

**SERIAL #**

**SST/*Racer*<sup>®</sup>**

**OWNERS MANUAL**

*Racer/Elite<sup>™</sup>, SST/Racer, Racer/Trainer, Racer/Tan dem, Racer/Tactical, Anglefire Reserve*

**PARACHUTE LABORATORIES INC.**

d.b.a. JUMP SHACK

**1665 LEXINGTON AVE.**

**SUITE 106**

**DELAND, FL. USA**

**32724**

*Art work by Nancy LaRiviere & Sandy Williams*

## Table of Contents

|  |           |  |           |
|--|-----------|--|-----------|
| <b>GENERAL.....</b>                        | <b>3</b>  | <b>SST/TRAINER ASSEMBLY .....</b>                          | <b>16</b> |
| INTRODUCTION. ....                         | 3         | <b>INSTRUCTION FOR CHANGING FROM STATIC LINE</b>           |           |
| WARNING .....                              | 3         | <b>TO PILOT CHUTE WITH OUT UN PACKING THE</b>              |           |
| DISCLAIMER. ....                           | 3         | <b>BAG. ....</b>   | <b>17</b> |
| ABOUT THE MANUAL .....                     | 4         | MAIN ASSEMBLY .....  | 17        |
| COPYRIGHTS .....                           | 4         | <b>RESERVE PACKING INSTRUCTIONS .....</b>                  | <b>18</b> |
| SERIAL NUMBER .....                        | 4         | GENERAL .....  | 18        |
| <b>OPERATIONAL LIMITATIONS.....</b>        | <b>5</b>  | CRITICAL POINTS .....                                      | 18        |
| TECHNICAL DATA .....                       | 5         | REQUIRED TOOLS .....                                       | 18        |
| MODIFYING YOUR SST .....                   | 5         | PART ONE: PREPARATION .....                                | 18        |
| COMPATIBILITY .....                        | 5         | PILOT CHUTE, CLOSING LOOP (QUICK LOOP) & HAT .....         | 18        |
| <b>OPERATIONAL CHARACTERISTICS.....</b>    | <b>7</b>  | PART TWO: PACKING .....                                    | 19        |
| GENERAL DESCRIPTION .....                  | 7         | PACKING TYPE I & II .....                                  | 20        |
| THE MAIN SYSTEM .....                      | 7         | PACKING TYPE IV .....                                      | 21        |
| 1. Ripcord Deployment .....                | 7         | PACKING TYPE V .....                                       | 21        |
| 2. Pull out Hand Deployment .....          | 7         | <b>PART THREE: CLOSING THE CONTAINER .....</b>             | <b>28</b> |
| 3. Throw-out Hand Deployment .....         | 7         | TACKLING QUICK LOOP .....                                  | 30        |
| 4. Automatic Activation .....              | 7         | DRESSING THE CONTAINER .....                               | 30        |
| 5. Static-line Deployment .....            | 8         | <b>MAIN PACKING INSTRUCTIONS .....</b>                     | <b>32</b> |
| THE RESERVE SYSTEM .....                   | 8         | SETTING BRAKES .....                                       | 32        |
| 1. Ripcord Deployment .....                | 8         | FLAG SLIDER INSTRUCTIONS .....                             | 32        |
| 2. Reserve Lanyard .....                   | 8         | PLACING CANOPY INTO BAG .....                              | 32        |
| 3. Automatic Activation .....              | 8         | PLACING BAG INTO CONTAINER .....                           | 33        |
| AAD SET-UP NOTIFICATION .....              | 9         | FOR PULL-OUT .....   | 33        |
| THE MAIN CANOPY RELEASE SYSTEM .....       | 9         | FOR THROW-OUT .....  | 34        |
| THE SST TRAINER SYSTEM .....               | 9         | FOR RIPCORD .....  | 36        |
| WHAT YOU SHOULD KNOW ABOUT                 |           | FOR STATIC LINE .....                                      | 36        |
| RESERVE STATIC LINES .....                 | 9         | DRESSING THE CONTAINER .....                               | 37        |
| The Drogue Sys tem .....                   | 10        | <b>Tan dem Drogue &amp; Main Con tainer Clos ing .....</b> | <b>38</b> |
| <b>INSPECTION INSTRUCTIONS.....</b>        | <b>12</b> | Clos ing The Main Con tainer .....                         | 38        |
| CYCLIC INSPECTIONS .....                   | 12        | First Level Clos ing .....                                 | 38        |
| PRE-JUMP INSPECTION .....                  | 12        | Bridle Release Assembly .....                              | 39        |
| <b>MAINTENANCE/REPAIR .....</b>            | <b>13</b> | Sec ond Level Clos ing .....                               | 40        |
| PERSONNEL QUALIFICATIONS .....             | 13        | <b>DONNING THE SST .....</b>                               | <b>42</b> |
| MAINTENANCE PROCEDURES .....               | 13        | WITH THREAD THROUGH LEG STRAPS .....                       | 42        |
| <b>MAIN CLOSING LOOP REPLACEMENT &amp;</b> |           | WITH B-12 LEG STRAP SNAPS .....                            | 42        |
| <b>ADJUSTMENT .....</b>                    | <b>13</b> | <b>FAMILIARIZATION .....</b>                               | <b>43</b> |
| <b>REPAIR PROCEDURES .....</b>             | <b>13</b> | MAIN ACTIVATION .....                                      | 43        |
| <b>ASSEMBLY .....</b>                      | <b>15</b> | PULL-OUT .....   | 43        |
| PERSONNEL QUALIFICATIONS .....             | 15        | THROW-OUT .....  | 43        |
| PARTS LIST .....                           | 15        | RIPCORD .....  | 44        |
| RESERVE ASSEMBLY .....                     | 15        | CUTAWAY ACTIVATION .....                                   | 44        |
| TANDEM CANOPY ASSEMBLY .....               | 16        | RESERVE ACTIVATION .....                                   | 44        |

# GENERAL

---

## INTRODUCTION

Congratulations on the purchase of your new SST/Racer, Racer/Elite™ or Elite/TRAINER or Tandem. As you put jumps on your new rig and get to know it, you will come to realize that you have purchased the most exquisite piece of parachute equipment that money can buy. We are sure that it is the most thoroughly engineered harness and container system available.

Note, if you will, our attention to details such as our use of type 13 webbing, the only webbing approved for use with parachute hardware. The new Elite™ mini mizes the use of velcro, but where velcro is used it is easily serviced. We've paid attention to other details like the finished end on the chest strap, but many features of the SST will escape your first glance.

We started building SSTs when the idea of "piggy-back" meant literally snapping a reserve to your back above the main container. We developed and were the first to employ the hot knifed single piece construction technique now used by all of the other manufacturers. Now after 25 years and 30,000 Racers, our basic design has not had to change. It was ahead of its time when it was conceived and it still is. So while other manufacturers have had to undergo recalls and major design changes in an effort to "get it right" the SST has endured. Even our competitors have said of the Racer, "Sherman got it right the first time".

When you examine the new Racer/Elite™ closely you will find the basic workings of the rig haven't changed at all, we've just made it simpler and more attractive! We have refined the SST from the most time-proven design in parachuting. It's funny, but not that much needed changing. We *did* get it right the first time.

As parachutes got smaller, we trimmed the SST to the familiar wedge shape of the Racer. The 3-Ring release became available, so we designed it into the system. Skydivers demanded hand deployment, so we gave them the choice of either type, pull-out or throw-out, while retaining the rip cord option for students.

Modern canopies had become so small, the harness could no longer brace against the pack for fit. The new age called for a truly integral harness and container system that fit more like a tailored coat than a hiker's backpack.

That's how your new Racer, Racer/Elite™ or Elite/TRAINER came to be. And yet, it still is an SST. We alone offer the superior Pop-Top reserve system, and we still make SSTs for the jumper who demands gear from the cutting edge of skydiving technology.

This manual introduces you to your new SST/Racer, Racer/Elite™, or Elite/TRAINER or Tandem—An introduction you must have before taking to the air with it. So leave yourself plenty of time between getting the rig and making the first jump on it. Use this manual to help familiarize yourself with the system. You can get thousands of jumps from a well maintained SST, so there's no need to rush to the first one.

## WARNING

IT IS ASSUMED THAT INTENTIONALLY JUMPING FROM AN AIR PLANE IN FLIGHT OR FROM A FIXED OBJECT IS DANGEROUS TO LIFE AND LIMB. PARACHUTES DO NOT ALWAYS WORK AS DESIRED. WHEN YOU TAKE IT UPON YOURSELF TO PARTICIPATE IN PARACHUTE JUMPING, YOU ACCEPT THE FACT THAT NO MATTER HOW CAREFUL YOU ARE, OR HOW GOOD YOUR EQUIPMENT IS, YOU CAN BE SERIOUSLY OR FATALLY INJURED.

## WARNING—NO WARRANTIES

## DISCLAIMER

It is expressly understood and agreed between the seller and the buyer and any subsequent user of the SST, all or in part, the manufacturer and seller shall in no way be deemed or held liable or accountable for any failure or damages resulting from failure of the

SST. Use of the SST for any pur pose shall con sti tute waiver to the manu fac turer and seller for any dam ages to per son or prop erty di rectly or in di rectly caused by said use. The SST is sold with all faults and without fitness for any particular pur pose, and the manu fac turer neither implies or expresses any warranties or guar an tees of the SST. Use of this rig for any pur pose constitutes agree ment be tween the buyer or user and the seller ac cord ing to the terms herein. If the buyer re fuses the terms of this agree ment, he must re turn the unused SST to the manufacturer with 10 days of re ceipt of the SST with a let ter stat ing why the SST was re turned along with the origi nal in voice show ing pur chase price.

## **ABOUT THE MANUAL**

We have tried to write this, the sixth edition of this man ual, for all SSTs. How ever, it is only cur rent for the se rial number shown on the first page. The data con tained herein was cur rent at the time of this writ ing, but the sport ad vances rap idly. Some of this in for ma tion may not be true now or es pe cially as time goes on. We re serve the right to change the SST and its pro cedures without notice. Prudence requires that you con tact us for in for ma tion on up dates if you are us ing this manual as a guide to service a later generation SST. Additionally, you may view our most recent version at our Internet site [WWW.JUMPSHACK.COM](http://WWW.JUMPSHACK.COM)

## **COPYRIGHTS**

Jump Shack holds all copy rights to this man ual. We grant permission to anyone to reproduce it all or in part for non-commercial purposes. No reproduction of this man ual may be sold any where with out a roy alty agree ment with Jump Shack. Anyone copying this manual for distribution must do so without charge, ex cept ing the cost of re pro duc tion.

## **SERIAL NUMBER**

The first two digits of the serial number denote the week of manu fac ture. The third digit de notes the year. The last two dig its de note the se quence.

*Caution:* This man ual is se rial num bered cor re spond ing to the SST with which it was shipped. Technical in for ma tion in this man ual re fers only to the SST of that same se rial number.

Record the information from the data plate now, along with the col ors of your SST, in case your gear be comes lost or stolen. Also record the se rial num bers and col ors of your main and re serve para chutes. Keep the rec ord some place other than your equip ment bag. If you have any ques tion re gard ing the SST, this man ual, or the procedures described in the manual, con tact:

**Jump Shack**  
**1665 N. Lexington Ave. #106**  
**DeLand, Florida 32724 USA**  
**TEL (904) 734-5867**  
**FAX (904) 734-8464**

# OPERATIONAL LIMITATIONS

---

## TECHNICAL DATA

The SST harness and container system has been certificated in the Standard Category by the Federal Aviation Administration (FAA) under Technical Standard Order (TSO) C-23(b). This TSO refers to National Aircraft Standard (NAS) 804 published in September, 1949. The Tandem is Certified under TSO-C23(c) this TSO refers to AS-8015a published September 30, 1982. To meet these requirements, the manufacturer must submit the design drawings to the FAA Engineering District Office. The FAA then inspects and certifies the manufacturing facility and approves the quality control of the manufacturing process as described in the manufacturer's manual. The FAA further assures that the manufacturer will trace and inspect each piece of fabric and hardware he uses during the manufacturing process of the equipment.

Under TSO C-23(b), equipment can be tested to Standard Category (sometimes called High Speed) or Low Speed Category. The SST has been tested to the Standard Category which certifies it to a shock load of 5,000 pounds. The rig may be assembled with a Low Speed Category reserve canopy, but then the entire system becomes certificated in the Low Speed Category. (Later in installation of a Standard Category canopy restores the system to the Standard Category, of course.) Regulations require the rigger to identify the system as Low Speed Category in the appropriate manner when he installs a reserve from that category. Standard Category requires no markings. Canopies certificated under TSO C-23(c) and later revisions may be assembled into the SST line of containers providing the assembling rigger has complied with FAA regulations and policy. Performance limitations of the installed canopy should be placarded, in the manner required by the TSO document, for the user's information.

The Tandem certified under TSO C23(c) must conform to AS-8015a. The test weight and speed specified in AS-8015a Category B is 300 Lbs. @ 175 KTS.

The Racer Tandem system has been tested to 600 LBS. @ 175 KTS.

Many reserve and main canopies will fit well into your SST, but some won't. Results of packing the wrong-sized canopy into your SST range from difficulty in packing to a likelihood of either a premature pack opening or total pack closure, depending on whether the parachute canopy is too small or too big. FAA Advisory Circular (AC) 105-2, paragraph 5.B(6) states guidelines for component interchangeability, but we've made the decision even easier.

The Parachute Industry Association and the Jump Shack have each published a list of canopy volumes. They tell you the cubic inches required for your container and which size SST you should choose for a specific canopy. If you don't find your canopy listed, call the canopy manufacturer or Jump Shack to find your canopy's volume. Don't guess; it's unnecessary and dangerous.

## MODIFYING YOUR SST

Although the Federal Aviation Regulations technically allow alterations to some parts of the assembly by designated personnel, the SST is such an integral system, we don't recommend it. Virtually nothing on the SST works completely independent of the reserve system. We've tested the entire system as a unit, and it should stay that way.

If you think you can improve something, we welcome your comments. It's valuable input from the field that made the SST the great rig it is. We are continually testing new ideas on the SST, and we may have already considered yours. What we have already learned could save you from finding out the hard way.

## COMPATIBILITY

Look at the system data information plate under the reserve pin inspection flap to determine the size of the main and reserve containers. Check that information against published Jump Shack canopy volume charts. If there is a problem, give us a call. We make in excess

of 150 different container sizes/combinations on 11 different harness sizes, so there is no reason that your canopies shouldn't fit the containers or the harness not fit your body.

## **Pin Space & Line Stow Change in Reserve Free Bag**

Effective September 1, 1999, the Jump Shack has changed the pin spacing on the SRP (Small Reserve Pilot chute) equipped Racers from 2 inches to 4 inches. This change makes the rip cord pins easier to insert and reduces the overall number of rip cord that must be stocked.

This change requires the Free Bag to be changed accordingly. Therefore, we will be providing Free Bags for the 11" Wide (formally the "Thinline") and the 12" wide (formerly the "Square Back") which can be used for either the SRP or the large top pilot chute with 3 grommets in the top surface.

It is apparent while packing the reserve which 2 of these grommets to use. Simply select the grommets that most closely match the reserve side flaps. Always

begin the alignment by matching the grommet closest to the wearers' neck.

Additionally, this change eliminates the line stow pocket on the 9 Wide (formally the "Power Racer") containers. This pocket has been eliminated for some years on the Military rigs and the Tandem rigs and some specialty rigs. This pocket will be phased out completely in favor of rubber band stows in the future. The Jump Shack testing has revealed that rubberband stows, properly located, are more reliable than the stow pocket and the "Safety Stow" locking stow method. All Free Bags produced for the past 5 years have had the ability to use rubber band locking stows in place of the "Safety Stow" and is now recommended across the board.

## **AngleFire Reserve:**

The Angle Fire Reserve is a 183 square foot Ram Air parachute certified in the Low Speed Category of TSO C23b. It is limited to use in Aircraft under 150MPH. It is additionally limited to use with less than 225 pounds. It should be used in a container of 425 cubic inch, or more capacity.

# OPERATIONAL CHARACTERISTICS

---

## GENERAL DESCRIPTION

The har ness and con tainer are de signed and built as an in te grated sys tem for rea sons of func tion, safety, and com fort. The com ponents of the har ness and con tainer sys tem are made from nylon and polyaramid fab rics man u fac tured to U.S. mil itary spec i fi ca tions and new (not re con di tioned) Mil- Spec. hard ware.

The SST, SST/Racer, Racer/Elite™ and SST/TRAINER fea ture a pre-sized one-piece nylon har ness. Every SST em ploys the Pop-Top re serve con tainer and a one-pin main con tainer. The Tan dem is equipped with a drogue stowage com part ment which is closed by 1 pin and must be opened be fore the main con tainer can be opened.

The com fort pads will not ab sorb wa ter, per spi ra tion, or hold dirt. The padding was chosen for its light weight and du ra bility. Al though it won't keep you af float, it pro vides some flo ta tion for the sys tem.

Both the main and reserve con tainers fit snugly around the cano pies to keep them in place un til the an chored pi lot chute ex tracts them in the proper se quence. This metering effect max i mizes the re li a bility of the canopies by pre venting one part of the sys tem from de ploying ahead of another which should go first.

The main and reserve con tainers hinge to gether for greater com fort. The Pop-Top re serve rides just be low the shoul ders on the shoul der blades, and the main con tainer rests in the small of the wear er's back. When the wearer moves, so does the SST. This "hug-ging" abil ity of the SST keeps the mass of the rig closer to the cen ter of grav ity of the wearer, and im proves sta bil ity and han dling. The wedge shape of the whole sys tem im proves the aero dy namic pro file and fa cili tates ex its from small doors.

## THE MAIN SYSTEM

The main para chute can opy may be de ployed in any of five ways, de pend ing on the main de ploy ment con figuration:

### 1. Rip cord Deployment

A stain less steel rip cord han dle lo cated on the wear er's right front re leases a re tain ing pin when pulled. Pulling this single pin re leases a cloth closing loop, and the con tainer opens from the spring ten sion of the pi lot chute. The pi lot chute springs from the con tainer into the air stream and ini ti ates the de ploy ment of the main para chute, if proper body po si tion is util ized.

### 2. Pull out Hand Deployment

A soft han dle lo cated on the bot tom right cor ner of the main con tainer con nects to a rip cord pin and the base of a springless pi lot chute. As the handle is pushed down, the rip cord re leases a cloth clos ing loop al low ing the con tainer to open. The pull ac tion then ex tracts the pi lot chute by its base. The wearer must manu ally throw the pi lot chute into the clear air stream to his side and re lease it. The pi lot chute then de ploys the main para chute.

### 3. Throw-out Hand Deployment

A plastic handle at the top of the wearer's right leg strap con nects di rectly to the apex of a limp pi lot chute in a leg-strap pouch. The wearer ex tracts the pi lot chute from its pouch and manu ally launches it into the clear air stream next to him. When the pi lot chute has in flated and ap plied a load to its seven-foot bri dle, it ex tracts a curved pin on the bri dle from the cloth clos ing loop, and opens the con tainer. The pi lot chute then con tinues to de ploy the main parachute. This pi lot chute may also be stowed and de ployed from a Bot tom of Con tainer mounted in a Span dex pouch.

### 4. Automatic Activation

In this con figuration, a pre set sens ing unit de ter mines the al ti tude and air speed, and ac ti vates the rip cord pin (in the rip cord de ployment con figuration) when the de sired de scent air speed and al ti tude co in cide. The SST ac cepts sev eral au to mat ic ac ti va tion de vices (AADs) on the mar ket for use on the main para chute sys tem.

## 5. Static-line Deployment

### Direct Bag:

This is a wearer- passive deployment controlled by a jump master. A static line is attached at one end to the airplane and at the other to a rip cord pin and the main parachute deployment bag. The bag attaches to the top of the main canopy with breakcord. Loading the static line first extracts the main rip cord from the cloth closing loop, then extracts the main parachute bag. When the system fully loads, the break cord detaches and releases the deployment bag from the canopy.

### Pilotchute Assist:

Same as above except that the canopy end of the static line is attached to the main pilot chute with Velcro or Breakcord. Loading the static line first extracts the main ripcord from the cloth closing loop, then extracts the main pilot chute and bag. When the system fully loads, the break cord or Velcro detaches and releases the pilot chute and bag from the static line. The pilot chute and bag stay with the canopy.

## THE RESERVE SYSTEM

The reserve parachute uses the patented Pop- Top pilot chute. It's the only reserve system where the pilot chute is externally mounted—so it doesn't need to push container flaps out of the way to get open—and the ripcord pins are protected between the reserve container and the wearer's back. The Pop- Top system enables the highest launch of the low- volume MA-1 pilot chute spring when the reserve has been properly assembled and packed. **THE SST RESERVE PARACHUTE SYSTEM MUST BE USED WITH AN APPROVED PILOT CHUTE.**

There are three ways to deploy the SST reserve:

### 1. Ripcord Deployment

The stainless steel trapezoidal ripcord handle is shaped to invite a left- handed thumb hook and thrust type activation while accepting an across the chest right- handed grip and pull type activation. A combination of both or a two-handed activation is recommended. The handle is mounted on the wearer's left main lift web and activates two ripcord pins when pulled. These pins release the two cloth closing loops that route through the pack, over the pilot chute, and back through the pack. Releasing the cloth closing

loop allows the pilot chute to launch into the airstream and deploy the reserve.

### 2. Reserve Lanyard

This system comes as standard equipment on the SST/Trainer and is used to back- up the above system after the wearer has separated from the main parachute canopy. The reserve rip cord housing is joined by an elastic retainer channel at the front of the shoulder. A cross connector lanyard crosses from its shackle on the right riser, routes under the top section of the reserve rip cord and housing, and then shackles to the left riser. After both of the risers separate from the harness, the lanyard slides along the housing to a dynamic topmost point of suspension. The lanyard extracts the housing from its elastic channel or AAD housing clamp. When all tolerance is taken from the ripcord/housing system, the ripcord pins are extracted, and the lanyard slides free over the remainder of the housing and the rip cord. The spring- loaded pilot chute launches and deploys the reserve canopy.

**NOTE: The attachment of a springless pilot chute, w/bridle, to the apex of the main canopy is required to positively assure the activation of the Main/Reserve Interlock. The force required to pull the rip cord is the same as the force required to activate the inter lock. Adequate force may not be generated, during a streamer (high speed/low drag) malfunction, when utilizing a direct bag static line system w/o the springless pilot chute.**

### 3. Automatic Activation

When the desired altitude and descent coincide, a pre-set altitude/velocity sensing device fires a pyrotechnic charge into a combustion cylinder and activates a piston. A dog on the piston pushes a tube which slides over the proximal rip cord pin of the reserve rip cord, releasing the cloth closing loops of the reserve pilot chute. The pilot chute then deploys the reserve canopy.

The device described is the SSE Sentinel MK 2000, which has been tested and approved for the SST. The Sentinel MK2000 may deploy the reserve while under a normally functioning ram-air main parachute in a spiral or "riser" turn below 1,000 feet. If your activities include this type of maneuver and you employ a MK2000 it is recommended that you get it "de tuned" by the manufacturer. Contact SSE for details.



