

# Owner's Manual for Packing, Donning, and Maintenance of the TPDS Military Student System (**MSS**).



## **TACTICAL PARACHUTE DELIVERY SYSTEMS, Inc.**

4035 Correia Drive  
Zephyrhills, FL 33542 USA

Phone: +1.813.782.7482  
Fax: +1.813.788.2799  
E-mail: [info@tpdsairborne.com](mailto:info@tpdsairborne.com)  
Website: [www.tpdsairborne.com](http://www.tpdsairborne.com)





**Tactical Parachute Delivery Systems, Inc.**  
**4035 Correia Drive, Zephyrhills, FL 33542**  
**Phone 813.782.7482 Fax 813.788.2799**

**STATEMENT OF CONFORMANCE**

This letter is to inform that all components of the **Military Student System (MSS) Harness/Container System** by **TPDS, Inc.** are manufactured under Federal Aviation Administration (FAA) Technical Standard Order (TSO) requirements of the Federal Aviation Regulation 14, Code of Federal Regulations Part 21, Subpart O.

Furthermore; the Military Student System meets all Military Standards and Specifications.

Sincerely,

Henri Pohjolainen  
President  
Tactical Parachute Delivery Systems, Inc.



# WARNING!

## PARACHUTING IS A HIGH RISK ACTIVITY WHICH CAN CAUSE OR RESULT IN SERIOUS INJURY OR DEATH.

The following information must be read and understood before any use of this equipment:

### USER KNOWS THE RISKS OF PARACHUTING AND ACCEPTS THAT:

Parachuting can cause **death** and/or **serious injuries**. Many of these deaths and injuries can be attributed to equipment problems or malfunctions.

Parachuting equipment can fail, even if all possible precautions are taken by the user, the equipment manufacturers and everyone else involved with the jump.

Failure to activate the main or reserve parachute (or follow emergency procedures) at a safe altitude, and/or equipment failure can result in **severe injury or death**.

### IT IS THE USER'S RESPONSIBILITY TO:

Receive proper training before any use of all parachuting equipment.  
Be extremely careful and cautious.

Read and Understand all owner's and operating manuals for all parachuting equipment.

Thoroughly check all parachuting equipment and replace any defective or worn component prior to use.

Review emergency procedures before each use of this and all parachuting equipment.

Check equipment warnings –

## **WARNING!**

### **DO NOT EXCEED EQUIPMENT LIMITATIONS!**

Never violate the training and experience requirements for the specific equipment use.

### **DISCLAIMER – STATEMENT OF WARRANTY**

Because of the unavoidable dangers involved in the use of this and all parachute equipment – **Tactical Parachute Delivery Systems, Inc.**, (including but not limited to all owners, officers, staff, and employees), hereafter referred to as “**TPDS**” makes no warranties of any kind, expressed or implied. The liability of the seller is limited to replacing defective parts found upon examination by the manufacturer to be defective in material or workmanship within 7 days after purchase and found not to have been caused by an accident, improper use, alteration, tampering, abuse or lack of care on the part of the purchaser.

By using this equipment or allowing it to be used by others, owner/buyer waives any liability of **TPDS** for personal injuries or any other damages arising from such use. Any promise or representations inconsistent with or in addition to the **Statement of Warranty** are not authorized by **TPDS** and shall not be binding.

## **!WARNING!**

Parachuting is a hazardous activity that can result in serious injury or death. Failure to follow all warnings, instructions, and required procedures may result in serious injury or **DEATH!** Parachutes sometimes malfunction even when they are properly designed, built, assembled, packed, maintained and used.

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## Chapter 1

# Product Information

## 1.1 Tactical Parachute Delivery Systems, Inc. (TPDS)

**TPDS** is committed to providing you with the latest, most versatile and dependable skydiving systems available on the market today. **TPDS** can provide you with a system designed to suit or exceed the expectations of your demanding and changing environment with each assembly built to support a range of parachute combinations and options. If your operation requires a custom solution, please feel free to contact us.

This manual should provide you with the necessary information to help select and operate your system to the maximum of its abilities.

## 1.2 Harness/Container Information

While each system is available in a combination of sizes and options there are several standard features of the **Military Student System (MSS)** which includes:

- Main Pin Cover – Having an upward facing pin cover creates the ultimate in pin protection from unintended knocks or bumps causing premature pin extraction.
- Bridle and Riser Cover Protection – Zero exposed riser or main bridle ensures proper function in any manner of orientation or use.
- Reserve Static Line (**RSL**) – A lanyard connecting the main riser and reserve ripcord which allows minimum altitude loss on the reserve opening during the event of a cutaway.
- Single Pin Reserve Closing.
- Partially Exposed Reserve Pilot-Chute.
- Adjustable Harness - The **TPDS MSS** Harness is adjustable on the Main Lift Web and Side Laterals, allowing a range of users to access the same system.
- Type VII Mil-SPEC Harness and Reserve Risers.
- Foam Padded Yoke, Back Pad and Leg Pads.
- Automatic Activation Device Set-up - ready for installation.
- Main Deployment – Over the Shoulder Ripcord, BOC Ripcord, BOC Throw-out, Static Line Assist (T/O or Spring-loaded Pilot Chute) or Direct Bag Static Line.
- Cutaway Location – Inboard.



- Reserve Ripcord Location – Inboard.
- **“Reserve Boost”** Main Assisted Reserve Deployment (**M.A.R.D.**) System.
- 

The **TPDS MSS** Harness/ Container is tested and manufactured under the Technical Standard Order (**TSO**) **C23d** of the Federal Aviation Administration (**FAA**).

### 1.3 Parachute Information

Since the mid-1970's, the company that would become **TPDS** has designed, built, tested and sold multiple types of parachutes to thousands of skydivers, glider, ultra light and fixed wing pilots. These parachutes include **Mains**, popular with many military and student markets as a predictable and safe platform, and **Reserves**, manufactured under the Technical Standard Order (**TSO**) **C23d** of the Federal Aviation Administration (**FAA**).

**TPDS** pioneered the idea of wing loading, appropriately matching the size of the parachute to the weight of the jumper, thereby allowing multiple jumpers of different weights and sizes to jump the same parachute.

This makes it easier to translate how to fly a parachute effectively and safely by having not just a parachute that compares in name but in flying characteristics, handling and landing performance.

## Chapter 2

# Technical Information



## 2.1 TPDS Military Student System (MSS)

### TPDS-MSS

Inboard Reserve Ripcord Handle  
 Inboard Main Canopy Release Handle  
 Outboard Main Ripcord Handle

The **TPDS Military Student System (MSS)** is designed for training with a single operator.

The **TPDS-MSS** accommodates TPDS Main and Reserve Canopy sizes from 220-400 sq. ft. according to the end user's tactical and training requirements.

TPDS specializes in the custom applications and requirements of the end user.

### TPDS- MSS Specs:

#### Maximum Suspended Weight:

550 lbs. (250 kg.) depending on the canopy size.

#### Maximum Deployment Altitude:

35,000 ft. (10,668m) Some restrictions apply depending on canopy size and type.

#### Minimum Deployment Altitude:

Main Canopy- 3000 ft. (914 m)  
 Reserve Canopy- 2000 ft. (600 m)

**Main Canopies:** TPDS 220-400 sq. ft.

**Reserve Canopies:** TPDS 220- 400 sq. ft.

**Harness/Container Weight:** 17 lbs. (7.7 kg.)

#### Reserve AAD Set-up:

Military Cypres AAD  
 Astra by FXC  
 Military Vigil  
 Military Argus

*Installation according to AAD and/or end user's requirements.*

#### Reserve Static Line:

Standard RSL with attachment to the Left Main Riser and Reserve Cable.



## TPDS- MSS Specs continued:

### Main Deployment Options:

- Throw-out Bottom of Container. (BOC)
- Spring-Loaded Pilot Chute w/BOC or Chest Mounted Ripcord.
- Static Line Deployment with Direct Bag, Spring-Loaded Pilot-Chute Assist or Throw-out Pilot-Chute Options.

### Main AAD Options:

AR-2 or equivalent.

### Main Risers:

Type 8

### Harness:

Adjustable Main Lift Web  
Adjustable Laterals.  
Adjustable Leg Straps.  
Adjustable Chest Strap.  
Adjustable Bellyband or  
Removable/Adjustable Bellyband.

### Leg Hardware:

B-12 Snaps, Thread-Thru or Quick Ejector

### Chest Hardware:

B-12 Snaps, Thread-Thru or Quick Ejector

### Container Material:

1000 Denier Nylon

### Container Colors:

Black, Silver, Dark Grey, Olive Drab Green, Desert Camouflage, Woodland Camouflage, Multi-Camouflage, others upon request.

## TPDS- MSS Standard System

### Features:

- Fully Adjustable Harness
- Adjustable or Detachable Bellyband

## TPDS- MSS Optional System

### Features:

- Removable **HAHO** Seat Sling.
- **Main Assisted Reserve Deployment (MARD) “Reserve Boost” System**



### TPDS- MSS Military Student System



- Outboard Main Ripcord Handle
- Inboard Reserve Ripcord Handle
- Inboard Main Canopy Release Handle
- Adjustable Main Lift Webbing



- AAD Clear Inspection Window
- Chest Main Ripcord Housing
- Throw-out Pilot Chute Handle





## Chapter 3

# Inspection Processes

### **3.1 TPDS Military Student System (MSS) Harness/Container.**

- Main Lift Web
  - Sizing Identification is Symmetrical (same color).
  - Fold-overs are present and sewn.
  - Harness Stitching: 3 and 4 point stitching is intact, no broken stitches.
  - Selvage edge is intact.
  - Webbing is free of wear and abrasions.
  - Velcro for Main Release and Reserve Ripcord is correct and in place.
  - Main Release and Ripcord Housings are in place and secured.
  - Chest Strap fold-over is present and sewn.
  - TSO Label present and info correct.
- Laterals
  - Symmetrical (if adjustable)
  - Harness stitching is present and correct.
- Leg Straps/ Leg Pads
  - Fold-overs are present and sewn.
  - Leg pads have reinforcing bar tacks.
  - Harness stitching is present and correct.
- Reserve Container
  - Grommets secure without burrs or sharp edges.
  - Binding tape is secure and sewn correctly.
  - AAD pocket and window sewn in place for AAD set-up.
  - Floor Plate sewn in place.
  - RSL Ring in place.
- Reserve Risers
  - Symmetrical
  - Harness stitching is present and correct.
  - Toggles and Velcro in place.
  - Guide rings present, free of wear, no abrasions.
  - Steering Line Locking Loop is present.
  - Guide Ring is present and in good shape.





- Main Container
  - Binding Tape, present and no stitches missing
  - Closing Loop Retainer present.
  - Grommets, free of burrs, sharp edges.
  - Housings are secure and no sharp edges.
  
- Reserve Free-Bag and Pilot-Chute
  - Grommets secure without burrs or sharp edges.
  - Bridle bar tacked.
  - Spring crimped.
  - Cap and snaps present and secure, TSO Label present.
  - Free bag size matches container.
  - Velcro and pocket secure, TSO Label present.
  
- Reserve Ripcord
  - Handle is correct shape and smooth.
  - No broken strands of cable.
  - Straight pin.
  - Ball & Shank in place.
  
- Main Risers
  - Ring shape
  - No Corrosion or wear
  - Harness Stitching present and correct.
  - Bartacks, present.
  - Velcro, Hook secured.
  - Grommets secure w/o burrs or sharp edges.
  - T-IIA Loop present.
  - Steering Line Locking Loop present.
  - Snap Shackle RSL present and in good working order.
  
- Other Hardware
  - No Corrosion or wear.
  - In shape
  
- Reserve Static-Line (RSL)
  - Bartacks are present.
  - No Corrosion or wear.
  - Mini Ring present & Lanyard intact.
  
- Main Deployment Bag and Deployment Option
  - Deployment Bag is correct size. Grommets have no burrs or sharp edges.
  - Deployment Handles are present and in good shape.
  - Pilot Chute is present and correct.
  - Static Line (if used) is present and all stitching is correct and present.



## 3.2 Reserve Parachute

- Links should be:
  - Clean of corrosion, debris and without cracks or visible damage.
  - No sharp or raw edges.
  - Free moving barrel, which should be able to tighten 2 ¾ turns from first engagement of the barrel without resistance.
- Rapide Link Covers
  - Covers should be firmly seated on top of links.
  - Covers tacked in place to prevent slippage.
- Lines
  - No excessive fraying or damage to lines.
  - Continuity is correct.
  - Bartacks sewn correctly on each line.
  - Each line is without twists and correctly installed from link to parachute, passing through correct slider grommet.
- Slider
  - Grommets seated correctly without burrs or damage.
  - Slider is without holes, burns or other damage.
- Bottom Skin
  - Inspect each cell for any tears, fraying or other damage.
  - Seams and attachment points stitched correctly and evenly.
- Ribs
  - Cross ports without damage.
  - Stitching correct on seams.
  - Reinforcing tape present on loaded ribs.
  - No other damage on entire rib section.
- Top Skin
  - Seams are sewn correctly.
  - Leading edge bar tacks are in place.
  - Control line attachment points are reinforced.
- Stabilizers
  - Slider stops are present and secured.
  - Lines bar tacked to lower edge of stabilizer.
  - Slack is present in stabilizer when line is taut.



