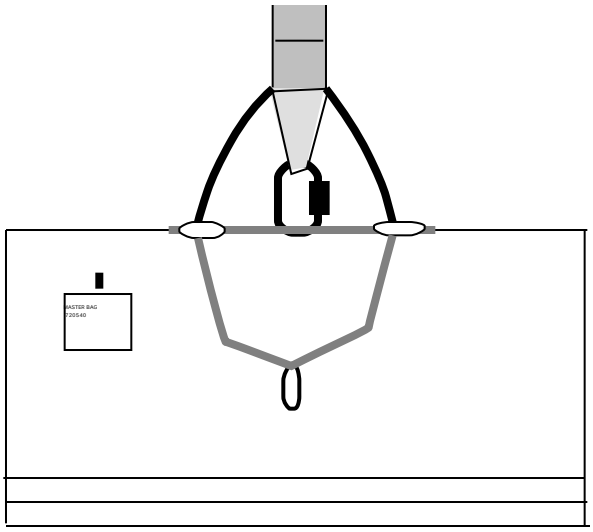


Illustration AN-3

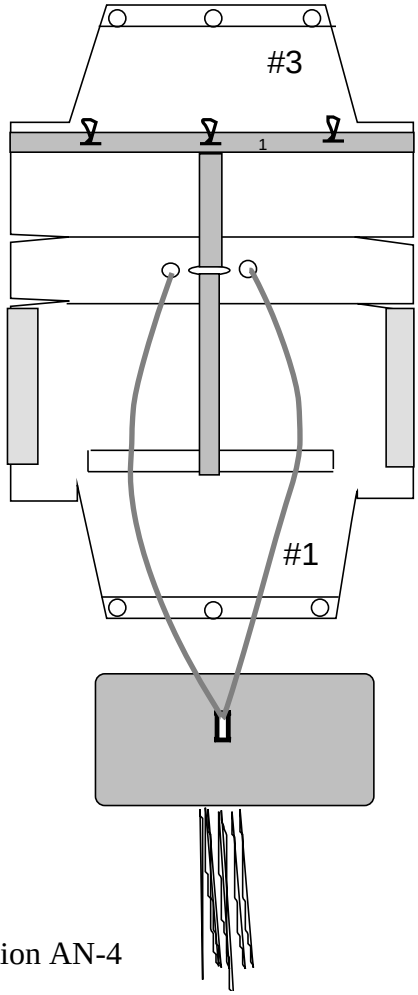


Illustration AN-4

PACKING INSTRUCTIONS FOR THE ALS (Anti- Line- Slump) BAG.

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1. Fold canopy in normal way.
2. Lay bag with inside facing skyward and the end with closing loops (facing the ground) towards the folded canopy (Illustration AN-4)
3. Place canopy on top of the fully open bag, with lines coming out on top of canopy locking flap # 1.
4. Close bag from top to bottom and lock with center inner stows, #1.
5. Then lock left and right inner stows using the rubber bands.
6. Close sides of bag with Velcro®.
7. Stow remaining lines on top of canopy locking flap, leaving approximately 3 feet un-stowed.
8. Close line cover flap, # 3, and lock with left and right stow, center stow last, using the shock cords.
9. Place bag in container, with the three shock cord stows facing bottom of container

See page 34 for further instructions.

PACKING THE MASTER & T520 MAIN

See Page 28 for packing the SET 400 main

PRO PACKING. With the addition of a flag slider, Strong Enterprises now approves the PRO Packing method for the tandem main. The Master and T520 mains require that the outside 4-5 cells be rolled at the nose and stuffed into the center cell. The ‘Flag’ will be wrapped around the nose. Insure that the flag pockets are facing outward and are not inverted.

THE FLAG SLIDER. For years skydivers around the world have been using material attached to the leading edge of their sliders to help soften the opening of their parachutes. This material has taken several forms ranging from plain flaps of varying lengths to today's popular “pocket” sliders.

Strong Enterprises has borrowed from this established technology in order to make the openings of our tandem mains softer. SE’s modification is in the form of a rectangular, reinforced flag, sewn along the leading edge of the slider, with 10” deep pockets facing outward at the top of the flag.

The flag is wrapped around the stacked nose when packing, blocking the introduction of air into the center cell during the initial stage of deployment, at the same time the “pockets” at the top of the “flag” retard the descent of the slider.

FLAT PACKING:

WITH THE FLAG SLIDER.

1. Lay out flat, with brakes set.
2. Packer position at top of canopy.
3. Front section of canopy: (if nose is at left)
   A. Roll the four or five outside cells at the nose, towards the middle and stuff in the center cell.
   B. Grab canopy along top at "A" lines.
   C. Lift and drag all material across "B" lines, double back to create an "S" fold (approx. 6") and place the "A" lines on top of the "B" lines.
4. Rear section of canopy.
   A. Fold the tail section over to the "C" line group.
   B. Fold the "D" lines on top of the "C" lines. (Illustration MF-1)
5. Pull up slider, keeping flag between left and right A/B line groups.
6. Put slider inside canopy between stabilizers.
7. Pull flag up in front of canopy, and wrap around nose only.
8. Fold front section over to rear section.
9. Fold rear section of canopy on top of front section.
10 S-fold and bag canopy in normal way.

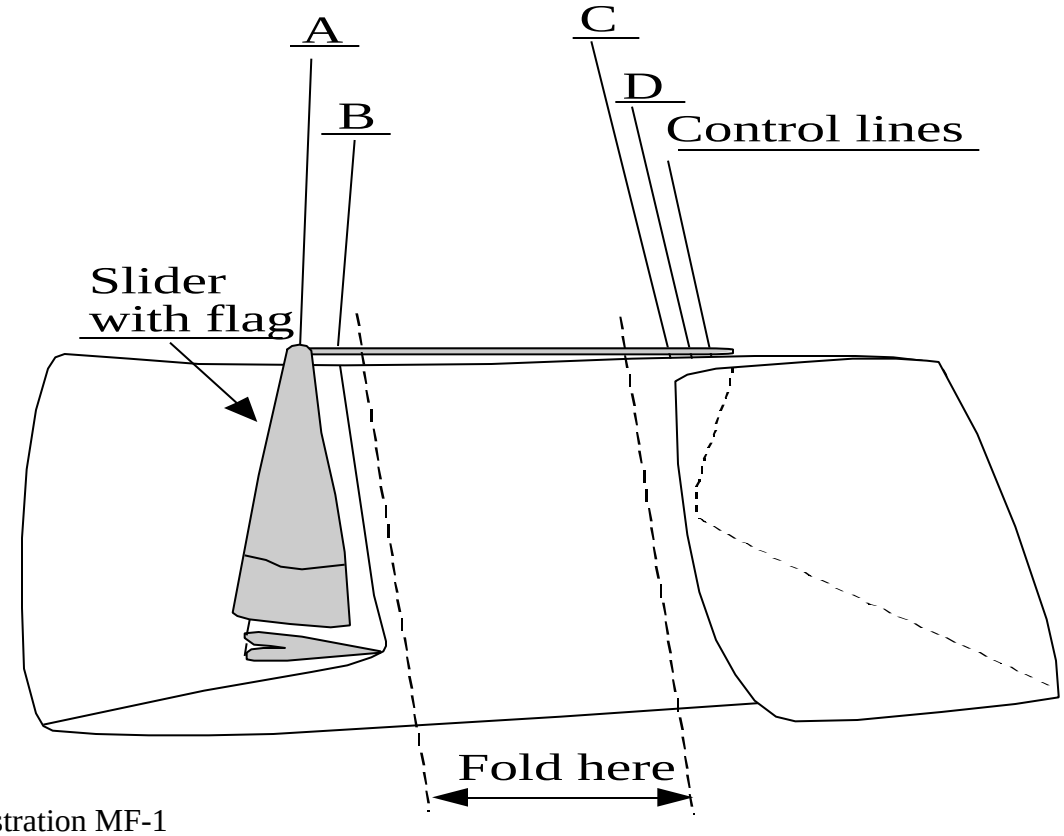


Illustration MF-1

WITHOUT THE FLAG SLIDER.

FOLD THE CANOPY. Lay the canopy out with the left or right side up. Flake the entire canopy neatly making sure all the lines are straight. Fold the nose over up to the A-line group (Illustration M-1).

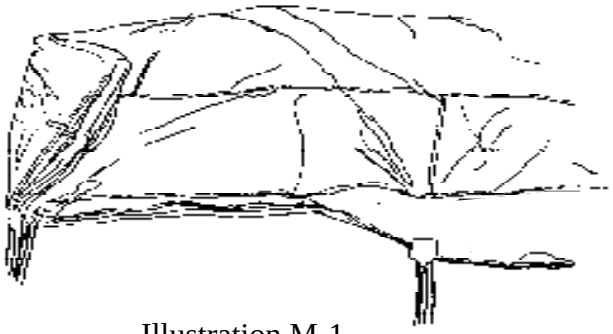


Illustration M-1

FOLD (do not stack) the canopy again half way between the A-line group and the B-line group (Illustration M-2). Continue with one more fold to the B-line group.

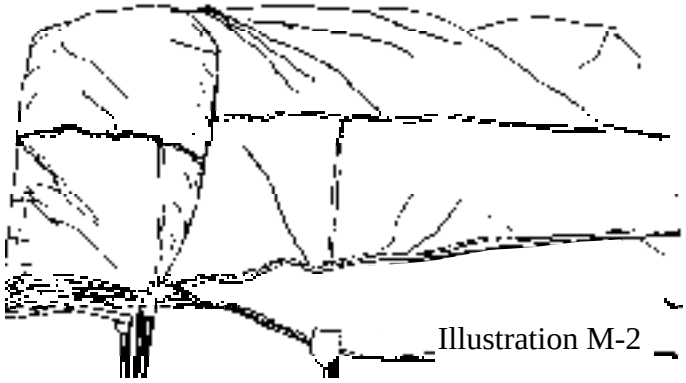


Illustration M-2

At this point the A-line group should be laying directly on top of the B-line group (Illustration M-3).

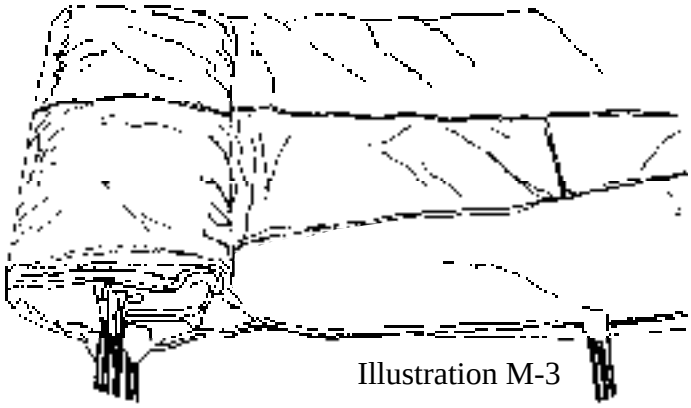


Illustration M-3

Go to the tail section of the canopy and FOLD (do not stack) the tail section of the canopy over to the C-line group. When doing this, the tail section should be folded so that the control line attachment points are placed on top of the C-line slider stops (Illustration M-4). This is done so when the brakes are set, pulling down on the control lines will not distort or “mess up” your neat pack job.

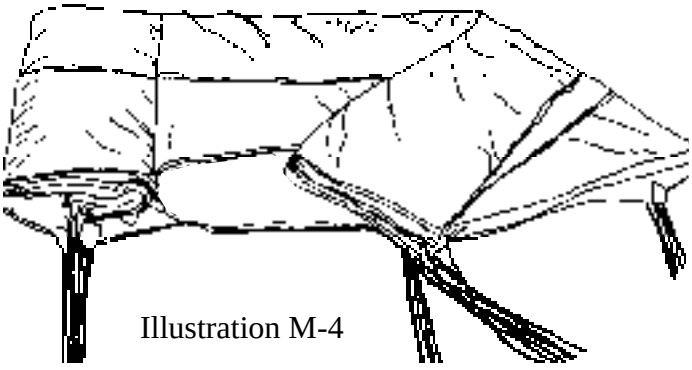


Illustration M-4

SET THE BRAKES:

SET 400 and MASTER CANOPY.

Pull the control line through the guide ring until the finger trapped brake loop (located on the control line) is just below the steel guide ring on the rear riser. Bring the locking loop (located on the riser) up through the guide ring and pass it through the brake loop (Illustration M-5).

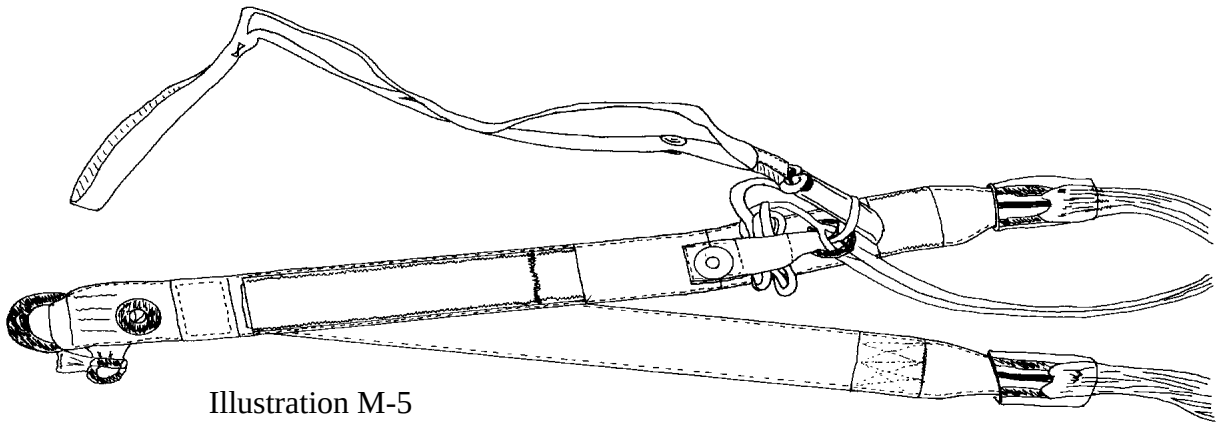


Illustration M-5

Insert the stiff end of the toggle through the locking loop, up to the grommet (Illustration M-6), and insert into elastic keeper. Snap the toggle to the riser then fold the toggle between the middle and lower hand grip loops and tuck the lower end of the toggle into the toggle pocket located on the riser.
S-fold the excess steering line and stow under the toggle. (Illustration M-6). Repeat procedure on the opposite riser.