The FXC Model 12000 can be in stalled, but only by the Jump Shack as it may require a special ripcord with adjusted pin length to compensate for the reduced pull stroke gen er ated by some Model 12000s. If your rig is equipped with an FXC Model 12000 check the rip cord pin length and ad vise your ven dor upon purchasing a replacement reserve ripcord. **WARNING: If the origi nally in stalled FXC 12000 is exchanged, for any reason, the installation should be re-evaluated for func tion in packed con figuration while being worn. This procedure should be per formed by the Jump Shack.**

Finally, AADs have both failed to operate when needed and operated before the desired altitude. Whether from fault of the de vice or user er ror, AADs should be considered unreliable and used with cau tion. None the less, Jump Shack strongly rec om mends the use of an AAD.

## **AAD SET-UP NOTIFICATION**

Your new Racer has been equipped with a kit to accept the installation of a 2-pin CYPRES AAD unit. All rigs built af ter 1997 are equipped with the Spec tra/CY PRES Quick Loop.

## **THE MAIN CANOPY RELEASE SYSTEM**

**3-Ring Release System**—Two rings on the riser acting as force reduction levers retained by a locking loop which serves as a force re duc tion pul ley trans mit the load of the open ing and sus pen sion to a larger ring on the har ness. A han dle at tached to the main lift web pulls two ca bles that re lease the left and right side ring locking loop simultaneously. Simultaneous release was not possible on Racers manufactured before January 1998 and is not possible on any other rig manu fac tured at this time. Af ter the breaka way, only the large rings re main.

Bef ore us ing the SST with the above re lease, con sult an ap pro pri ately rated in struc tor.

## **THE SST TRAINER SYSTEM**

The SST/TRAINER meets the needs of mod ern stu dent training programs. It complies with U.S. Para-

chute As so ci a tion doc trines on stu dent train ing, both for part III, or the accelerated freefall method. The SST/TRAINER readily con verts from static line de ploy ment to rip cord de ploy ment to make training eas ier for the drop zone operator. It is equipped with a “Stevens” main reserve interlock system which causes ac ti va tion of the re serve con tainer upon se pa ration of both of the main risers. This system is the only one in the industry which employs a full time cross con nec tor on the main risers as stan dard equip ment.

The cross connector/reserve lanyard may be option ally assembled to a single riser. This assembly method is pre ferred by some op era tors as it elim i nates the cross connector feature. However, this method does make the sys tem sen si tive to the con nected side. If the con nected side of the main re leases first a main re serve en tan gle ment could oc cur, as with other sys tems.

## **WHAT YOU SHOULD KNOW ABOUT RESERVE STATIC LINES**

The pur pose of a Re serve Static Line (RSL) is to provide an auto mat ic link from cuta way of the main canopy to reserve activation. To do this the cutaway canopy must gen er ate a drag force ca pa ble of pulling the re serve rip cord.

All means available must be employed to maximize and utilize this drag force. One of the best ways to maxi mize the drag of a mal func tioned canopy is with a “Cross Con nec tor”.

When the “Stevens” system was first incorporated, tests showed that a canopy with one side cutaway doesn’t al ways have enough drag to pull the re serve rip cord (22 lbs.+ 5 lbs. for the seal = 27 lbs.). That’s right, you could eas ily end up with less than a square foot of ef fec tive drag sur face. Those tests were done using round canopies. There is no reason to believe that a square canopy would do any bet ter - quite to the contrary.

The origi nal “Ste vens Sys tem” had the cross con nec tors at the top of each riser, at the links. That lo ca tion required two connectors, one front and one rear, to prevent elongation and resultant loss of drag of the

main canopy. This configuration is not acceptable on a piggy back as the cross connectors can and do catch under the reserve container. Presently we are enlightened enough to realize that cross connectors placed at the base of the riser near the attachment point to the harness will preclude these problems.

The Racer/*Elite*™ employs such a cross connector, with “Quick Releases” on both sides. Its routing takes it from the left riser, under the top half of the exposed ripcord housing, over (outside) the top or yoke flap, then to the right riser. The excess lanyard is concealed under the top “lip” of the Pop- Top and the respective sides of the yoke flap. Velcro is provided under the edges of the yoke flap to mate with Velcro on the cross connector itself, thus preventing escape of any critical amount of lanyard in free fall.

After, and only after BOTH risers have separated from the harness does the cross connector load the reserve ripcord pins, pulling them and activating the reserve.

Other solutions to this problem have no cross connector, only a direct link or “static line” to the ripcord pin. We call that type “Side Sensitive”; that is, it activates the reserve when the side to which it is connected has enough drag to release from the harness and pull the pin.

We trouble shoot the mechanics of parachute equipment operation with the “What if scenario”. What if... on a side sensitive system, the critical riser releases before the other riser, as they frequently do? The pin is pulled and the reserve pilot chute entangles with the yet unreleased side of the canopy. What if... on a single sided system, the non-RSL side releases and the RSL side hangs up? The canopy “streamers” and fails to generate enough drag to pull the pin. Both of these scenarios have happened with tragic results on single sided systems.

Experience has shown us that all of the single handle cutaway systems in use today release unevenly. Try as we may, we being the designers and manufacturers, no one has developed a reliable method to perform even release to date. Additionally, prudence tells us that we MUST assume a possibility of a release hang up. As much as 40 pounds of force has been required to release some poorly maintained riser release systems, *after* the cable has been pulled.

The entanglement scenario is prevented with the two pin RSL (one pin to each riser) system. However, it retains the “one side attached without enough drag to pull the pin” problem.

The cross connector system is “what if”ed with: suppose a previously “tailed” main deploys after the reserve is out. Some say, and we acknowledge, that this rare occurrence would put the reserve over your head with the main inflated and in tow behind the reserve. OK! What if that does happen? We have a good canopy over our heads and plenty of time to disconnect either side of the cross connector thus releasing the main. No panic!

Suppose someone routes the cross connector improperly under the top reserve flap. No one would do that you say! We did it in a test! No problem, we simply pulled the quick release and separation was complete. Later analysis showed that in that situation all one must do is pull the reserve ripcord. Then we not only have adequate separation, but a deploying reserve as well. Additionally, an AAD would provide the ripcord pulling chore.

Cross connectors have been faulted with snagging on Bell helmets (which were not designed with sky diving in mind). This, by the way, never prevented the RSL from doing its job. We submit that it is the fault of the helmet design and not the RSL. Helmets and all other pieces of extraneous parachute equipment shouldn't have edges that snag.

On the Racer/*Elite*™ the choice is yours: single sided, cross connected, or none. If you decide to do CRW on the way down and want to disconnect your RSL, simply release either one of the snap shackles and go for it! The Racer/*Elite*™ RSL, with its unparalleled 20 year safety record ....because it works better.

## **The Drogue System**

The Racer drogue which is used on both the Tan dem and the Tac ti cal Rac ers is unique to the parachute industry. It is a back center mounted fall rate reduction and stabilization device which is anchored to the front of the jumper and is releasable at the rear of the jumper. Releasing the drogue deploys the main canopy. In the case of the presents of a passenger or bundle, or both, it is anchored to the center of the most forward load. The drogue suspension system has it's

own com part ment lo cated be tween the main and the re serve. It has its own clo sure flap (see Sec ond Level Clos ing). The drogue can opy is stowed in a span dex pouch at the bot tom of the main con tainer. It is right hand op er ated and de ployed like a **Throw out Hand Deployment** pi lot chute

#### **The Bridle and Release**

The drogue bridle is releasable via a 3-Ring release sys tem lo cated at the base of the bri dle. The bri dle is equipped with a large ring which serves as the base ring which is the “flya way” end of the release. A back cen ter mounted drogue riser, which is part of the front mount ing sys tem, is equipped with the re leas ing rings and ca bles. There are three dis tinc tive re lease points on this riser. The three re leases are in tended for the mas ter, the pas sen ger and the cuta way riser re lease. This means that when you cuta way the main can opy the drogue also releases. This additional safety fea ture means that your emergency procedures are the same for drogue as sisted fall and non- drogue as sisted fall.

#### **The Canopy**

The Racer Drogue is small and light weight and easy to de ploy yet it pro duces a fall rate equal to a solo fall rate. We have meas ured the fall rate of a 400 LB tan dem load both with the drogue and with out. With out

the drogue the fall rate is 143.7MPH @ 9000ft.. With the drogue out at 6000 ft. the fall rate was 117.3 MPH. These are average speeds taken over the previous 1000ft. Af ter fal ling for 2000 ft. which al low for sta bil i za tion. The can opy is equipped with a dou ble cen ter line which controls the amount of apex pull down. Additionally, if the “Kill Line” were to break there would be no change in drogue per form ance.

Some Drogues are collapsible. That is they are col lapsed af ter the can opy is ex tracted from the bag so as to not continue to drag dur ing can opy flight. This is accomplished via a “Kill Line”, routed through a chan nel in the bri dle from the bag to the apex of the drogue can opy, which pulls, that apex, to the bri dle at tachment location of the canopy thus inverting the canopy reducing the effectiveness of the drogue. If this “Kill Line” is not re set dur ing pack ing the drogue will not be in flated dur ing de ploy ment. This has hap pened. The fall rate of the tan dem pair was ex ces sive (140 to 145 MPH) the opening force was sub se quently higher, how ever, the sys tem has never failed to op erate un der these con di tions. Most im por tantly, the ex cess “kill line” should be pulled up into the can opy when it is set. This allows the slack in the “kill line” to be avail able dur ing bri dle stretch and load ing. Fail ure to not do this will re sult in ex ces sive “kill line” wear or un sta ble drogue per form ance.

# INSPECTION INSTRUCTIONS

---

## CYCLIC INSPECTIONS

The Federal Aviation Administration requires that all parachute systems in use for emergency circumstances be inspected every 120 days. This inspection process is well known and generally thought of as a canopy inspection only. Such is not the case. The harness and container and its accessories, such as the pilot chutes, bridles, bags, and cables, must be thoroughly examined and certified as air worthy at the same time. You, as the user of this equipment, should be familiar with and check these items more frequently such as every time you pack or jump it.

All SSTs should be inspected for: Broken or frayed fibers on webbing, cables, container fabric, tapes, locking loops, and housings; broken tacking; severe discoloration or fading (and indication of possible sunlight damage); grommet distortion; bent ripcord pins; worn velcro; broken stiffeners; broken stitching; and a general look at the overall appearance.

## PRE-JUMP INSPECTION

The “jump master check” should be performed before every jump by another person who is familiar with the equipment you are using. It should be performed in the following manner. “Hands on”, beginning at the front of the wearer at the leg straps and proceed up the front of the wearer to the shoulders then to the rear of the wearer at the top of the shoulders and down to the bottom of the rig. Observe for: properly threaded and routed leg straps, properly threaded and routed main lift webs, securely seated ripcord and cutaway handles, properly threaded and routed chest strap, proper and secure assembly of the riser releases, proper routing of the risers, proper seating of the reserve pilot chute, proper seating of the main ripcord pin, proper routing of the throw-out bridle if so equipped, proper routing of the pull out lanyard if so equipped, housing to cable clearance of the main ripcord cable if so equipped, and back to the leg straps for assurance of proper routing.

# MAINTENANCE/REPAIR

---

## PERSONNEL QUALIFICATIONS

The FAA states that mi nor re pairs may be done by a Senior Rigger and major repairs must be done by a Master Rigger. They fur ther de fine mi nor re pairs as any thing that does not af fect the air wor thi ness of the equip ment, and ma jor re pairs as any thing that does af fect the air wor thi ness. This regu la tion/pol icy is sub jec tive and open to dis cus sion. You as the owner and your rigger should discuss the required repair and make the best de ci sion you can. If there is still some ques tion call us.

## MAINTENANCE PROCEDURES

Your new rig is de signed so as not to re quire any rou tine maintenance except for the 3-Ring system. It must be disconnected and the following procedure per formed as indicated.

1. With a ny lon brush re move the cad mium ox ide de pos its on the web bing where it con tacts the rings. At the same time, flex the web bing as sur ing that it is soft and sup ple. This step may be per formed dur ing the In spec tion cycle.
2. If your Racer is equipped with a yel low cuta way ca ble you should with “3 in 1” oil or equiva lent wipe a light coat onto the re lease ca ble . This pro cess should re sult in a clean well oiled ca ble. **This should be done weekly!** If your Racer is equipped with a red Teflon coated ca ble it is not nec es sary to lu bri cate it.

## MAIN CLOSING LOOP REPLACEMENT & ADJUSTMENT

The main clos ing loop is con structed of Type 5 Ny lon Cord Sheathing. The running end is finger trapped back into it self at about one (1") inch past the cen ter. The fin ger trap is drawn out of the end of it self and the

ends are drawn even. By se lect ing the Type 5 sheath ing we avoid the re quire ment of a washer to re tain the knot be hind the grom met.

The lo ca tion of the knot, and ul ti mately the length of the “Thru Loop”, is determined by trial and error. With the loop ade quately long to al low for a first time closing, close the main and pin the loop leav ing the pull- up cord in place. Now take a grip on the pull up cord and pull it with one hand while the other hand presses down on the top main flap. Determine the amount of loop ex posed be tween the pull- up cord and the grom met, then re lease the pull- up cord. Open the top flap and un thread the pull- up cord from it. In or der to ac cess the knot of the “Thru Loop”, sad dle bag the rig as de scribed in the sec tion of the own ers man ual about Closing the Main. Leave the pull-up cord in place through the grommets of the side and bottom flaps. Pull the cut end of the “Thru Loop” away from the retaining grommet exposing the knot. Relocate the knot the same distance determined above. Close the con tainer and re peat as nec es sary.

***Note: Loops which are too long can in crease the fre quency of accidental activation of the main, and loops which are too short can cause hard pulls. Both cases should be avoided.***

## REPAIR PROCEDURES

The best guide for the exe cu tion of gen eral re pairs to be per formed on para chutes is “The Para chute Man ual” by Poy n ter.

Tacking, the most com monly re quired re pair on any rig should be re placed with waxed ny lon 5 cord in the same man ner as orig i nally manu fac tured with one ex ception. That is, the com fort pads on Racers were orig i nally tacked to the main lift web just above the chest strap in two places with two turns of waxed ny lon 5 cord. This tack breaks oc ca sion ally and should be re placed so that the bot tom edge of the com fort pad lines up edge to edge with the top of the chest strap. As an al ter na tive it may be sewn with a ma chine. The ma chine stitch should traverse across the main lift web

on the bind ing tape of the com fort just above the chest strap.

Velcro pile should be replaced as required using a Fed. Std. 751 Type 301 stitch with a 2 inch over stitch.

Vel cro Hook should be cleaned and only re placed if necessary. Use “Type B” hook. Attach in the same man ner as the pile.

Stain removal should be performed with a non-detergent soap with a dry suds and a light ny lon brush. A non-volatile, non-corrosive dry cleaning solvent also works well. We use “Pic rin”.

Any bro ken or frayed fi bers should be re placed, dis-torted grom mets should be re formed or re placed, dis-col ored or faded fab ric should be tested and re placed if necessary, bent ripcord pins straightened or re-

placed, broken stiffeners replaced, and broken stitches replaced.

## **AngleFire/Tandem Reserve:**

When performing periodic inspection to Angle Fire or Tan dem Re serves the rela tive line lengths should be noted. A dif fer en tial of more than one inch should be cause for rejec tion and sub se quent cor rec tion be fore re turn to serv ice. Any bro ken fi bers or threads should be re paired or re placed. Stains must be iden ti fied and documented. They should be removed if possible without damaging the fabric. Generally only acidic entities are harmful to nylon there for a pH test is an ap pro pri ate method of de ter min ing if a stain is harm-ful.

# ASSEMBLY

---

## PERSONNEL QUALIFICATIONS

Only a cur rently FAA li censed rig ger may as sem ble, in spect, pack, and cer tify the re serve of an SST as air worthy. Riggers are required to have *this* manual avail able to them while serv ic ing this sys tem. Per the FAA regu la tions you must be fa mil iar with any type of re serve para chute you wish to cer tify.

The main can opy and its ac ces so ries may be as sem bled and packed by you or a li censed rig ger.

## PARTS LIST

**The har ness and con tainer**  
**Main pi lot chute**  
**Main de ploy ment bag**  
**Main ris ers**  
**2 Sets of Tog gles**  
**3- Ring Re lease**  
**Reserveripcord**  
**Re serve pi lot chute hat**  
**Quick Loop**  
**Pull- up cord (in side main flap)**  
**Re serve Pack ing data card**  
**2 Main cloth clos ing loops**  
**Re serve pi lot chute and bri dle**  
**OPTIONS:**  
**Reserve free- bag (ram- air reserve)**  
**Cross Con nector/Reserve Lanyard**  
**AAD**  
**Main rip cord**  
**Spring loaded main pi lot chute**  
**Rub ber Stow Bands**

**Note:** Only U.S. Mili tary Speci fi ca tion R- 1832 rub ber stow bands may be used on Para chute Labs. Prod ucts. These should be pre-assembled to the de ploy ment bags, both main and re serve, in the pro vided stow band re tain ers.

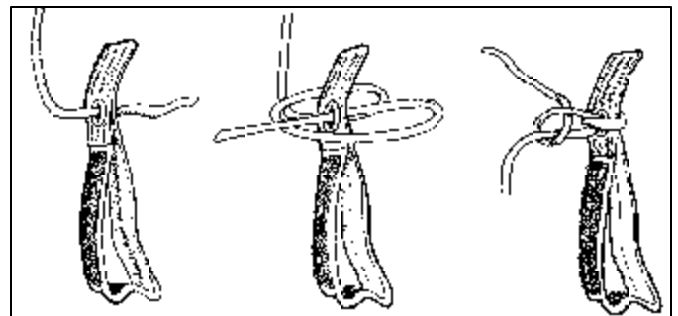
## RESERVE ASSEMBLY

**A.** Con nect the can opy to the re serve ris ers. When as sem bling a new SST, you have the choice of us ing L- bar or Rap ide links. The ris ers come from Jump Shack ready to ac cept Rap ide type links.

The PIA (Para chute In dus try As soc.) urges rig gers to install round cano pies on four ris ers to help the per form ance of the can opy. Pio neer re quires that if their K- series re serves are in stalled on four ris ers, then #6 Mal lion Rap ide links must be used. To in stall L- Bar links on Racer re serve ris ers care fully add type 8 or 12 buffer webbing between the link and the riser webbing.

For Rap ide links, turn un der the edge of the riser webbing to buffer it self and in stall the links. Turn the bar rel nuts un til snug plus one- quarter turn.

**B.** Insert the running end of the steering line down through the guide ring mounted on the riser and then through the grom met of the steer ing tog gle en ter ing from the vel cro side. Wrap the line around the tog gle 360 de grees from where it ex ited, pass ing above the line that en ters the grom met. Then, in sert the run ning end back through the grom met ex iting on the vel cro side. The end should exit the grom met above that por tion of the line which wraps around the tog gle. Tie the run ning end and the main steer ing line to gether strad dling that por tion which is wrapped around the tog gle, using a half- hitch and lock ing knot. Fin ger trap and tack with 5 cord ny lon waxed.



**C.** On round cano pies, thread the bri dle through the ra dial tapes at the base of the pi lot chute, then thread the other end through the loop pro vided in the bri dle

and pull it tight. Route the other end of the bridle through the apex vent lines, making sure to catch all of them, then bring the loop over the top of the pilot chute and back down to the apex. Secure the bridle loop to it self with one turn doubled of waxed nylon 5-cord, so it slides freely on the apex. **THE BRIDLE MUST NOT RESTRICT OR CHOKE THE APEX. IT MUST SLIDE FREELY SO AS TO ALLOW SELF-CENTERING.**

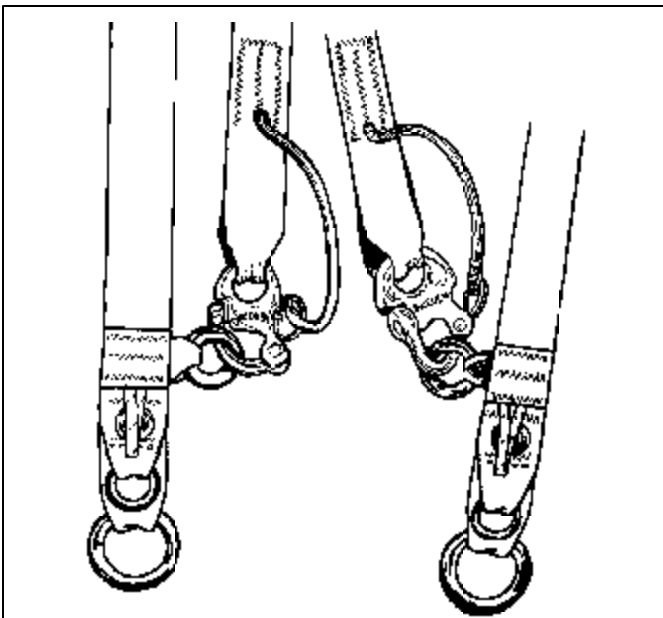
On Square canopies only the pilot chute to bridle need be assembled. The procedure is the same as for round canopies.

## TANDEM CANOPY ASSEMBLY

All Tandem canopies should have a rubber stow band attached to the line attachment point of one of the in-board "B" lines. The center of the slider should be stowed in this retainer during packing. The purpose of this retainer is to prevent the slider from coming down the lines prematurely. It is a good idea to do this to any canopy.

## SST/TRAINER ASSEMBLY

Install the reserve static line system at this time.



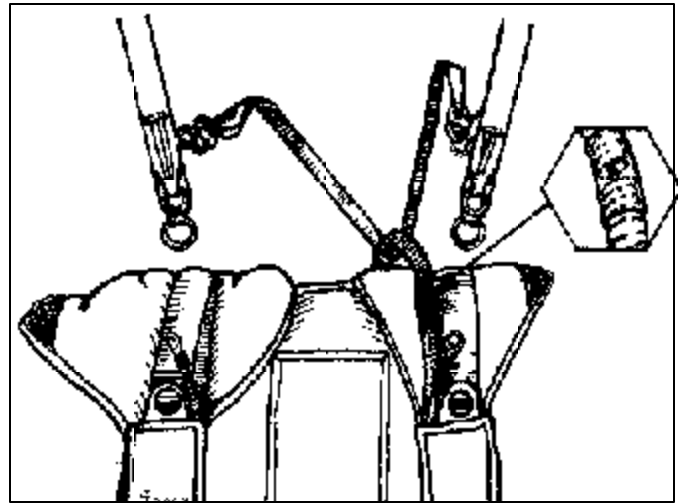
**Note: To preclude the possibility of inadvertently routing the static line under the top reserve flap we**

**recommend that the reserve be packed and sealed before taking the following steps.**

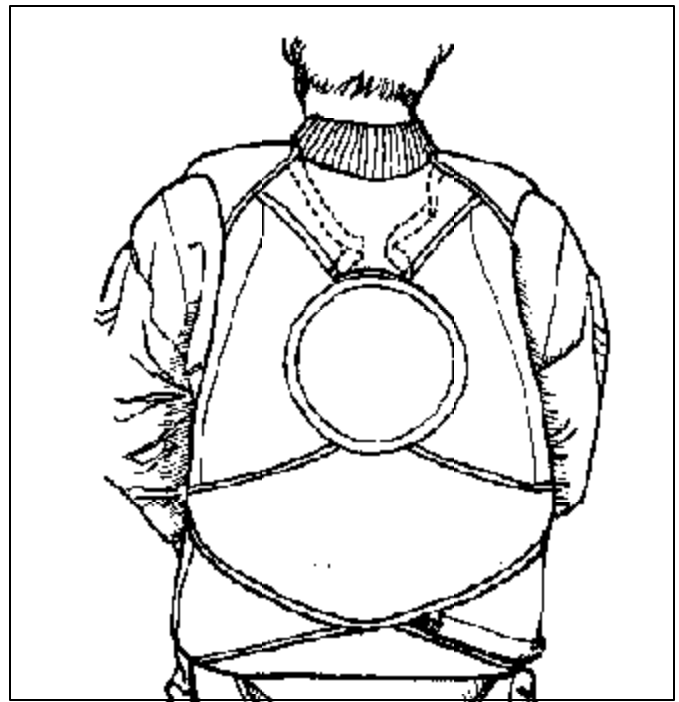
**A.** Pass one end under the top half of the reserve rip-cord housing, **BUT NOT UNDER THE RESERVE RISERS OR THE TOP FLAP OF THE RESERVE CONTAINER.**

**B.** Connect the shackle to the small ring located on the side of the riser.

**C.** Repeat for the other side.



**D.** Stow the reserve static line in the channel over the wearer's shoulder and mate the velcro on the yoke or top flap.