### 3.3 Main Parachute

- Links should be:
  - Clean of corrosion, debris and without cracks or visible damage.
  - No sharp or raw edges.
  - Free moving barrel, which should be able to tighten 2  $\frac{3}{4}$  turns from first engagement of the barrel without resistance.
- Rapide Link Covers
  - Covers should be firmly seated on top of links.
  - Covers tacked in place to prevent slippage.
- Lines
  - No excessive fraying or damage to lines.
  - Continuity is correct.
  - Bar tacks sewn correctly on each line.
  - Each line is without twists and correctly installed from link to parachute, passing through correct slider grommet.
- Slider
  - Slider is without holes, burns or other damage.
  - Reinforcement Tape in place and secure.
  - Grommets seated correctly without burrs or damage.
- Bottom Skin
  - Inspect each cell for any tears, fraying or other damage.
  - Seams and attachment points stitched correctly and evenly.
- Ribs
  - Cross ports without damage.
  - Stitching correct on seams.
  - Reinforcing tape present on loaded ribs.
  - No other damage on entire rib section.
- Top Skin
  - Seams are sewn correctly.
  - Leading edge bar tacks are in place.
  - Control line attachment points are reinforced.
- Stabilizers
  - Slider stops are present and secured.
  - Lines bar tacked to lower edge of stabilizer.
  - Slack is present in stabilizer when line is taut.



## Chapter 4

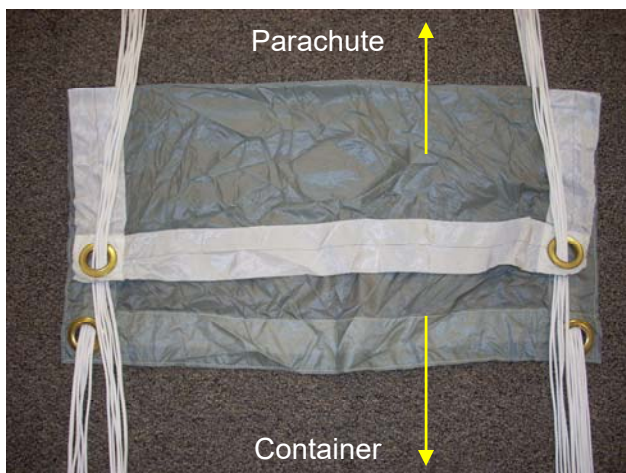
# Assembly Instructions

## 4.1 Assembly of Reserve Canopy.

### 4.1.1 Reserve Canopy Line Order.

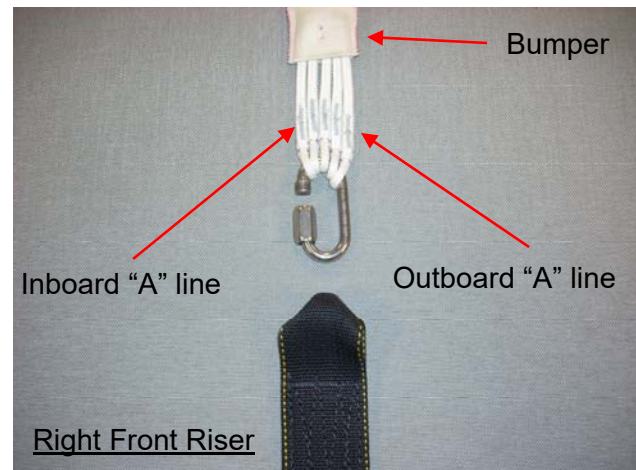
After inspecting the Parachute and the Harness/Container System, hang or lay the parachute out on the ground with the nose section on the ground and the Harness/Container System oriented face down.

Check to see that the T-12 Bumpers are above the links. See the instructions on page 3 to install them if needed.



Ensure the slider is correctly oriented; the slider should be longer span-wise than chord-wise, with the reinforcing tape of the slider on the side facing the reserve parachute.

Begin the assembly process by ensuring that all lines are connected to the links correctly with the outboard A-lines on the outside of the link and the center A-line towards the inside of the link, the longer side of the link towards the riser.

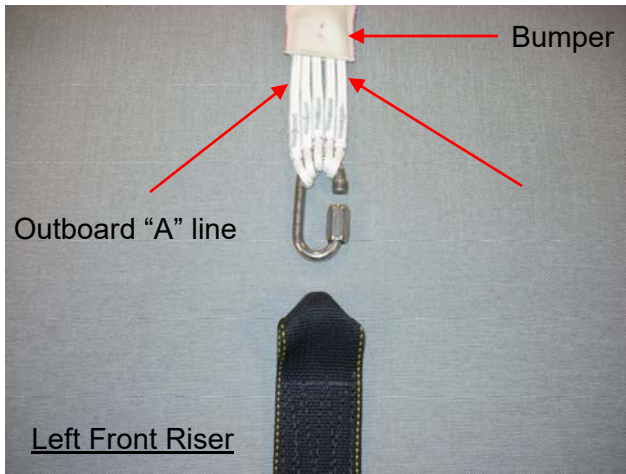


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the **Right Front line-set** onto the end of the **Right Front Riser**. Tighten the barrel finger tight and then an additional  $\frac{1}{4}$  turn with a small wrench until the link is tight.

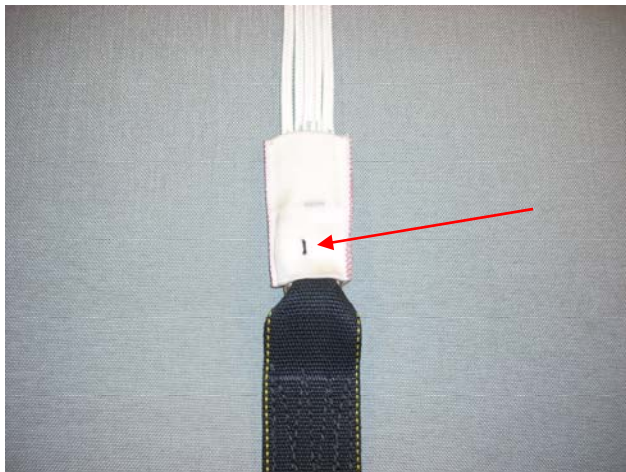


Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the Left Front Riser.

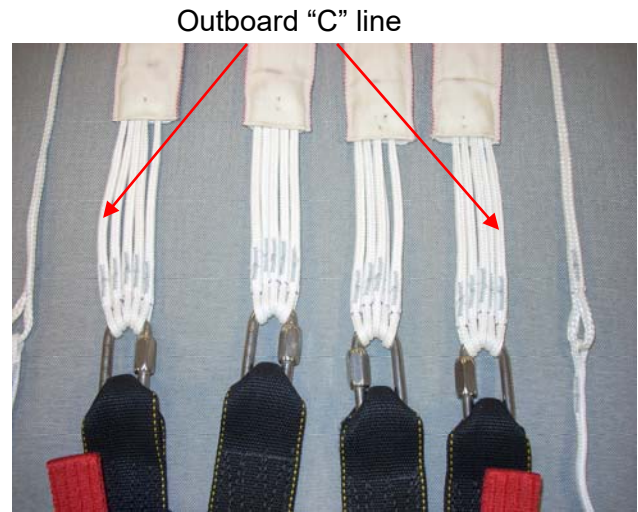


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the **Left Front line-set** onto the end of the **Left Front Riser**. Tighten the barrel finger tight and then an additional  $\frac{1}{4}$  turn with a small wrench until the link is tight.



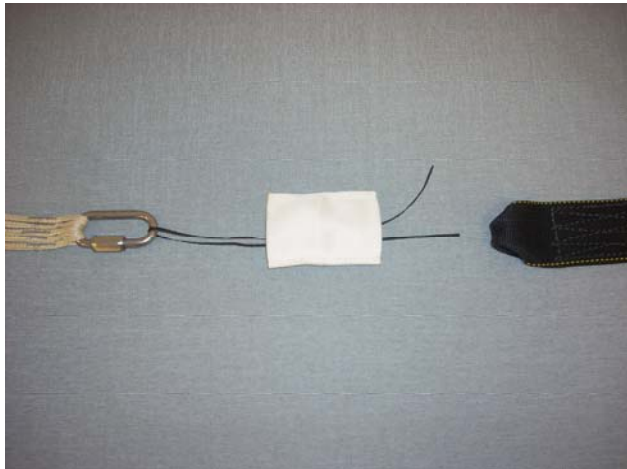
Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the two **Rear Risers**, ensuring that the Outboard "C" lines are on the link first.

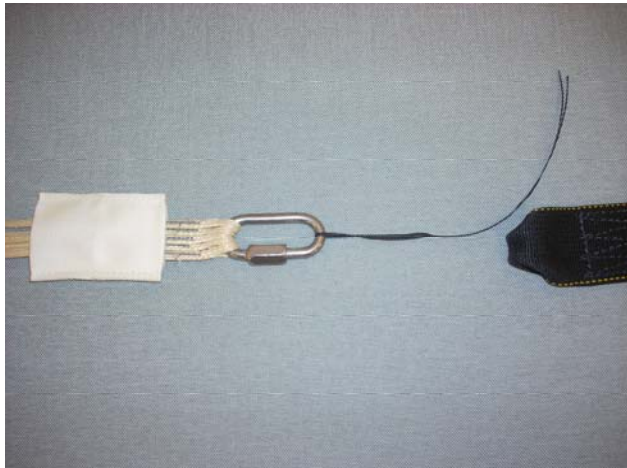




## 4.1.2 Installing the Bumpers.



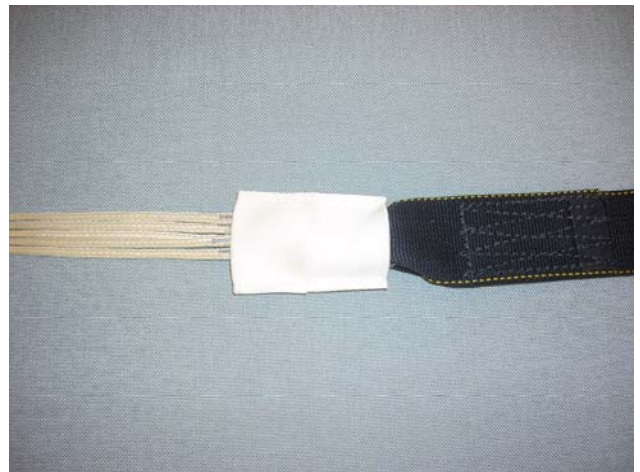
With the line group correctly assembled onto the link, run a short piece of line through the closed link and the center of the bumper.



Pull the link through the bumper without twisting or turning the link.



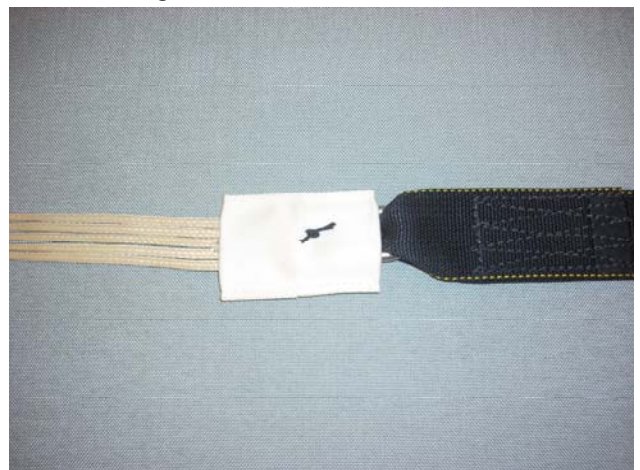
Fold the top of the riser and install the link. Tighten the barrel finger tight then a 1/4 turn with a small wrench.



Pull the bumper down and secure with Super Tack cord.



The tacking should go through both sides of the bumper and include a surgeon's knot and locking knot.



Trim the tails of the tacking cord.



### 4.1.3 Installing the Toggle onto the Control Lines.

Once the reserve parachute is assembled onto the reserve risers, pass the control line through the appropriate slider grommet and **ONLY** through the guide ring on the reserve riser and **NOT** the Dacron locking loop.



Pass the control line through the rear of the toggle to the "dot". Pass the line back through the grommet forming a loop around the outside of the toggle.



Pass the line back through the grommet forming another loop around the other side of the toggle. Tighten the loops.



Tie an overhand knot on the tail that is on the other side of the grommet. Snug the knot up as close to the grommet as possible.

Repeat for the other toggle.

The parachute brakes are now ready to be set.

## 4.2 Installing the Closing Loop in the Reserve Container.

Follow these Instructions for Installing the Closing Loop in the Bottom Plate of the *MSS* Reserve Container.



Pictured above is the Reserve Container with the new dual grommet bottom plate.

This configuration allows the closing loop to be inserted from the top of the first grommet then up from the bottom through the second grommet.



Begin by lifting the elastic covering of the top grommet.

Pass the closing loop down through the top grommet.



Pass the closing loop up through the bottom grommet as shown.



Tuck the excess closing loop under the elastic cover.

Installation of the Reserve Container Closing Loop is complete.





### 4.3 Installing the Automatic Activation Device. (AAD)

Read the **AAD Owner's Manual** and become familiar with the different components of the unit and details of its use.

Insert the **Processing Unit** into the spandex pocket located on the bottom wall of the reserve container. (fig. 1)

Route the **Release Unit** under the reserve floor plate and through the slot and elastic housing. Stow the excess cable in the spandex pouch. (fig.2)

Route the **Control Unit** through the channel next to the floor plate. Once threaded through this channel, insert the Control Unit into the Reserve Cover Flap. (fig. 3)

Once secured in the spandex pocket, the display should be clearly visible through the clear plastic window of the back pad.

Stow the excess cable in the channel or spandex pocket.

Close the Velcro pocket on the spandex pouch.

Installation is complete.



Fig. 1

**Processing Unit**



Fig. 2

**Release Unit**



Fig. 3

**Control Unit**



Installation complete.

#### 4.4 Assemble the Reserve Static Line. (RSL) Optional



Mate the Pile Velcro of the RSL with the Hook Velcro under the RSL channel on the Left Side of the Yoke. Start at the lower end of the channel and proceed to the top.



Install the cable of the Reserve Ripcord Handle into the Reserve Ripcord Housing on the left side Main Lift Webbing.