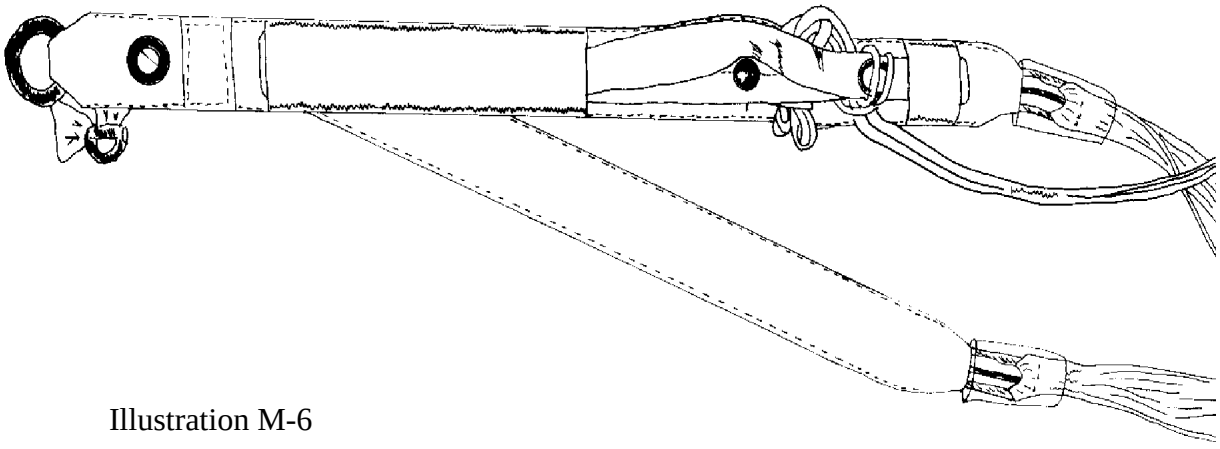


Illustration M-6

T520 CANOPY

Take both the primary toggle (yellow) and the flare toggle (red) in one hand and pull both control lines through the guide ring until the finger trapped brake loops (located on both the primary and the flare control line) are just below the steel guide ring on the rear riser.

Bring the locking loop (located on the riser) up through the guide ring and pass it through the primary brake loop first, then the flare brake loop.

Insert the stiff end of the primary toggle through the locking loop, up to the grommet, and insert into elastic keeper.

S-fold the excess steering line and stow under the toggle. Repeat procedure on the opposite riser.

Fold the primary toggle between the middle and lower hand grip loops and tuck the lower end of the toggle into the toggle pocket located on the riser. S-fold the excess line from both primary and the secondary steering lines together and stow on rubber band on toggle. (Illustration M-7). Repeat procedure on the opposite riser.

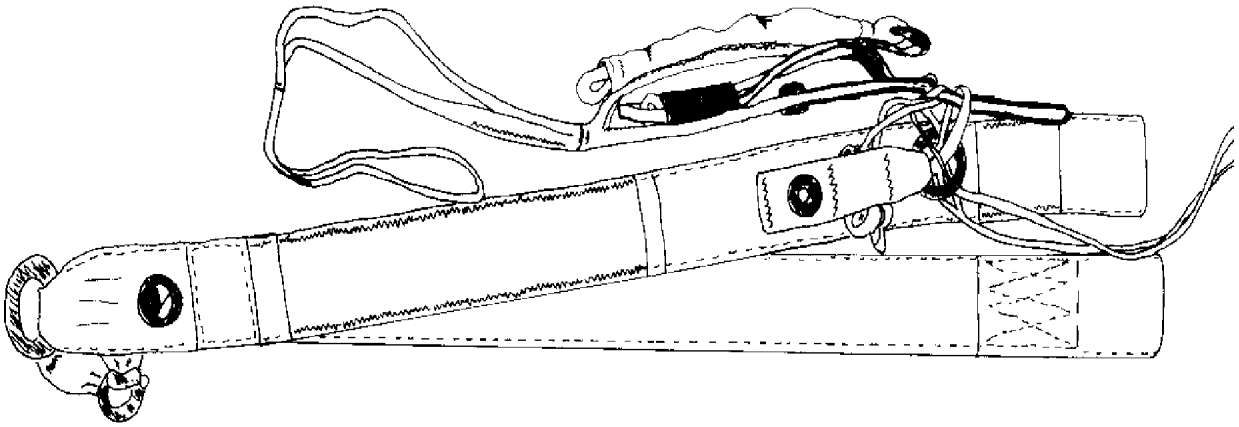


Illustration M-7

CONTINUE FOLDING CANOPY.

Straighten out the control line groups by pulling them tight from the top of the canopy. Fold the D lines on top of the C lines, keeping the lines straight (Illustration M-8).

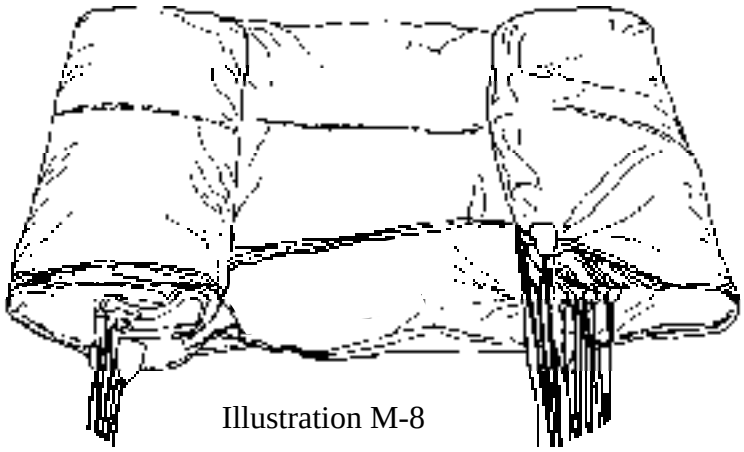


Illustration M-8

STOWING THE SLIDER.
Move the slider up to the base of the stabilizers. Make sure the grommets on the slider go all the way to the slider stops located on the canopy stabilizers. Keep any twists in the lines above the slider (Illustration M-9).

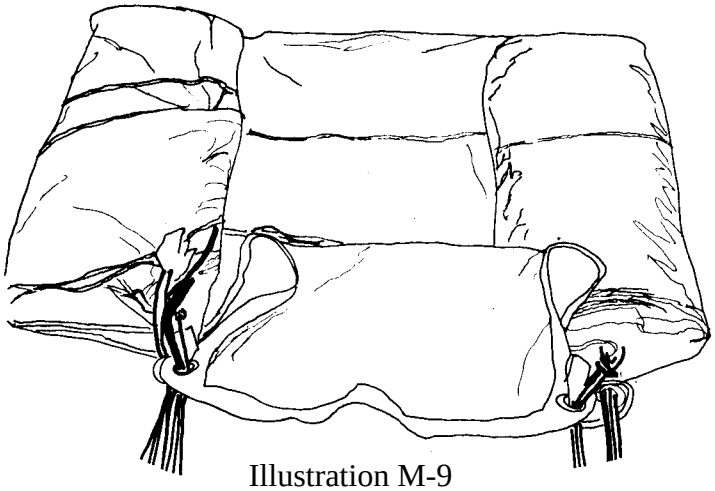


Illustration M-9

Stow the slider between the two stabilizers keeping the slider spread out (Illustration M-10).

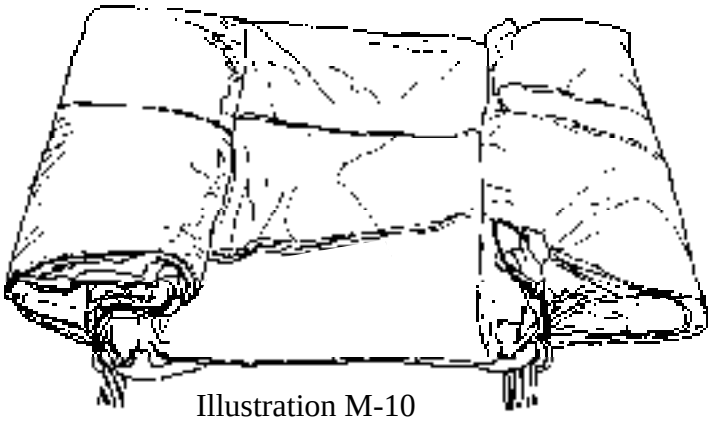


Illustration M-10

Fold the tail first and then the nose toward the center (Illustration M-11). The last fold will be the nose on top of the tail section. This leaves the canopy in one long fold slightly wider than the width of the deployment bag.

For stowing the canopy in the ALS bag see page 34

Illustration M-11

SET 400, SEMI ELLIPTICAL TANDEM, 400 sq. ft.

INTRODUCTION

The following instructions will cover two different packing procedures approved for use on the Strong Enterprises SET 400 Tandem Canopy. These consist of the Pro-Pack method and the "flop type" Flat Pack method. Although either of these methods may be used, the Pro-Pack provides superior consistency and is our recommended procedure.

PRO PACK METHOD

Set the deployment brakes according to instructions on page 24.
The loop on the riser must be used in order to keep the brake line loop from digging into the side of the toggle, making brake toggle release, almost impossible during a malfunction.
The inner control lines are not braked.
(Illustrations M-5/M-6, Page 24).

Standing between the right and left riser group while facing the canopy, pick up the suspension lines and use your fingers to separate the front lines, rear lines, and control lines.
Walk toward the canopy pushing the slider ahead of you until it is seated against its stops.
While keeping the lines taut, transfer them to your shoulders in preparation for flaking the canopy.
Alternately, due to the weight of the canopy, the packer may wish to use a pair of overhead hooks to suspend the canopy during the following steps.
Flake the canopy in a normal manner with the lines to the center and all fabric folded outboard from between each line group and clear out the stabilizers.

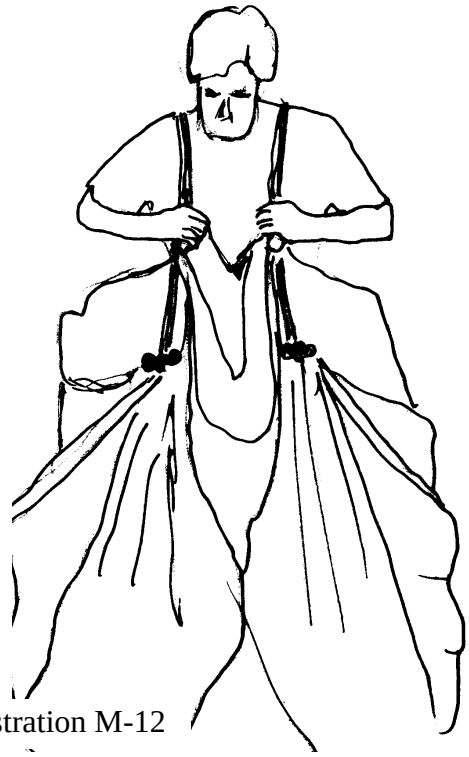


Illustration M-12

STOWING THE INNER CONTROL LINES.

If not already done, attach a rubber band to each of the two innermost control line attachment tabs on the tail of the canopy.

Stow the four inner control lines in these rubber bands, using a double wrap, so that their attachment tabs are even with the tabs of the outer "braked" control lines. Right lines in one rubber band, left lines in the other. (Illustration M-12)

Because of the inherent soft, lengthy openings of the SET 400, there is no need to do anything with the nose other than to let it hang down naturally, grasp it and push it into the canopy folds a few inches.
(Illustration M-13)

Illustration M-13

Cloverleaf the slider so that it is ready to cup air the moment its four corners are spread and ensure that the slider pocket is out in front of the nose.
(Illustration M-14)

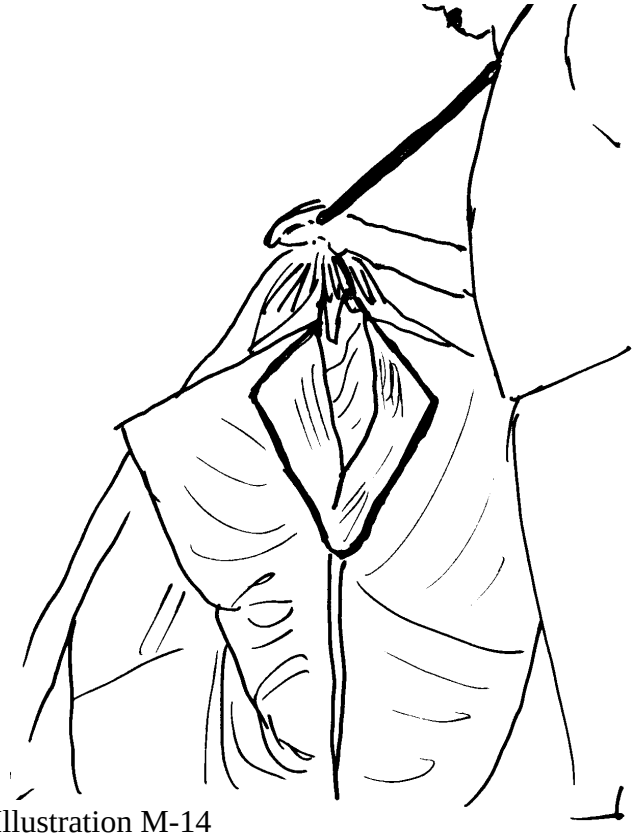


Illustration M-14

Locate the center of the tail near the warning label and pull it up so that it covers the slider grommets.
Swing the tail seams around the canopy so that they meet in front of the nose and roll them together several times. (Illustration M-15).