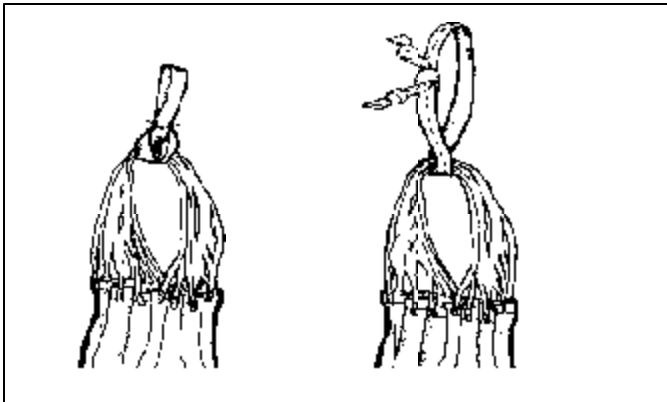




## INSTRUCTION FOR CHANGING FROM STATIC LINE TO PILOT CHUTE WITHOUT UNPACKING THE BAG.

E. At tach the loop of 9/16 tu bu lar pro vided to the apex of a round can opy or the bri dle at tach ment point of a square can opy by loop ing it through and tack ing the loop, with one turn of waxed ny lon 5 cord dou bled, so that it does not choke the vent lines on a round can opy. Local manu fac ture of this item can be ac com plished by making a loop, on the vent lines, which has strength equal to the strength of a pilot chute bridle and length ade quate to pass through the bag grom met to the break cord tie lo ca tion on the trainer bag, about 12" circumference.

**NOTE: This loop must float on the vent lines.**



## MAIN ASSEMBLY

1. Install the elastic stow bands on the deployment bag. For most cano pies you will need one elas tic band for each lock ing stow and from two to four on each side of the bag. **NOTE: DUE TO THE VARIETY OF LINE DIAMETERS AND SUBSEQUENT STOW BULK, ELASTIC STOW BANDS ARE NO LONGER SUPPLIED BY CONTAINER MANU-FACTURERS. THEY SHOULD BE SUPPLIED WITH YOUR CANOPY.**

2. Thread the main pilot chute bridle through the grommet at the top center of the bag with the stow bands on the out side. The mouth of the bag faces away from the pi lot chute.

3. Thread the bridle through the bridle attachment point on the top of the square parachute (or through the apex lines of a round parachute), then back through the grom met and over the pi lot chute from the top. When you fin ish, the pi lot chute bri dle loop will have re turned once more through the grom met and be tightly secured around the canopy's load-bearing point (or apex loop).

4. Lay the con tainer face- down on a pack ing mat with the packed re serve con tainer to ward the main can opy. At tach the ris ers to the con tainer by loop ing the bot tom riser ring through the main har ness ring and then the small riser ring through it, bring ing the cloth lock ing loop over and through the small ring and then through the grommet in the riser. The loop is then routed through the terminal eyelet in the adjacent hous ing whereby the re lease lan yard is then threaded through the loop. No less than 6 inches of ca ble should ex tend be yond the loop and eye let. This ex cess ca ble is then stowed in the cloth channel provided in the back of the riser.

5. In stall the can opy on the ris ers mak ing sure noth ing is twisted and the line ro ta tion is cor rect. If you don't com pletely un der stand how to do this, con sult a rig ger. Don't guess, or you may find yourself under a can opy go ing back wards or worse!

The Type VIII & XIII ris ers have been de signed to ac cept con nec tor links simi lar to the #6 Mal lion Rap ide link. If you wish to in stall your can opy on the older type L- bar links, add a buffer and sew it in with a U shaped pat tern against the link chan nel to pre vent the link from twist ing while it's load ing. The newer Type 17, 1" ris ers ac cept the #3.5 Rap ide link, but not the L- bar type.

6. Install the steering toggles at this time (See RE-SERVE ASSEMBLY Paragraph B). Consult your Canopy owners manual for proper location and subse quent ad just ment.

7. Insert a closing loop into the retainer provided in the main con tainer tray next to the bot tom cen ter of the reserve partition (if one is not already installed from the fac tory).

**NOTE: WHEN REPLACING THE MAIN LOOPS DO SO WITH GUTTED TYPE 5 NY-LON CORD, OR THE EQUIVALENT.**

# RESERVE PACKING INSTRUCTIONS

---

## GENERAL

There are many types of re serves on the mar ket, and the SST will ac cept most of them. Jump Shack has de veloped specific packing in struc tions for each type. It's the rigger's re spon sibil ity to use the ap pro priate method for any re serve he packs, and to pack ac cord ing to the harness and container man ufac turer's in struc tions if there is a differ ence in the methods de scribed by the can opy man u fac turer's in struc tions.

### CRITICAL POINTS

**Compatibility**—Make sure the can opy you're pack ing is the right size for the SST it's con nected to. Even if it was in there be fore, some one el se's mis take will be come yours when you sign the pack ing data card.

**Closing loop length**—A too-short closing loop re sults in a dan ger ously hard pull. One that's too long makes the pi lot chute hat look messy and can snag pro tru sions on the air plane.

**Pilot chute closing loop assembly**—You must use the spec i fied ma te ri als to as sem ble the pi lot chute, closing loop, and hat. Total mal func tions of the re serve could re sult from the wrong tack ing cords.

**Clear chan nel for the loops**—Visu ally in spect the com pleted pack job from the back and the front (back pad) of the con tainer. Make sure that no lines, can opy, or pi lot chute ma te ri al can hin der the clos ing loops' pas sage through the con tainer.

## REQUIRED TOOLS

This Man ual

Line Sepa ra tor (Round Re serve Only)

Ten sion De vise (Round Re serve Only)

(3) Shot bags

(2) SST Bodkins, Jump Shack Part Num ber 2003

(2) Full gut ted 550# (type III) pull-up cords 36" long

Pack ing pad dle or fid

Ruler or tem plate for mark ing pi lot chute

A pen or soft lead pen cil for mark ing

Large sew ing nee dle (for tack ing)

5 cord ny lon waxed for tack ing

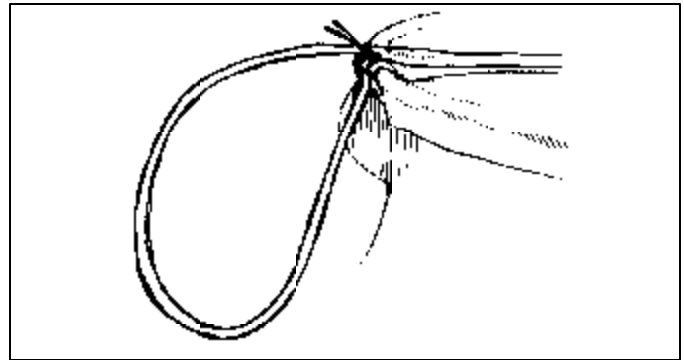
## PART ONE: PREPARATION

1. Count your tools.
2. In spect the can opy ac cord ing to the man u fac turer's in struc tions.
3. Read in struc tions and re view.

### PILOT CHUTE, CLOSING LOOP (QUICK LOOP) & HAT

A. While seated, place the pi lot chute be tween your legs with the top fac ing up. Ro tate the swage to the eleven o'clock po si tion.

B. Lay one end of the Type 4 (square weave) tape over the edge of the pi lot chute, **loop side up**, at the twelve o'clock po si tion. An equal amount of tape should



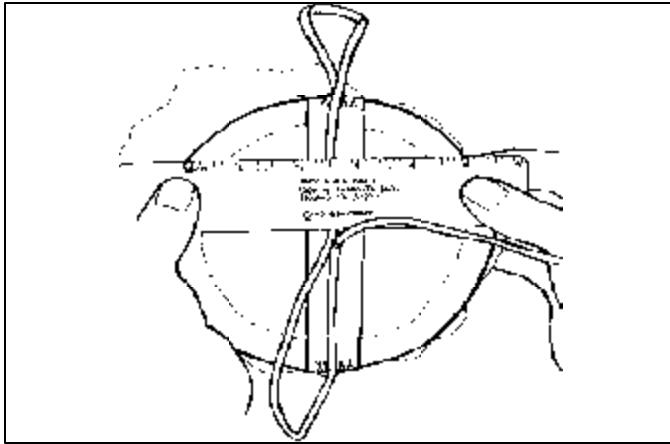
hang over the edge at the six o'clock po si tion.

C. Whip stitch each end of the Type 4 to the pi lot chute spring across the width of the tape and back. The stitches should pass through the tape from the un der side of the cap, through the para pack fab ric of the pi lot chute cap, around the spring, and through the para pack pi lot chute fab ric and tape at the top. Care should be taken not to catch any pi lot chute can opy fab ric in these stitches. Tack the parapack around the spring with each whip stitch.

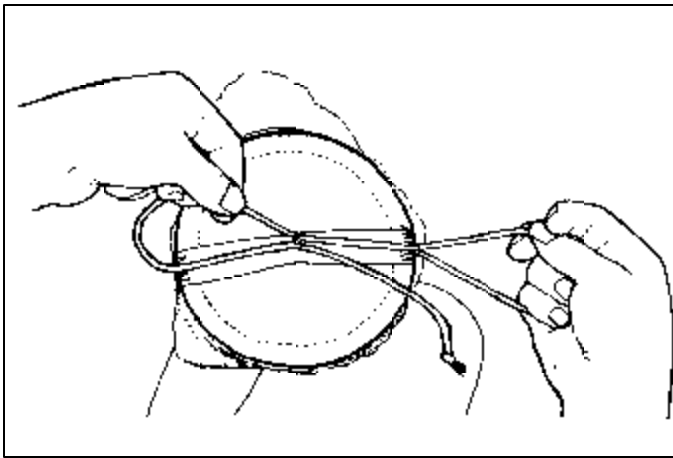
Also re mem ber, if you sew through the Kev lar loop, the run ning end must still be able to slide freely in the fin ger trap. Sew only through the stand ing end.

D. Cen ter the loop across the top of the cap by plac ing a ruler across the cap at the ten and two o'clock po si tion, per pen dicu lar to the loop. The loop must be cen tered exactly, or the pi lot chute will "tip over" af ter

the finished pack job has settled. Experience has taught us to use a ruler or bet ter still, pre pare a tem plate made from poster board. It should be 6 inches in di a me ter with notches at the 12 and 6 o'clock po si tion for mark ing the lo ca tion of the loop on the top of the pi lot chute.



Take a mo ment to evalu ate the op era tion of the quick loop. Each knot ted free end ad justs the length of the



loop on the op po site end.

After the first clos ing of the re serve con tainer, the run ning ends are pulled un til the pi lot chute seats snugly into a de pres sion on the back of the con tainer.

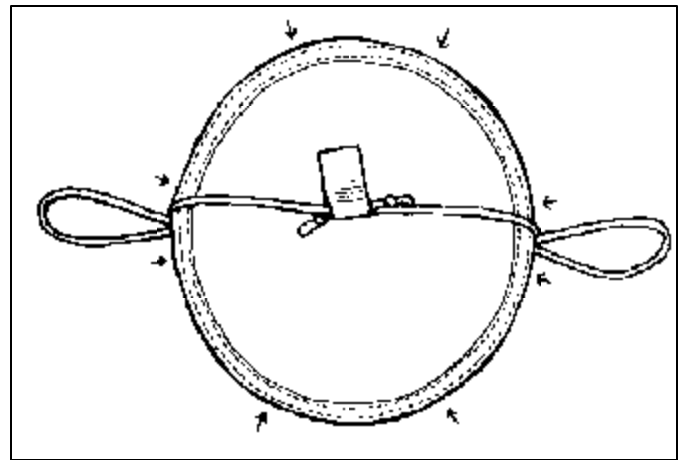
You may then wish to tack the fin ished loop to gether to within one-quarter inch of each end. Refer to "TACK ING QUICK LOOP" un der "PART THREE: CLOS ING CON TAINER" in this chap ter. These pro ce dures assure that every SST has the right loop length for a good pack job and an easy rip cord pull. The Kevlar loop doesn't stretch and allows the rip cord to slide more eas ily than a ny lon one, even when

the pi lot chute is pulled firmly down onto the con tainer.

E. Lay the hat on the top of the pi lot chute, and thread the clos ing loops through the small holes pro vided in the Type 4 valance. Each free end deter mines the length of the loop on the op po site side of the hat.

F. Tack the pi lot chute hat with waxed ny lon 5- cord in no less than the eight points shown as fol lows:

Fold the para pack pi lot chute top over the spring. In sert the nee dle through the folded over edge, around the spring, through the top of the cap and the Type 4 lip very close to where it joins the bind ing tape of the hat. Return through the Type 4 lip near where the tack ing ex ited and tie the two ends us ing a sur geon's and lock ing knot.



G. Temporarily tie or tape the running ends of the quick loop together over the top of the hat to keep them out of the way while clos ing the con tainer.

4. For all but Type V cano pies lay out, in spect, rec ord, flake, and fold the reserve canopy according to the man u fac turer's in struc tions.

5. For all but bagged cano pies in sert the bodkins up through the two grommets in the rip cord stiffener plate.

## PART TWO: PACKING

*NOTE: Several in dus try stud ies have shown that de ployment diapers in crease re liability and re duce dam age to round re serves. Jump Shack rec om mends the use of a FULL diaper on round parachute cano pies and no longer pro vides fa cil ity for pack ing round cano pies with out full diapers.*

There are essentially five methods for packing/deploying reserve canopies; they are:

**TYPE I:** Canopy-first deployment no diaper or deployment device. All lines stow in the container. Examples: 24' T-10A, Navy Conical, early Security, Strong, and Pioneer Lpos. No longer supported by current production. Available by special request only.

**TYPE II:** Two-bight diaper. Two locking stows from one-half of the lines secure a wrap around the skirt of the canopy until full line stretch is achieved. The rest of the lines stow in the container.

Examples: Strong and Security Lpos, Steintal Nimbus, Pioneer K-series, early G.Q. Security SAC. No longer supported by current production. Available by special request only.

**TYPE III:** (Piglet/Phantom) diaper. All lines stow perpendicular to the radial seams at the bottom of the canopy. Sometimes an extra fold of canopy also goes into the diaper.

Examples: Featherlite, Piglet, Phantom.

**TYPE IV:** Handbury diaper. All lines stow parallel to the radial seams. Generally, three full stows of lines secure a wrap around the skirt.

Examples: Later SAC, later Strong 26' and Lopo Light and Preserve. Hobbit ram-air or any ram-air converted under AC 105-2 Par. 5.B(6).

**TYPE V:** Free Bag Ram Air. Canopy packed into a untethered deployment bag with lines stowed in or on the bag.

Examples: Swift, Raven, Firelite.

### RISER PLACEMENT

Lay the reserve risers flat along the harness as it passes over the shoulder then follow the side walls of the container down to the bottom corners then fold along the 90 degree bend and follow the vertical partition. Tacking is not necessary for systems with long risers.

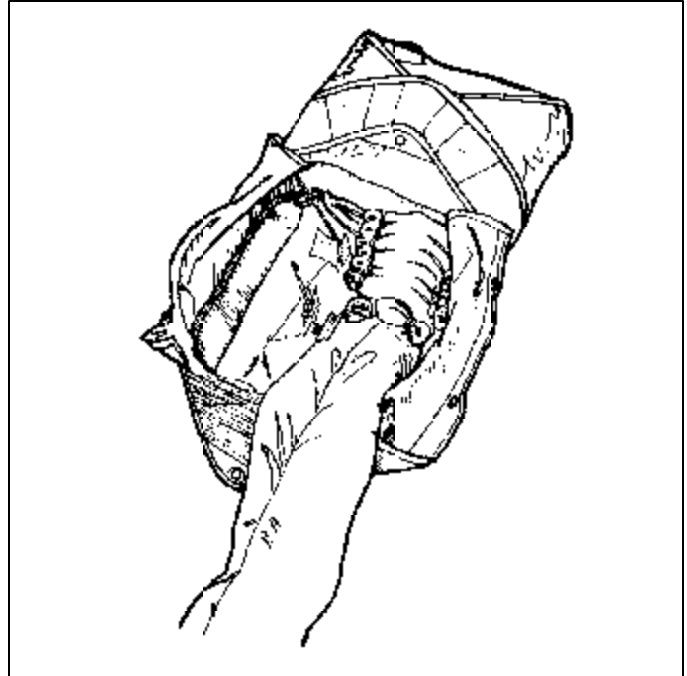
### PACKING TYPE I & II

Jump Shack recommends that any reserve which would normally fall into the Type I or Type II category be modified to a Type III or Type IV full diaper configuration. AC 105-2b Par. 5.B(6) provides authority for such modification.

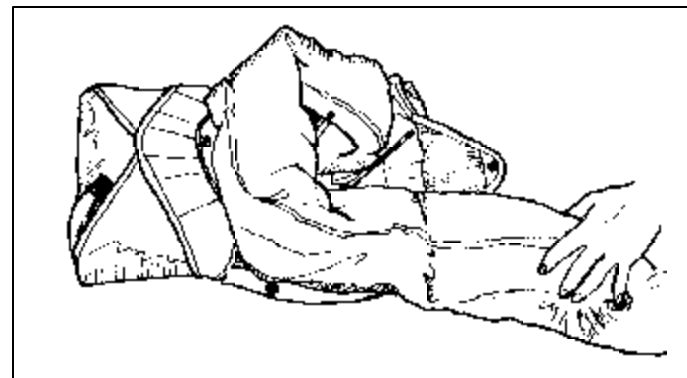
### PACKING TYPE III

1. Stow the lines on the diaper according to the canopy manufacturer's instructions.

2. Place the diaper in the bottom left corner of the container just as it lay on the packing table. You may fold the lines near the center over onto the other lines (Taco Fold) to make the bundle as wide as the left side of the container.



3. Fold the canopy back over the top of the diaper and across the bottom of the container to the other side. Fill the left-side corner before you cross over.



A great amount of canopy can be stowed in the bottom center area below the pilot chute. If it is properly filled it will relieve stress lines and depression after closing.

4. Fold the remainder of the canopy in the right side of the container. Starting with a long fold and stowing progressively shorter folds each time forms the wedge shape of the container without bumps. Keep the canopy fabric at least one inch away from the top of the container or it will work out before the next repack.

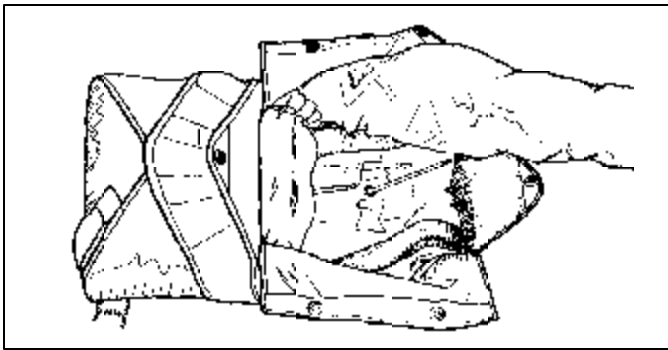


*Note: The dia per may be flipped plac ing the skirt at the top of the con tainer and the lines down to ac com mode different size canopies/containers. The im por tant thing is that no twists be placed in the can opy during container installation.*

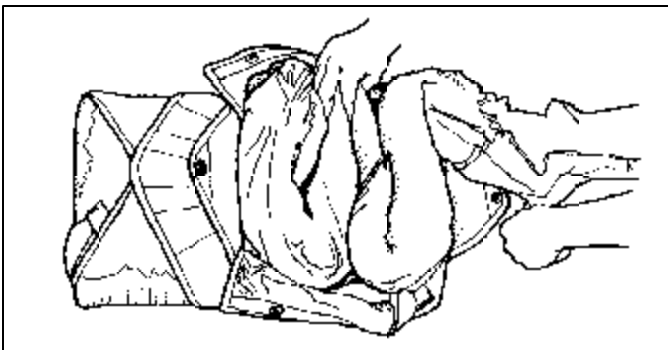
**MOVE TO PART THREE!**

### **PACKING TYPE IV**

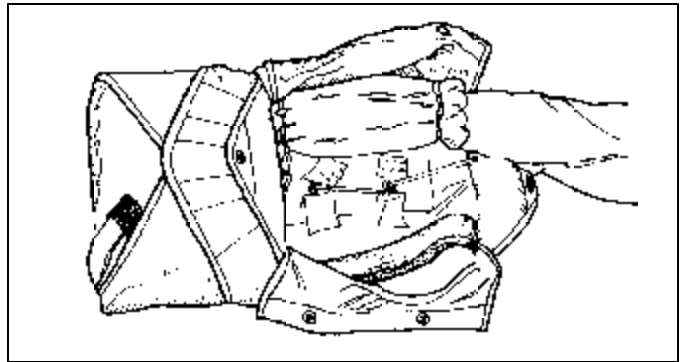
1. Stow the lines in the dia per ac cording to the can opy manufacturer's in struc tions.
2. You may lay the dia per in hori zon tally across the bot tom of the con tainer and make a 90 de gree fold to ward the top of the con tainer.



Then you may make a se ries of stack folds with de creas ing length to fol low the ta per of the con tainer. At a point about two thirds to the apex make an other 90 degree fold back across the container between the bodkins and an other 90 de gree fold to ver ti cal and fin ish with de creas ing length stack folds. Or you may stow the re main der of the can opy by "S" fold ing back and forth from right to left.



You may also lay the dia per in ver ti cally on the left side and con tin ue pack ing as in TYPE III.