Install the Reserve Ripcord Handle into the Reserve Ripcord Pocket.



Pass the Ripcord Cable through the guide ring of the RSL.

## 4.5 Installation of the Main Canopy Release Handle.

Inspect the ends of the yellow cables of the Release Handle for sharp edges.

Ends should be smooth so as to not snag the Type IIA line loop of the risers.



Pass the other yellow cable into the other cutaway housing.



Begin by passing the shortest yellow cable into the short cutaway housing.



Mate the Hook Velcro of the Main Canopy Release Handle to the Pile Velcro in the pocket on the Right Main Lift Webbing.



## 4.6 Installing the Optional T-8 Belly-Band. (MSS-280)



Pictured above is the **MSS-280** Optional T-8 Separable Belly-Band with Stainless Steel 1/4", 650 kg. Rapide Links.



Begin with the shorter strap that has the Friction Adapter sewn to it.



Pass the strap through the slot of the RW-8 Harness Ring of the lower Right Side of the TPDS **MSS**.



Pass the Stainless Steel Rapide Link through the loop of the T-8 Strap.



Tighten the nut "finger tight".



Pictured above is the other half of the Belly-Band. When installing it to the Left Side of the TPDS **MSS** be sure that the "turned back" end is facing the Harness/ Container to prevent it from slipping when fed through the Friction Adapter.



Pass the strap through the slot of the RW-8 Harness Ring of the lower Left Side of the TPDS **MSS**.

Pass the Stainless Steel Rapide Link through the loop of the T-8 Strap.



Tighten the nut "finger tight".



The Optional Belly-Band assembled and ready.



**Chapter 5**

**Tools**

Use this page to record which tools are used during the packing of your TPDS, Inc. **Military Student System (MSS)** Harness/Container. Mark which tools, and how many were used for packing and document all tools after work is complete.

**5.1 Packing Tool Check-List**

**Tool used:**

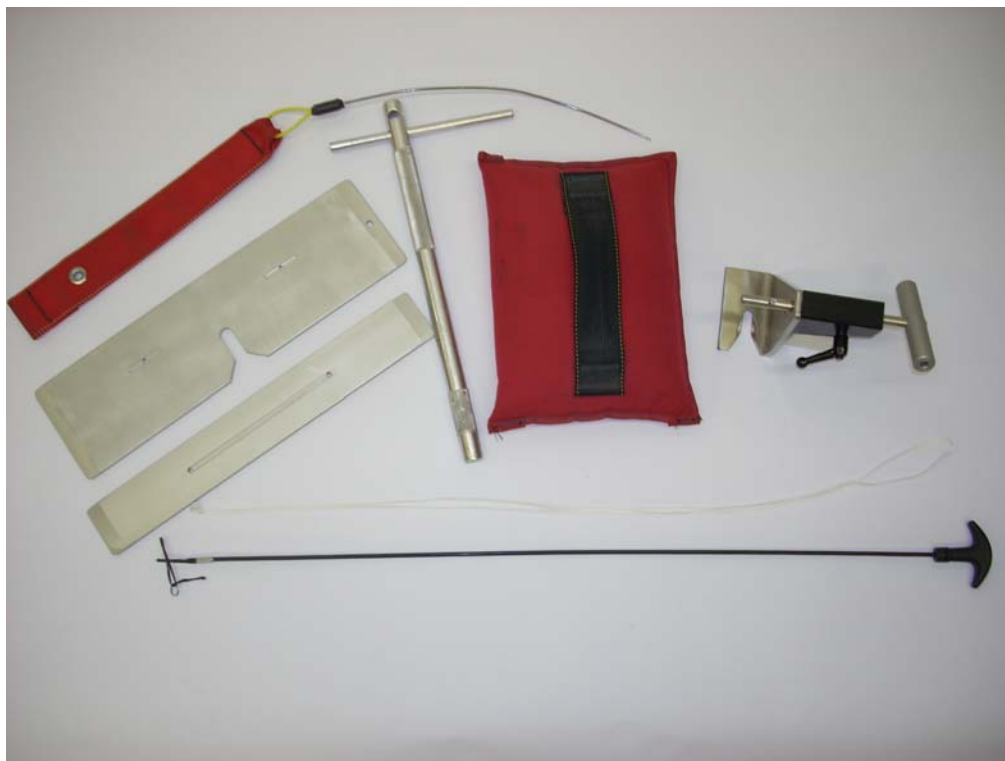
**Pre-packing**

**Post-packing**

Packing paddle	___ used	___ used
Shot bag	___ used	___ used
.22 Gun cleaning rod	___ used	___ used
Pull up cord	___ used	___ used
Leverage device	___ used	___ used
Temporary pin	___ used	___ used
Mechanical Tension Device	___ used	___ used
Closing plate	___ used	___ used
Additional tools:		
_____	___ used	___ used
_____	___ used	___ used
_____	___ used	___ used
_____	___ used	___ used
_____	___ used	___ used
_____	___ used	___ used
_____	___ used	___ used
_____	___ used	___ used



**5.2 Recommended Packing Tools**



SHOT BAG

MECHANICAL TENSION DEVICE

PACKING PADDLE

TENSION PLATE

TEMPORARY PIN

.22 GUN CLEANING ROD

SCREW DRIVER

SCISSORS

PULL-UP CORD

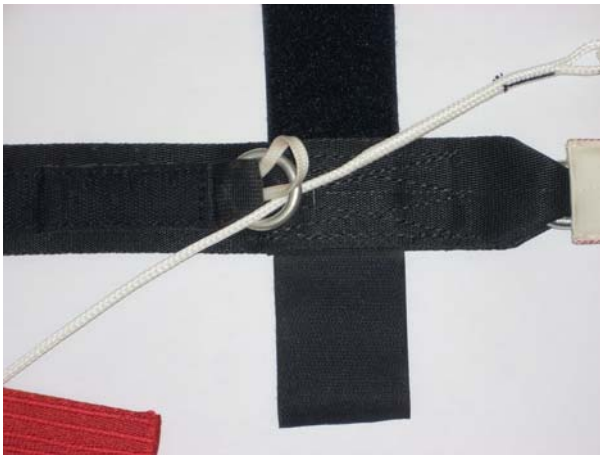


## Chapter 6

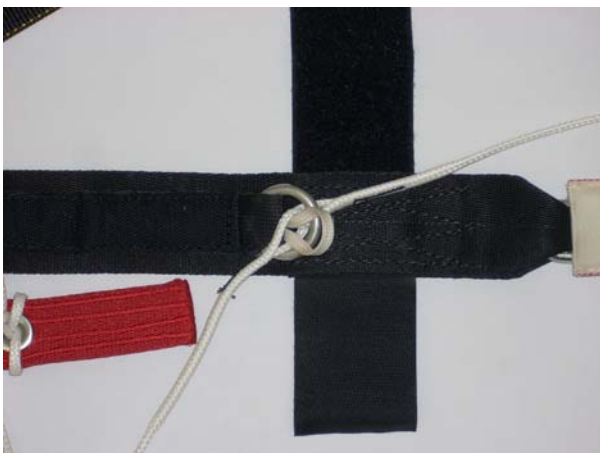
# Reserve Packing

### 6.1 Setting the Reserve Brakes.

After assembling the toggles correctly, Pull the control line so that the “cat’s eye” of the control line is just below the guide ring located on the riser.



The control line should pass only through the guide ring and **NOT** the Dacron loop located on the riser.



Pull the Dacron locking loop through the guide ring and “cat’s eye” of the control line.



Insert the toggle into the Dacron locking loop, ensuring the guide ring and “cat’s eye” are underneath the toggle and the brake setting is below the guide ring.



Mate the Velcro of the riser and the toggle.

“S”-fold the excess control line next to the toggle tip.

Wrap and secure the Velcro around the toggle tip.

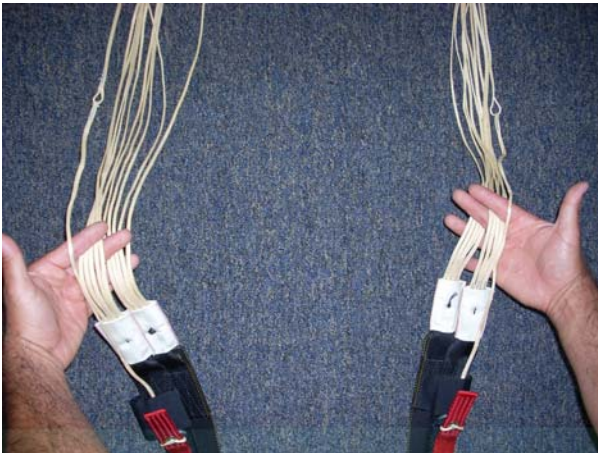
Repeat steps for the other brake.





## 6.2 PRO Pack Method of the Reserve Canopy.

Follow the Instructions for stowing the Reserve Riser Brake Toggles in Chp. 6.1.



With no twists in the risers, place the Left Front Riser line group between the middle and ring finger of the **LEFT** hand.

Place the Left Rear Riser group between the middle and fore finger of the same hand.

Place the Control Line between the fore finger and the thumb.

Repeat for the opposite hand and line groups.

The slider should be between your body and the parachute.

Walk towards the parachute between the line groups, moving the slider up the lines with you and separate the line groups in your hands.

Upon reaching the parachute, check that the control lines are not twisted around any other line groups.

If so, restart this step or perform another continuity check.

Step outside of the lines, group the lines together in one hand and place this group over your shoulder.

For these instructions, the parachute is over the **LEFT** shoulder. Switch orientation if using the right shoulder.

With the parachute in the correct orientation (nose towards the container, tail away from the container) start counting the 9 leading edge cells out.

Start by slightly turning the parachute over your shoulder, resting the right outside cell against your body.



Count each cell and grasp this group.



Push the nose through the center of the parachute and pull it briskly back out.

Place the tip of the leading edge between your knees and hold the material in place.



Starting with the A-line group, count the 5 right cells between the A- and B- line attachment points and flake the material away from the center of the parachute.



Count the 5 right cells between the B- and C- line attachment points and flake the material away from the center of the parachute.



Count and flake the 5 right cells between the C- and D- lines.



Count and flake the 5 right cells between the D- lines and the Control Lines / Tail.

Repeat this process on the other side of the canopy.

Separate the nose, one half on the side, center cell in the middle and second half on the other side.



Raise the canopy so that it is parallel to the floor and gently lay it on the floor.



Pull the slider down and away from the slider stops.

Dress the lines towards the center of the reserve.

On the outside folds, smooth out the material between the A-B, B-C, C-D and D-Control Lines.

Fold the A-B panels in half to narrow the pack job for the free-bag.

Do **Not** Include the **Nose** in these folds.

Repeat for B-C, C-D panels.



Flake the tail of the parachute on top of itself. This step will involve folding half cells between the control lines and whole cells on the remainder of the trailing edge.



Bring the slider up to the slider stops and quarter the slider.

Finish flaking the tail into half folds.

Pull tail down carefully to just above slider and cocoon the parachute by wrapping the tail around the flaked cells.

DO **NOT** include the nose in this cocoon. The cocoon should roughly be the same width as the free bag.



“S”-fold the four (4) nose cells under the corresponding side of the parachute.



Carefully squeeze out any trapped air.



“S”-fold lower portion of canopy up to the trailing edge of the parachute and place under the trailing edge. If Needed.



Find center seam and follow up to the nose.



Separate into two (2) ears and gather center cell material.



Place free-bag under the reserve with the trailing edge in line with the mouth of the bag.



“S”-fold each ear on top of the canopy.



Put all of the fabric from one ear into the free-bag, filling out the ear of the free-bag. Repeat for the opposite ear; wrap free-bag around the “S”-folded portion of the parachute.



Close the free-bag by feeding the safety stow through the grommets of the free-bag and make the first line bight approximately 1 1/2” and place in the safety stow.



Secure the free-bag closed by making a second line bight and placing it in the safety stow.



Make the first line bight and place into the corner of the line pouch.



Take the second line bight and place it into the opposite corner of the line pouch.



Alternate line stows into the pouch until a little less than 6" of line remains.

Close the line pouch with the Velcro tabs.



Kneel on the center of the free-bag to form a "nest" for the reserve free-bag bridle and pilot chute.



Place free-bag into Reserve Container.

Thread the Closing Loop through the AAD cutter.



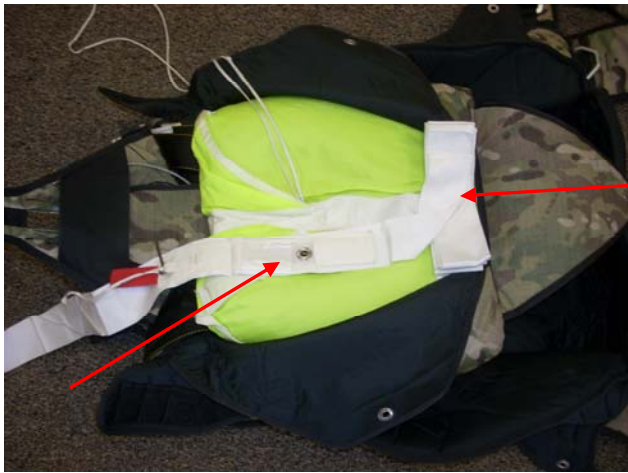
Thread the pull-up cord through the free-bag grommet.



Make sure that the Reserve Risers are tight and that the corners of the container are filled with the free-bag.



## 6.5 Closing the Reserve Parachute using the “Reserve Boost” RSL.



Fold the anti-twist flap under the Free-bag.

“S”-fold the Bridle into 6”-8” folds (depends on the width of the Free-bag) to the “Reserve Boost” modification.