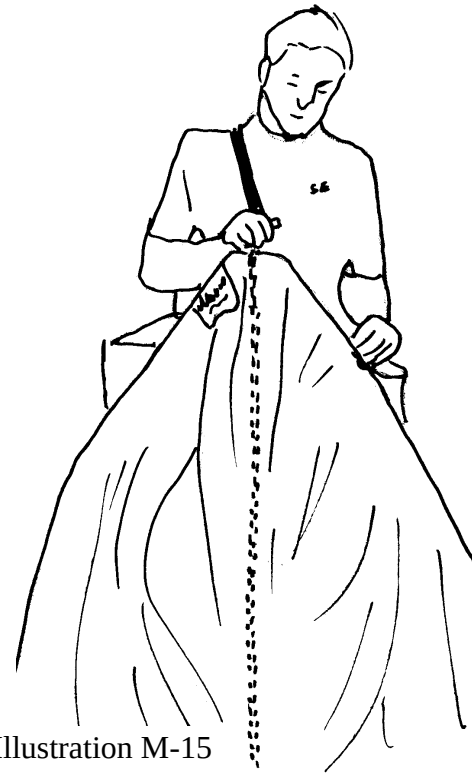


Illustration M-15

Carefully lay the canopy down flat on the packing surface with the lines taut.
Purge the air from the canopy and dress to the approximate width of the deployment bag. (Illustration M-16).

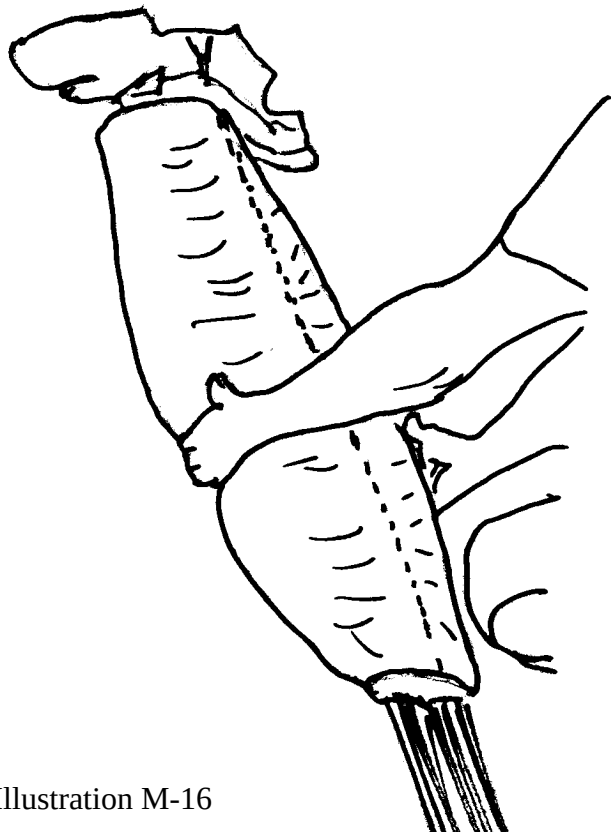


Illustration M-16

FLAT PACK METHOD

Flake out the canopy on either side.

Take the entire nose, and roll it tight,until it lines up with A-line group.
(Illustration M-21).

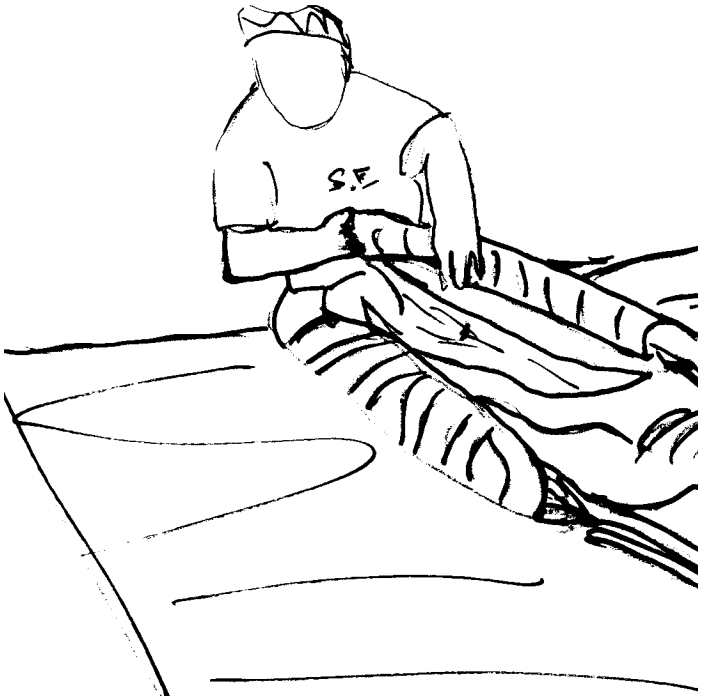


Illustration M-21

Grasp the nose and make a fold between A and B.
Then another fold on top of B's.
(Illustration M22).

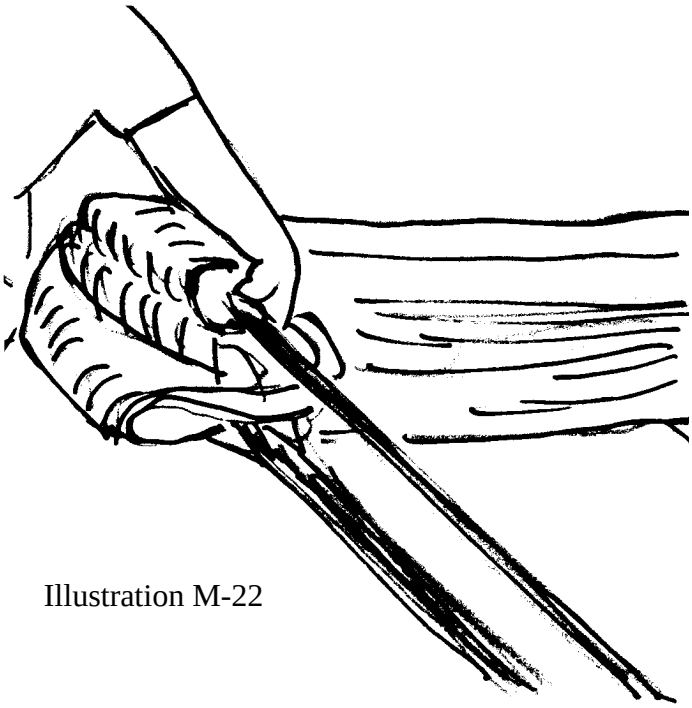


Illustration M-22

If not already done, attach a rubber band to third line from outside of the canopyon each side.

Grasp the tail and fold it up onto the canopy. Make the fold at the “D” line point (Illustration M-23).

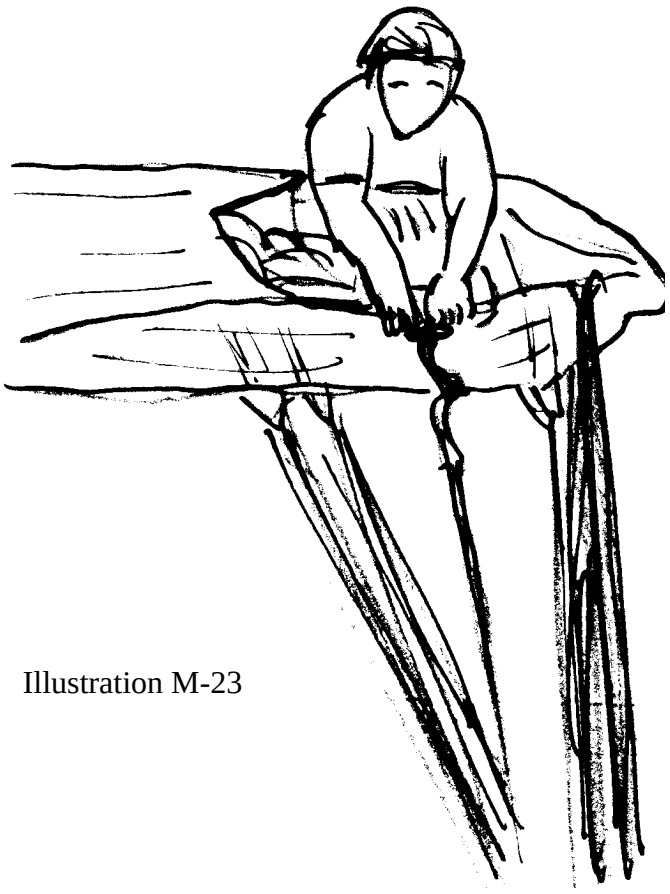


Illustration M-23

Set the deployment brakes by pulling each outer control line’s brake locking loop down through its corresponding guide ring and inserting the end of the toggle through the loop. The inner control lines are not braked.

Insert the toggle into the elastic pocket on the riser. Then stow the lower section by folding the last loop under and inserting into the riser’s pocket. (Illustration M5/M6, page 24)

S-fold the excess brake line next to the toggle and secure under the Type XII toggle keeper.

Flake the tail, one seam at a time, to the rear of the canopy so that its control lines lie along side of the “D” lines.

Stow the two inner control lines from each side in rubber bands (see step #5) so that they are even with the outer “braked” lines (Illustration M24).

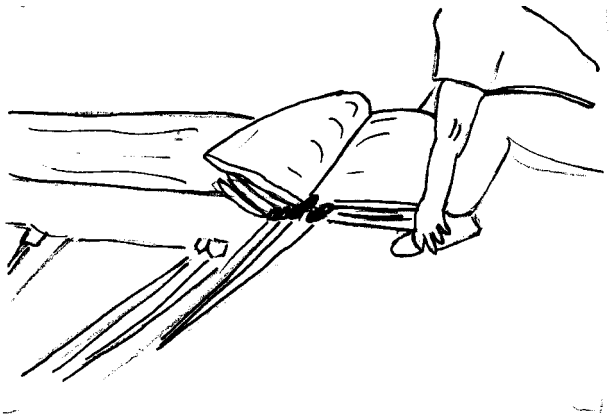


Illustration M-24

Fold the tail and “D” lines over so that they lie on top of the “C” lines.

Pull the slider up to its stops. Ensure that the slider pocket is routed forward of the slider so as to catch air, and stow the entire assembly between the stabilizers (Illustration M-25).

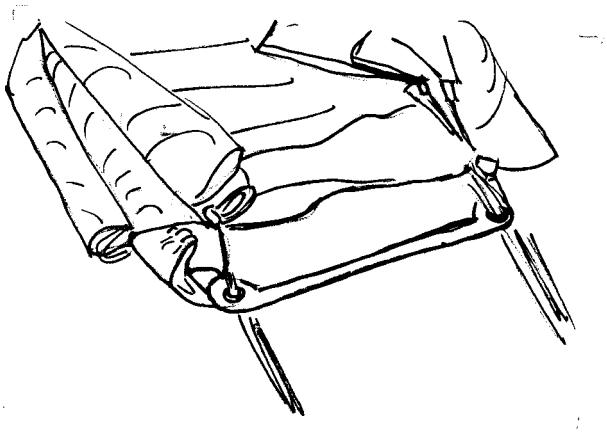


Illustration M-25

Fold the rest of the canopy toward the nose so that the “C”, “D”, and control lines lay against the “A” and “B” lines (Illustration M-26).

Fold “A” and “B” lines over “C”, “D”, and control lines.

Purge the air from the canopy and dress to the approximate width of the deployment bag.

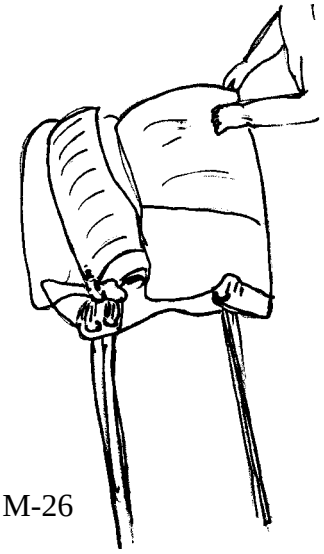


Illustration M-26

NOTE: Before continuing, we must emphasize that the use of an ALS type bag is highly recommended to prevent line dump. Its use is discussed below.

STOWING THE BAG

Prepare the ALS bag by de-mating its side Velcro® so that it lies flat .

Grasp the base of the canopy and fold it up approximately 10 inches.

Make a complete S-fold which lays on top of the first fold. Any excess canopy may be rolled under the top of the S-fold.

Slide the bag under the folded canopy with the three rubber band locking stows facing upwards and oriented so that they are on the opposite side of the canopy from the suspension lines. (Illustration M-17).

Illustration M-17

Pull all of the Y-line out through the two grommets in the center of the bag.

Fold the bag up over the canopy and lock it closed with three bights of suspension line starting with the center stow (Illustration M-18).