*NOTE: The Hob bit ram- air re serve with the TYPE IV dia per has been tested and ap proved for this method. The dia per may also be placed ver ti cally and packed like TYPE III. Set ting the brakes as de scribed in Type V is re quired for this op tion.*

**MOVE TO PART THREE!**

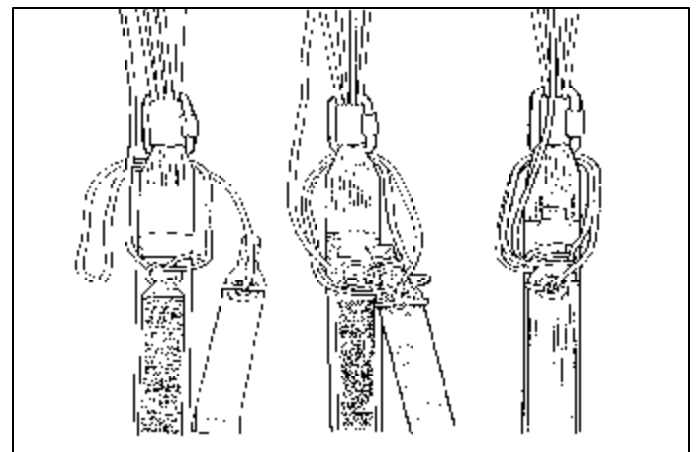
### **PACKING TYPE V**

(Ex cept Dia pered Ram- Airs, see Type IV)

As sem ble, in spect, and check line ro ta tion ac cording to the manu fac tur er's in struc tions and/or Chap ter 9.3 of the Parachute Manual by Dan Poynter. The methods de scribed in the fol low ing pas sage does not preclude the use of the method de scribed in ear lier edi tions of the SST Own ers Man ual.

#### **SETTING BRAKES (Ram Air only):**

- A. Pull the steering line through the guide ring mounted on the riser down to the eye let pro vided in the steer ing line.
- B. Fold the ex cess in half and in sert through slot in top of riser.



C. Place the loop made by the excess over and in line with the brake eye let.

D. In sert the tog gle through the loop in “C.” and then through the brake eye let.

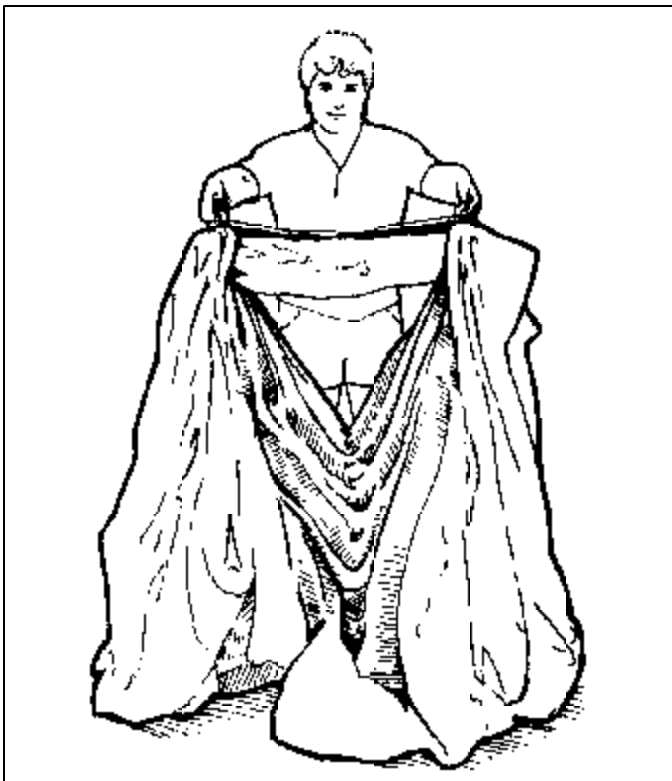
E. In sert the tog gle into it’s elas tic keeper and seat it to the mat ing vel cro on the riser.

#### **FOLDING CANOPY:**

A. Set the bag near the top of the can opy with one T-handle through the bot tom grom met and one through the left end of the safety stow.



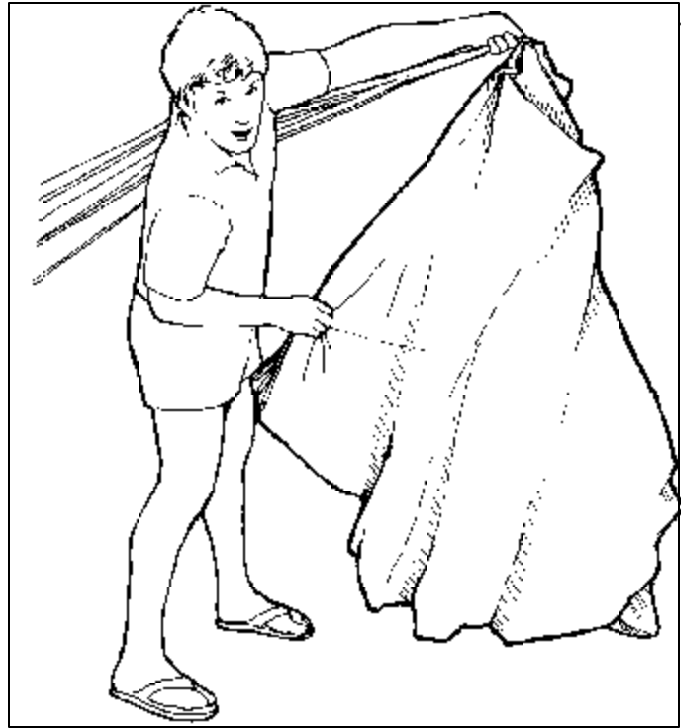
B. Sepa rate the four line groups be low the slider and walk the slider up to ward the can opy while lift ing the can opy off the floor. Seat the slider grom mets against the slider stops.



C. Hold all the lines in one hand while stand ing, and or gan ize the nose. It should now face the con tainer.

With “HANDS ON” trace and clear the pe rime ter of

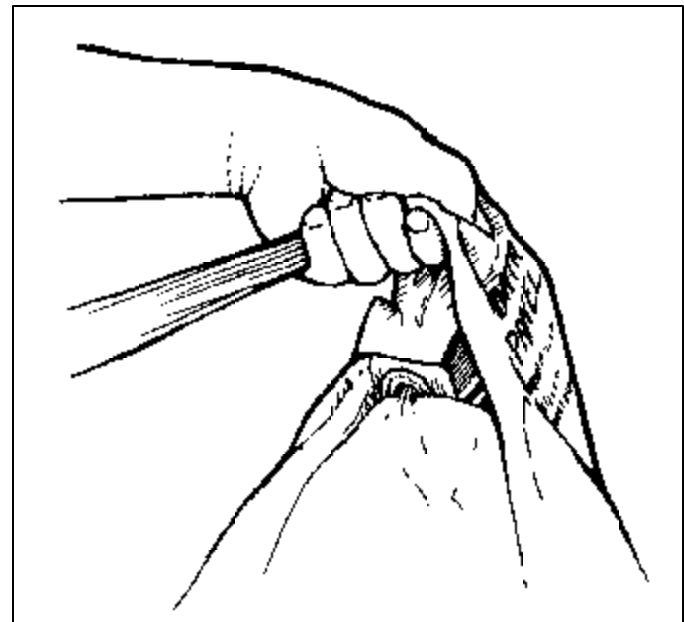
the can opy pull ing all sta bi liz ers to ward the out side of



the bun dle.

**NOTE: This process is similar to the flaking of a round can opy and must be done with care as pan els not cleared could cause a mal func tion.**

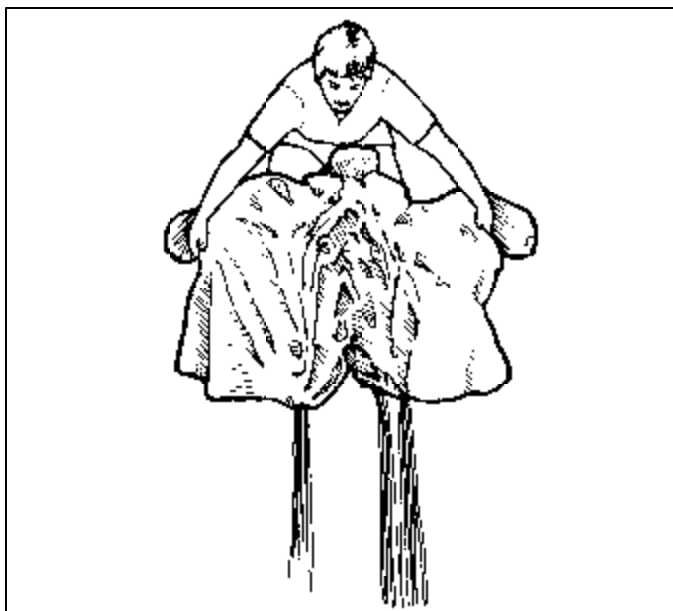
D. Place the cen ter tab of the tail un der your thumb as shown



E. Sweep your fore arm un der the nose of the can opy and lay it on the floor. The bundle will spread out widely, but neatly.



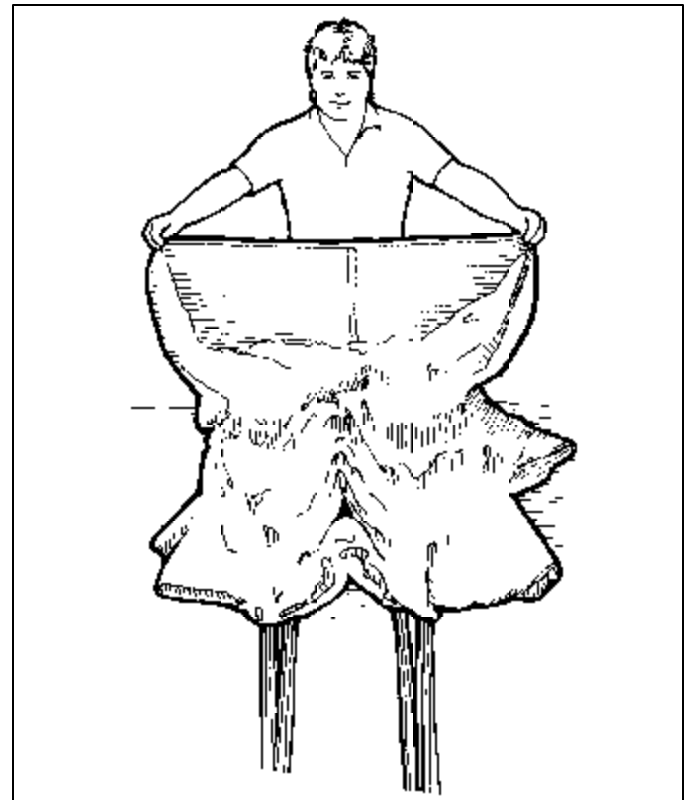
F. Kneel at the top of the can opy fac ing the con tainer. Draw the can opy to ward you while at the same time narrowing the bundle to the width of the bag. Con stantly work the fab ric away from the links.



G. Pull the cen ter tab of the tail to the top ex pos ing the

air chan nel.

H. Fold one- half of the tail over the bun dle to in spect

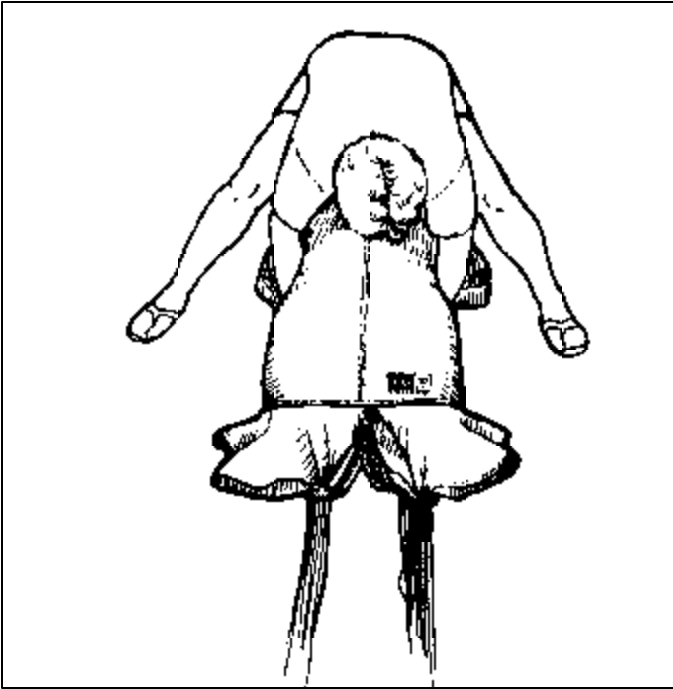


the sta bi lizer folds. Dress the tail, stack ing all chord seams neatly over the center line (air chan nel) and neatly lay all sta bi lizer and tail fab ric to the out side. Re peat with other half of tail back to the cen ter. Stow the slider in its rub ber band.

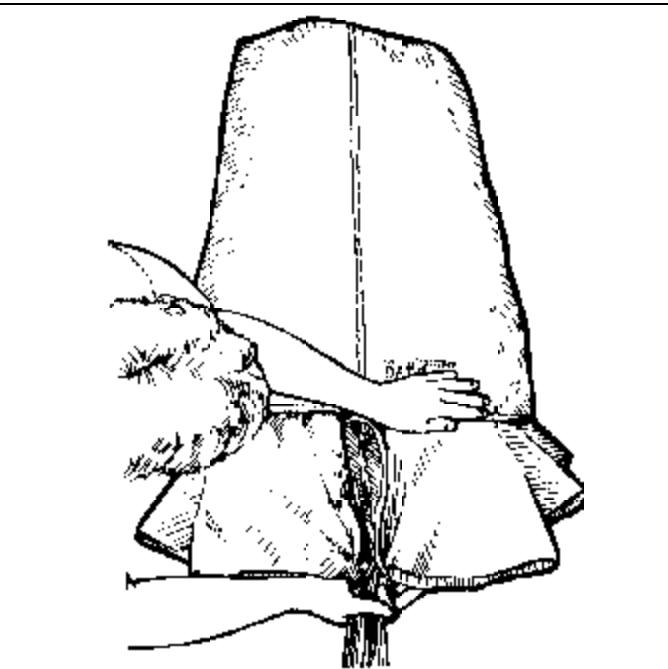


I. Re turn the cen ter tail tab to the bot tom cen ter of the bun dle. Where the sta bi liz ers at tach to the main body

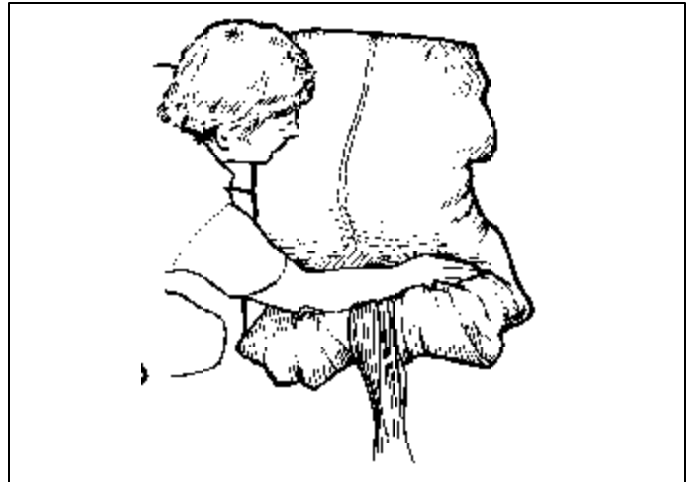
of the canopy. “Co coon” the can opy to the width of the bag.



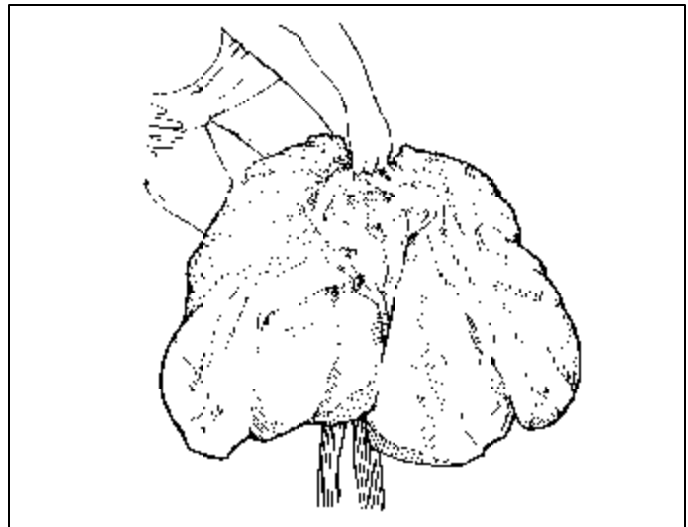
**NOTE:** Care must be taken dur ing the co coon ing process so as not to disturb the air channel and lines of the can opy.



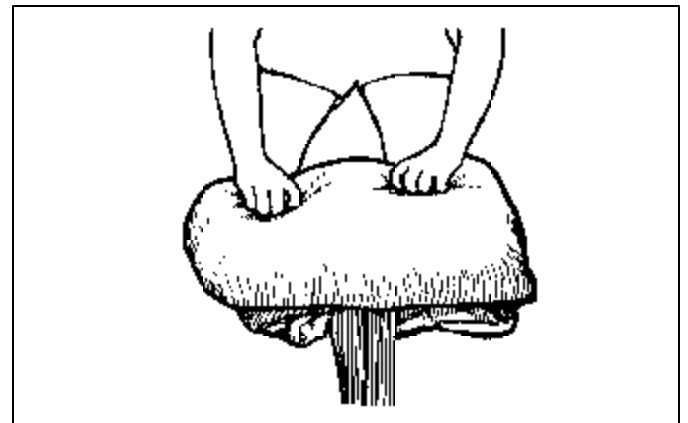
J. Fold the ex posed sta bi liz ers back un der the tail.  
Lay your hand 6"-8" from the bottom of the bundle and fold the can opy back over it self.



K. Fold each section of the nose outward from the cen ter so it takes air quickly dur ing de ploy ment.



L. Fold the can opy back over so you now have an 8" S- fold at the bot tom.



M. Tuck the re main der of the can opy un der the bun dle un til it is the height of the bag.

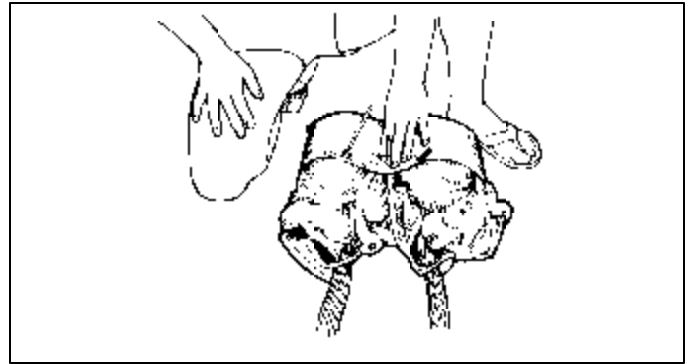


## PLACING CANOPY INTO BAG:

**A.** Face away from the container and kneel on the packed canopy to keep it under control. Shape the bundle to re sem ble the bag, pre pare the bag and in stall the can opy into it. The T- handle bod kin should pro trude from the bot tom at the cen ter, how ever, all of the canopy may be placed *below* the “T” handle bod kin on cer tain sizes of con tain ers.

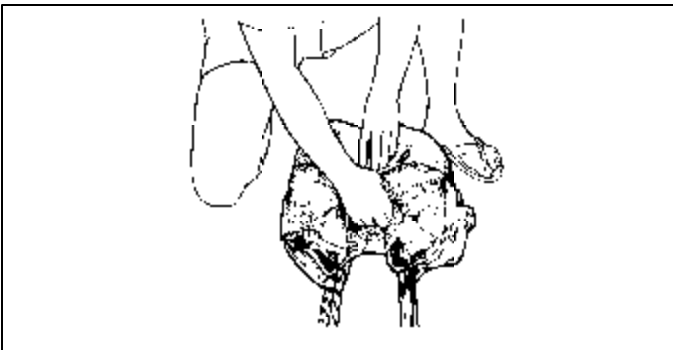
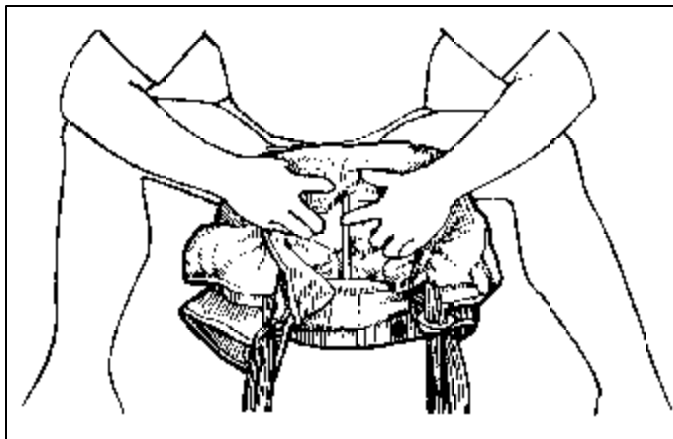
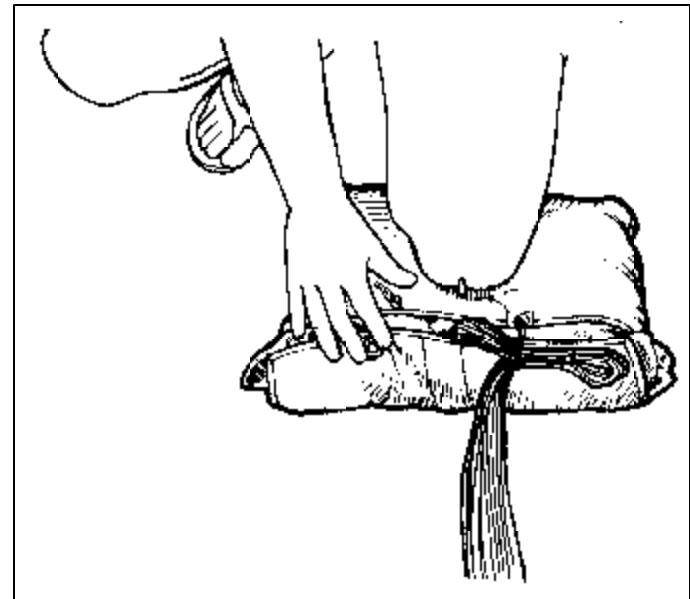
**Discussion:** *The SST line of reserve containers are available with three different distances between the bottom grommet and the vertical partition. Obviously, on con tain ers with only 1 inch avail able in this area, it is re quired to place the cen ter cell of the can opy, as above, under the pilot chute. On containers with 2 or 3 inches avail able in this area the rig ger has the op tion, de pend ing upon can opy bulk, to place the cen ter cell of the can opy above or be low the bot tom grom met. The de ci sion, on this choice, is made based upon ap pear ance as func tion is not affected.*

**B.** Make sure the buffer tabs are be tween the bod kin and the can opy fab ric. Bring the bod kin be tween the right and left line groups. Form a V- shaped dent in the bottom of the bundle with the bodkin and thread it through the grom met on the top. Clear the buffer tab again.



**C.** Close the bot tom flap of the bag by thread ing one of the rub ber stow bands through the mat ing grom met and place a line bight which reaches to the edge of the bag through the stow band. Re peat for the other side.

**D.** Stow the re main der of the lines in the rub ber stow bands lo cated be gin ning on the bag clos ing flap. The stows should be equal to the width of the bag.