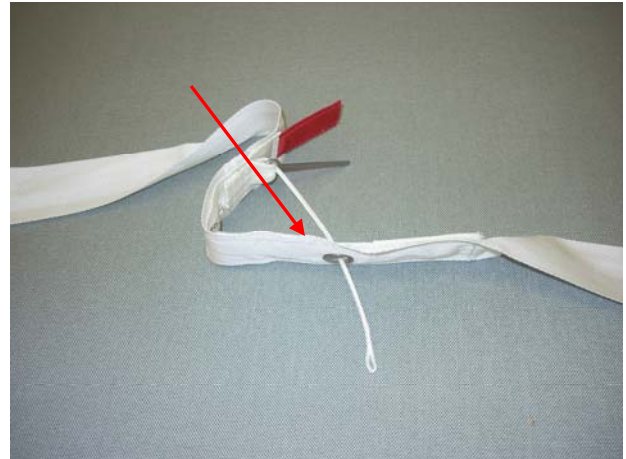
Fold the bridle back towards the top of the container.



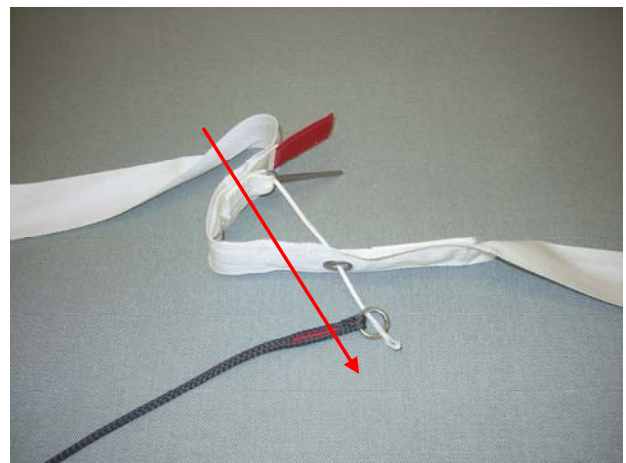
Tuck the folded Bridle under the Side Flaps.

Do NOT tuck more than 1” on each side.

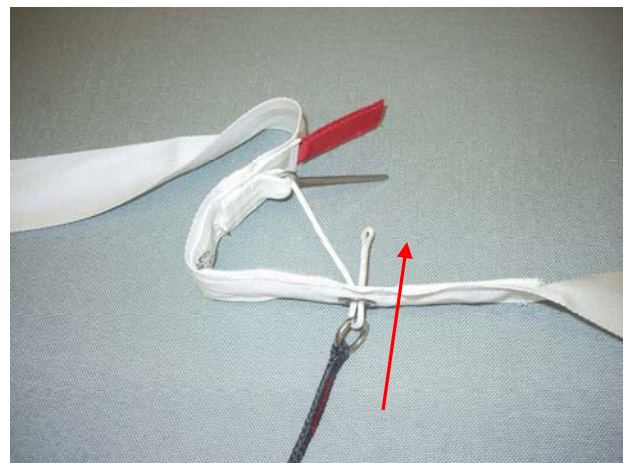
Keep the Bridle to the left side of the center of the Free-bag.



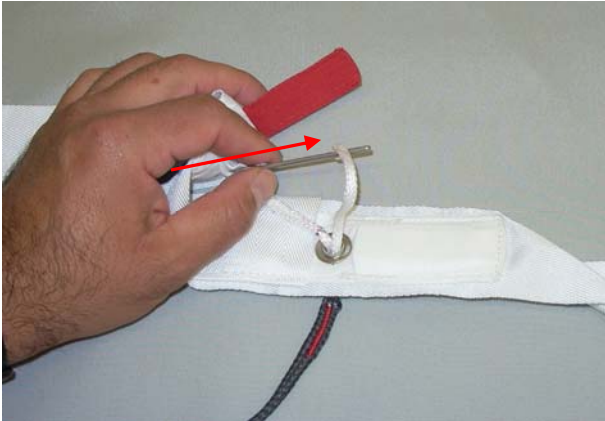
“Arm” the M.A.R.D. “Reserve Boost” at this time by passing the Spectra Line Loop down through the #0 grommet.



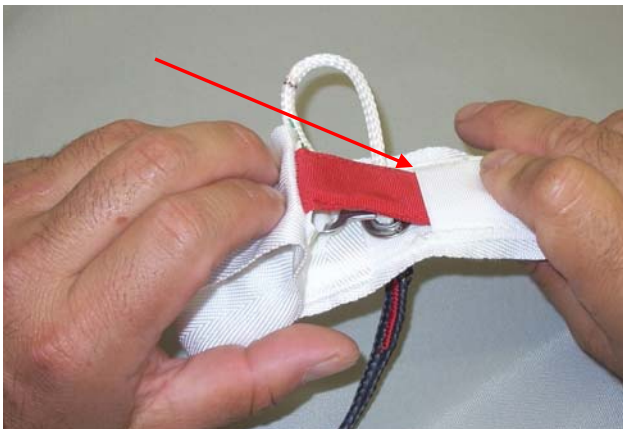
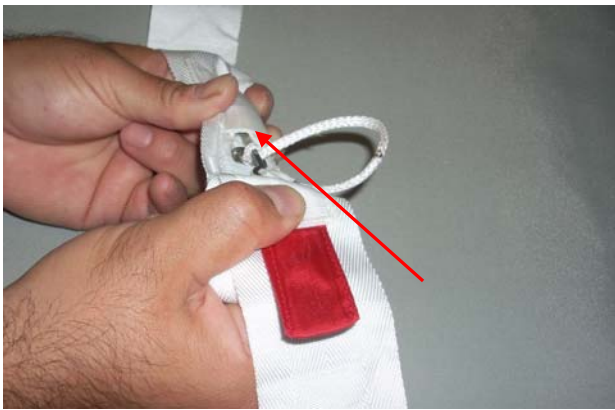
Pass the Spectra Line through the mini ring of the M.A.R.D. “Reserve Boost” RSL.



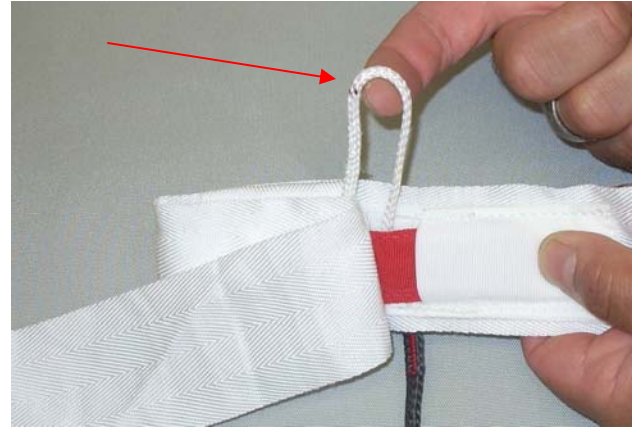
Loop the Spectra Line back up through the #0 grommet of the bridle.



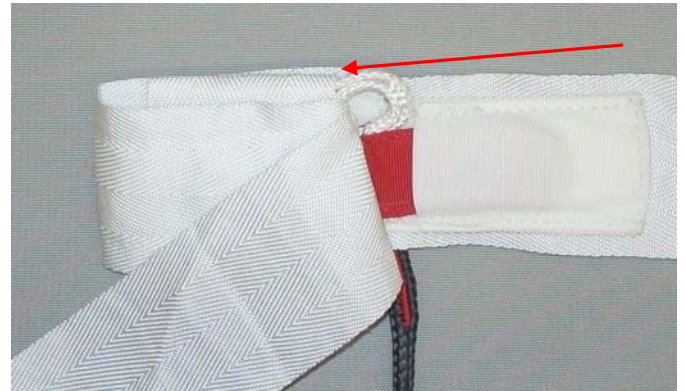
Slide the Long Pin through the loop then stow into the channel under the tuck tab flap. Be certain that it is in it's own channel.



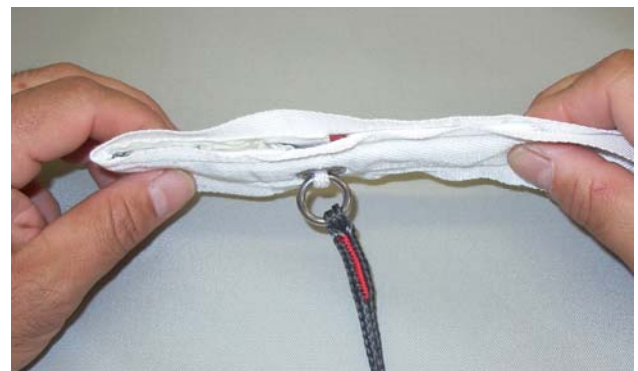
Tuck the stiffened T-III Tab into the tuck flap on top of the Long Pin Channel.



Take up the slack of the Spectra Line Loop.



Stow the Spectra Line Loop into the looped polyester sleeve opposite the long pin channel.



Should look like this.





Tuck any excess RSL into the channel pocket on the top left side of the free-bag.

The M.A.R.D. **“Reserve Boost”** is armed. Continue to close the Reserve Container.



Close the side flaps. Secure with a temporary pin.



“S”-fold the remaining bridle at a right angle to the tucked bridle.



Thread the pull-up cord through the Reserve Pilot-chute and center over the side flap grommets.



While compressing the Pilot-chute be sure to keep all of the pilot-chute material **folded into the spring** and secure with a temporary pin.



Make sure the Top Closing Flap is under the retaining tape of the Top Pin Cover Flap. Close and secure with a temporary pin.



Close and secure the **Bottom Closing Flap** with the Reserve Ripcord Pin.

Follow all applicable rules for documenting and sealing the Reserve Container.

**COUNT THE TOOLS USED DURING PACKING!**



Slide the clear plastic window into the channel on the **Top Closing Flap**.



Packed, sealed and ready for the Main Parachute.





## Chapter 7

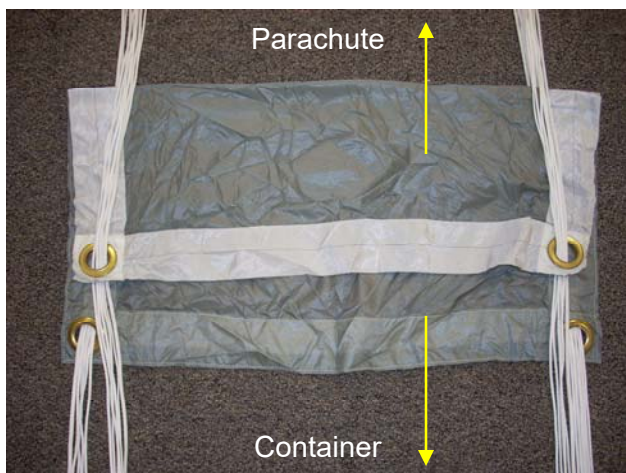
# Packing the Main Canopy

## 7.1 Assembly of Main Canopy.

### 7.1.1 Main Canopy Line Order.

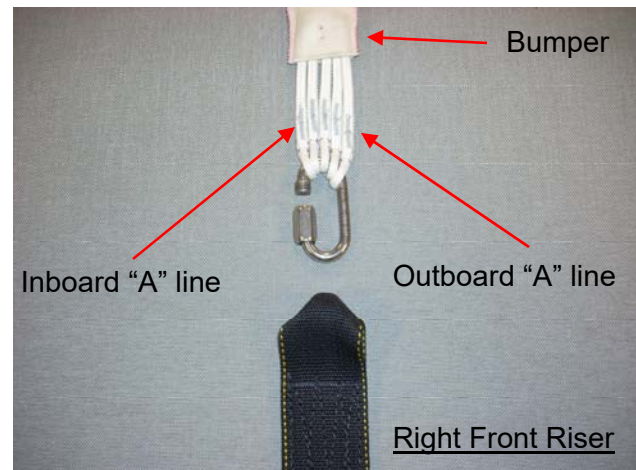
After inspecting the Parachute and the Harness/Container System, hang or lay the parachute out on the ground with the nose section on the ground and the Harness/Container System oriented face down.

Check to see that the T-12 Bumpers are above the links. See the instructions on page 3 to install them if needed.

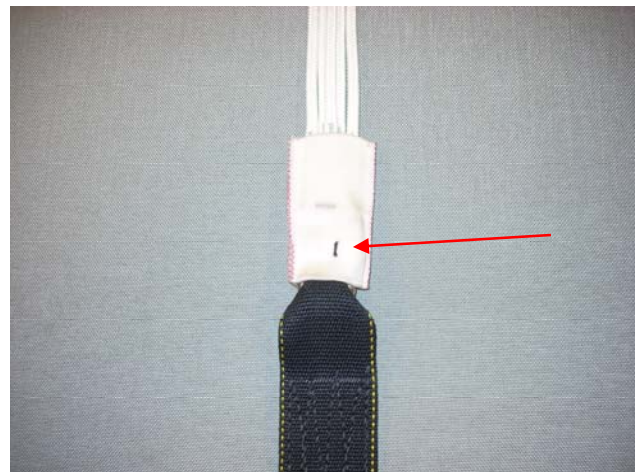


Ensure the slider is correctly oriented; the slider should be longer span-wise than chord-wise, with the reinforcing tape of the slider on the side facing the reserve parachute.

Begin the assembly process by ensuring that all lines are connected to the links correctly with the outboard A-lines on the outside of the link and the center A-line towards the inside of the link, the longer side of the link towards the riser.