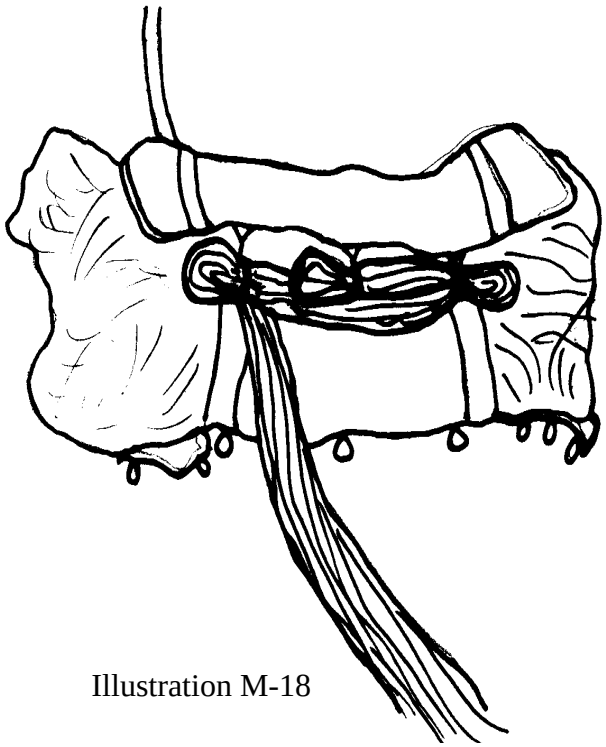


Illustration M-18

Push all of the protruding canopy fabric back into the sides of the bag and close the bag's side flaps by mating the Velcro®.

Stow the remainder of the lines to within about 4 feet of the links (Illustration M-19).

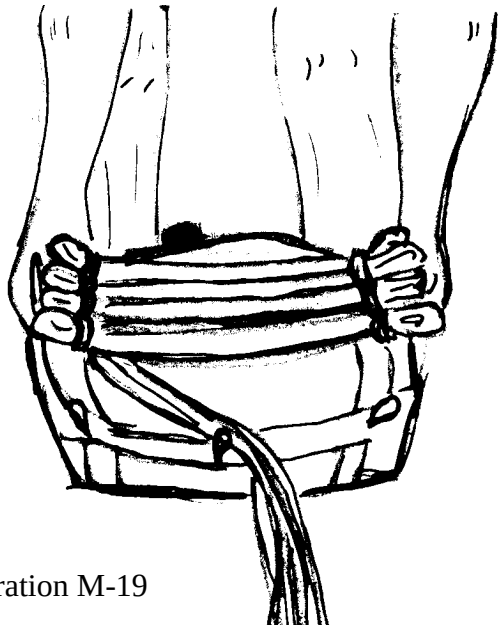


Illustration M-19

Fold the ALS flap down over the suspension lines and lock it in place using the bungee loops and three bites of suspension line. Lock the center stow last so that the risers are always routed toward the center of the pack tray.

Anchor the bag and cock the drogue by pulling all of its Y-line into the Kevlar® drogue bridle (Illustration M-20).

Illustration M-20

ARMING THE DROGUE.

After the canopy has been jumped, several feet of deflation line will be protruding from the bridle of the drogue. Before the bag can be packed into the container, this line must be pulled back inside the bridle. This is done by grasping the drogue deployment pud (located at the apex of the drogue canopy) and extending the drogue bridle to its fullest length. Doing this will pull the deflation lines back inside the bridle.

CLOSING THE CONTAINER

Place the deployment bag into the container, lines facing to the bottom of the container, drogue bridle towards the reserve (Illustration M-38).

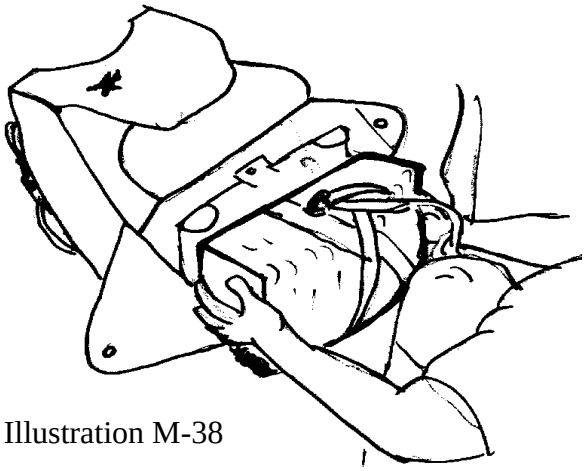


Illustration M-38

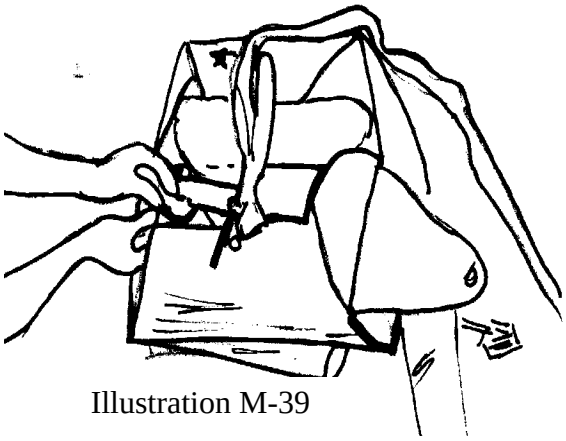


Illustration M-39

Using a 2” closing loop (1800 # Spectra), close the top and bottom flaps of the container making sure the drogue bridle is routed out the center of the container (Illustration M-39).

Close the top Spandura® flap with the two tuck-in tabs into the bottom flap. Make sure the drogue bridle comes out between tuck-in tabs Seat the closing loop temporarily with the closing pin located on the drogue bridle.
(Illustration M-40).

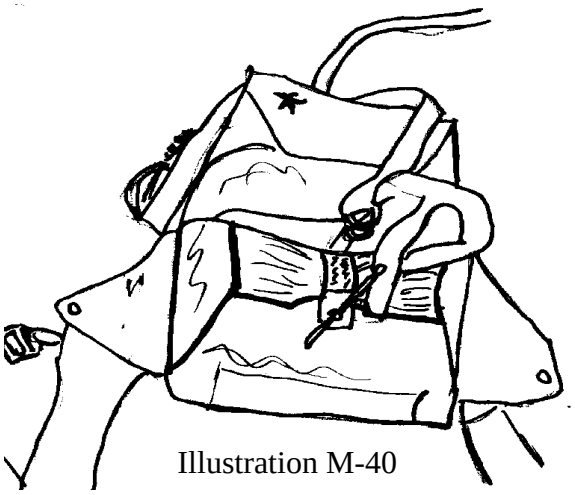


Illustration M-40

At this point the container can be split open between the main and reserve containers to expose the drogue riser for assembling the 3-ring attachment (Illustration M-41).

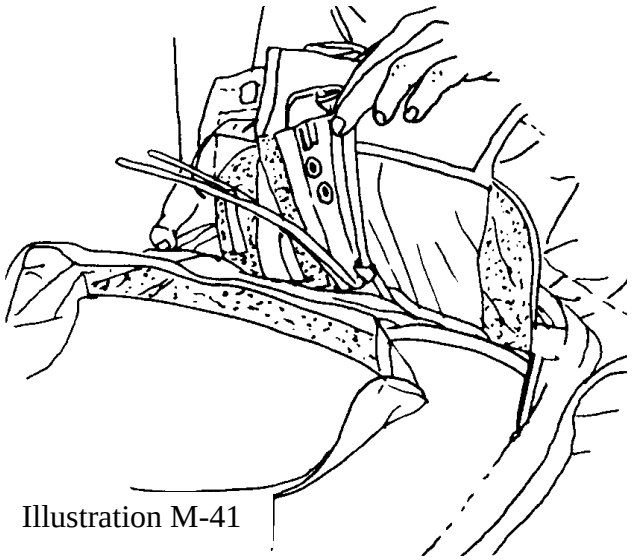


Illustration M-41

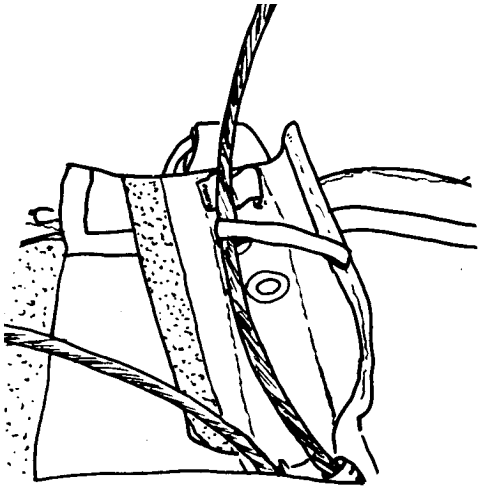


Illustration M-42

Insert the coated cable from the student cable housing into one end of the continuous thru-loop (Illustration M-42).

Assemble the 3-ring and route the other end of the thru-loop through the bottom grommet around the small ring on the 3-ring assembly and back through the top grommet (Illustration M-43).

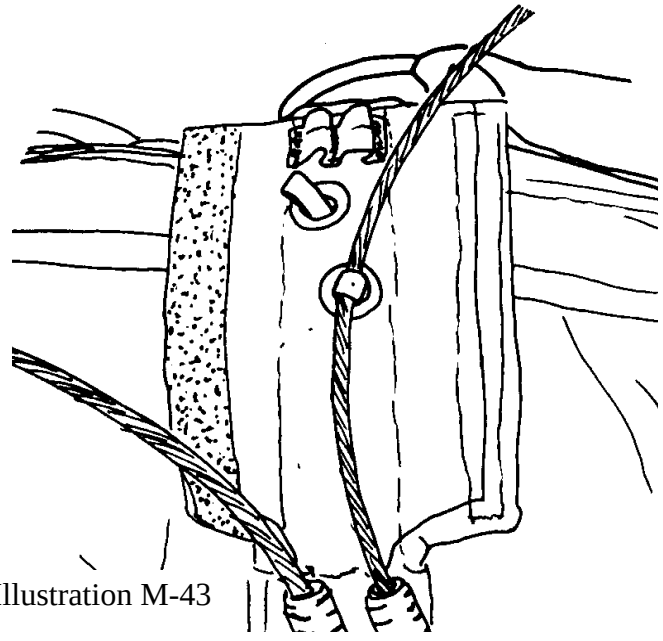


Illustration M-43

Insert the coated cable from the instructor cable housing through the thru-loop and stow the cables into the channels provided (Illustration M-44).

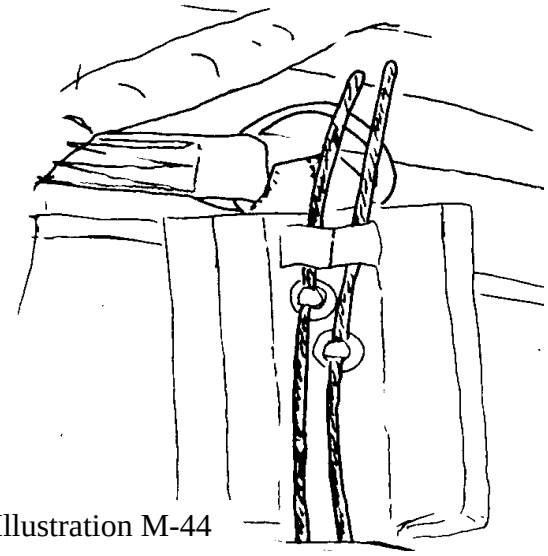
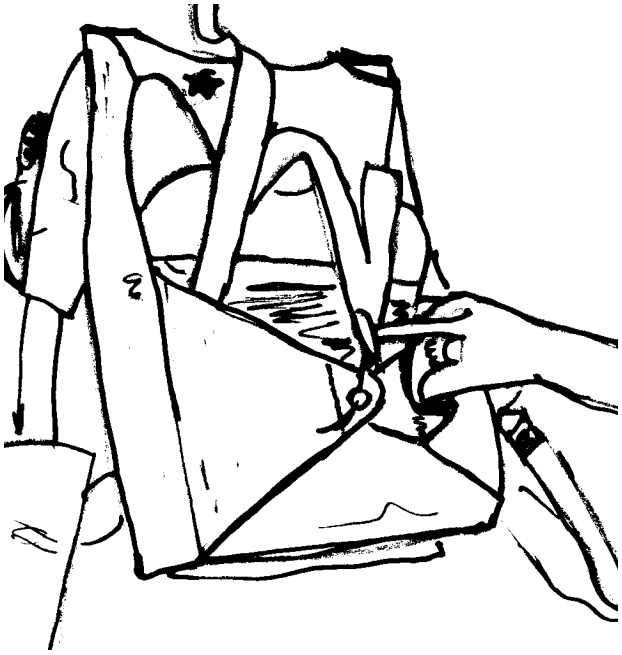


Illustration M-44



Close right flap then left flap, seat flex pin, remove pull-up cord, inspect and close protective cover flap (Illustration M-45).

Route drogue bridle down channel on right cover flap channel (Illustration M-46).