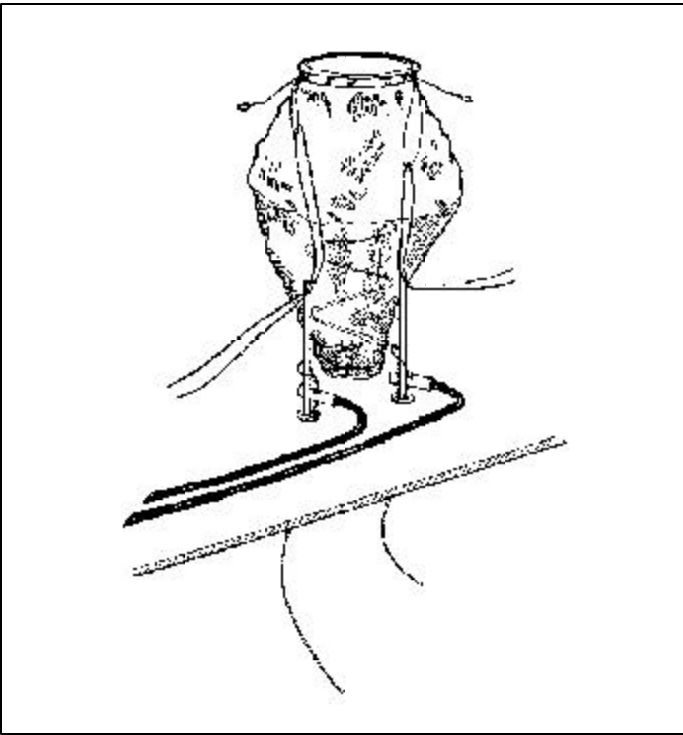
**E.** Thread a pull- up cord through the bod kin and then through the free bod kin as shown.

**Note:** If your rig is equipped with a CY PRES the fol low ing pro ce dure will make it eas ier to pack.

### Racer/Cy pres Closing Diagram

The Dia gram be low shows the rout ing of the Cy pres pull-up cords around the bodkin, through the cutter, and through the grom meted holes in the back pad of the Racer. The de ploy ment bag with can opy has been deliberately omitted for clarity. The bodkins can be used in the normal fashion in this way. When the quick loops with their pull up cords are pulled through the pack, the bodkins are set aside. Pull on the Cy pres

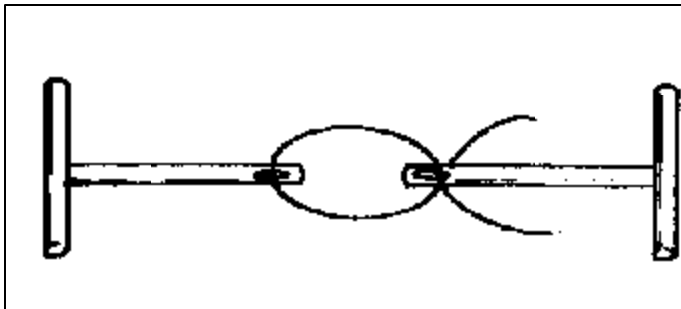
pull up cords that have been “pre- loaded” through the cut ters. This will pull the “regu lar” pull up cords back in side the re serve con tainer, through the Cy pres cut ters, and out side again. Easy as Cake!



F. Then pull the sec ond bod kin back through the bag while stand ing the bag up on its end.

**PLACING BAG INTO CON TAINER:**

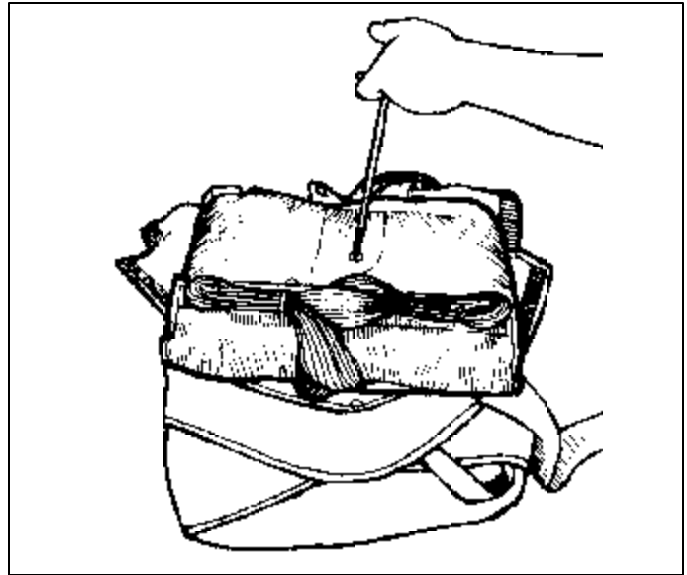
A. Now that the “free” bod kin is through the bag, re move the first bod kin and pass it up through the bot tom grom met in the pack tray of the re serve con tainer as shown. Re- thread the pull- up cord through the bod kin.



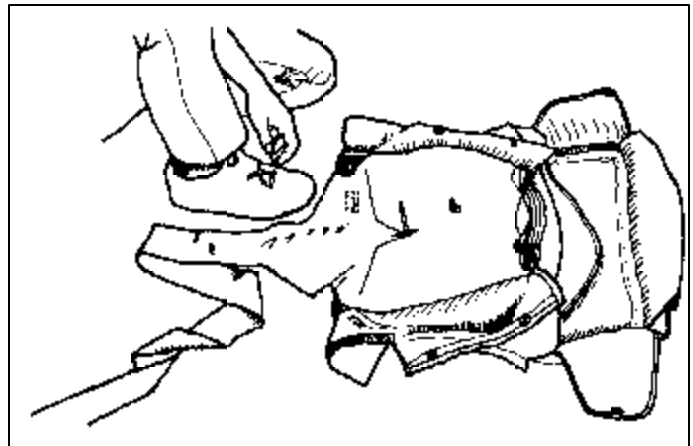
B. While set ting the bagged can opy in the con tainer, use the pull- up cord and top bod kin to pull the bod kin through the bag.

C. Thread the free bod kin through the top grom met in the re serve pack tray and the top grom mets of the bag.

**TIP:** *Main tain the de pres sion in the cen ter of the bag be tween the two grom mets with your knee.*



D. Tuck lower corners of bag into lower corners of



container.

E. Tuck yoke of bag un der bag at top of con tainer.

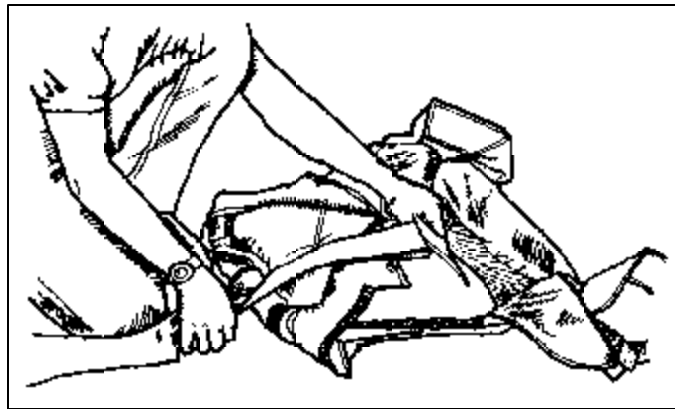


F. Close side flaps of con tainer over bot tom bod kin. Close bot tom con tainer flap over bod kin. Spread side flaps open to the bot tom bod kin.

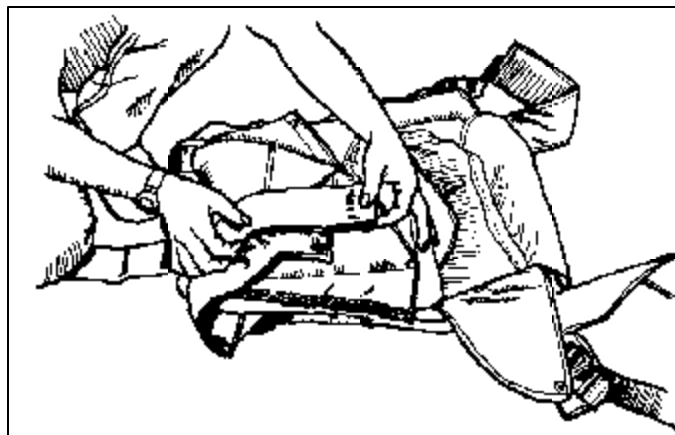


#### STOWING BRIDLE:

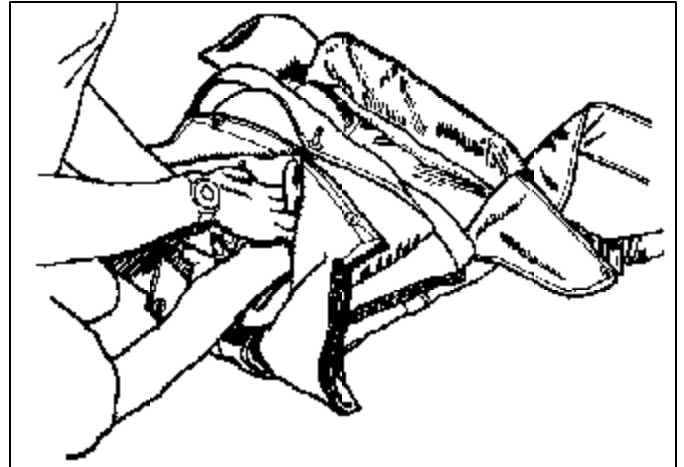
1. Lay bri dle down over side flap to es tab lish length of fold.



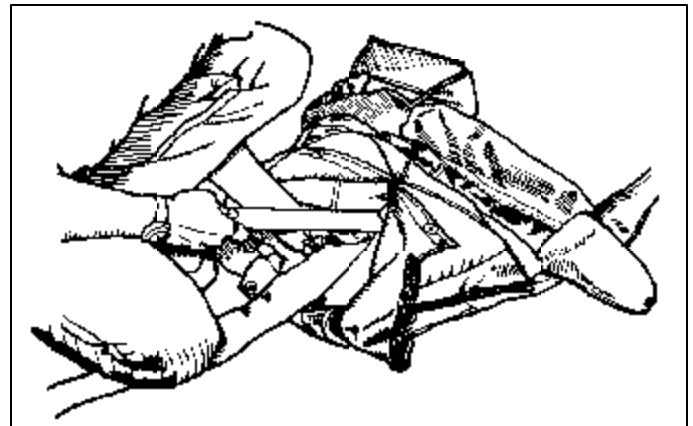
2. Make an other fold on top of the pre vious fold.



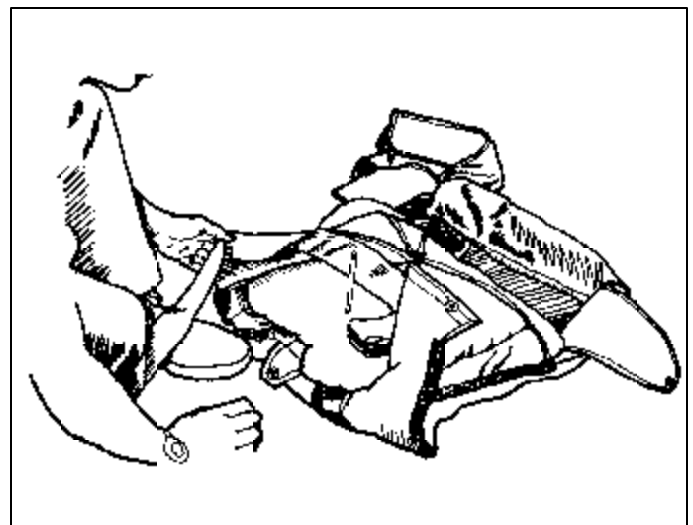
3. Tuck folds un der side flap.



4. Smooth folds of bri dle with pack ing pad dle.

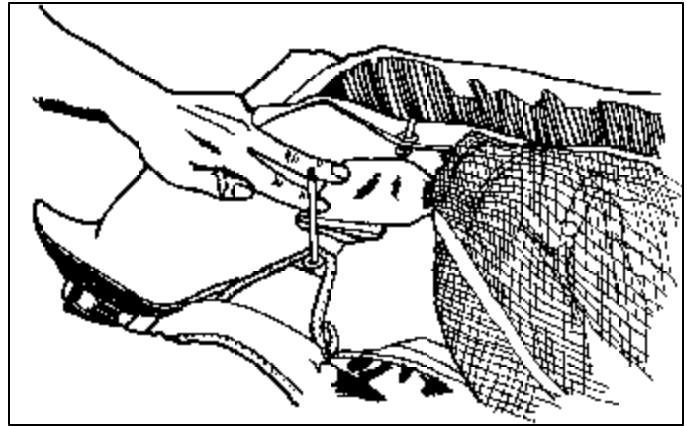
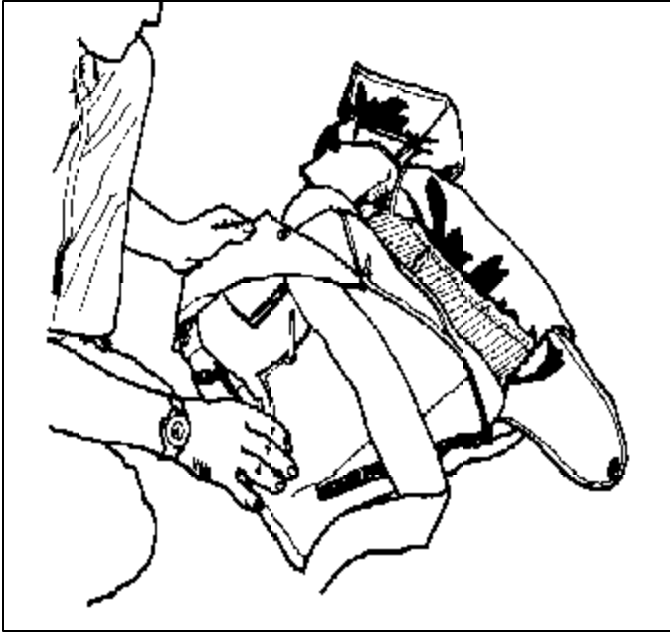


5. Make a 90 degree fold in bri dle at cen ter of con tainer and route across con tainer to op po site side.



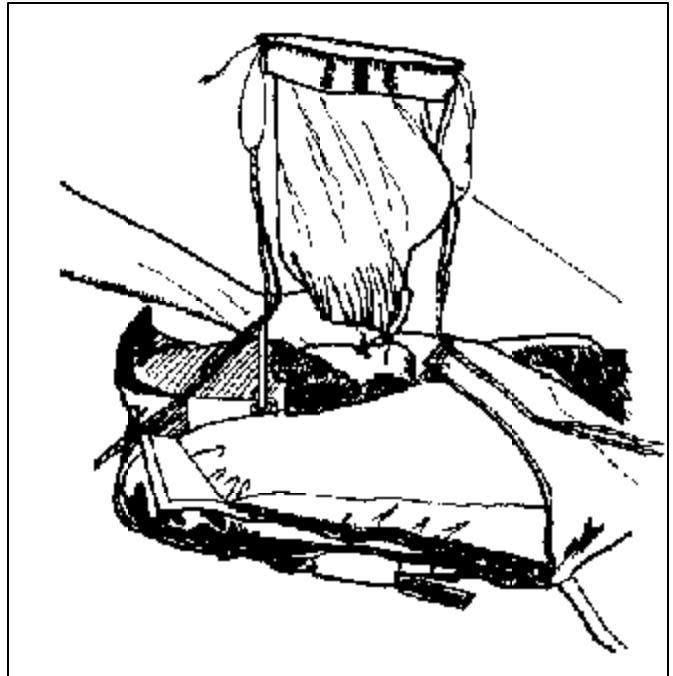
6. With out twist ing the bri dle make an other 90 de gree fold and tuck it un der side flap with pack ing pad dle.

7. Repeat folding procedure from previous side and tuck folded bri dle un der this side flap while mak ing an other 90 de gree fold back to the cen ter of the con tainer.



E. Set the pi lot chute on the folded bri dle.

F. Thread the pull- up cords through the bodkins.

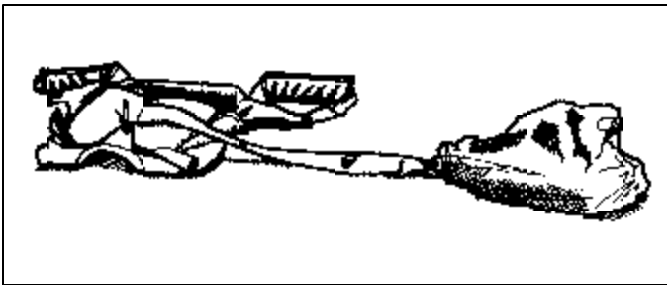


GO TO PART THREE.

### PART THREE: CLOSING THE CONTAINER

A. Place the top two grom mets of the left (or right) re serve closing flap over the top bodkin. The bridle should exit the con tainer be tween the bodkins. Re peat with the other side.

B. Thread the bod kin through the top clos ing flap.

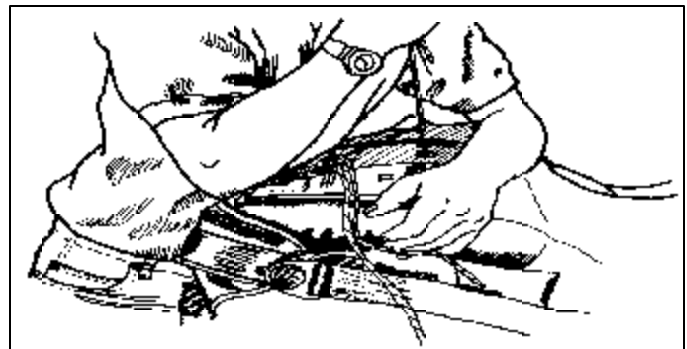


C. Open the quick loop on the pi lot chute about four inches on each side for the first pack job. Thread a pull- up cord through each loop.

D. S- fold the re serve pi lot chute bri dle neatly from left to right between the two bodkins. Make the S-folds about four inches long.

G. Com press the pi lot chute to the con tainer. Hold ing it com pressed, flip the rig over onto its back.

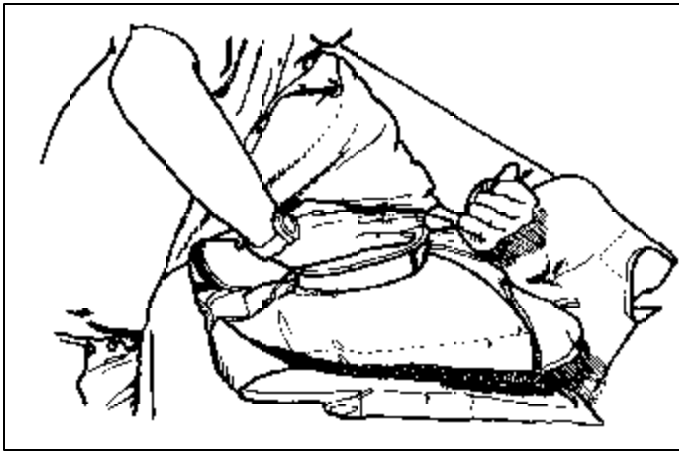
H. Slowly pull the pull-up cords through the rig. Make sure no pilot chute or reserve canopy fabric comes through with the pull- up cords.



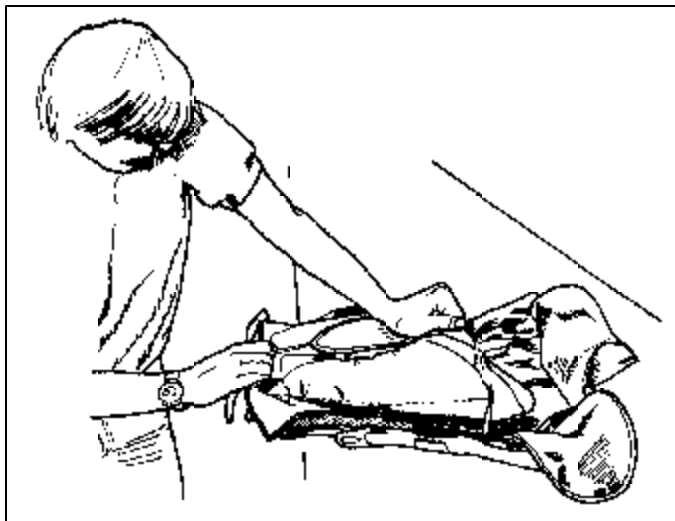
**I.** Re move the bodkins and pull the clos ing loops the rest of the way through the grommets, starting with the top one, se cure them with the rip cord pins.

**J.** Turn the con tainer back over and un tape or un tie the run ning ends of the quick loop.

**K.** Push the pilot chute down into po si tion and take the slack out of the quick loop by pull ing on the op po site run ning end. You will have to re peat this step sev eral times un til all the slack is out.



**Note:** This is your op por tu nity to seat the pi lot chute and ad just the pull force. The SST “Quick loop” sys tem is de signed the give the rig ger abil ity to do both of these things. Re mem ber 22 lbs to move the pins is all that is re quired.



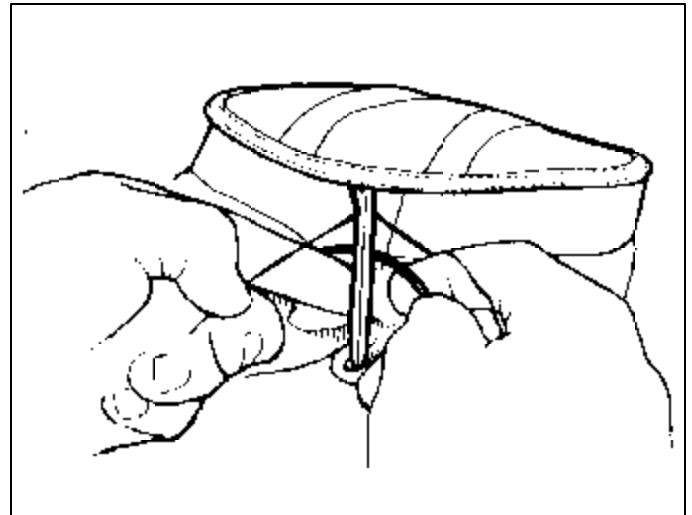
## TACKING QUICKLOOP

**Note:** *THIS STEP IS OPTIONAL. If the canopy has been carefully packed into the bag and the buffers properly placed and the bag or long folded round canopy has been carefully placed into the container*

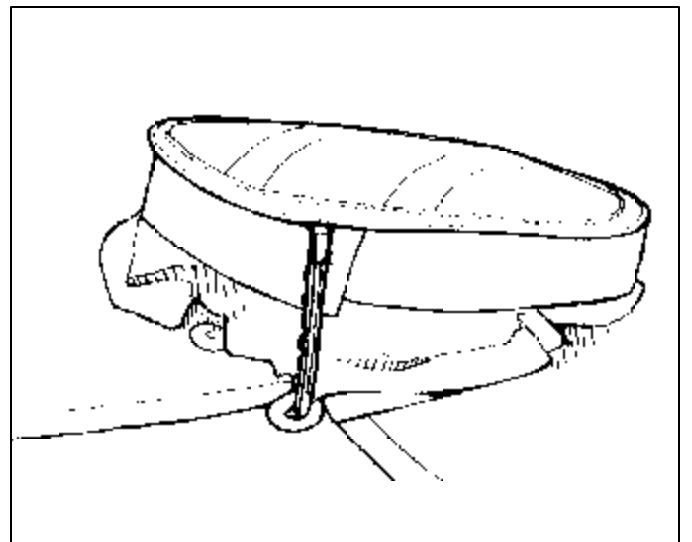
*with the buffers properly placed and no canopy fabric is exposed to the area of the quick loop then there is no need to tack the quick loop closed. How ever, this pro ce dure is pro vided for rig gers who want to use it.*

**A.** Tie the two pull-up cords to gether to pre vent the pi lot chute from traveling too far after the pins are re leased

**B.** Re lease the rip cord pins, but keep the pi lot chute under control.



**C.** With lit tle more than the quick loop ex posed, you should be able to rock the pi lot chute top to bot tom as the pull-up cords slide. This al lows you to ac cess the loop ends for tack ing.