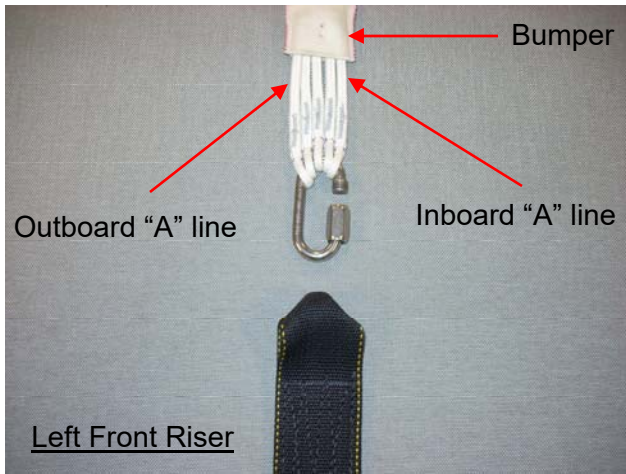


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the **Right Front line-set** onto the end of the **Right Front Riser**. Tighten the barrel finger tight and then an additional  $\frac{1}{4}$  turn with a small wrench until the link is tight.

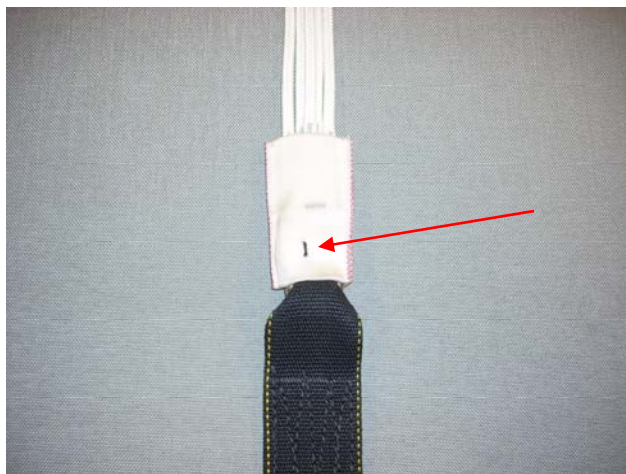


Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the Left Front Riser.

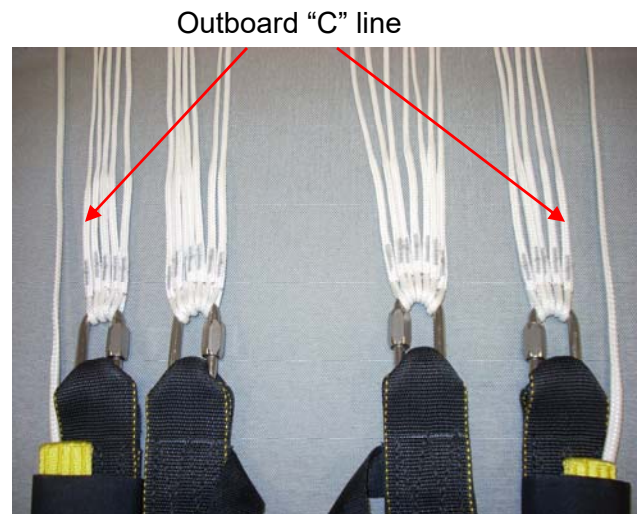


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the **Left Front line-set** onto the end of the **Left Front Riser**. Tighten the barrel finger tight and then an additional  $\frac{1}{4}$  turn with a small wrench until the link is tight.



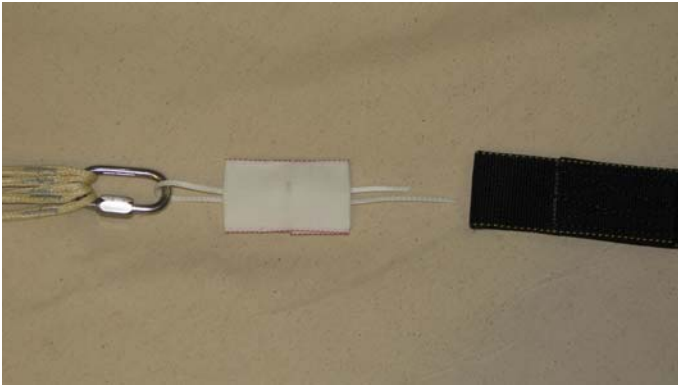
Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the two **Rear Risers**, ensuring that the Outboard "C" lines are on the link first.

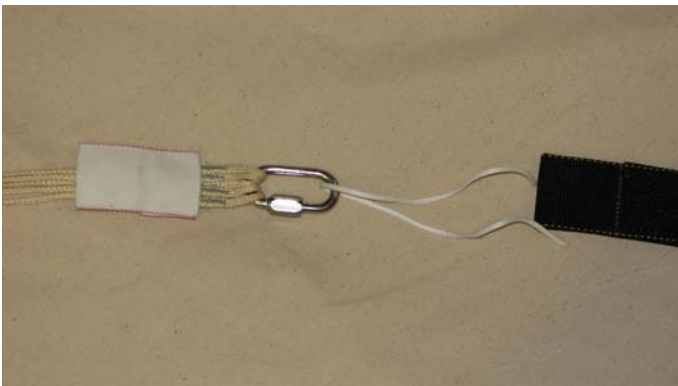




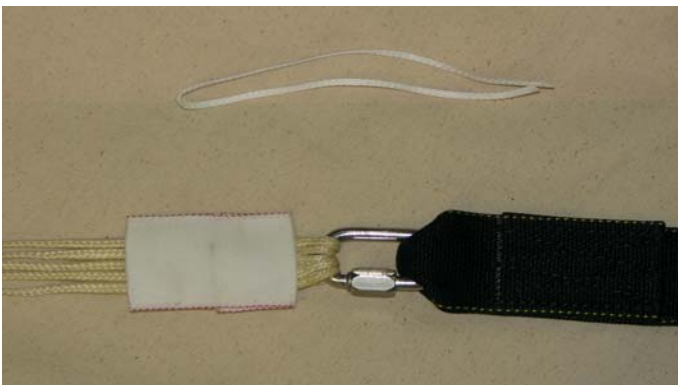
## 7.1.2 Installing the Bumpers.



With the line group correctly assembled onto the link, run a short piece of line through the closed link and the center of the bumper.



Pull the link through the bumper without twisting or turning link.



Fold the top of the riser and install the link. Tighten the barrel of the link. Ensure continuity of the line group.



Cinch the bumper over the link and tack into place. The tacking should go through both sides of the bumper and include a Surgeon's knot and locking knot. Once tight, cut the loose ends of the tacking thread.

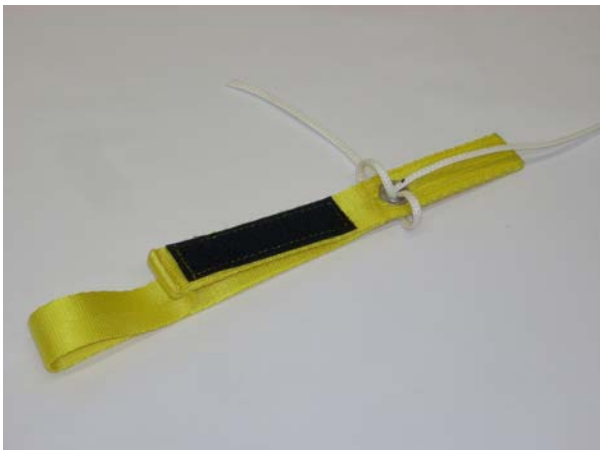


## 7.2 Installing the Toggle onto the Control Lines.

Once the Main Parachute is assembled onto the Main Risers, feed the control line **ONLY** through the appropriate slider grommet and guide ring on the Main Riser and **NOT** the Dacron locking loop.



Pass the control line through the rear of the toggle to the "dot". Pass the line back through the grommet forming a loop around the outside of the toggle.



Pass the line back through the grommet forming another loop around the other side of the toggle. Tighten the loops.



Tie an overhand knot on the tail that is on the other side of the grommet. Snug the knot up as close to the grommet as possible.

Repeat for the other toggle.

The parachute brakes are now ready to be set.



## 7.3 Setting the Main Canopy Brakes.

After assembling the toggles correctly, (See **Chp.7.2**) Pull the control line so that the “cat’s eye” of the control line is just below the guide ring located on the riser.

Check to be sure that any twists in the control lines have been removed before proceeding to setting the brakes.



The control line should pass only through the guide ring and **NOT** the Dacron loop located on the riser.



Pull the Dacron locking loop up through the guide ring and “cat’s eye” of the control line.



Insert the toggle into the Dacron locking loop, ensuring the guide ring and “cat’s eye” are underneath the toggle and the brake setting is below the guide ring.



Mate the Velcro of the riser and the toggle.

“S”-fold the excess control line next to the toggle tip.

Wrap and secure the Velcro around the toggle tip.

Repeat steps for the other brake.

The Main Parachute is ready to be packed.





**7.4 Attaching the 3-Ring Risers.**



Pass the large ring of the Riser through the large ring of the Harness.



Pass the small ring of the Riser through the large ring of the Riser.



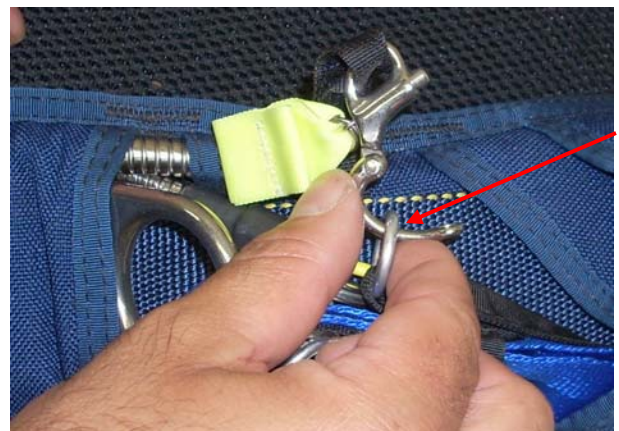
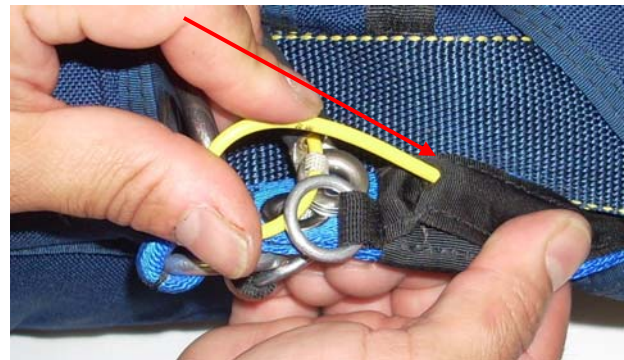
Pass the Type IIA loop through the small Riser ring and into the grommet.

**CAUTION:** Be sure that the loop goes through only the small ring.



From the back side of the Riser, feed the loop through the housing grommet.

Feed the yellow cable through the loop.



Attach the Shackle to the Reserve Static Line (RSL) ring.



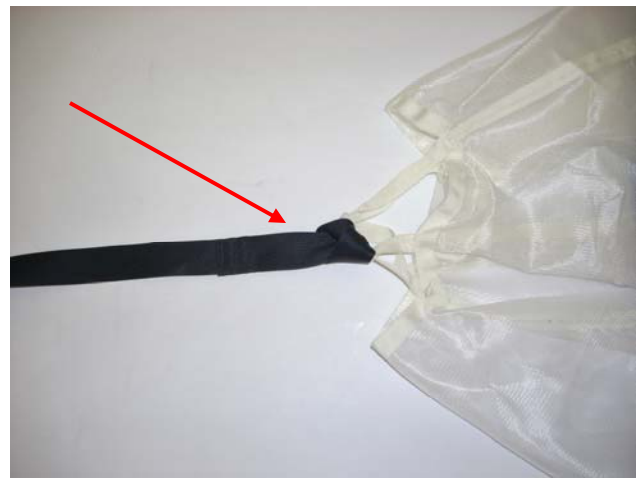
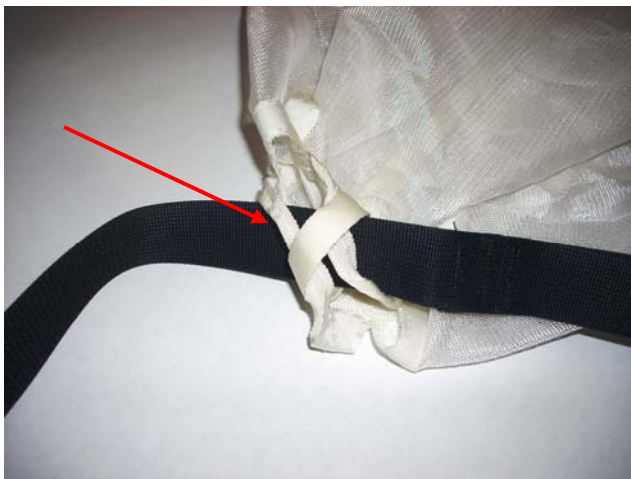
## 7.5 Attaching the Bridle to the Main Pilot Chute.



Pass the smaller loop of the Bridle (TPDS -MSS-245) through all of the Pilot Chute (TPDS-MSS-231) Loops.



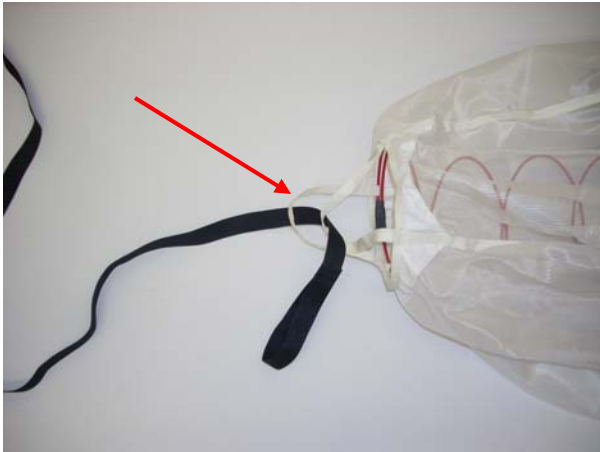
Pass the other end of the Bridle through the small loop.