Illustration M-46

DROGUE DESCRIPTION

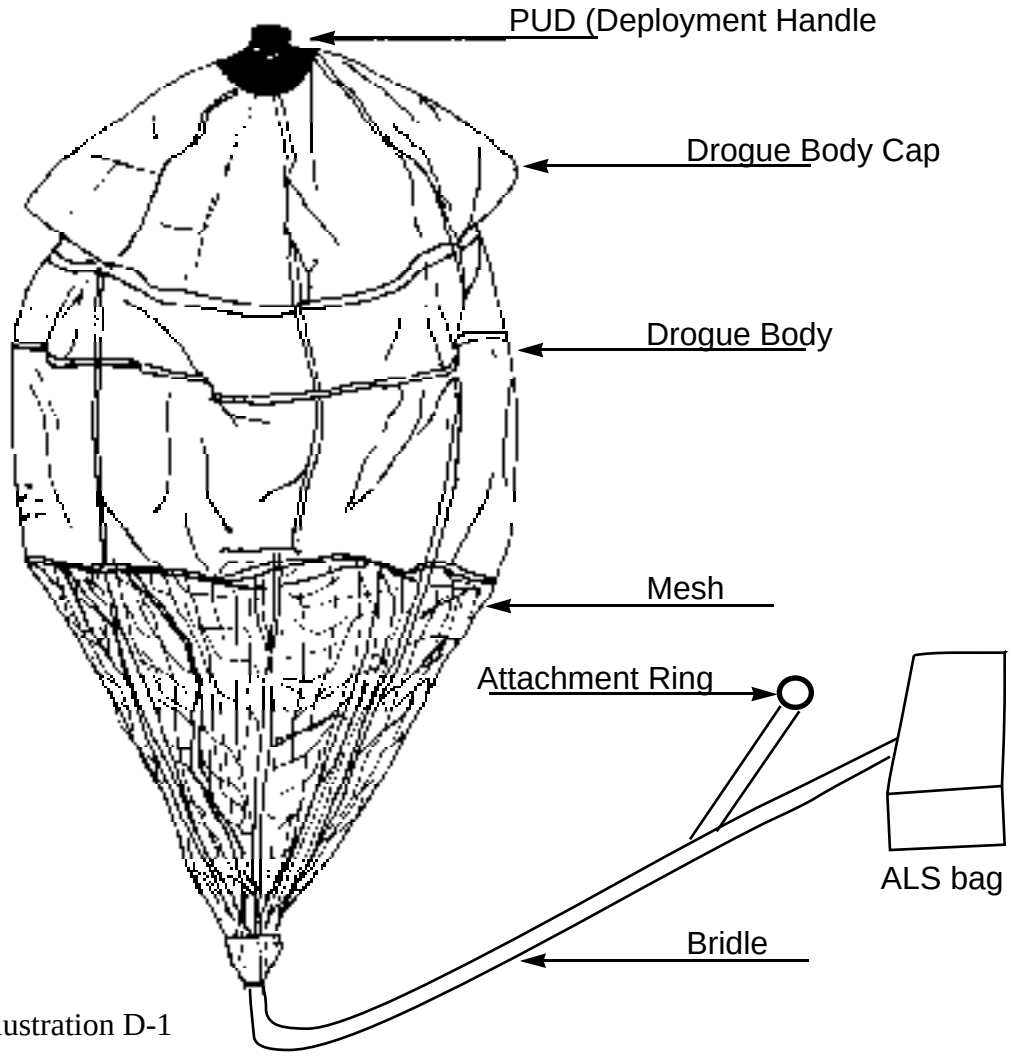


Illustration D-1

PACKING THE DROGUE

Pick up the drogue by the pud and lay it down with the pud next to the drogue Spandura®® pocket, hook Velcro®® on the pud facing up (Illustration D1 and D-2).

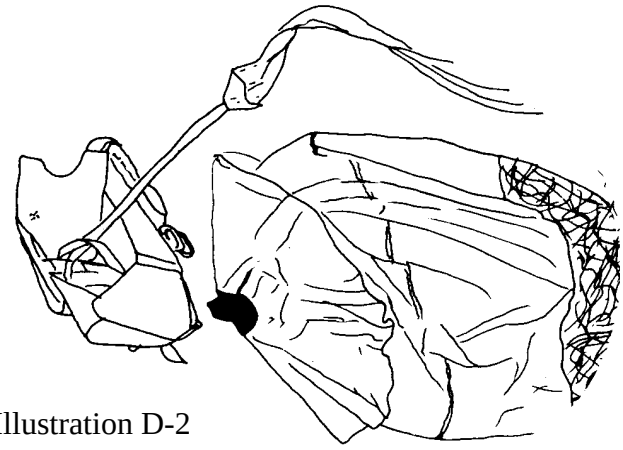


Illustration D-2

Hold the top of the bridle (bottom of mesh) in your right hand and grasp the top of the mesh in your left hand (Illustration D-3).

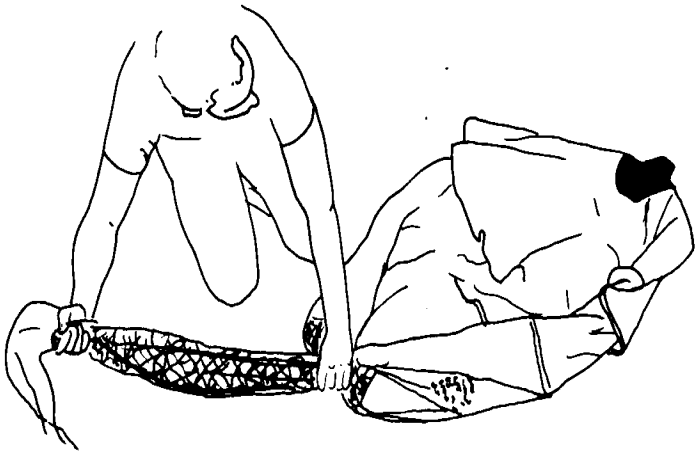


Illustration D-3

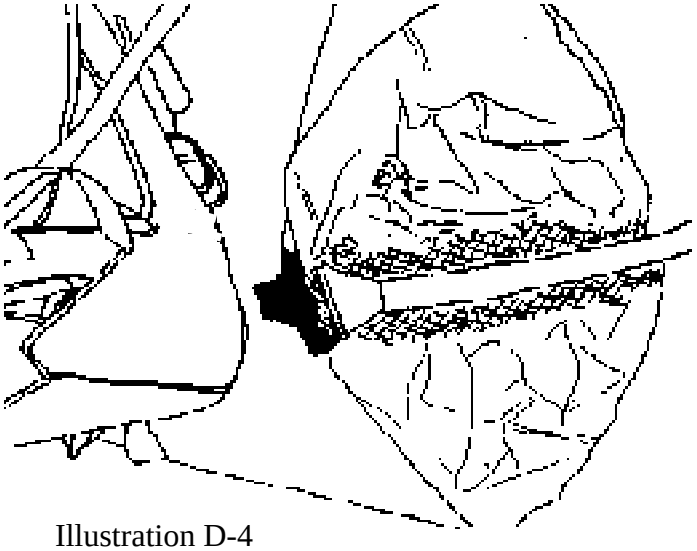


Illustration D-4

Lay the top of the mesh up against the pud, then the top of the Kevlar® bridle up against the pud (Illustration D-4).

S-fold the bridle on top of the mesh making folds the length of the pouch (Illustration D-5).

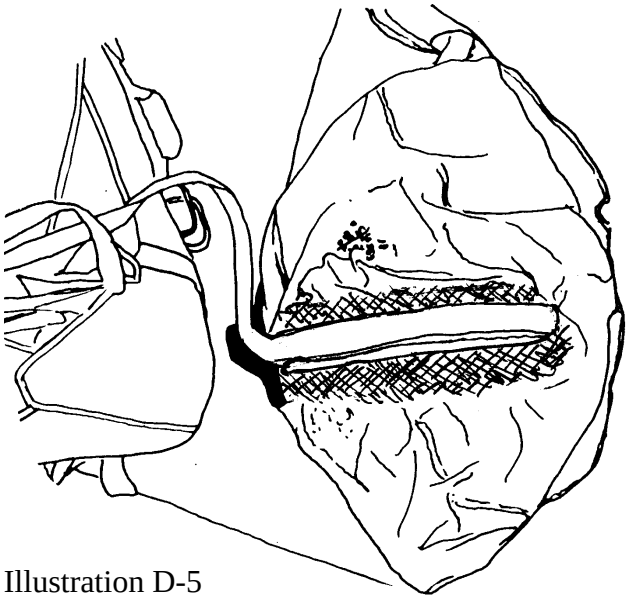


Illustration D-5

Fold the lower portion of the cap into a locking fold along the lower edge of the bridle folds (Illustration D-6).

Illustration D-6

Fold the left and right sides (3” to 4” folds) towards the center (Illustration D-7).

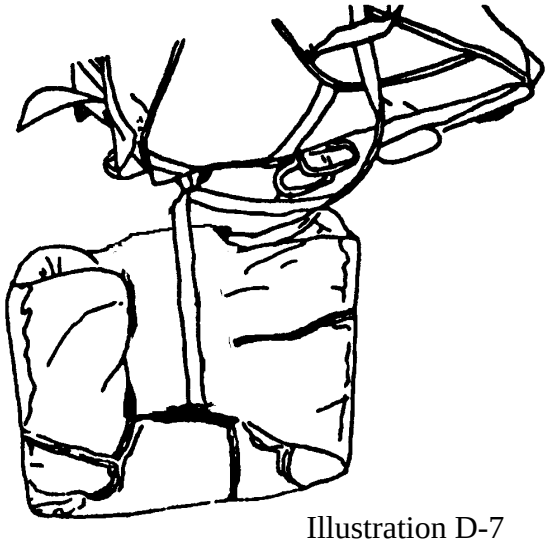


Illustration D-7

The finished rectangle should resemble the dimensions of the Spandura®® pouch, with the pud located for proper insertion into the Spandura®® pouch at the bottom of the main container. (Illustration D-8).

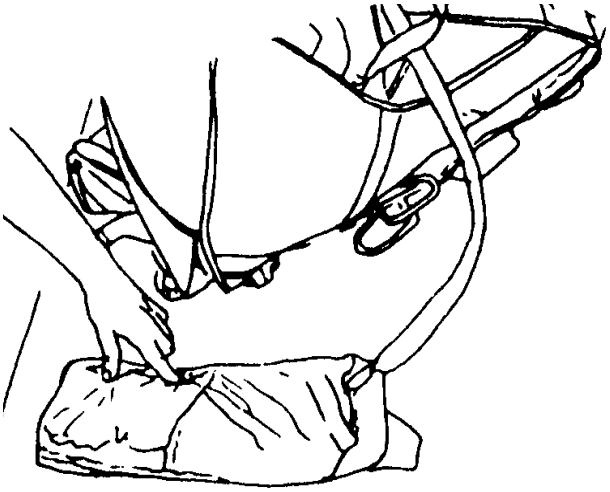


Illustration D-8

MAINTENANCE

GENERAL. The exemption to part 105.43 of the Federal Aviation Regulations, stipulates that "the dual parachute harness, hardware, main canopy, deployment slider, suspension, and steering lines shall be thoroughly inspected each 25 jumps". The 25 jump inspection is not a recommendation, **it must be done**. Following the detailed description of the procedure to be followed for this inspection is a check list to assist in the inspection itself. Jumbo jet airline transport instructors with decades of experience and thousands of hours of flying experience use a check list every time they fly to insure they do not miss anything. We highly recommend you do the same. While conducting this inspection, keep in mind that an inspection does not make a parachute system airworthy. The inspection itself is useless unless the problems found are corrected.

1. HARNESS: The inspection described for the harness applies to both the instructor and student harnesses.
a. Hardware - Inspect all hardware for excessive rust that might inhibit the operation of the unit. Snap or "click" the gates open and closed on the B-12, butterfly and quick ejector snaps to verify the spring inside is still operational. Inspect the large RW-0 ring student side attachment point on the instructors harness to insure that the 4-point stitch is not unraveling. Inspect the tackings on the B-12 snaps. Check the Pull-The-Dot snaps or Minex fittings to insure they have not come loose.
b. Drogue riser - Tighten the screws on the separable L-link that attaches the drogue riser to the diagonal back straps. Insure that the tacking that attaches the ripcord cable housing to the drogue riser are secure and have not become loose. Inspect the drogue riser itself for cuts or frays in the webbing.
c. Webbing - Inspect all webbing on both harnesses for cuts or fraying. Inspect all 4 -points and single needle stitching to insure they are not unraveling. Look at the overall appearance of the harness and try to locate any excessive fading in color by its dull dry look. This is an indication of over exposure to ultra violet rays which can weaken the webbing substantially. This condition should be non-existent, considering all tandem system owners should protect their equipment from the sun when it is not being used.

2. CONTAINER:
a. Grommets - Inspect all the grommets for rough edges, dents or bends in the metal. Rough edges can be smoothed out with very fine emery cloth, large dents or bends in the metal require replacement. Grasp the grommet with two fingers and try to spin the grommet in place to insure that it is still set properly and secured to the container. It should not move at all.
b. Fabric condition - Look at the overall appearance of the cordura and binding tape looking for any holes, tears, or broken stitches in the fabric. Oil or grease spots can be removed with a laundry pre-soak detergent available at your local supermarket.
c. Velcro® - Mate all Velcro® to insure it stays secured, clean off any grass or dirt that might have accumulated on it. Worn out Velcro® should be replaced.

3. RIPCORDS, 3-RING RELEASE HANDLE, CABLE HOUSINGS:
a. Ripcords - Inspect the ripcord pockets for wear, the ripcord handle should fit snug in the pocket. Inspect the ripcord cables for kinks, broken strands or rough areas. Check the tip of the cable to insure that no metal cable strands have become exposed. Inspect the reserve ripcord pins to ensure they are not bent.

b. 3-Ring release - Inspect the release handle for kinks in the cable, or loose ends. Breakaway/drogue release handle (PN 862020) must be used on all Dual Hawk Tandems. Coated cables are obsolete.
c. Cable housings - All cable housings to include the small release cable housings should be inspected for damage. Check all tackings to insure they are secure, replace tackings if loose.