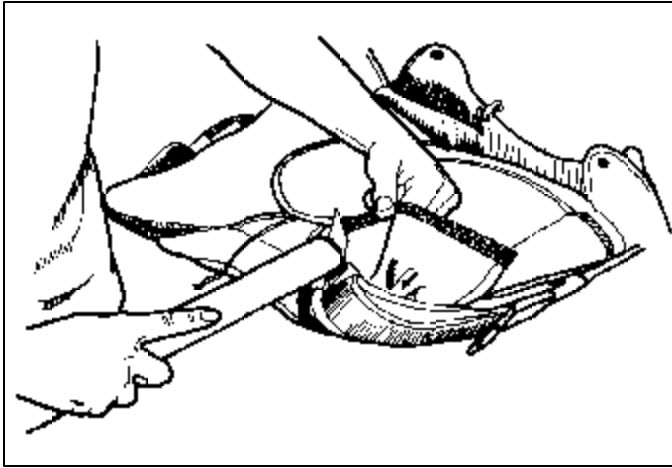
**D.** Using red rig ger's seal tie thread, tack the loops with two passes of over hand stitch ing. The loop must be tacked within one-half inch of the end. **USE ONLY SEAL THREAD.**

E. Re close the re serve as above.

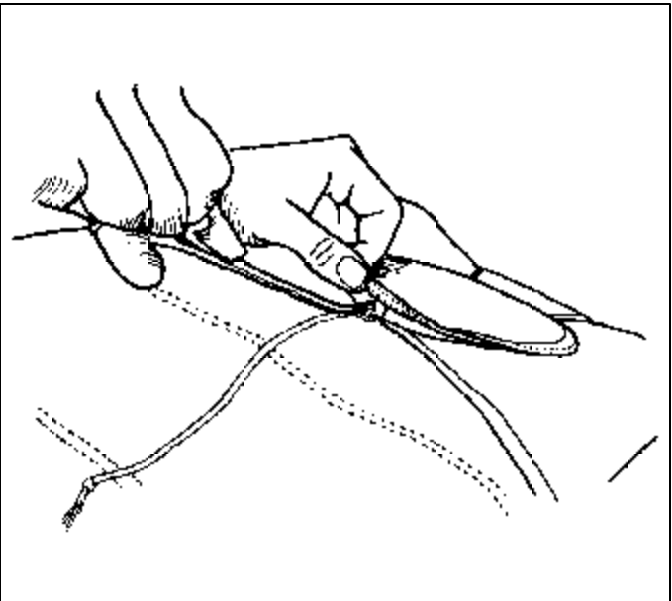
F. Re move the pull- up cords.

### DRESSING THE CONTAINER

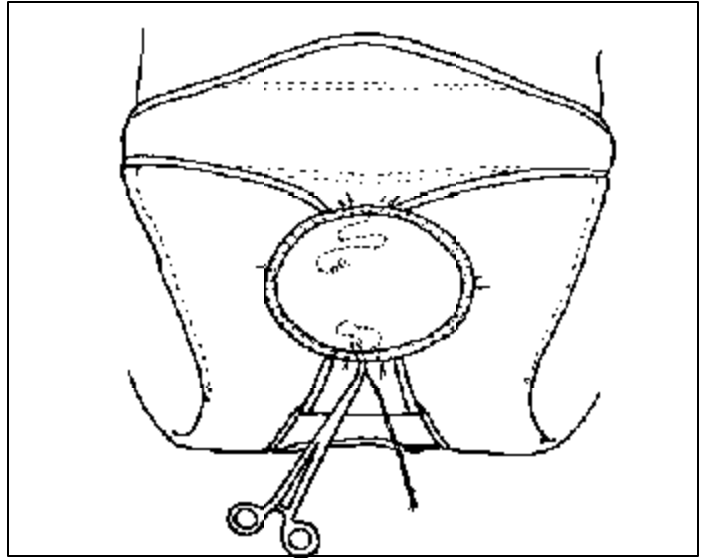
A. On the Racer only, tuck the Type 12 webbing tabs at the top of the container under the side flaps, but over the top of the bag or canopy.



B. Using hemostats or needle nose pliers grip “Quick Loop” pull string about 1/4 inch back from edge of hat and push slack through hole in hat valance into area between top of pilot chute and bottom of hat.



C. Regrip pull string and insert it in its entirety into area below hat.



D. Insert packing pad into opening provided in the bottom corner of the container and run it along the vertical partition shaping and smoothing as you go.

E. Using Packing pad, tuck in the bottom corners of the vertical partition. Use this opportunity to shape the sides of the container.

### COUNT YOUR TOOLS!

Seal the container, fill out the data card, and log.

# MAIN PACKING INSTRUCTIONS

---

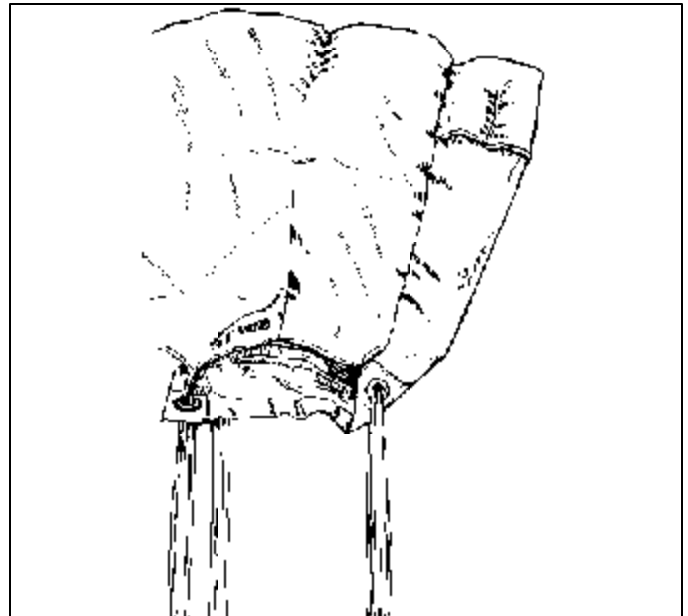
Refer to the manufacturer's instructions for laying out, inspecting and folding the canopy, and otherwise preparing it to put into the bag. If you can't find suitable instructions, consult your rigger or call Jump Shack. **Note:** The square canopy packing instructions found in the Type V reserve canopy packing instructions of this manual may be for all tandem canopies and at your discretion for other main canopies.

## SETTING BRAKES

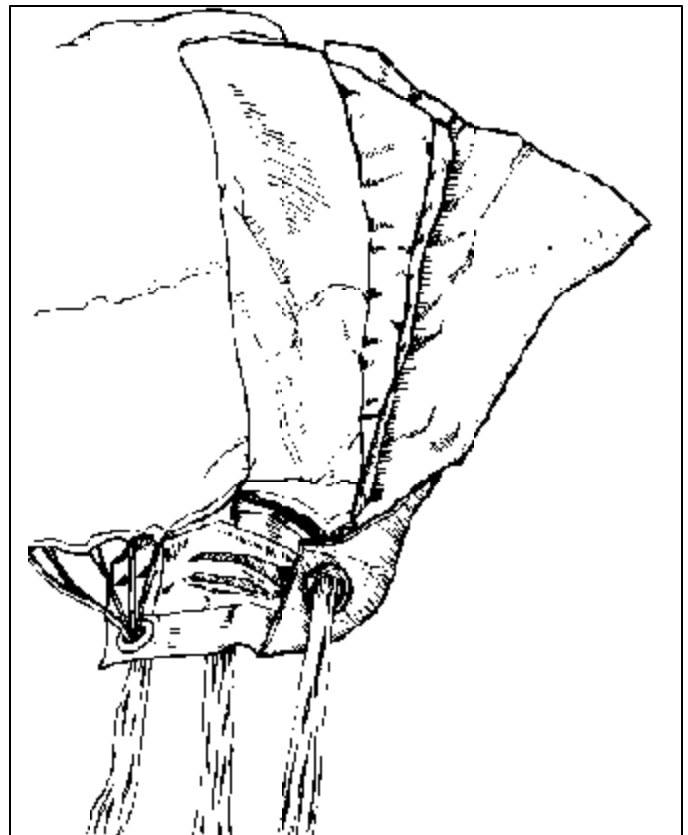
Refer to the brake setting instructions in the Type V Reserve packing instructions.

## FLAG SLIDER INSTRUCTIONS

Pull the slider up to the stops in the same manner you would for a non-flagged slider. Continue to pull the flag portion up towards the top of the canopy until the flag is straight and the grommets are against their stops. The pockets of the flag should be pointing out or exposed. Fold the canopy using the procedure you are most comfortable with, PRO or Side packing. Roll or fold the nose and make the A to B Fold if you are side packing.



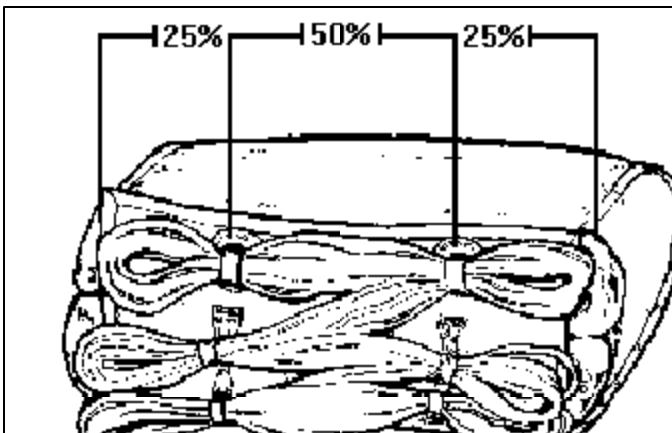
**NOTE:** The purpose of the flag is to cover the nose during deployment and for the pockets on the flag to inflate and hold the flag in place covering the nose and slowing inflation.



Next wrap the flag around the rolled nose as shown. Continue folding the canopy in the manor you are most com fort able.

## PLACING CANOPY INTO BAG

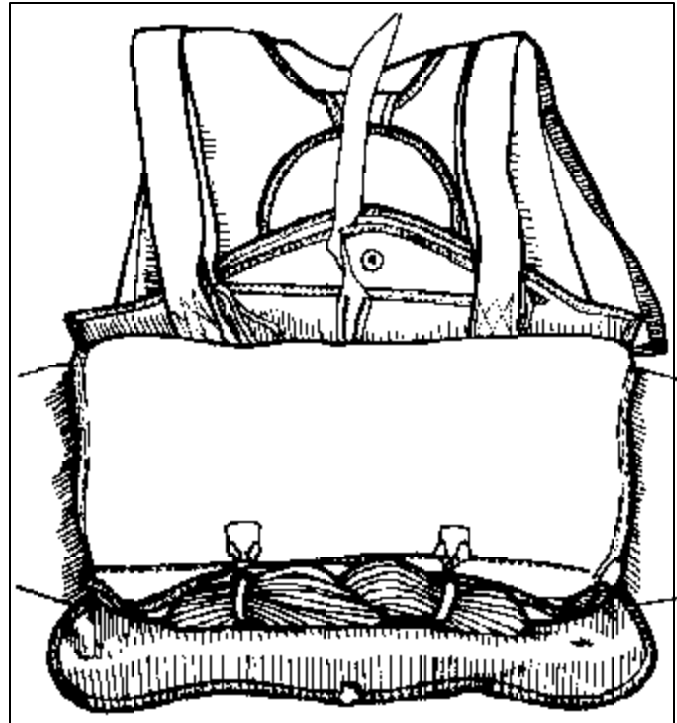
1. Dress the can opy slightly wider than the bag.
2. Stack the can opy into a bun dle the height and width of the bag, and in sert it into the bag. **MAKE SURE TO FILL THE CORNERS.**
3. Thread one of the two center lock ing elas tic stow bands through its partner grom met. Take a bight of can opy lines 25% of the bag width long, and wrap the stow band around it. Repeat with the other center lock ing stow.
4. Pull the pi lot chute bri dle out of the top of the bag until the load-bearing ring on the top of the canopy seats against the grom met on the top of the bag. Clear out any ex tra fab ric with your fin ger.



5. Stow the rest of the lines in bights 25% the width of the bag long into the stow bands on the bottom flap and back of bag of the bag. Leave 8" to 15" of lines unstowed.

## PLACING BAG INTO CONTAINER

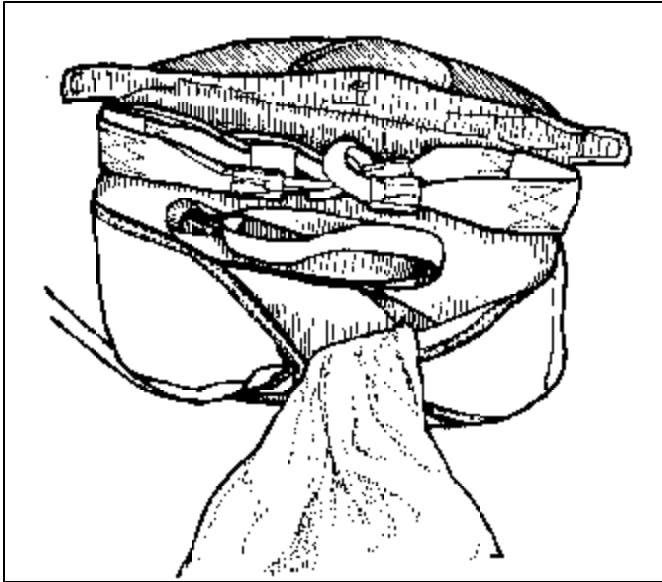
1. Set the bag in the tray of the con tainer with the lines fac ing to ward the bot tom of the rig.
2. Tuck the bights of the line stows un der the box ing of each cor ner of the main container.



3. Thread the pull- up cord through the clos ing loop.
4. Close the bot tom three flaps, bot tom, side, side. In sert pin tem por arily.
5. Now is the time to "Sad dle Bag" the con tainer; that is, lift up on the cen ter of the sides of the con tainer to expose the ver tical par tition at the bot tom of the re serve con tainer. This pro vides an op por tu nity to stuff the bag down into the bot tom cor ners of the main con tainer and to place the ris ers and links against the bot tom of the re serve con tainer and off the floor or pack tray of the con tainer where they would dig into your



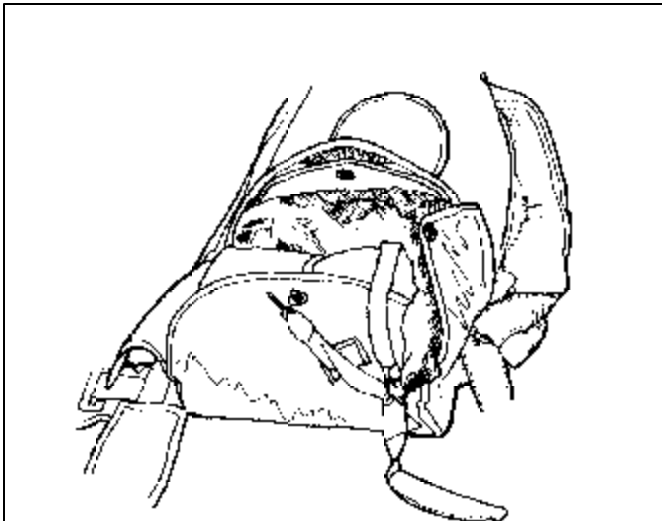
back.



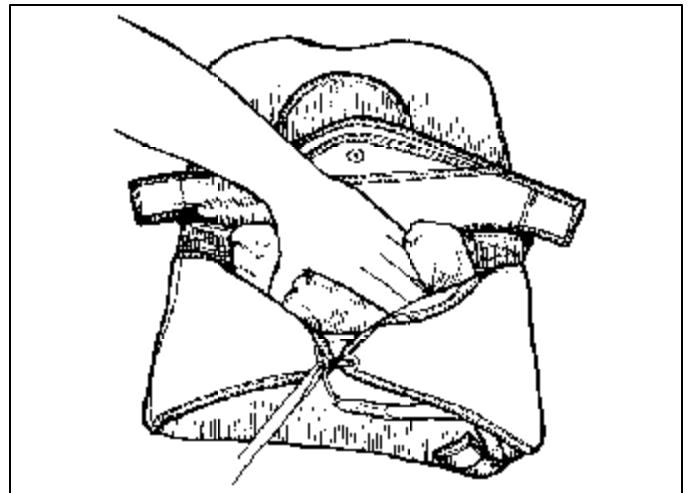
### FOR PULL-OUT

A. Re move the pin.

B. Route the lan yard and han dle un der the right hand side flap. (Note: This step may be performed before the initial closing or “Saddle bagging”).



C. S- fold the pi lot chute bri dle across the top of the con tainer, and lay the pi lot chute in the top cen ter of the bag (THE DEPRESSION CREATED BY THE CLOSING LOOP MAKES AN EXCELLENT RE-CESS FOR STOWING THE PILOT CHUTE) with the base com ing out of the right- hand bot tom corner.



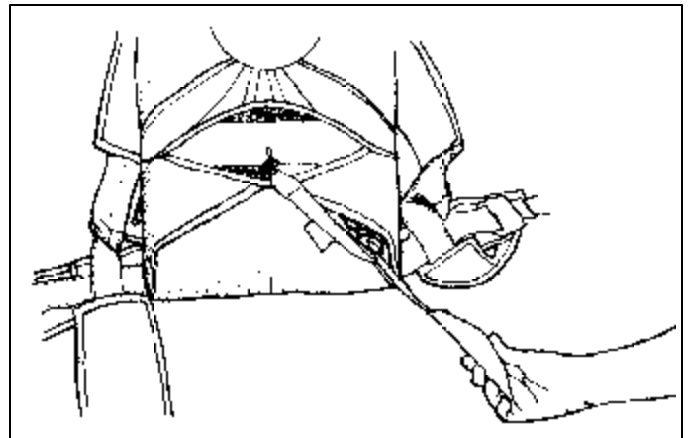
D. Place the lan yard end of the han dle into the elas tic pouch on the bot tom right corner of the container. Bend the handle enough to slip the end tab into the other square pocket on the bot tom of the con tainer.

E. Close top flap.

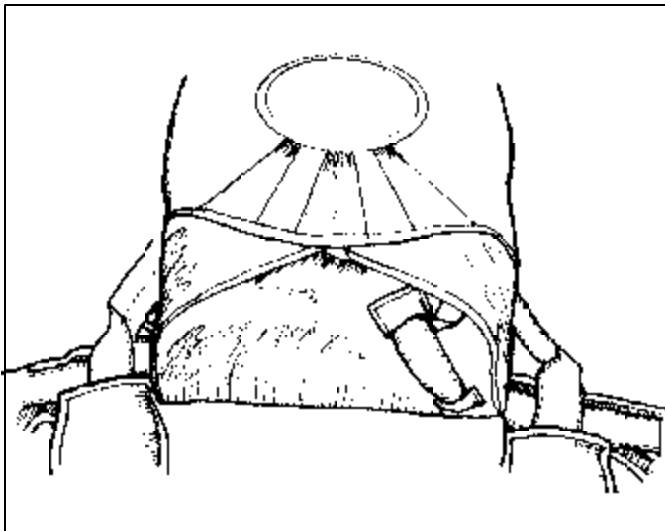
F. In sert the pin on the lan yard at the base of the pi lot chute through the closing loop from bottom to top. Re move the pull- up cord.

**FAILURE TO REMOVE THE PULL-UP CORD WILL RESULT IN A PILOT-CHUTE-IN-TOW MALFUNCTION.**

G. Check to see that the vel cro on the lan yard is mated to the vel cro on the pi lot chute re tainer. This is to as-sure enough slack move ment of the lan yard to be able to pull the pin with out mov ing the pi lot chute.



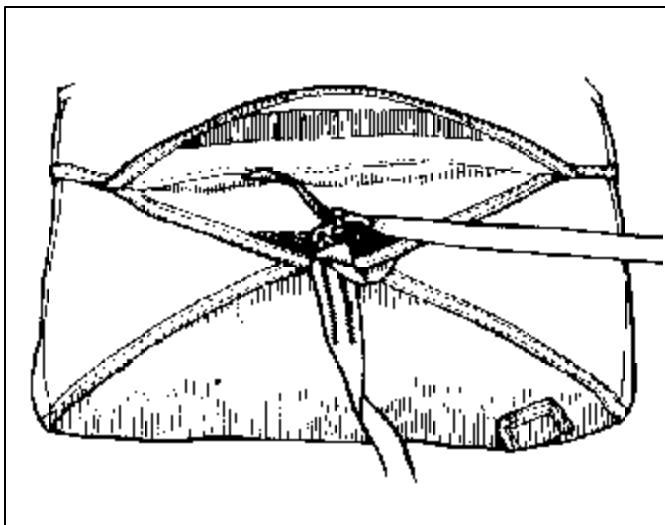
H. Stow any ex cess lan yard un der the right side flap.



Al ways have your SST checked by some one com pe tent af ter you put it on.

### **FORTHROW-OUT**

- A. Route the bri dle out the top right.
- B. Close the top flap.
- C. Re move the pin.
- D. In sert the curved pin through the clos ing loop on top of the top flap from right to left.



Remove the Pull-up cord. FAILURE TO REMOVE THE PULL-UP-CORD WILL PREVENT THE CONTAINER FROM OPENING AND RESULT IN A PILOT-CHUTE-IN-TOW MALFUNCTION.

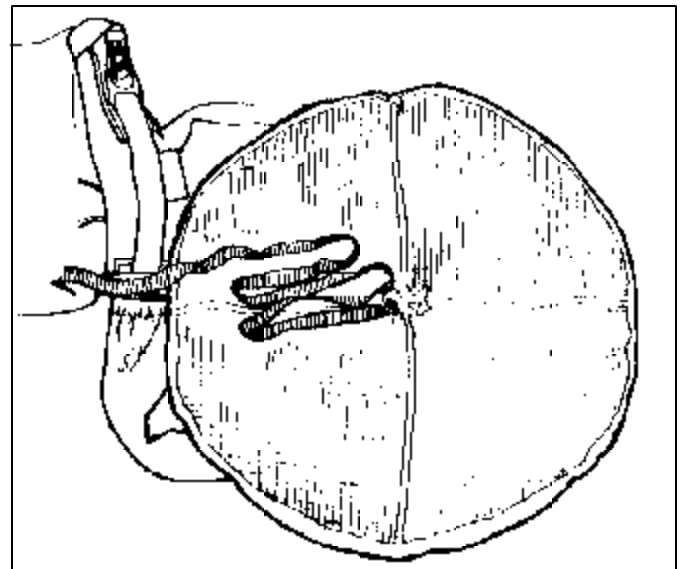
- E. Mate the small vel cro strips on the pi lot chute bri dle just above the curved pin. FAILURE TO MATE THE VELCRO STRIPS CAN RESULT IN A PILOT-CHUTE-IN-TOW MALFUNCTION. Close the pin- inspection flap.