Tighten the Lark's Head Knot formed.



## 7.6 Attaching the Spring-loaded Pilot-chute to the Bridle.



Pass the smaller loop of the Bridle (TPDS-MSS-247) through both loops of the Spring-loaded Pilot Chute (TPDS-MSS-230).



Pass the other end of the Loop of the Bridle through the smaller loop.



Tighten the Lark's Head Knot formed.



**7.7 Attaching the Pilot Chute Bridle to the Main Canopy.**



When attaching the Bridle to the Main Canopy, the end of the Bridle with the fold-over goes through the grommet of the Deployment Bag from the outside to the inside of the bag.



Pass the Loop of the Bridle through the ring at the center of the Main Canopy.



Pass the entire D-Bag through the Loop.



Continue to pass the pilot-chute through the loop also.



Tighten the Lark's Head Knot formed.



## 7.8 Flat Pack Method of the Main Parachute.

***Before beginning to pack the Main Parachute, have the deployment method set up and ready for the closing of the container. See Chp.8***

Read and follow the Instructions for stowing the Main Steering Toggles in Chapter 7.3



Place the slider at the connector links.

Grasp the rear line and control line groups in the left hand and the front line groups in the right hand. Walk towards the parachute, leaving the slider at the top of the risers, separating the line groups as you go. Once at the stabilizer edge, shake the parachute from side to side. After this and while maintaining control of the line groups, lay out the parachute in front of you and away from the harness/container assembly. Maintaining line tension will help in later steps.



Walk to the top of the canopy and:  
Count and flake out the cells leading edges.  
Count and flake out the B-line seams.  
Count and flake out the C-line seams.  
Count and flake out the D-line seams.  
Count and flake out the control lines and the remainder of the trailing edge of the canopy.



Fold the leading edge under the A-line group.



Grasp the B-line group under slight tension and fold over the A-line group.



Grasp the C-line group under slight tension and fold over the B-line group.



Grasp the D-line group under slight tension and fold over the C-line group.



Now is a good time to set the brakes.



Bring the slider up from the connector links until it is touching the slider stops and quarter the slider between the slider stops.



Gently squeeze the air out of the canopy.



Start "S"-folding the parachute. The first "S"-fold should be approximately 1/3 of the canopy material.



Fold the remaining material on top of the first "S"-fold.



Place one corner of the canopy stack into the Deployment Bag.



Insert the other corner of the canopy into the other corner of the Deployment bag.



With the lines from the center of the folded canopy, Stow the first bight of line in either rubber band through the 2 center grommets.

Allow 1 1/2"-2" of line to extend through each stow.

Continue to stow the lines into the rubber bands either on the top of the Deployment Bag or on the sides of the Deployment Bag.

Alternating back and forth until approximately 12" of lines remain.

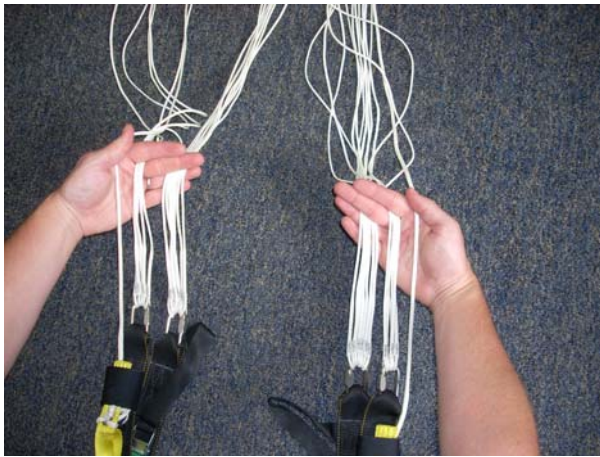
Follow the instructions in **Chp. 8** for closing the Main Container.



## 7.9 PRO-Pack Method of the Main Parachute.

***Before beginning to pack the Main Parachute, have the Deployment method set up and ready for the closing of the container. See Chp.8***

Read and follow the instructions for stowing the Main Steering Toggles in Chapter 7.3.



With no twists in the risers, place the left front riser line group between the middle and ring finger of the left hand.

Place the left rear riser group between the middle and fore finger of the same hand.

Place the control line between the fore finger and the thumb.

Repeat for the opposite hand and line groups.

The slider should be between your body and the parachute.

Walk towards the parachute between the line groups, moving the slider up the lines with you and separate the line groups in your hands.

Upon reaching the parachute, check that the control lines are not twisted around any other line groups.

If so, restart this step or perform another continuity check.

Step outside of the lines, group the lines together in one hand and place this group over your shoulder.

For these instructions, the parachute is over the left shoulder. Switch orientation if using the right shoulder.

With the parachute in the correct orientation (nose towards the container, tail away from the container) start counting the 9 leading edge cells out.

Start by slightly turning the parachute over your shoulder, resting the right outside cell against your body.



Count each cell and grasp this group. Push the nose through the center of the parachute and pull it briskly back out.

Place the tip of the leading edge between your knees and hold the material in place.





Starting with the A-line group, count the 5 right cells between the A- and B- line attachment points and flake the material away from the center of the parachute.



Count the 5 right cells between the B- and C- line attachment points and flake the material away from the center of the parachute.



Count and flake the 5 right cells between the C- and D- lines.



Count and flake the 5 right cells between the D- lines and the Control Lines / Tail.

Repeat this process on the other side of the canopy.



Separate the nose, one half on the side, center cell in the middle and second half on the other side.

Quarter the slider by placing the section between the B-C attachment points away from the center of the parachute and separating the front and rear portions in a similar position.



Slowly wrap the tail around the line groups. Begin to roll the tail carefully be sure not to disturb the canopy. Keep the roll tight and make enough turns until the top skin appears tight and able to hold the cocoon shape.



Gently lay the canopy on the floor. Keep the lines tight and do not disturb the pack job.  
Carefully lay on the canopy to remove as much excess air out of it as possible.  
Do not allow the canopy to bellow out.



The first "S"-fold should be approximately 1/3 of the canopy material.



Fold the remaining material on top of the first "S"-fold.

Follow instructions next page.



With the Kicker Plate facing up place one corner of the canopy stack into the Deployment Bag.



Insert the other corner of the canopy into the other corner of the Deployment Bag.



Bring the lines up through the center of the canopy and out of the Deployment Bag.



Stow the first bight of line into a rubber band brought through one of the center grommets.



Stow the second bight through a rubber band brought through the other center grommet.



Continue stowing the lines, alternating back and forth, until approximately 12"-16" remain.



**Chapter 8**

**Closing the Main Container**

**8.1. Closing the Riser Covers.**



Place the Main Risers on top of the Reserve Riser Covers.



Cover the Main Risers with the inside flap.



Close the outside Riser Cover.



Place the Risers into the tray beside the Reserve Container.



Place the Deployment Bag into the Main Container with the lines towards the Bottom Flap.



## 8.2 Closing for Direct Bag Static

Begin by attaching the Main Bag (TPDS-MSS-271) to the Static-line (TPDS-MSS-261).



Pull the red Type IV Loop that is attached to the inside of the Main Bag through the grommet.



Pass the rest of the Static Line through the Static Line Loop, creating a Lark's Head Knot.



Pass the loop of the Static Line through the red loop of the Main Bag.



Tighten the knot formed.

Pack the Main Canopy using either the Flat Pack method or the PRO Pack method. Follow instructions for placing the canopy into the Deployment Bag. *Chp. 7.10.*

Set the Deployment Bag into the Main Container Tray with the lines towards the Bottom End of the Main Container.

Use a closing loop mounted on the bottom of the Reserve Container.



Pass the pull-up cord through the Bottom Flap and pull the closing loop through the grommet. "S" fold the Static Line on top of the Deployment Bag about 12"-16" or to the plastic covered cables.



Pass the pull-up cord through the Top Flap and pull the closing loop through the grommet.



Close the Right Side Flap.



Close the Left Side Flap.



Insert one of the plastic covered cables through the closing loop then into the channel as shown.



Insert the other plastic covered cable into the channel.



Stow the first bight of the Static Line into the first rubber band of the Right Side.



Stow the second bight of the Static Line into the Left Side rubber band.



Alternate back and forth leaving about 1 1/2" - 2" in each bight.



Stow the remainder of the Static Line into the pocket on the side of the Container.



### 8.3 Assembly of the Throw-out Pilot Chute Static-Line Assist Deployment System.

The **TPDS MSS** Military Student System has the option to be used with a Throw-out Pilot Chute Static-Line Assist Deployment Method.



Pictured above are the Throw-out Pilot Chute Static-Line Assist Deployment Parts.

Included is the **(TPDS-MSS-241)** Pouch, **(TPDS-MSS-265)** Static Line with Black Cables, **(TPDS-MSS-232)** Main Pilot Chute with Hacky.

Inspect these parts before installing them to the **TPDS MSS** Military Student System.



Pictured above is the **(TPDS-MSS-241)** Pouch for the Throw-out Pilot Chute.



Pass the Loop of the Static Line **(TPDS-MSS-265)** through the Type 4 Loop on the end of the Pilot Chute Pouch **(TPDS-MSS-241)**.



Pass the rest of the Static Line through the Static Line Loop, creating a Lark's Head Knot.



Tighten the knot formed.



Finally roll the Pilot Chute into a narrow roll and place into the pouch, **Hacky first**.



Fold the Pilot Chute in half then into 3rds as shown.



Pass the Rubber Band under the T-IV retainer and secure the Pouch closed using the rubber band and the P/C bridle as shown.



"S"-Fold the bridle in the middle of the P/C.



Set the Deployment Bag into the Main Container Tray, lines to the bottom.

Lay the Pouch on top of the Deployment Bag. Use a closing loop mounted on the bottom of the Reserve Container.

Close the **Bottom Main Flap** first.



Close the **Top Main Flap**.



Close the **Right Main Flap**.



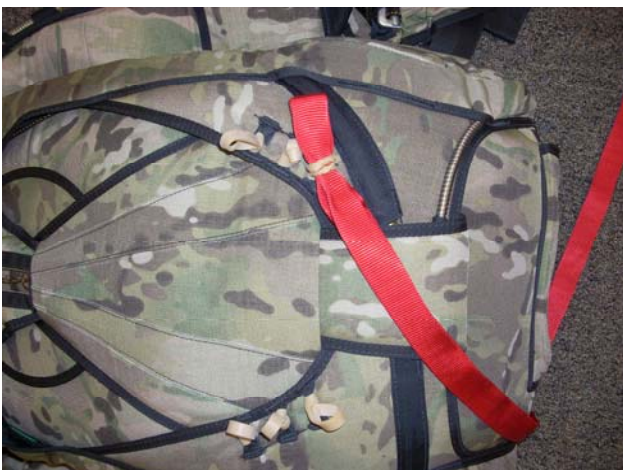
Close the **Left Main Flap**.



Insert one of the plastic covered cables through the closing loop then into the channel as shown.



Insert the other plastic covered cable into the channel.



Stow the first bight of the Static-line on the **Right Side**.



Stow the second bight of the Static Line on the **Left Side** of the Container.



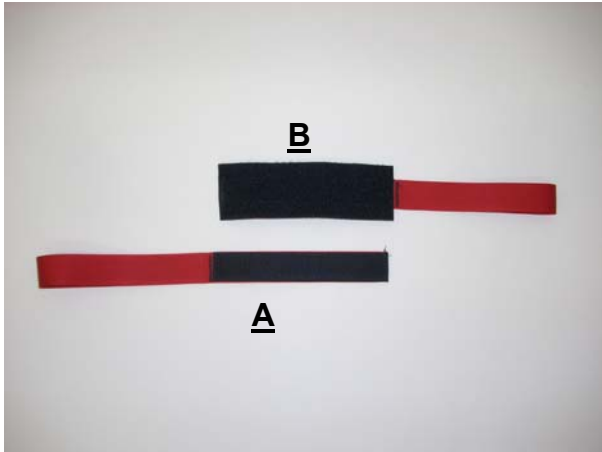
Alternate back and forth leaving about 1 1/2" - 2" in each bight.



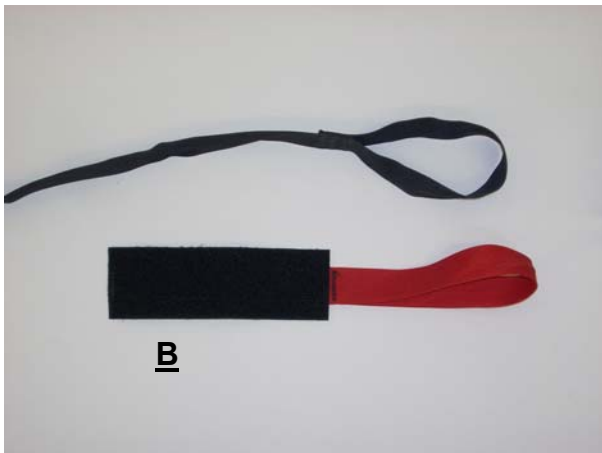
Stow the remainder of the Static Line and the Static-line Snap into the pocket on the side of the Container.



**8.4 Closing the Main Container for Spring-loaded Pilot Chute Static Line Assist. TPDS-MSS-242- A & TPDS-MSS-242-B**



Pictured above are the two (2) parts of the Spring-loaded Pilot Chute Assist Static Line Assembly. **TPDS-MSS-242-A & B**



Begin with the Pile Velcro piece and the smaller loop end of the Pilot Chute Bridle.