4. MAIN CANOPY:
a. Canopy fabric - Check the seams and attachment points for stitch integrity. This can be done by turning the canopy face up and standing on a chair, hold the top leading edge (nose) of the canopy at shoulder height, spreading each cell apart to look inside. Inspect each panel for damage. Inspect the canopy for holes, tears and burns and repair as needed. Inspect the slider and bridle attachment point for wear.
b. Lines - Check for stretch or shrinkage. The tolerance for line length deviation is plus or minus 1 inch. Inspect the lines for excessive wear and replace if necessary. Tandem systems are subject to heavier loads. This should be taken into consideration when looking at a frayed line that is borderline. Inspect the bartacks at the links, at the cascades and at the canopy attachment points.
c. Risers - Inspect the stitching on the complete riser for unraveling. Inspect the stainless steel snap shackle to insure it functions properly. Inspect the #6 rapide links for cracks and tightness.
d. Slider - Inspect the fabric for holes or burns, repair as necessary. Inspect the grommets for burrs and separation, replace or reset if necessary.

5. DROGUE/DEPLOYMENT BAG:
Starting at the top of the drogue and working down, inspect the canopy fabric for holes or tears, moving down to where the drogue canopy is attached to the bridle, inspect the bartacks for any unraveling. Inspect the whole bridle for loose stitching and signs of wear. Inspect the drogue 3-Ring attachment and the main closing pin attachment and Velcro®, replace or repair as necessary. Inspect the bartacks on the Y deflation line for unraveling and the deflation line itself for wear. When replacing the Y deflation line the new deflation line can be pulled through the bridle, from the top, using the old deflation line by attaching the two together. Inspect the shock cords, rubber bands, Velcro®® and grommets on the deployment bag, replace if required.

6. RESERVE CANOPY:
Inspect the reserve canopy, bag, bridle and pilot chute at every 120 day repack cycle.

EXPECTED SERVICE LIFE OF COMPONENTS

Harness/Container/Student Harness	2,000	Jumps
SET 400 main canopy	600	Jumps
Master and T520 main canopies	600	Jumps
Drogue	600	Jumps
Lines on main canopy	200	Jumps
Master Reserve Canopy	20	Rides

25 JUMP INSPECTION CHECK LIST

HARNESS:

- ❑ Hardware functional and tacked (leg strap B-12s).
- ❑ Return springs on snaps still functional.
- ❑ Drogue riser L-link screws tight.
- ❑ No cuts, fraying or broken stitches on webbing.

CONTAINER:

- ❑ Grommets secure and in place.
- ❑ No holes in cordura.
- ❑ No broken stitches.
- ❑ Velcro® is clean and in place.
- ❑ Student side attachments are secure with no broken stitches.
- ❑ Housings securely tacked.
- ❑ Drogue pouch secure, no holes..

RIPCORDS/3-RING RELEASE HANDLE:

- ❑ No kinks or frays in ripcord cables.
- ❑ Terminal balls are secure.
- ❑ Pins straight.
- ❑ No kinks, dents or loose strands in the 3-ring release cable. Remove and clean cables.

MAIN CANOPY:

- ❑ No holes or tears in the fabric, stitch integrity good.
- ❑ No excessive wear or stretching/shrinkage of the lines.
- ❑ No broken stitching at cascade line junction.
- ❑ No cracks in rapide links, Velcro® and stitching good on risers.
- ❑ Swedish link good.
- ❑ No holes in slider, stitching good, no burrs on grommets.
- ❑ Grommets secure.

DROGUE, MAIN BAG:

- ❑ Reinforcing tape on drogue body good.
- ❑ Stitching and bar tacks at base of drogue canopy good.
- ❑ No holes or excessive wear in the bridle.
- ❑ No excessive wear and no twists in the Y deflation line.
- ❑ Bungees not broken.
- ❑ Grommets secure.

PRODUCT SERVICE BULLETIN #22

20 February 1997

A) Dual Hawk Tandem, Use of Unapproved Components

B) Dual Hawk Tandem Service Life

STATUS: Mandatory compliance.

COMPLIANCE DATE: 20 May, 1997.

IDENTIFICATION: Dual Hawk Tandem Systems; PN 103000 through 103005 (Dwg No. 1151 & 68E10001).

BACKGROUND: A) Strong Enterprises has determined that Dual Hawk Tandem Systems with components not approved by Strong Enterprises present a hazard that is not acceptable for tandem jumping.

B) The rapid improvements of the Dual Hawk Tandem System have shown considerable safety enhancements. It is also evident that most systems older than eight years have considerable wear and deterioration with loss of performance and could pose a threat to the users.

SERVICE BULLETIN: A) Only components approved by Strong Enterprises may be used on the Dual Hawk Tandem System for tandem jumping.

B) All Dual Hawk Tandem Systems shall have a service life of eight years from date of manufacture or be returned to Strong Enterprises for re-inspection and re-certification. It may then be placed back into service for five years.

This service bulletin does not change the requirements for periodic inspections and maintenance as outlined in the FAA Exemption or manufacturers instructions.

DISTRIBUTION: All Dual Hawk Tandem System owners, national aero clubs, FAA, PIA, USPA, *Skydiving, Parachutist*.

BULLETIN 22 EXPLANATION

Strong Enterprises has taken a proactive step to ensure public safety and the safety of our certified tandem instructors by issuing Service Bulletin 22 on 20 February 1997 (attached).

The purpose of Bulletin 22 is to assure that Dual Hawk Systems more than 8 years old are still safe to use, and components that Strong Enterprises has not tested or approved as being compatible are not being used in these systems.

Dual Hawk Tandem Systems that are not in compliance with Bulletin 22 are considered by Strong Enterprises to be un-airworthy. Therefore, the TSO on that system is void and any tandem jumps made on these systems are made in violation of FAR 105.43 (a).

Any Strong Enterprises certified tandem instructor who enters into an aircraft with the intention of making a tandem jump, and the Dual Hawk System he intends using on that jump is not in compliance with Strong Enterprises Bulletin 22, has automatically voided his Strong Enterprises tandem instructor certification and that jump will be made in violation of FAR 105.43 (a) and Strong Enterprises' tandem exemption.

The appropriate FAA FSDO offices will be notified of the serial number, location, and owner of all Dual Hawk Tandem Systems that are not in compliance with Bulletin 22. In consideration of the liability exposure of USPA, a copy of notices related to Bulletin 22 will be forwarded to USPA.

Compliance with Bulletin 22 is quite simple:
1. Use only manufacturer approved components in your Dual Hawk system.
2. If a Dual Hawk system is more than 8 years old, return it to Strong Enterprises for inspection, refurbishing if needed, and re-certification as airworthy.

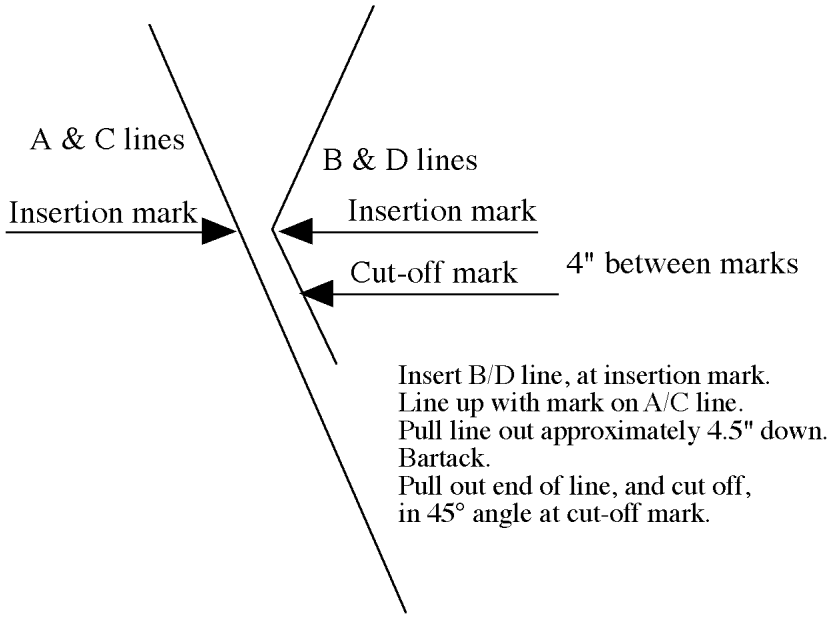
Recertified components are marked:
1. Harness/container: Labels are sewn on the horizontal back strap of the passenger harness., inside the main container, and on the front left reserve riser.
2. The main and reserve canopies: A label sewn onto the tail seam.

Line installation Master 425 and T520 main canopies

PN 410064 and 410077 all revisions

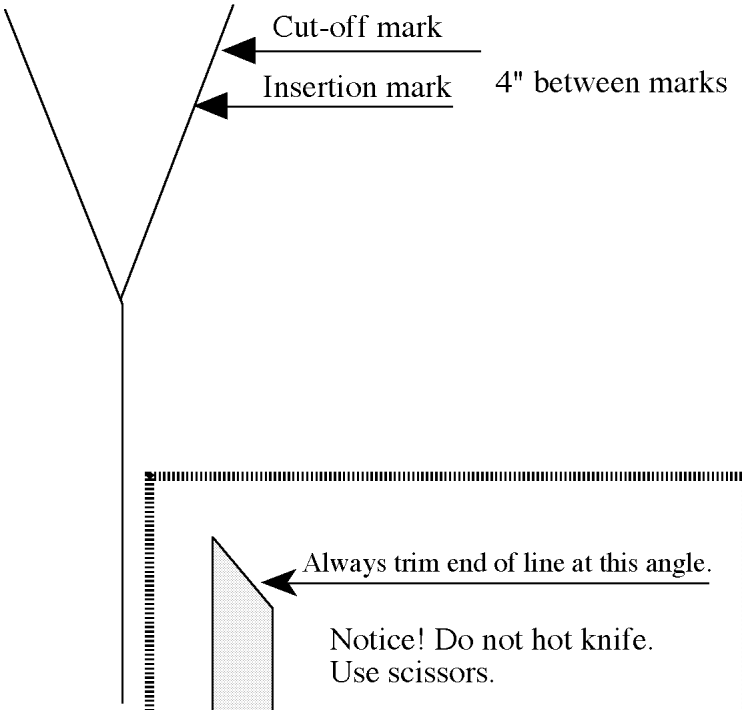
Color codes on suspension lines:
A- Green
B- Blue
C- Black
D- Red

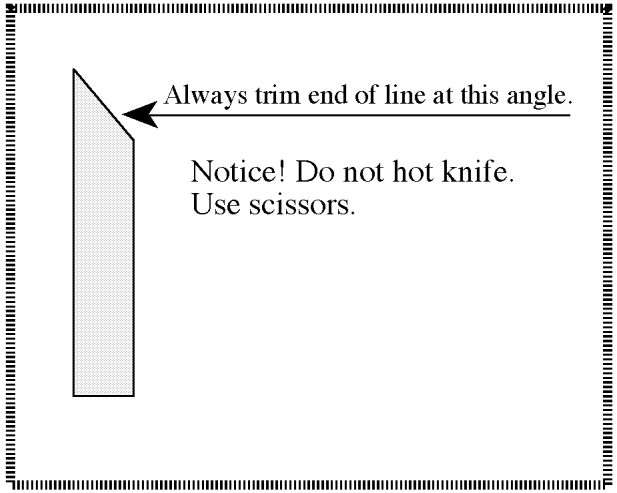
Suspension lines T520

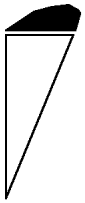


Insert B/D line, at insertion mark.
Line up with mark on A/C line.
Pull line out approximately 4.5" down.
Bartack.
Pull out end of line, and cut off,
in 45° angle at cut-off mark.