- F. Check to make sure the leg strap is not twisted. Mate the vel cro on the pi lot chute bri dle start ing from the top of the pouch on the leg strap and following along the side of the con tainer. Stuff any ex tra bri dle un der the right- side con tainer flap.

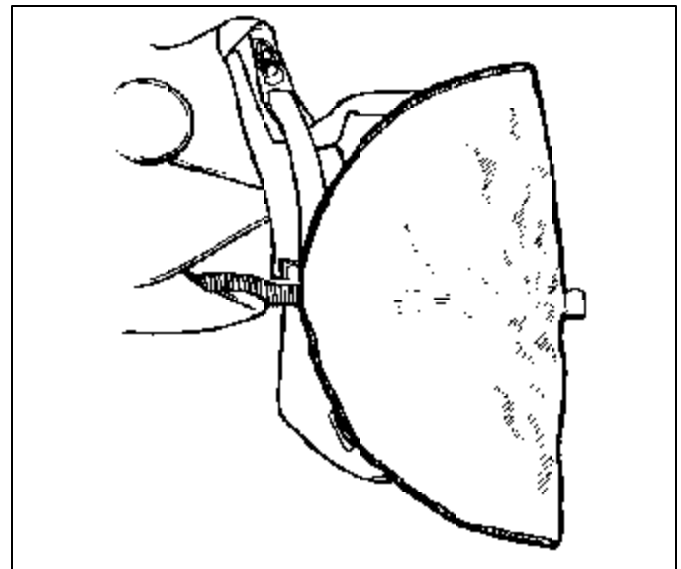
### **FOLDING THE THROW-OUT PILOT CHUTE**

- A. Lay the pi lot chute mesh- side- up over the leg strap, with the edge of the pilot chute at the mouth of the pouch. Turn the pilot chute until the bridle has no twists.

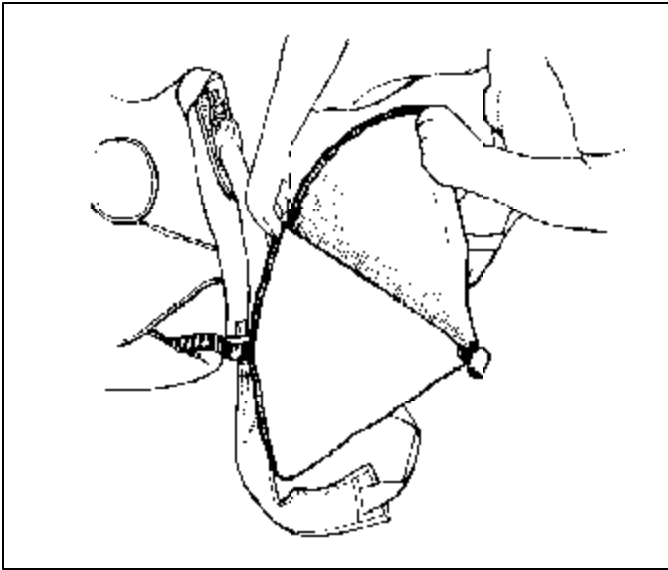
- B. S- Fold the bri dle ra di ally over the half of the pi lot chute clos est to the bri dle's en try.



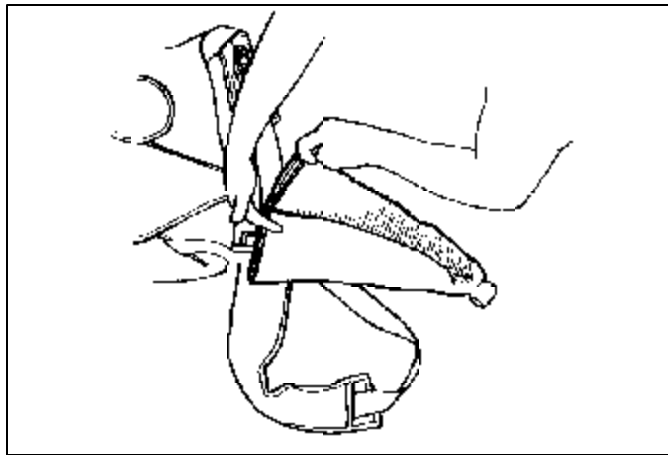
- C. Fold the pi lot chute in half over the bri dle.



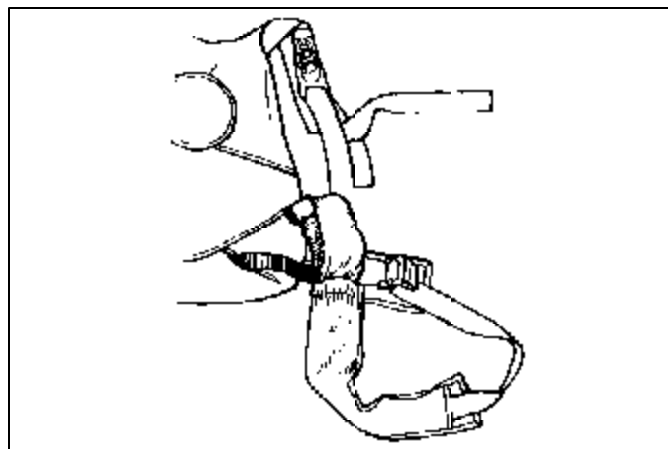
- D. Take the corners of the semi-circle and fold one over the other into thirds.



E. Fold the pie- shape into thirds again.

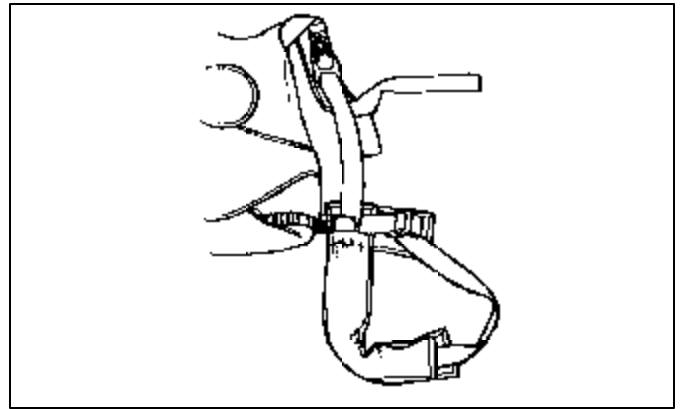


F. Fold the new thin pie shape in half to make it even thinner. Fold the han dle over to the mouth and place it into the pouch. (You will have to peel back a lit tle bri dle vel cro to keep from pull ing any bri dle out of the folded pi lot chute.)



**Note:** See Tandem Dro gue & Bridle section for tips on col laps ing Pull Out & Throw Out Pi lot Chutes.

**G.** Flat ten out the bun dle, and make sure noth ing but the han dle of the pi lot chute sticks out of the pouch.



**H. CHECK THE BRIDLE ROUTING. AN IM-PROPERLY ROUTED BRIDLE MAY RESULT IN A PILOT-CHUTE-IN-TOW MALFUNCTION.**

Al ways have your SST checked by some one com petent af ter you put it on.

### FOR RIP CORD

A. Thread the rip cord through its hous ing, and place the han dle in its pocket.

B. Thread the pull-up cord through the clos ing loop.

C. S-fold the pilot chute bridle neatly on top of the bag.

D. Com press the pi lot chute and hold it un der the cen ter of the bot tom flap grom met. In sert pin.

E. Thread the pull-up cord through the bottom, left, and right container flap grommets. Pull the closing loop through as you go, holding the pilot chute in place on the top cen ter of the bag un der the cen ter of the bot tom flap grom met.

F. In sert pin.

G. Thread pull-up cord through top grommet and close top flap.

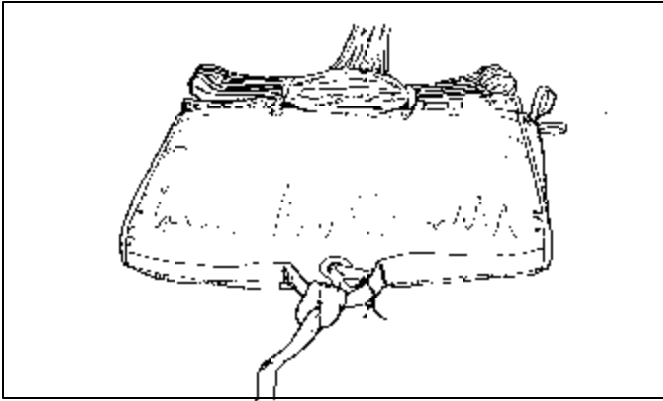
H. Re move pin and re in sert above top flap. Re move the pull-up cord. **FAILURE TO REMOVE THE PULL-UP-CORD WILL RESULT IN A TOTAL MALFUNCTION OF THE MAIN CON TAINER.**

**NOTE: IT SHOULD RE QUIRE NO MORE THAN 15 POUNDS TO EX TRACT THE PIN FROM THE LOOP AF TER THE CAN OPY IS PACKED.**

Al ways have your SST checked by some one com petent af ter you put it on.

## FOR STATIC LINE

**A.** At tach the static line to the top of the de ploy ment bag by loop ing it through it self around the type 8 bag bridle.



**B.** Thread the cano py's bri dle in ter me di ary loop (the 9/16 tu bu lar loop from the as sem bly sec tion) from the in side of the bag through the grom met in the top of the bag.

**C.** Tie it to the same web bing used in step "A", but not to the static line it self, with two turns of 1/4" Type 1 (80#) cot ton break- cord.

**NOTE: For con ver sion to pi lot chute de ploy ment simply un thread the static line. Then thread on the pilot chute bridle, but with the pilot chute bridle you MUST en com pass the 9/16 tu bu lar loop bri dle in ter me di ary where the break cord is. There is no need to re move the break cord as it will be needed the next time the rig is used for static line. To con vert back to static line simply remove the pilot chute bridle and loop the static line onto the bag bri dle of type 8 but DO NOT en com pass the 9/16 tu bu lar loop bri dle in ter me di ary as it MUST be al lowed to se pa rate when the break cord is ac ti vated.**

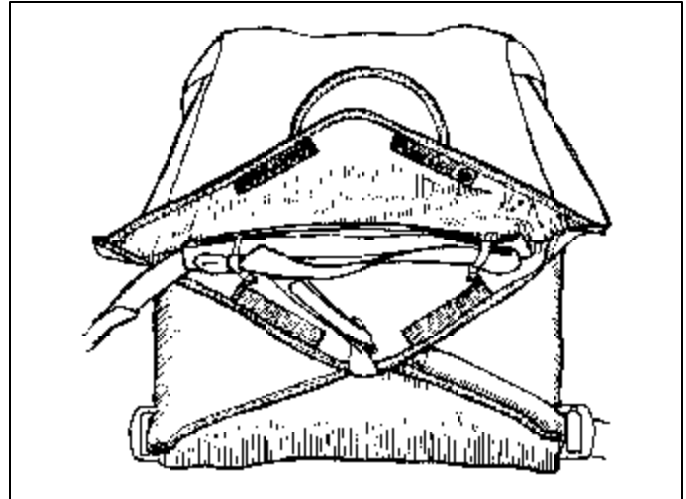
**D.** Route the static line out the top of the con tainer on the side op po site the door of the jump ship. (A right-

side jump door usu ally calls for a left- side static line routing.)

**E.** Close con tainer as you would for a rip cord rig. In sert static line curved pin.

**F.** Remove the pull-up cord. **FAILURE TO RE MOVE THE PULL-UP-CORD MAY RESULT IN A STUDENT-IN-TOW OR SEVERE CONTAINER DAMAGE.**

**G.** Stow the static line in the com part ment pro vided in the elas tic stow bands.



**NOTE: The first stow in the rubber band of the static line should be dou bled or tri pled to pre vent the prop blast from pre maturely blowing the pin out and al low ing an open con tainer.**

## DRESSING THE CONTAINER

**A.** After clos ing the top flap the rig is set up on its side. With your thumb hold the main ris ers against the bot tom side of the over the shoul der part of the har ness. Place the ris ers in the riser cov ers and mate the vel cro. For the Elite, route the ris ers over the out side edge of the shoul der and be gin clos ing the riser cover at the mid- flap work ing your way to the top of the shoul der.

**B.** Pull the side (Ep au let) flap over the top of the riser cover and mate to its vel cro patch.

## Tandem Drogue & Main Container Closing

---

Cock the drogue/main pi lotchute if your sys tem is so equipped. Pull the ex cess “kill line” up into the canopy. “S” fold the main can opy into the main de ploy ment bag and in sert the de ploy ment bag into the main con tainer as de scribed and shown in the Main Pack ing In struc tions.

### Closing The Main Container

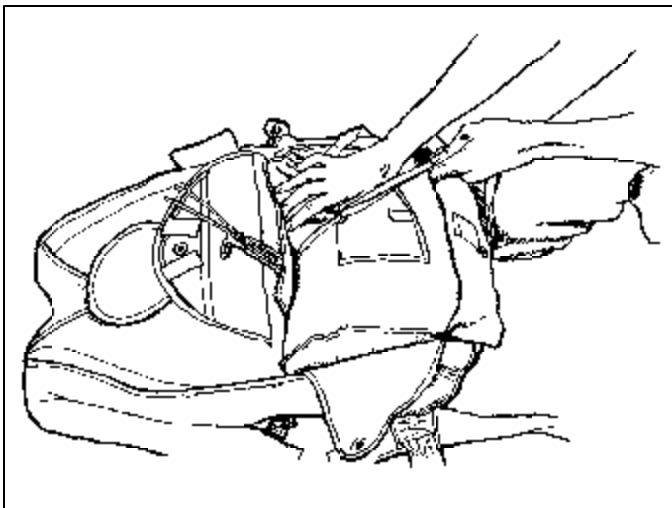
It is important to position the bag squarely into the con tainer, fill ing out the bot tom cor ners of the con tainer tray. This will pre vent the bag from “float ing” out of the tray in the event of a pre ma ture main con tainer open ing.

Note: The Elite Tan dem main con tainer bot tom flap is fitted with two closing grommets. The one located closest to the out side edge is as sem bled into a tri an gu lar shaped addition to the stan dard bot tom closing flap. This grom met is used for the first level clos ing as follows.

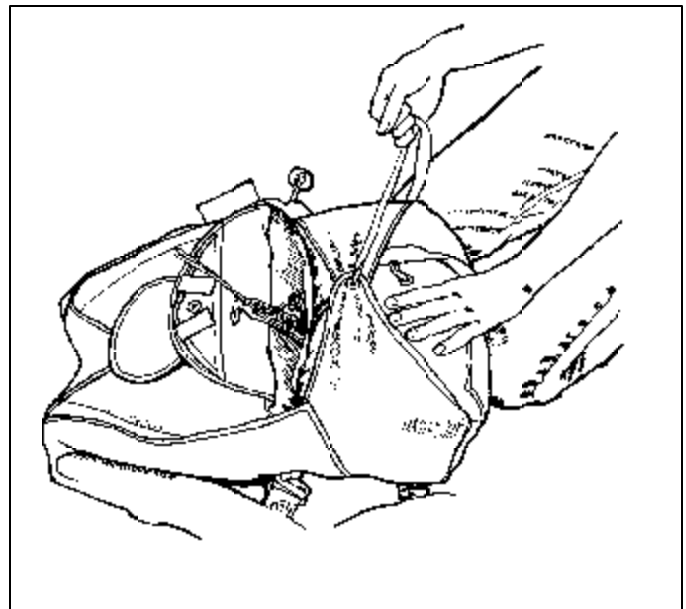
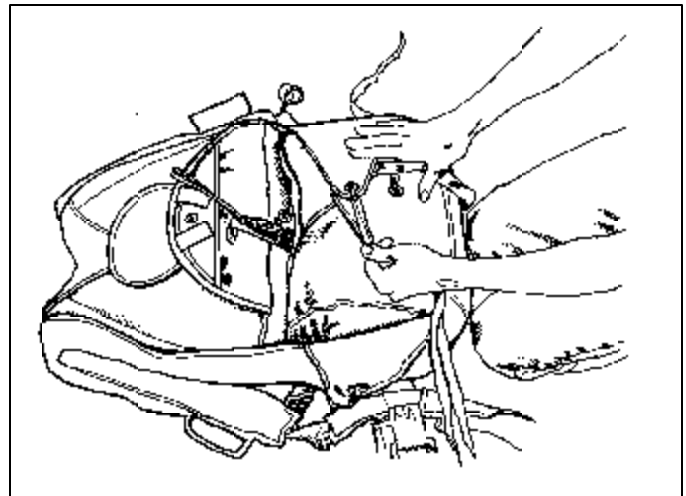
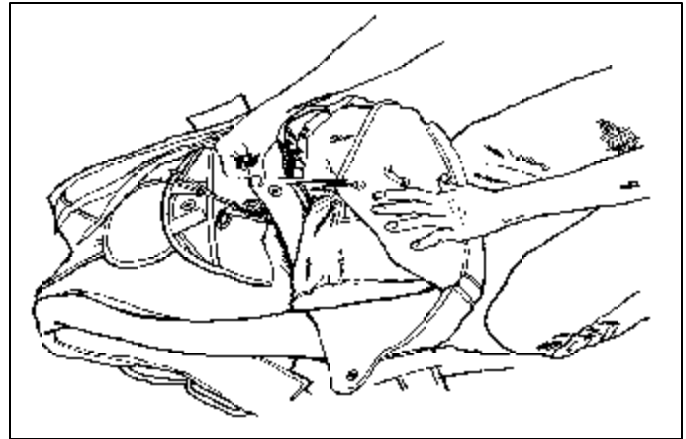
#### **First Level Clos ing**

In sert your pull- up cord through the “Thru Loop” lo cated in the tray of the con tainer.

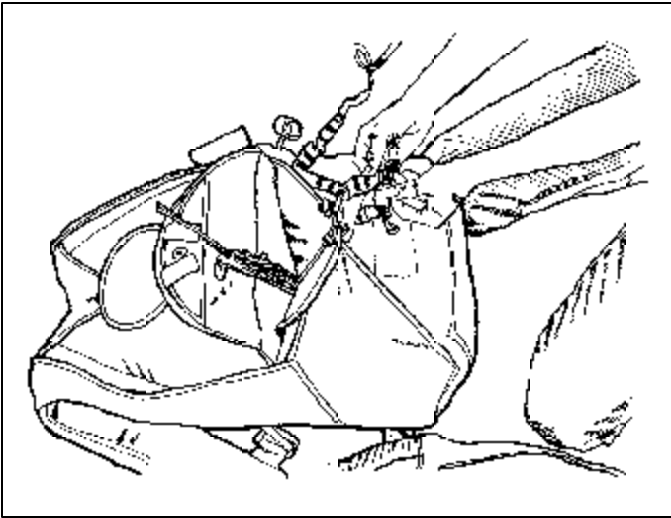
Bring the pull- up cord up and over the top of the main bag and through the grom met located closest to the edge of the flap.



Close the side flaps over this same grom met, then thread the pull-up cord through the top subflap and close it over the loop.



Pin the closing loop with the flexible pin on the bridle. This pin is located about 1 foot from the bag.

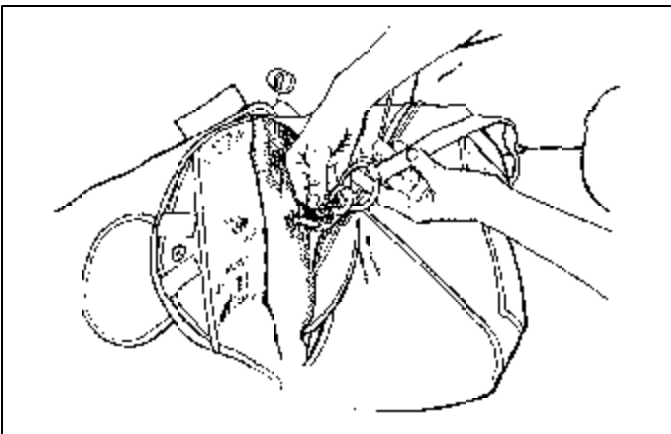


Mate the Velcro on the bridle to ensure proper pin movement during pin extraction.

### **Bridle Release Assembly**

*Note: There are three grommets on the bridle retractor support harness, or drogue riser. The top grommet accommodates the THIRD drogue release mechanism. The small ring with the attached loop threads through this top grommet, and is retained by the third cable of the cutaway handle. The small ring should be pre-assembled to the bridle retractor harness.*

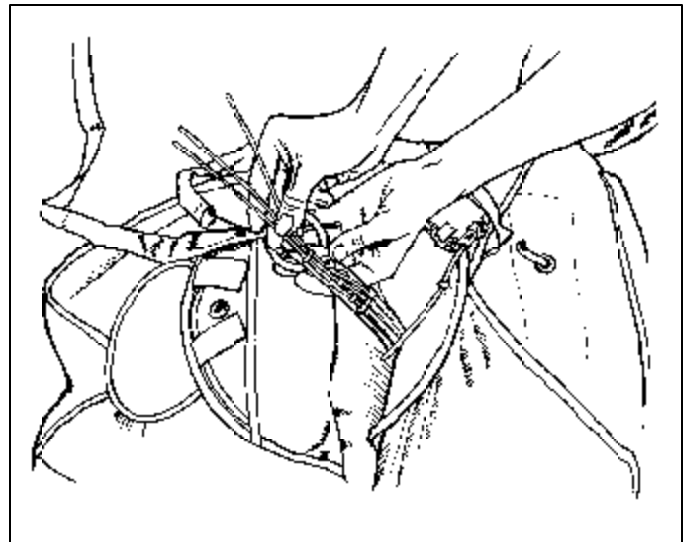
With the large ring facing the reserve container, and the bridle portion facing the main container, begin to assemble the 3-Ring drogue release. Insert the middle-size ring through the large ring, again facing the reserve container. Insert the small ring through the middle ring and fold it into position to receive the closing loop.



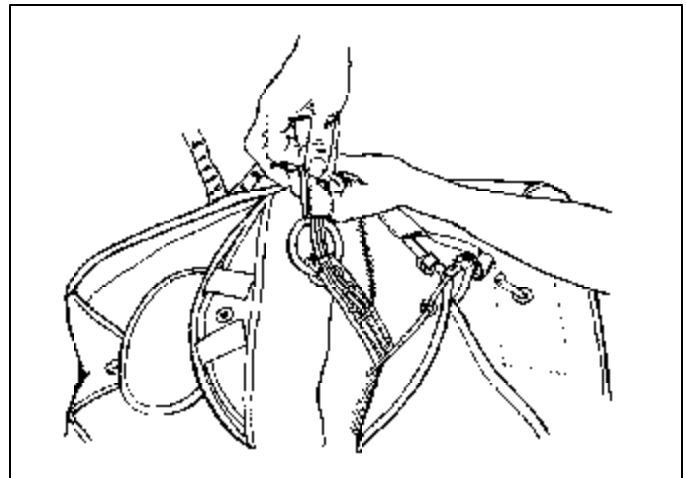
The double-ended loop should be pre-assembled to one of the two remaining drogue release cables (either the primary OR the secondary release cable). One end

of the double-ended loop is inserted through one of the two open grommets on the bridle retractor harness or drogue riser.