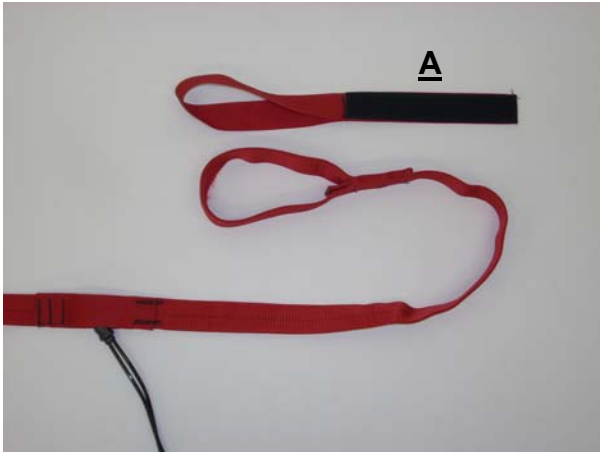
Pass both loops through both loops of the Spring-loaded Pilot Chute.



Pass the ends through both of the loops at the same time, forming a double loop. Tighten the formed knot.



Should look like this.



Next take the Hook Velcro part “A” and the loop of the Static Line.



Pass the Velcro end through the Static Line loop then through the loop of itself.



Tighten the formed Lark's Head knot.

The Spring-loaded Pilot Chute Static Line Assist is ready to be assembled to the Deployment System for closing of the Main Container.



Mate the Hook and Pile Velcro of the **TPDS-MSS-242** and proceed to close the **MSS Main Container** as follows on the next page.



Pack the Main Canopy using either the Flat Pack method or the PRO Pack method.

Follow the Instructions for placing the canopy into the Deployment Bag. *Chp. 7.10*



Set the Deployment Bag into the Main Container Tray, lines to the bottom.

Use a short closing loop mounted to the Main Container **Bottom Flap**.



“S”-fold the Pilot Chute Bridle on top of the Deployment Bag. “S”-fold the Static Line Bridle to the black cables on top of the Pilot Chute Bridle. Lay the **TPDS-MSS-242** on top of the Pilot Chute Bridle “S” folds.



While compressing the Main Pilot Chute be sure to keep the mesh out of the spring.



With the short closing loop mounted to the bottom flap, cover the Pilot-chute with the Bottom Flap.



Close the **Top Flap**.



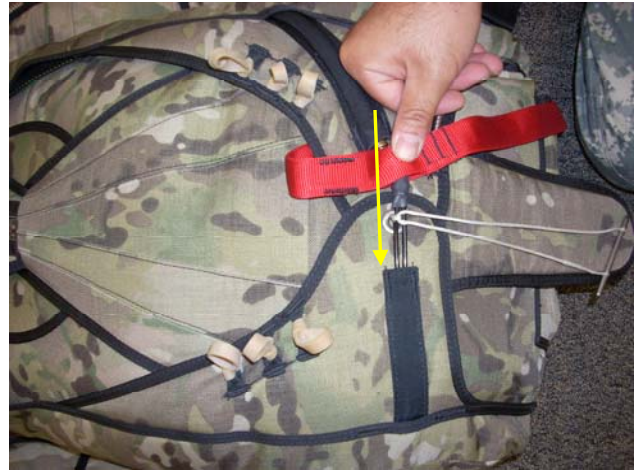
Close the **Right Side Flap**.



Close the **Left Side Flap**.



Insert one of the plastic covered cables through the closing loop then into the channel as shown.



Insert the other plastic covered cable into the channel.



Stow the first bight of the Static-line on the Right Side.



Stow the second bight of the Static Line on the Left Side of the Container.





Alternate back and forth leaving about 1 1/2" - 2" in each bight.



Stow the Static-line Snap into the pocket on the side of the container.



TPDS **MSS** ready for the Mission.

**8.5 Closing the Main Container for Throw-out Pilot Chute.**



Tuck the Risers along the Reserve tray.



Place the Deployment Bag into the Main Container, lines towards the Bottom Flap.



Using a closing loop on the bottom of the Reserve Container, pass the closing loop through the **Bottom Main Flap**.



Close the **Top Main Flap**.



Close the **Right Side Flap**.



Close the **Left Main Flap**.



Insert the curved closing pin into the closing loop. Be sure that the bridle is coming from the top right, over the Right Side Flap and then is tucked under the lower part of the Right Side Flap.

Follow the Instructions in **Chp. 8.6** for folding and stowing the Throw-out Pilot Chute.



## 8.6 Folding the Throw-out Pilot Chute.



Begin laying out the Pilot Chute flat.



"S" fold the bridle on top of the canopy.



Fold the Pilot Chute in half.



Fold the canopy into a 3rd.



Fold in half again.



Fold the canopy into a 3rd again.



Roll the Pilot Chute into a tube.



Place the Pilot Chute into the Pouch on the Bottom of the Container.

**CAUTION: IF USING A COLLAPSIBLE PILOT CHUTE, BE SURE TO "COCK" IT BEFORE FOLDING.**



TPDS **MSS** ready for the Mission.



## 8.7 Closing the Main Container with a Ripcord Assembly.

**Before starting:**

**Insert the Black Cable of the Main Ripcord into the Main Ripcord Housing located on the right side of the Bottom of the Main Container OR on the Right Main Lift Webbing.**



RIGHT BOTTOM OF CONTAINER



RIGHT MAIN LIFT WEBBING



“S”-fold the Pilot-chute Bridle on top of the launching pad of the Deployment Bag.



Compress the Pilot-chute Spring on top of the “S”-folded bridle.

Keep the mesh out of the spring but the F-111 may be folded in with the spring.



Using a short closing loop placed in the Bottom Closing Flap, close the **Bottom Flap**.



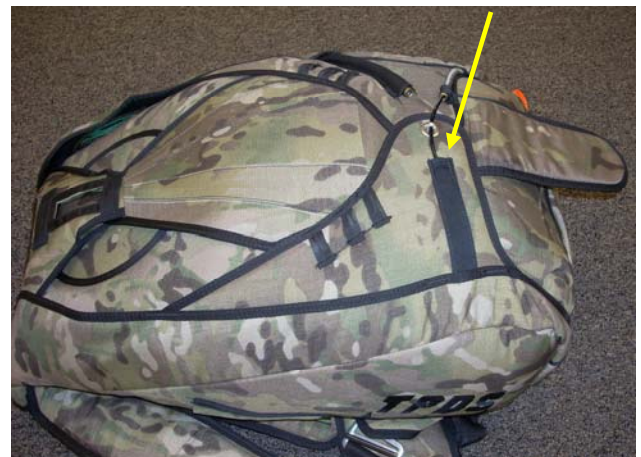
Close the **Top Flap**.



Close the **Right Side Flap**.



Close the **Left Side Flap**.



Insert the Plastic Covered Cable of the Ripcord through the closing loop then into the channel as shown.



**TPDS MSS Ready for the Mission.**





## 8.8 Closing the Main Container for AFF Left Side Jumpmaster Handle.

Follow the Instructions to Assemble the AFF Left Side Main Deployment Handle for T/O Pilot Chute in Chp. 4.



Pictured above is the TPDS MSS Container with the optional AFF Left Side Main Deployment Handle for Throw-out Pilot Chute.

Follow the instructions for placing the deployment bag into the Main Container and closing the Main Container in Chp. 8.

Placing the Throw-out Pilot Chute into the AFF Left Side Jumpmaster Pouch is the same as a standard Bottom of Container Pouch. See Chp. 8.

Once assembled, the AFF Left Side Jumpmaster Handle and Pocket function as a regular BOC.



## Chapter 9

# Donning the MSS

### **IMPORTANT:**

Inspect the complete system before donning the TPDS *Military Student System (MSS)*.

The series of TPDS containers are designed to fit snugly, yet comfortably, when properly adjusted. A harness that is either too small or too large for the jumper's body can affect safety and comfort during a parachute jump.

Begin by loosening all of the adjustable straps.

Place Container onto the shoulders.

Step into the Leg Straps or if applicable, snap the B-12/Quick Ejector Snaps. Be sure that the leg straps have no twists in them.

Snug-up the Leg Straps, but do not over tighten or legs may become numb.



Adjust the Main Lift Webbing to fit snug.

If applicable, adjust the Laterals to snug-up the Container.



Thread the Chest Strap through the friction adapter or if applicable, snap the B-12/Quick Ejector Snaps, snug up the Chest Strap and stow the excess in the elastic keeper.

**CAUTION: AN IMPROPERLY THREADED CHEST STRAP WILL NOT HOLD THE JUMPER IN THE HARNESS.**

### Optional Belly-band



### Optional Belly-band -

Thread the Belly-band Strap through the friction adapter. Snug up the Belly-band and stow the excess in the elastic keeper.

Stow all excess straps in the elastic keepers.

Be certain that all Handles are properly seated and accessible.



## Chapter 10

# Operation of the MSS Harness / Container System

## 10.1 Main Parachute Release.

In the event of the Main Parachute not deploying properly, it may be preferable to Release or “Cutaway” the Main Parachute.

This is accomplished by pulling the **Main Parachute Release Handle** which is located on the **Right** Main Lift Webbing below the 3-Ring Release Assembly.

The Main Parachute Release Handle comes in two (2) styles, a “pillow” and a loop style. Both use Velcro to secure it to the Main Lift Webbing Pocket.

The Handle should be grasped firmly in the right hand and “peeled” upward to separate the Velcro. In the same swift and smooth motion, the handle should be pulled down and away from the body to arm’s length.

## 10.2 Reserve Parachute Deployment.

There are three (3) styles of Reserve Ripcord Handles, one (1) metal “D” shaped, a “pillow” and a loop style. All are secured with the use of Velcro.

To deploy the Reserve Parachute, locate the **Reserve Parachute Ripcord Handle** on the **Left** Main Lift Webbing.

To pull the handle, the handle should be grasped firmly in hand and “peeled” from the Velcro in an upward motion then in a swift and smooth motion, pulled down and away from the body to arm’s length.



**Chapter 11**

**Parts List**  
**Military Student System**

**PART #**

**Manufactured Parts**

TPDS-MSS-100	Reserve Pilot Chute
TPDS-MSS-101	Reserve Free Bag and Bridle, specify size
TPDS-MSS-102	Reserve Free Bag and Bridle w/ <b>Reserve Boost</b> Modification
TPDS-MSS-103	Reserve Pilot Chute Cap, specify color & material type
TPDS-MSS-104	Reserve Static Line ( <b>RSL</b> ) w/Release Clasp
TPDS-MSS-105	Reserve Static Line, ( <b>RSL</b> ) (military type)
TPDS-MSS-106	Reserve Static Line Extension for <b>Reserve Boost</b> Modification
TPDS-MSS-107	Reserve Ripcord Assembly ( <b>Wedge</b> ) ( <b>in-board</b> ) specify length
TPDS-MSS-110	Reserve Ripcord Assembly ( <b>Pillow type</b> ) ( <b>in-board</b> ) specify color & length
TPDS-MSS-112	Reserve Ripcord Assembly ( <b>Loop style</b> ) ( <b>in-board</b> ) specify color, & length
TPDS-MSS-114	Reserve Ripcord Assembly (Bent metal) (in-board) w/ <b>FXC</b> cable extension)



TPDS-MSS-116 Reserve Closing Loop

TPDS-MSS-118 Reserve Toggles (Sport) (Pair)

TPDS-MSS-119 Safety Stow Loop, Reserve Freebag

TPDS-MSS-204 Main Risers – Type 8, (specify color, length, ring type and size)

TPDS-MSS-208 Main Risers – Type 17 1” wide, (specify color, length, ring type- stainless or Cad)

TPDS-MSS-209 Main Risers – Type 17 1” wide w/Velcro Toggles, (specify color, length, & ring type- stainless or Cad)



TPDS-MSS-216 Main Toggles- Sport (Pair) (specify color)

TPDS-MSS-217 Main Toggles- Sport w/Velcro (Pair) (specify color)

TPDS-MSS-230 Main Spring-loaded Pilot Chute

TPDS-MSS-231 Main Throw-out Pilot Chute w/plastic handle (specify size, color)

TPDS-MSS-232 Main Throw-out Pilot Chute w/Hacky (specify colors, size)  
TPDS-MSS-233 Main Throw-out P/C Collapsible w/Hacky Handle (specify size and colors)

TPDS-MSS-234 Main Pull-out Pilot Chute (specify color and size)

TPDS-MSS-235 Main Pull-out Pilot Chute Collapsible (specify color and size)

TPDS-MSS-236 Main Pull-out Handle with Pin Lanyard (specify color)

TPDS-MSS-237 Main Closing Pin- Curved

TPDS-MSS-238 Main Closing Pin- Straight



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TPDS-MSS-241	<b>Static Line Assist</b> Pouch – T/O P/C
TPDS-MSS-242-A	Spring-loaded P/C <b>Static Line Assist</b> (Hook)
TPDS-MSS-242-B	Spring-loaded P/C <b>Static Line Assist</b> (Pile)
TPDS-MSS-245	Main Throw-out Bridle
TPDS-MSS-246	Main Throw-out Collapsible Bridle
TPDS-MSS-247	Main Spring-loaded P/C Bridle
TPDS-MSS-248	Main Pull-Out Bridle
TPDS-MSS-249	Main Pull-Out Collapsible Bridle
TPDS-MSS-250	Main Release Handle – <b>Pillow – In-board</b> (specify color)
TPDS-MSS-252	Main Release Handle – <b>Loop- In-board</b> (specify color)
TPDS-MSS-254	Main Ripcord, Metal Bent, <b>In-board</b> (specify length and cable type)
TPDS-MSS-256	Main Ripcord, Plastic Handle - BOC
TPDS-MSS-257	Main Ripcord, Bent Metal, <b>AAD Extented Cable</b>

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TPDS-MSS-259 Main Ripcord, Plastic Handle -Hip

TPDS-MSS-264 Main Static Line w/Snap (specify length)

TPDS-MSS-265 Main Static Line w/Snap and Black Cables (specify length)