Control lines Master & T520







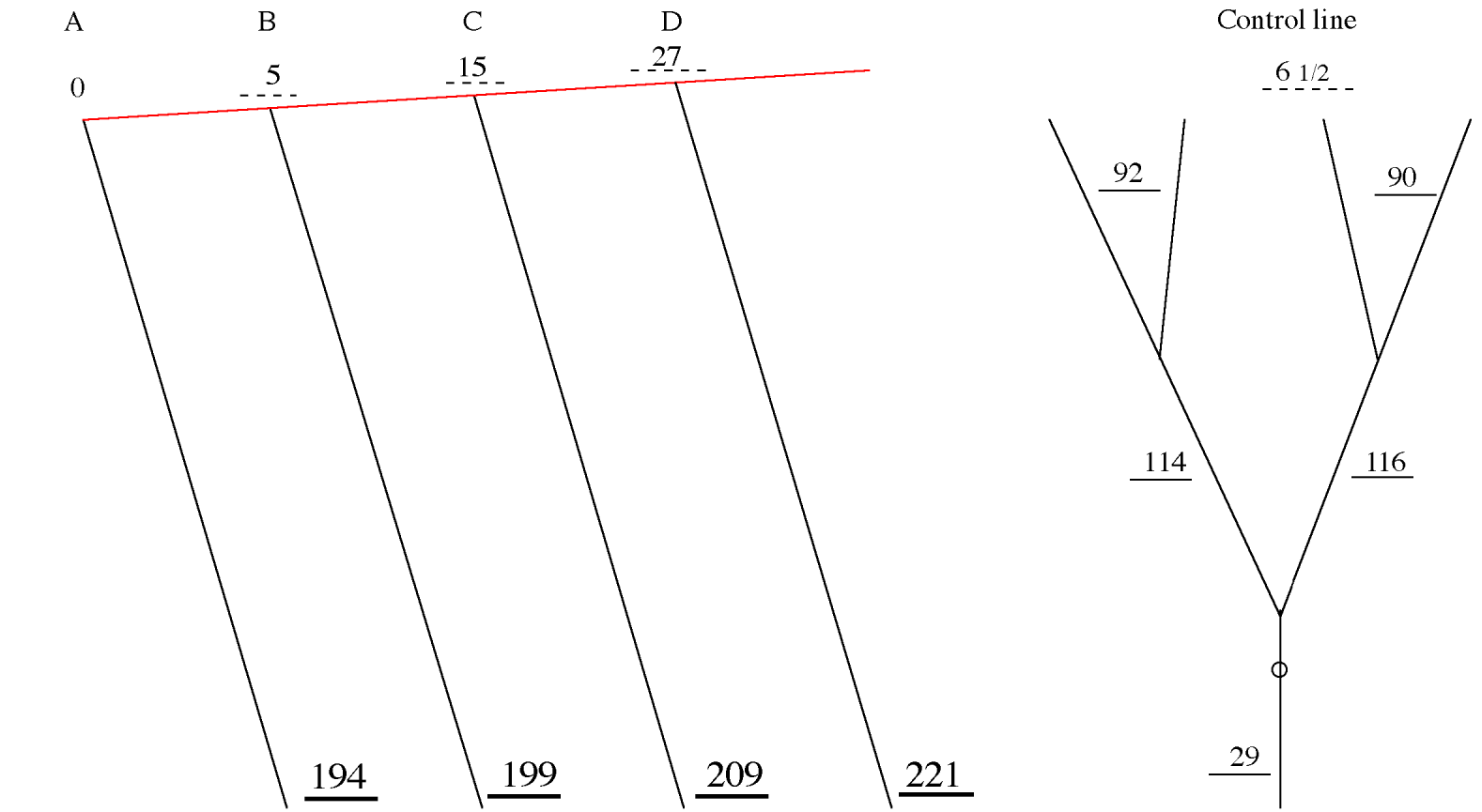
STRONG ENTERPRISES
11236 SATELLITE BLVD.
ORLANDO, FL 32837
(407) 859-9317
FAX (407) 850-6978

Master 425 main canopy. Trim and line length

PN 410064

Rev. -A Ser. No. 001-697, 700-713 w/Dacron lines
Rev. -B,C,D,E,F Ser. No. 698 - w/Dacron lines

Trim over A-line (0-point) with brakes set.
Trim measurements underlined with dotted line.



STRONG ENTERPRISES
11236 SATELLITE BLVD.
ORLANDO, FL 32837
(407) 859-9317
FAX (407) 850-6978

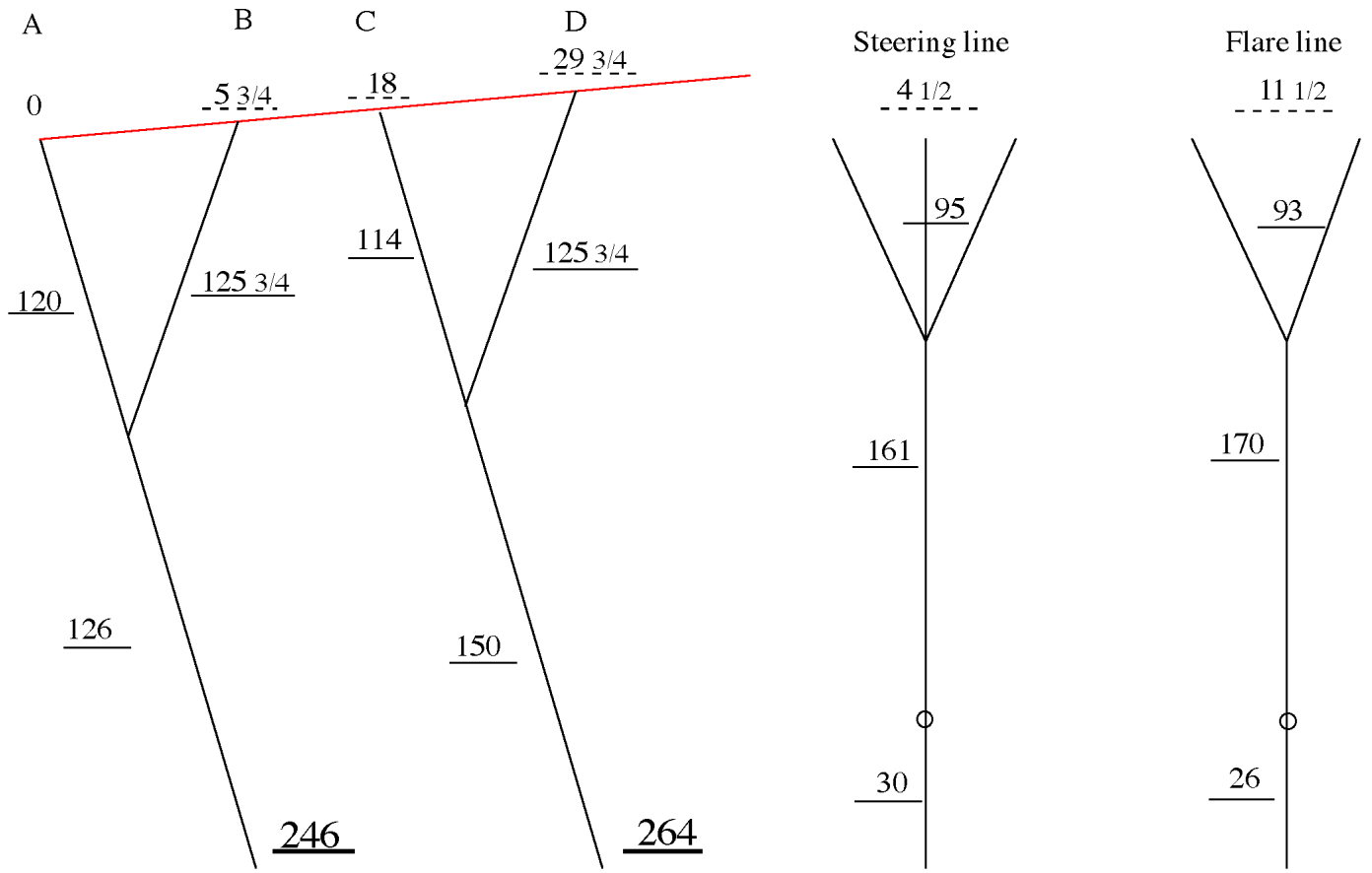
All measurements in inches.

T-520 main canopy. Trim and line length

PN 410047

Rev. -A Ser. No. 001-178 w/Dacron lines
Rev. -B Ser. No. 179-192 w/Spectra lines

Trim over A-line (0-point) with brakes set.
Trim measurements underlined with dotted line.



STRONG ENTERPRISES
11236 SATELLITE BLVD.
ORLANDO, FL 32837
(407) 859-9317
FAX (407) 850-6978

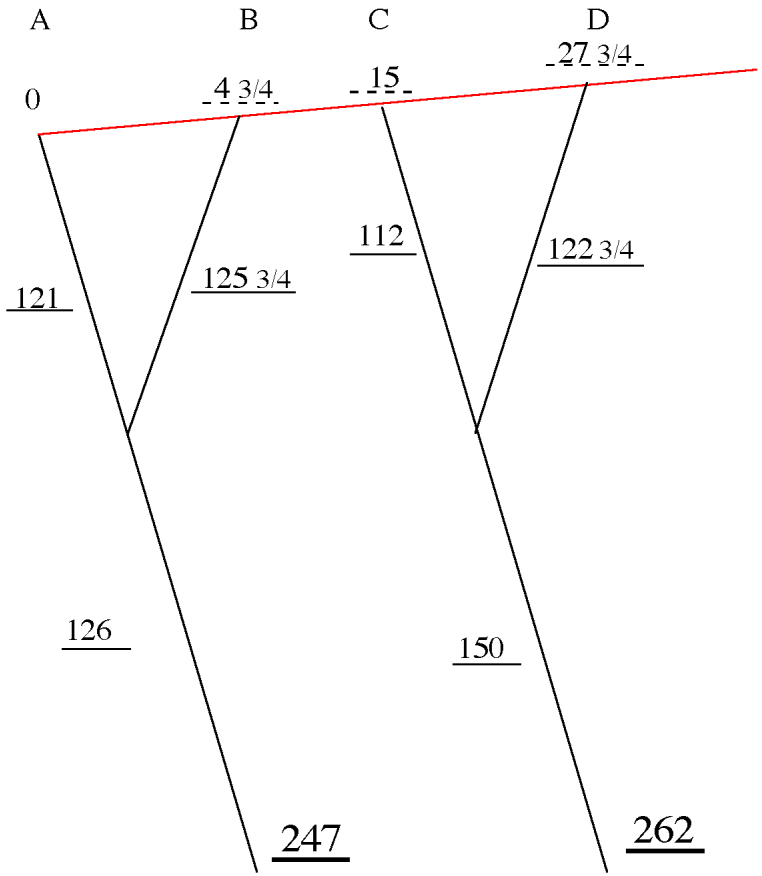
All measurements in inches

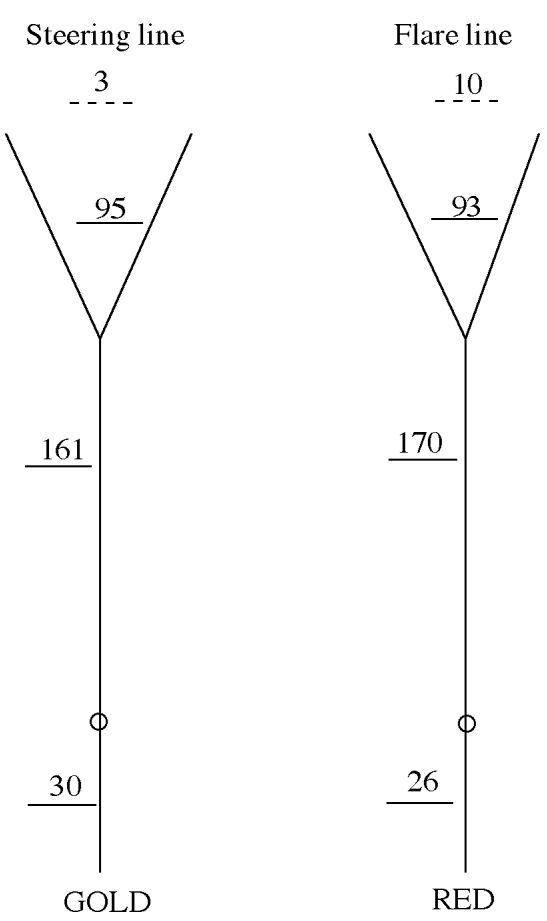
T-520 main canopy. Trim and line length

PN 410047

Rev. -C Ser. No. 193-212 w/Spectra lines
Rev. -D Ser. No. 213- w/Spectra lines

Trim over A-line (0-point) with brakes set.
Trim measurements underlined with dotted line.





STRONG ENTERPRISES
11236 SATELLITE BLVD.
ORLANDO, FL 32837
(407) 859-9317
FAX (407) 850-6978

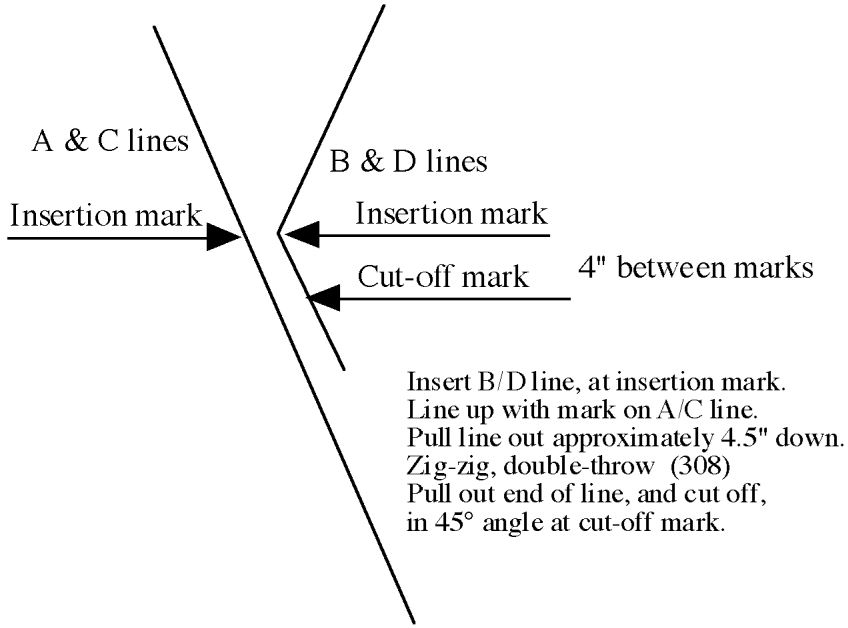
All measurements in inches.