Route the double-ended loop over or through the small ring, depending on which end you are starting from, and through the remaining grommet where it is pinned with the last drogue release cable. Each cable should go through ONE loop of the 3-Ring release system, then all three cables can be routed through the Guide Loop at the top of the drogue riser. The Guide Loop is not a functional part of the drogue release system.

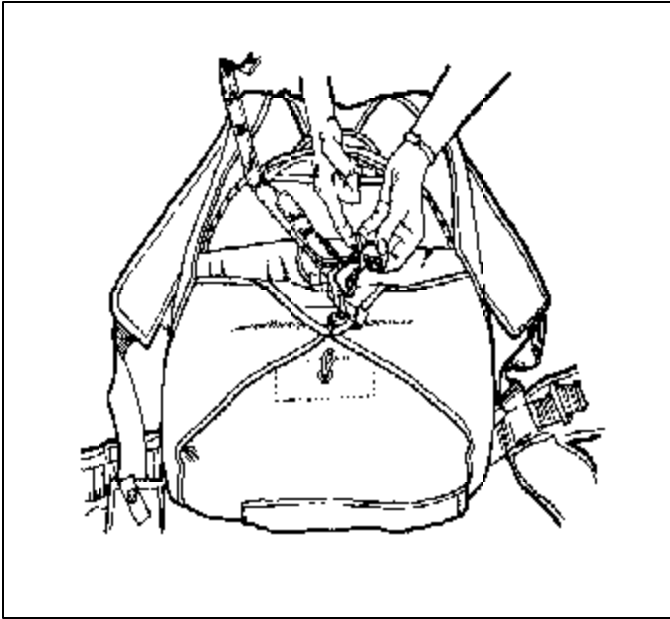


The drogue release cable ends should be inserted into the channel of the bridle, above the large ring.

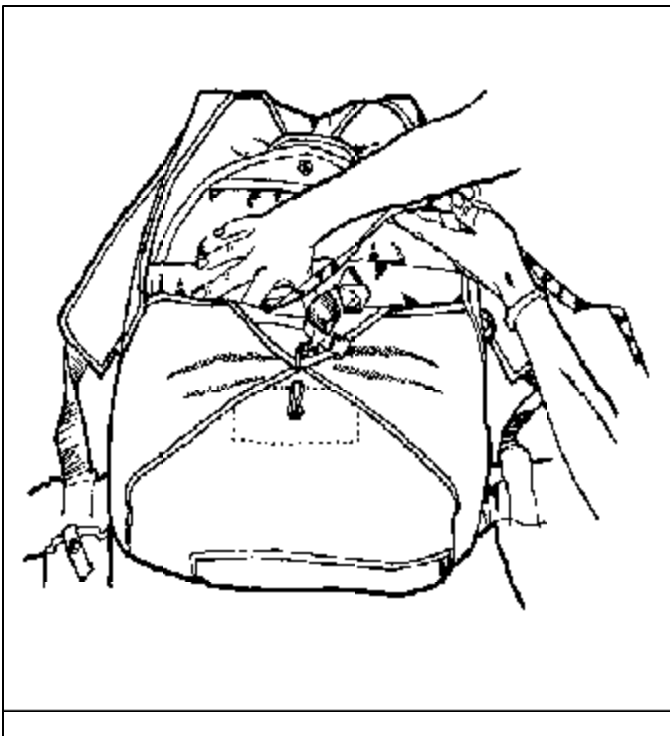


Part of the excess bridle length, between the first main pin and to a point about eight inches from the base of the large ring, must be stowed in the hesitator loop rubber band provided on the top main sub-flap. Double the rubber band over this portion of the bridle. Some slack (about eight inches) must exist between

the base of the 3- Ring sys tem and the “S” folded portion of the bri dle, to al low the bri dle to “sit up” out of the con tainer dur ing drogue fall. This step is crit i cal to prevent acci den tal ac ti va ti on of the main pin dur ing drogue fall.

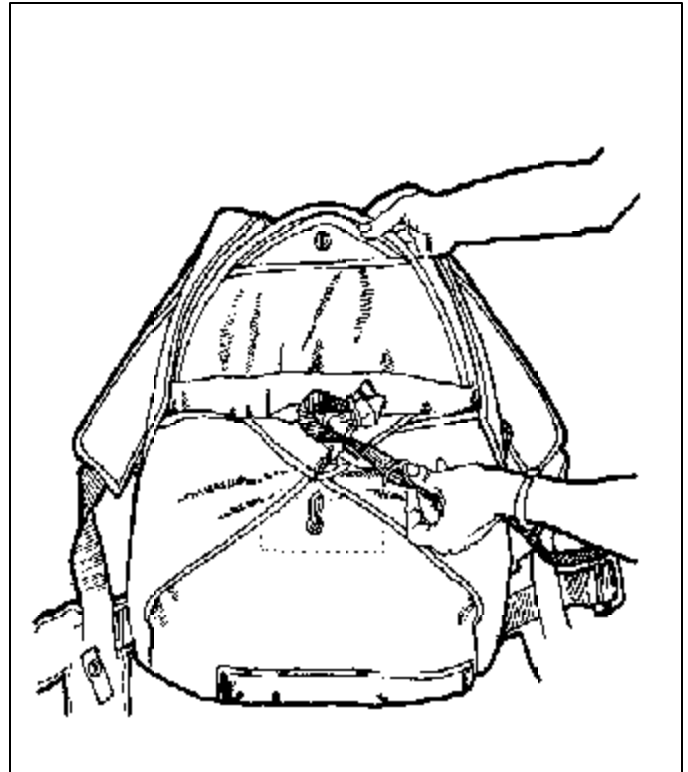


Push en tire as sem bly down to ward the back pad as far as it will go com for ta bly. “S” fold the re main ing bri dle from side to side on top of the com part ment that you have just pushed the 3- Ring as sem bly into. Leave the sec ond (curved) pin out, to lock the mid flap.

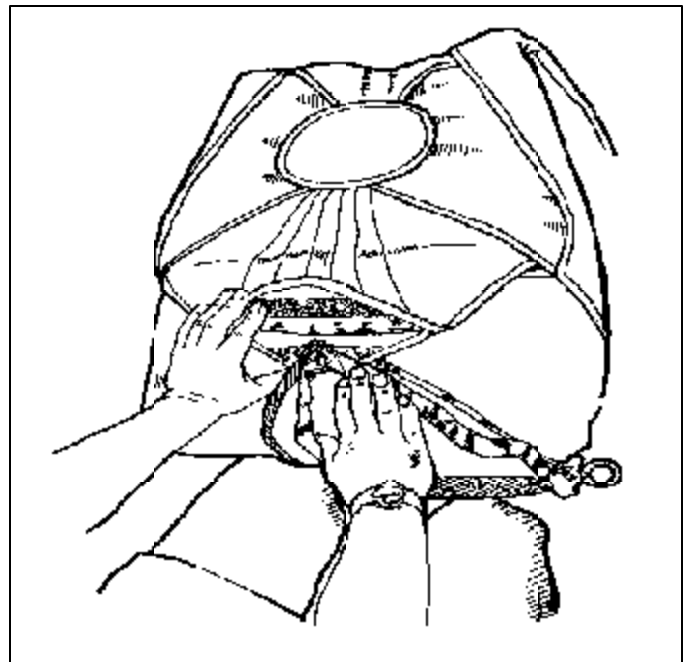


## Second Level Closing

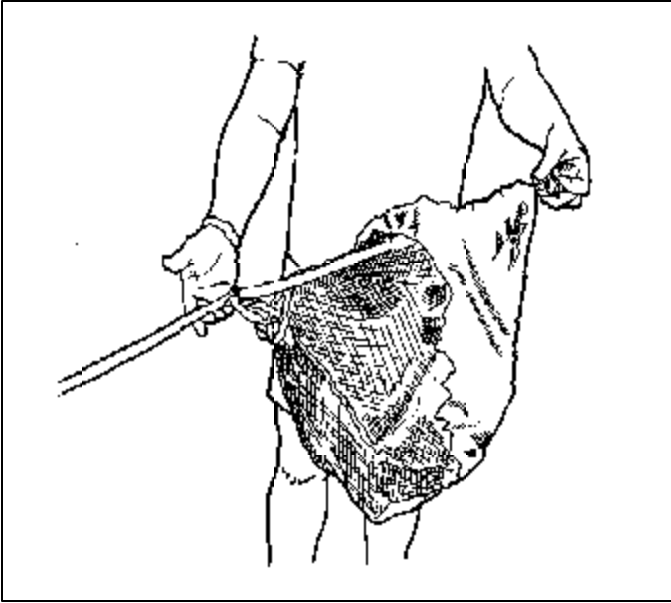
Close the mid flap as you would a stan dard Racer with throw- out pi lot chute, and pin it with the curved pin.



Tuck the bri dle un der the right side flap edge and to the pouch pro vided.



Double check the drogue centerline to verify it has been “cocked,” if so equipped. The apex of the pilot chute should be about even with the skirt when cocked.



### **The easiest way to cock the Jump Shack collapsible pull out or throw out pilot chute**

Attach the PC/bridle/bag to the canopy:

1. Collapse the PC. Route the kill line through the attachment ring or loop on the top of the canopy. Open the “noose” formed in the end of the kill line by the long finger trap, and thread the PC/bridle/bag through it. Close the noose, and draw it up tight against the ring/loop.
2. Route the limiting line through the ring/loop in the same manner, passing the PC/bridle/bag through its loop, and tighten it against the ring/loop.

Do not attempt to put both the kill line and limiting line onto the ring/loop simultaneously, or to put the limiting line on first. This can result in the kill line cutting through the limiting line.

Packing:

1. Leave the PC collapsed. Remove any twists between the bag and the canopy. Stack the canopy in the normal manner, and place it into the bag.
2. Pull the kill line out of the gap where the bridle is sewn to the bag. Simultaneously, reach inside the bag with the other hand, making sure the kill line is pulled out all the way, and no canopy fabric is caught between the attachment ring and the #0 grommet in the

bag. Lay the limiting line in a loop over the top of the canopy inside the bag.

3. Continue packing in the normal manner, closing the bag with the locking stows, and stowing the rest of the lines.

4. Place the bag into the container, then place a foot on the bag, while grasping the hackey (or the top of the PC in the case of a pull out) with one hand and the bridle with the other. Pull on the hackey, drawing the kill line into the bridle. The PC is now cocked, and can be checked by giving it a sharp tug through the air, watching it catch air.

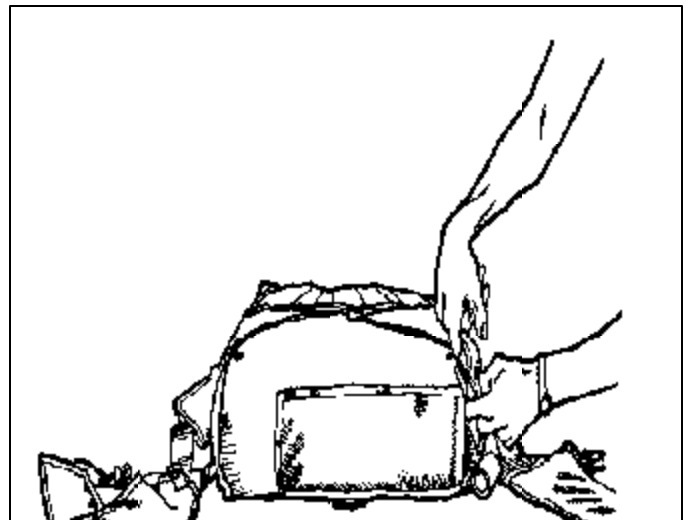
5. Continue closing the rig in the normal manner.

### **For Tandem:**

Proceed as above, except rather than cocking the drogue by pulling on the handle on top, grasp the kill line where it exits the top of the bridle, and pull all excess kill line up and out of the bridle, and into the drogue canopy. This excess kill line is there to compensate for bridle stretch during drogue fall, and must be pulled into the drogue, so that when the drogue is deployed, it is free to be drawn into the stretched portion of the bridle, between the drogue and the large ring on the bridle.

**Note:** It is necessary to pull the excess “Kill Line” up into the drogue canopy. This will prevent premature failure of the “Kill Line”

Fold the drogue/pilot chute into 1/8 pie sections, and insert it into the span dex pouch on the bottom of the container. Dress the bridle to assure that none is exposed.





## DONNING THE SST

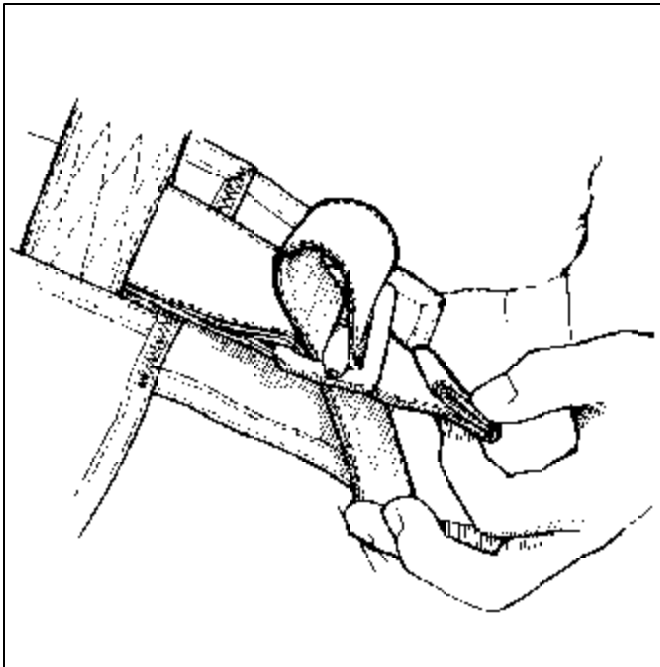
---

Before donning your SST you should check the re-serve rip cord pins, make sure that the seal is in tact, the pins are properly seated and there are no foreign ma-te-ri-als in the hous ing.

1. Grasp the SST by the har ness at one of the can opy release points, and put it on your back like a coat. Check for twists in the main lift webs (front straps) and leg straps.
2. Hook up the leg straps:

### **WITH THREAD THROUGH LEG STRAPS**

- A. Check the leg strap for twists as you pass it un der your leg.
- B. Bring it through the fric tion adapter from the side against your leg and over the slid ing bar.
- C. Con tinue over the slid ing bar and back through the fric tion adapter.



MIS-THREADING THE LEG STRAP THROUGH THE FRICTION ADAPTER MAY CAUSE YOU TO FALL OUT THE BOTTOM OF THE HAR-NESS.

- D. Repeat with the other leg strap. Tighten the free ends un til snug, and stow them away.

### **WITH B-12 LEG STRAP SNAPS**

- A. Check the leg strap for twists as you pass it un der your leg.
- B. Snap the hook onto the V- ring. It should “clink” when it closes the snap.
- C. Repeat with the other leg strap. Tighten the free ends un til snug, and stow them away.

WITH THROW- AWAY HAND DEPLOYMENT, A TWISTED OR OTHERWISE MISROUTED RIGHT LEG STRAP WILL RE SULT IN A PILOT-CHUTE-IN-TOW MALFUNCTION.

3. Locate the chest strap, and thread it like the leg straps.

MIS-THREADING THE CHEST STRAP MIGHT CAUSE YOU TO FALL FROM THE HAR NESS. Pull the free end un til the main lift webs are par al lel. Place the free end in the elas tic keeper.

Should your sys tem be equipped with ad just able lat-er-als, bend at waist, set ting rig so it is com fort able on your back. Tighten lat eral free ends at con tainer base until the SST fits snugly. (SSTs equipped with Throw-Outs will have an ad just ment on the left side only). Stow free ends under elastic keepers. Owners of pull- out should take spe cial note of proper stow ing, as an un stowed lat eral feels much like a pull- out han-dle. Repeat adjustment until comfortable fit is ob-tained.

## FAMILIARIZATION

---

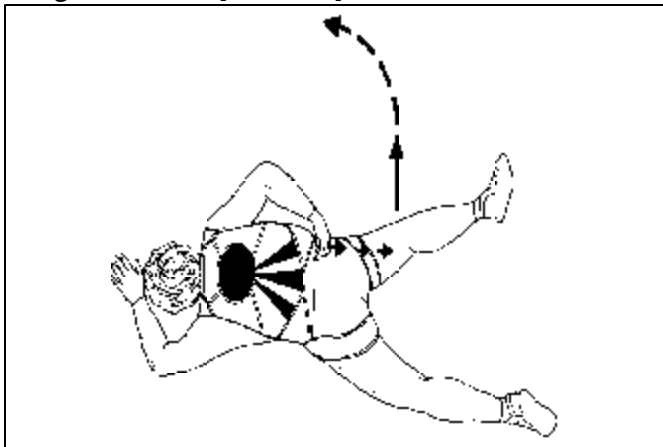
Now that you have learned how your rig works (OPERATIONAL CHARACTERISTICS), the environment wherein it works best (OPERATIONAL LIMITATIONS), how to as sem ble and pack it (ASSEMBLY, RESERVE PACKING INSTRUCTIONS, MAIN PACKING INSTRUCTIONS), and how to put it on (DON NING THE SST) it is time to learn how to use it. This man ual is not in tended to provide a curriculum on Skydiving, you *MUST* have com pleted an ap proved (by your na tional Aero club) course be fore you even think about tak ing to the air by your self. But now that your new rig is packed and you have it on let's get fa mil iar with it.

There are three han dles that you may have oc ca sion to pull. They are the main, the cut- away and the re serve. Let's talk about the main first.

### MAIN ACTIVATION

#### PULL-OUT

To learn about the activation of the pull-out, lay on your chest in a sky div ing arch, lo cate the pull- out han dle on the bot tom right cor ner of the rig with your right hand while your left hand com pen sates for level fall. Don't bother looking. You can't see it and you will need to be looking at traf fic and al ti tude while you are ac tu ally sky div ing. In sert your two cen ter fin gers be tween the two re tain ers of the han dle and re move the han dle. While grip ping the han dle thrust down ward by ex tending your arm straight down along the side of your body.



This ac tion will open the pack and al low you to toss the pi lot chute into the air stream to the right of your body while you simultaneously look up over your head to watch the deployment. **KEEP YOUR SHOULDERS LEVEL TO THE GROUND TO PRO VIDE FOR EVEN LINE DE PLOY MENT.** This pro ce dure should be prac ticed on the ground un til you are com fort able and auto mat ic with it. Ad di tion ally, with a friend to hold the pull- out han dle, prac tice los ing the han dle and re lo cat ing it while lay ing on your chest. Have the friend hold the han dle so as to sim u late where it might be trail ing be hind you out of its re tain ers. It could be any where so have the friend move it through its complete range of travel while you lo cate it. The pro ce dure for lo cat ing the han dle is sim ple. With your left hand on the reserve rip cord and your eyes on the ground, reach be hind you to the cen ter of the main container and trace the lanyard from the closing pin to the handle, grip it and pull as de scribed above.

#### THROW-OUT

To learn the use of a throw- out lay on your chest in a sky div ing arch with the rig on. Lo cate the plas tic cy lindric al han dle at the top of the right leg pad with your right hand while your left hand com pen sates for level fall. Don't bother to look for the handle. You prob a bly can't see it and you should be look ing at traf fic and al ti tude in an ac tu al sky dive. Grip the han dle and ex tract the pi lot chute from its pouch and toss it vig or ously into the air stream be side your body. Then look up over your head to watch the de ploy ment. As you look up your body will come to ver tical plac ing you in a sit ting po si tion for the open ing. You must not allow the pilot chute to be released in front of your arm as that will wrap the bridle around your arm. Make sure that the pilot chute is released between your body and your arm. To as sure that this oc curs re lease the pi lot chute be fore you look up. **KEEP YOUR SHOULDERS LEVEL TO THE GROUND TO PRO VIDE FOR EVEN LINE DE PLOY MENT.**

## **RIPCORD**

Lay on your chest on a flat sur face and as sume a sky-div ing arch. With out break ing the arch look down at the han dle and in sert the thumb of your right hand into the loop of the han dle while com pen sat ing for level fall with your left hand. Thrust your arm for ward and down then look up over your head to ob serve the de ploy ment. Be sure to hold on to the han dle as they are expensive and could hurt someone on the ground if you drop it.

## **CUTAWAY ACTIVATION**

This fa mili ari za tion should take place in a sus pended harness. Locate the red pillow type handle on your right main lift web below your chest strap. Peel the han dle off the vel cro and thrust the han dle down and away.

Students using the “ Stevens System” should keep their head for ward and down to pre vent the cross con nector from hitting their head, additionally they should select helmets that do not have a “snagable” edge which might catch a suspension line, riser, or cross connector.

You might want to lo cate and grip your re serve han dle be fore ac ti vat ing the cuta way but don’t take it out of the pocket un til your main has re leased.

Stu dents should be ad di tion ally trained to re lease both sides of the cross connector, from the main risers, upon con fir ma tion of a fully in flated and function ing

can opy over their head. That can opy will hope fully be the main. However, if an AAD misfire oc curred at pre cisely the wrong mo ment or the re serve were ac ti vated in any manner at that criti cal time, it could be the re serve can opy. By de ac ti vat ing the cross con nector, the main, which would be in flated and trail ing be hind the reserve, could be cutaway safely. This deactivation procedure would also prepare the main for cuta way, dur ing ground drag, af ter land ing.

## **RESERVE ACTIVATION**

In a sky div ing arch, with your chest on a flat sur face lo cate the metal han dle on your left main lift web be low the chest strap. In sert your left thumb into the bot tom curve of the handle while simultane ously gripping the ver tical por tion of the han dle with your right hand. With both hands thrust down and away to the limit of your reach. You might want to leave your el bows ex tended as much as pos si ble dur ing the grip ping phase, while look ing up to keep from go ing head down. Ex pe rienced jumpers can bring their knees up for some ad di tional com pen sa tion but newer jumpers must be cau tious with this maneuver, it can cause a back loop. Pull ing the re serve rip cord should be ad di tion ally prac ticed while in the sus pended har ness. A good time to practice both the cutaway and reserve pull is at the end of the cer ti fi ca tion cy cle. The re serve must be in spec ted every 120 days, and that is a good time to ex pe ri ence how much ef fort is re quired to op er ate the han dles of your SST.

# Racer/Elite™ PERMANENT HISTORY RECORD

|                      |              |                      |              |
|----------------------|--------------|----------------------|--------------|
| Container Serial #   | Date of Mfg. | Rsv. Canopy Serial # | Date of MFG. |
| Main Canopy Serial # | Date of Mfg. | Main Color           | Rsv. Color   |

|                              |
|------------------------------|
| Repair Record and Misc. Data |
|------------------------------|

This page provides for you a place to keep a permanent history record of your container and canopies. You as the owner of this parachute system should provide this manual to your rigger at the inspection/repack interval and they should fill out this page in addition to the Packing Data Card in order to maintain a permanent history record of your system. If your Packing Data Card is ever lost this page will act as a backup document.

[illegible]