Line installation SET 400 main canopy

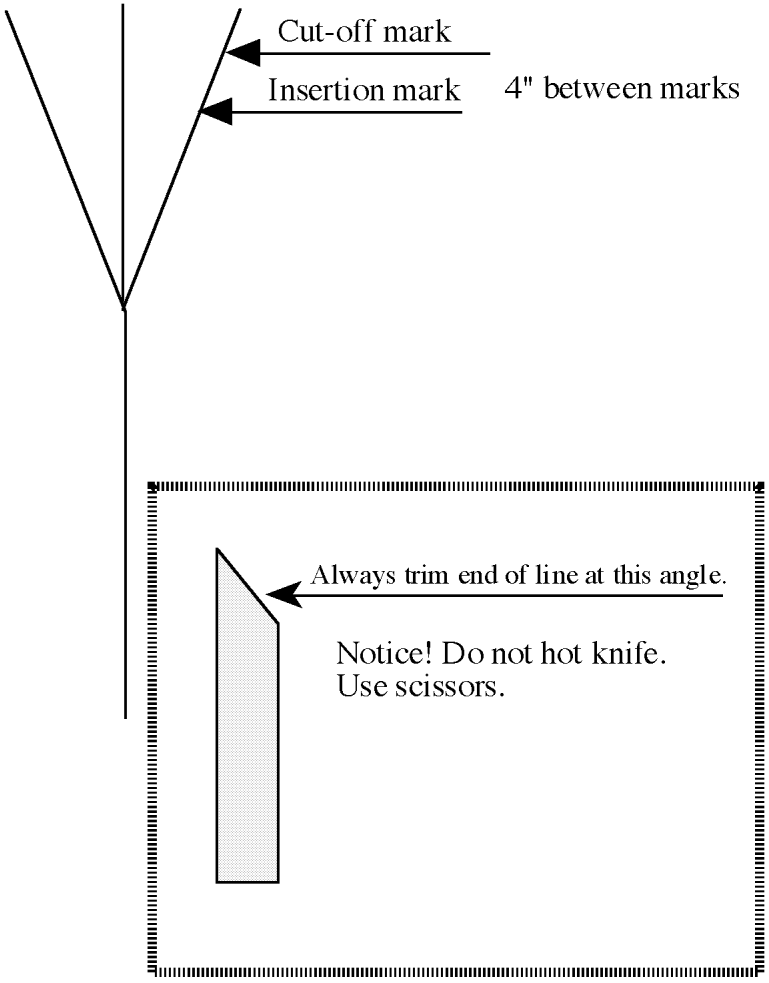
PN 411540

Line set PN 865055
Color codes on suspension lines:
A- Green
B- Blue
C- Black
D- Red

Suspension lines SET 400



Control lines SET 400 E1 and E2 (two uppers)

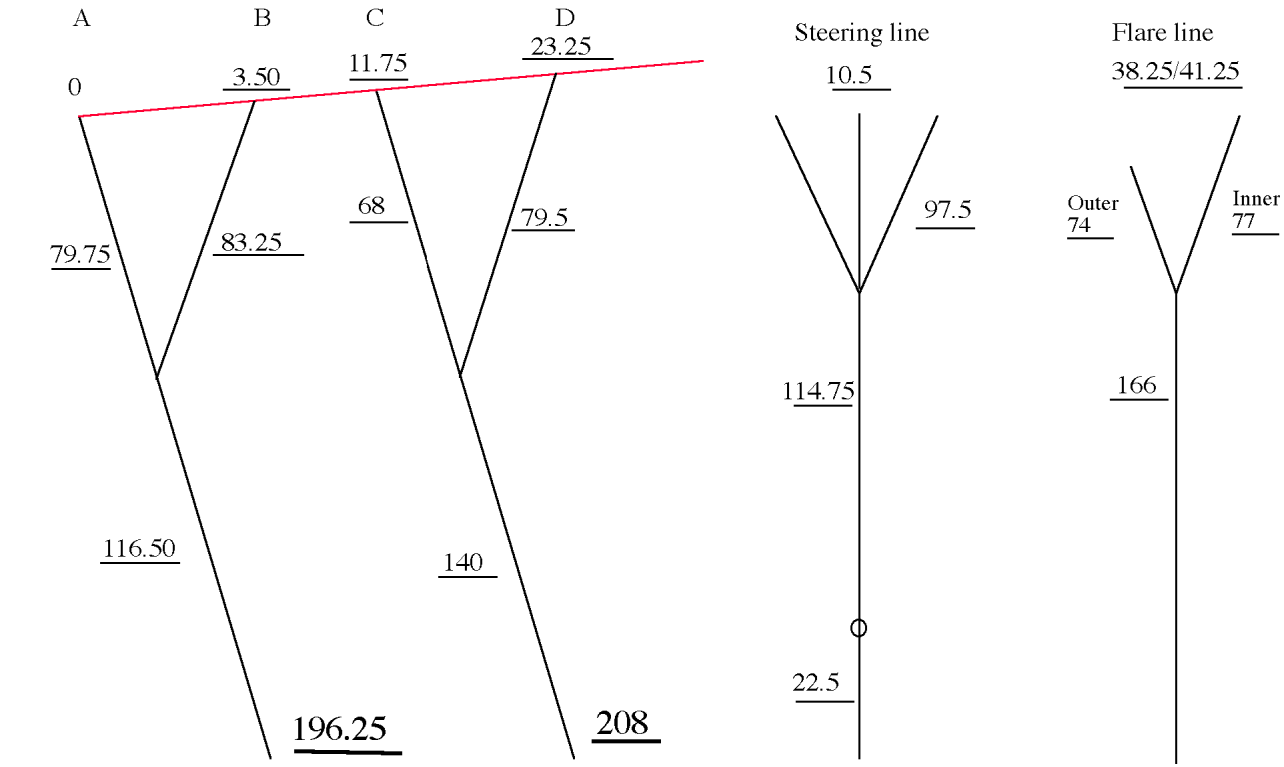


STRONG ENTERPRISES
11236 SATELLITE BLVD.
ORLANDO, FL 32837
(407) 859-9317
FAX (407) 850-6978

SET 400 main canopy. Trim and line length, outer lines. Ribs no. 1,2,3,8,9,10.

PN 411540

Trim over A-line (0-point) with brakes set.
Trim measurements underlined with dotted line.



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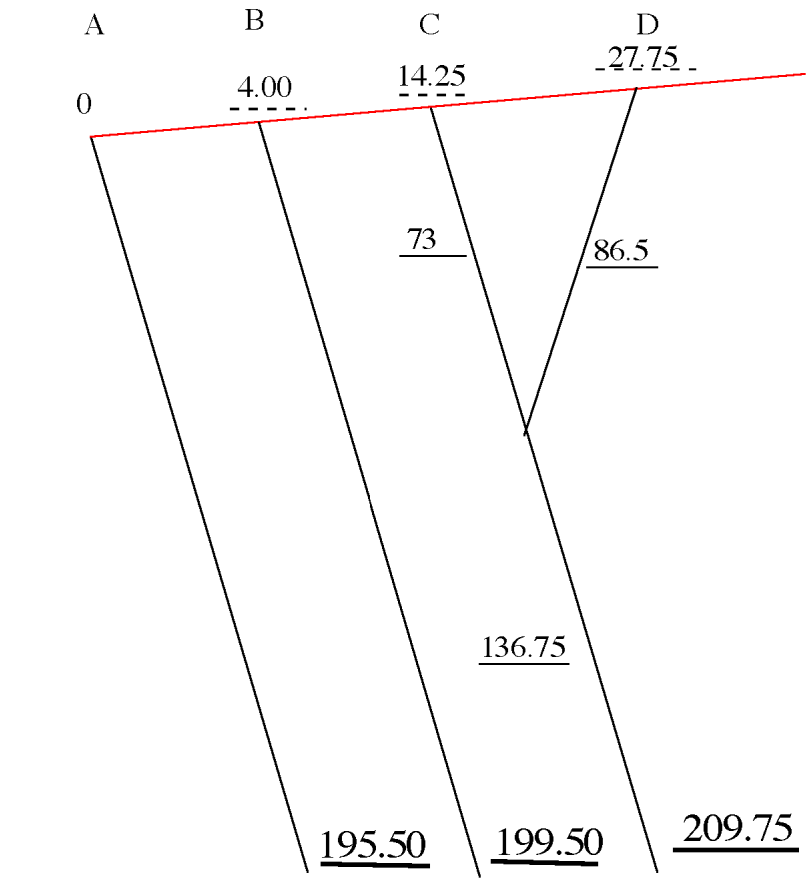
All measurements in inches.

SET 400 main canopy. Trim and line length, inner lines. Ribs no. 4,5,6,7.

PN 411540

Trim over A-line (0-point) with brakes set.
Trim measurements underlined with dotted line.



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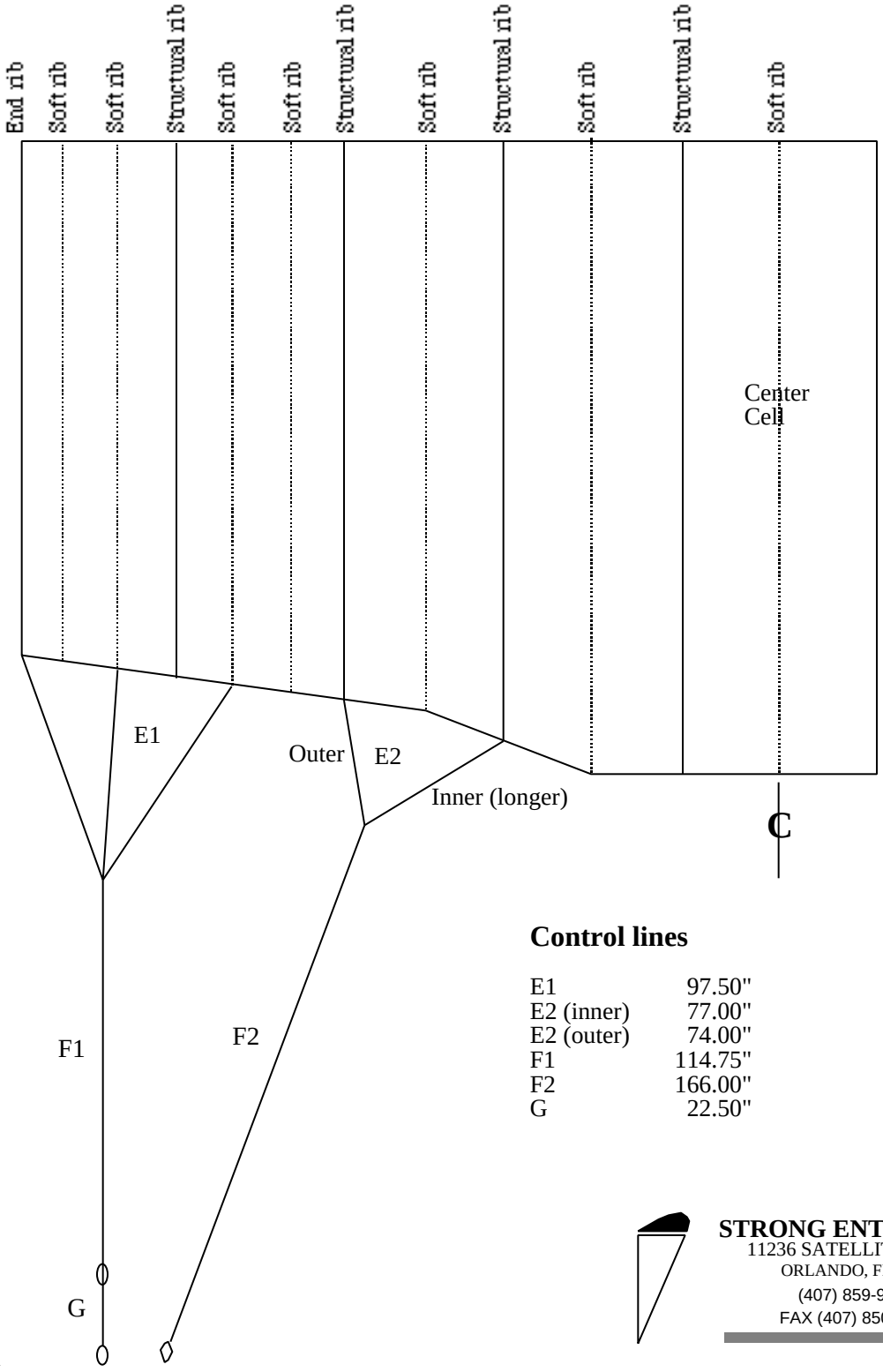
All measurements in inches.

Control line attachment SET 400



Control lines

E1	97.50"
E2 (inner)	77.00"
E2 (outer)	74.00"
F1	114.75"
F2	166.00"
G	22.50"

960304 JIA

STRONG ENTERPRISES
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General Aviation
Atlanta Aircraft Certification Office
1372 Tower Road West
College Park, Georgia 30337

FEB 17 1988

Mr. Edward Strong
President
Strong Enterprises
11838 Satellite Blvd.
Orlando, Florida 32837

Dear Mr. Strong:

This is in response to your July 31, 1987, request for Federal Aviation Administration (FAA) authorization to identify the Strong Enterprises' Dual Hawk Tandem System, FAA Number 1165-4, in accordance with the requirements of Federal Aviation Regulation (FAR) Part 43, Appendix D, Instructions Provided (ICA) 4(b).

We find your Statement of Conformance, dated July 31, 1987, and your quality Control Manual, dated July 1987, acceptable.

The following data, submitted with your July 31, 1987, letter will be retained on file for this authorization:

1. Statement of Conformance, dated July 31, 1987.

2. System Drawing for FAA Tandem System, dated July 31, 1987.

3. Quality Control Manual, dated July 31, 1987.

Effective this date, you are authorized to identify the Strong Enterprises' Dual Hawk Tandem System, Part Number 1165-4, with the applicable FAA markings required by FAR 21.182(d).

This authorization is not transferable to another person or location and is otherwise void if surrendered, withdrawn, or otherwise terminated by the Administrator.

Your responsibilities as a holder of a FAA authorization are outlined in FAR 21, Subpart O and FAR 21.3.

The FAA Specialist for your project is Jerry Bennett, telephone (404) 763-7457.

Sincerely,

John E. Steinmetz Jr.
John E. Steinmetz
Manager, Atlanta
Aircraft Certification Office

Edward Warner Flight Research Lab

Notes