TPDS-MSS-266 AFF Left Side JM Handle for **Ripcord**

TPDS-MSS-267 AFF Left Side JM Handle for **T/O Pilot Chute**

TPDS-MSS-270 Main Deployment Bag (specify size and color)

TPDS-MSS-271 Main Deployment Bag w/Kicker Plate (specify size and color)

TPDS-MSS-272 Main Deployment Bag Direct Bag S/L (specify size and color)

TPDS-MSS-275 Main Closing Loop, Type II-A

TPDS-MSS-278 Separable Belly Band (Type 7) (specify color)

TPDS-MSS-279 Separable Belly Band Pads (specify color)

TPDS-MSS-280 Optional Separable Belly Band (Type 8) (specify color)



TPDS-MSS-288      Hook Knife w/Pocket      (specify pocket color)

TPDS-MSS-289      Jack the Ripper Knife and Pocket      (specify pocket color)

TPDS-MSS-290      Magnets (Box)

TPDS-MSS-291      Rapide Links Stainless Steel #3 1/2 (Box)

TPDS-MSS-292      Rapide Links Stainless Steel #4 (Box)

TPDS-MSS-293      Rapide Links Stainless Steel #5 (Box)

TPDS-MSS-294      Rubber Bands (Tandem) (Box)

TPDS-MSS-295      Rubber Bands (Large) (Box)

TPDS-MSS-296      Rubber Bands (Small) (Box)

TPDS-MSS-297      Elastic Strap Keepers (Dozen)

TPDS-MSS-298      Elastic Keeper w/Snap



TPDS-MSS-320                      2000 lbs. Spectra Line Soft Links

TPDS-MSS-402                      Static Line Safety Pin and Lanyard



TPDS-MSS-600            Gear Bag (Extra Large)

TPDS-MSS-601            Gear Bag (Large)

TPDS-MSS-700            **Military Student System Manual**

Tactical Parachute Delivery Systems, Inc  
17 Aug 2020



Chapter 12

Spare Parts



TPDS-MSS-100 Reserve Pilot Chute



TPDS-MSS-103 Reserve Pilot Chute Cap



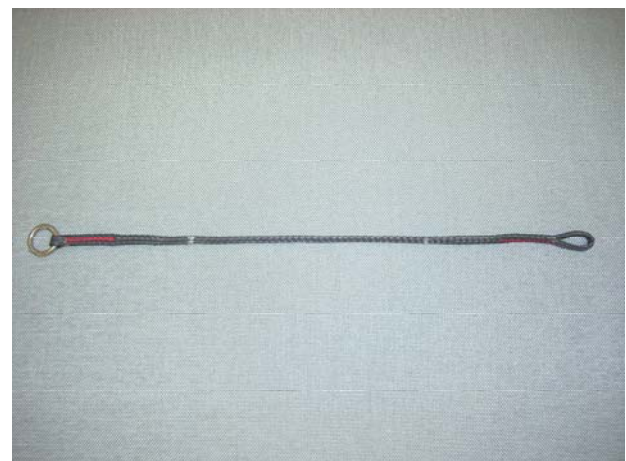
TPDS-MSS-101 Reserve Free-bag w/ Bridle



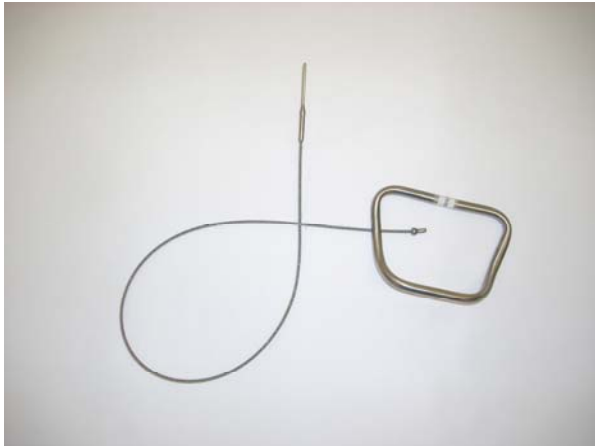
TPDS-MSS-105 Reserve Static Line



TPDS-MSS-102 Reserve Freebag w/  
**M.A.R.D. "Reserve Boost"**  
Modification



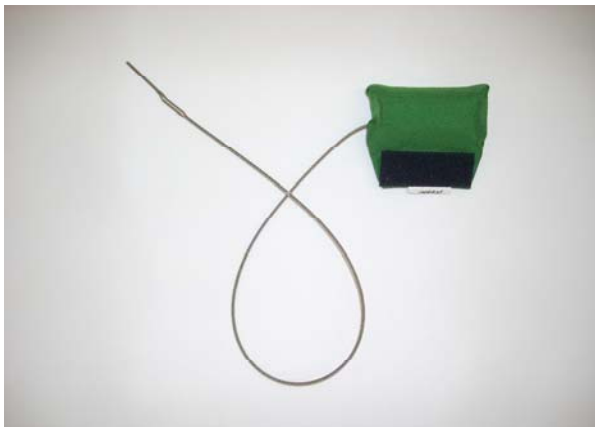
TPDS-MSS-106 Reserve Static Line (RSL)  
Extension for **"Reserve Boost"**



TPDS-MSS-109 Reserve Ripcord Assembly  
Bent Metal- Out-board



TPDS-MSS-117 Reserve Toggles (Pair)



TPDS-MSS-111 Pillow Reserve Ripcord  
Assembly



TPDS-MSS-119 Reserve Safety Stow



TPDS-MSS-113 Loop Reserve Ripcord  
Assembly



TPDS-MSS-215 Main Toggles (Pair)  
Military Style



TPDS-MSS-204 Main Risers Type VIII- 2"



TPDS-MSS-222 Floating RSL w/ Mini Ring



TPDS-MSS-230 Main Spring-loaded Pilot Chute



TPDS-MSS-231 Main Pilot Chute T/O w/ Plastic Handle

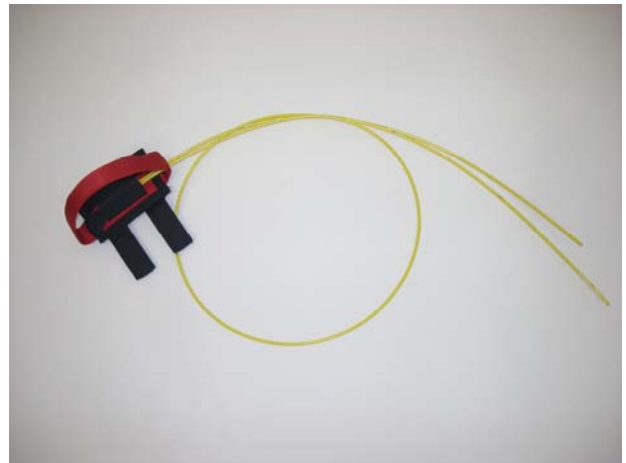


TPDS-MSS-232 Main Pilot Chute T/O w/ Hacky Handle

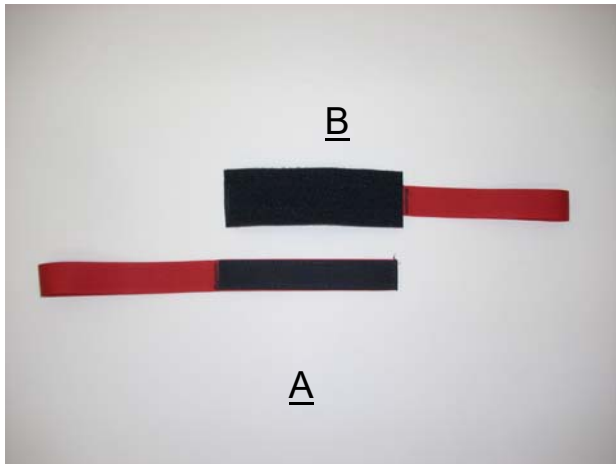




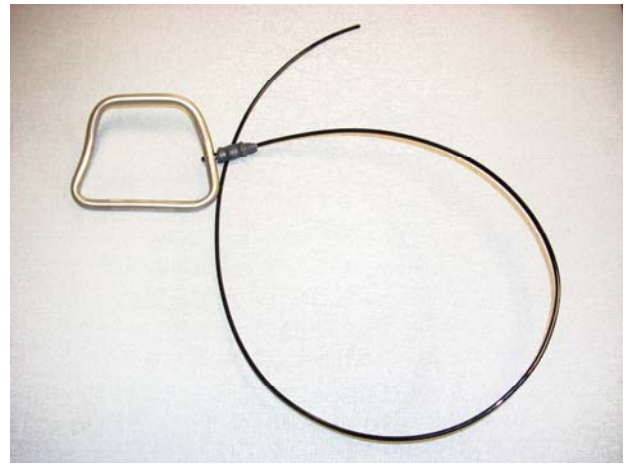
TPDS-MSS-241 Main T/O P/C Static-Line Assist Pouch



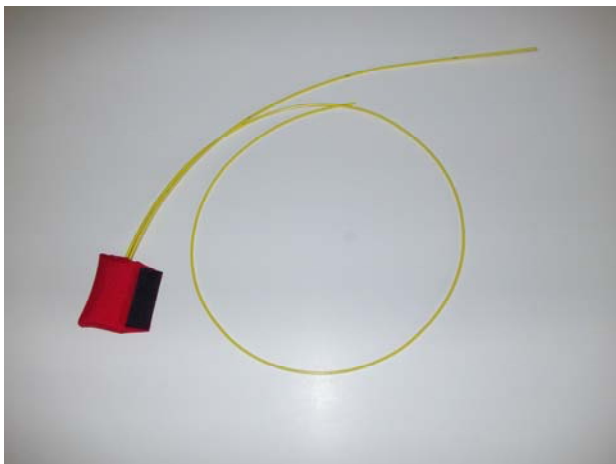
TPDS-MSS-253 Main Release Handle Loop / Out-board



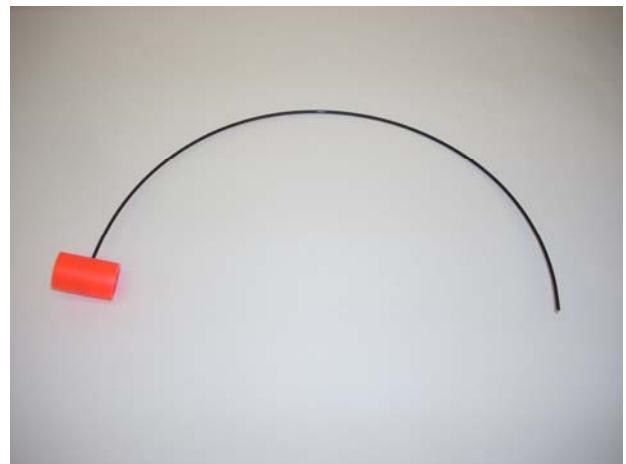
TPDS-MSS-242-A Hook Main Spring P/C  
TPDS-MSS-242-B Pile Static Line Assist



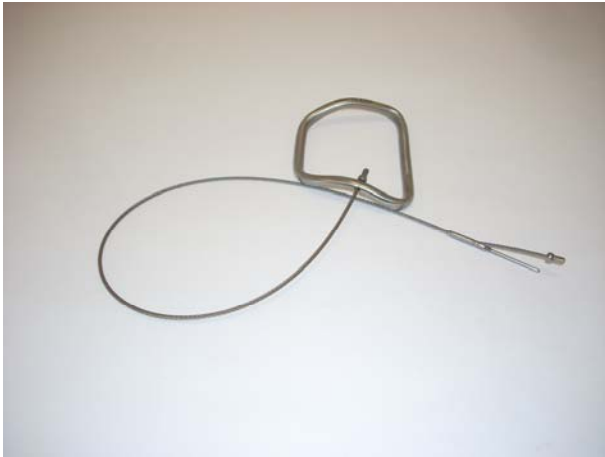
TPDS-MSS-255 Main Ripcord Handle Bent Metal- Out-board



TPDS-MSS-251 Main Release Handle Pillow / Out-board



TPDS-MSS-256 Main Ripcord Handle- Hip



TPDS-MSS-257 Main Ripcord Handle Bent Metal w/ AAD Extended Cable



TPDS-MSS-262 AFF Left Side JM Handle for Ripcord



TPDS-MSS-260 Main Static Line w/Snap



TPDS-MSS-263 AFF Left Side JM Handle for Throw-out P/C



TPDS-MSS-261 Main Static Line w/Black Cables



TPDS-MSS-270 Main Deployment Bag



TPDS-MSS-280 Optional T-8 Belly-Band



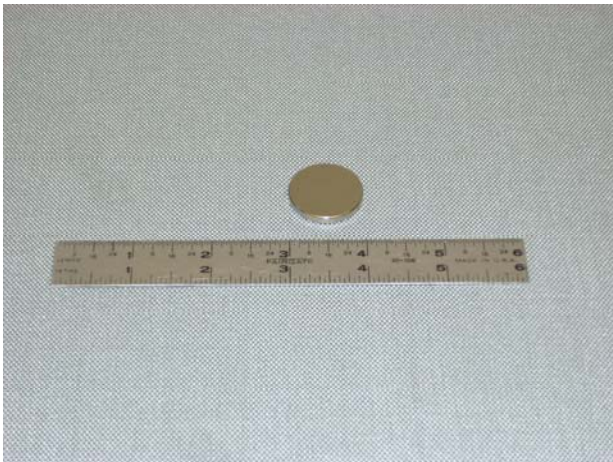
TPDS-MSS-271 Main Deployment Bag  
w/ Pilot Chute Kicker Plate



TPDS-MSS-272 Main Deployment Bag,  
Direct Bag, Static Line



TPDS-MSS-288 Hook Knife w/Pocket



TPDS-MSS-290 Magnets (Sets of 12)



TPDS-MSS-601 Military Gear Bag

Owner's Manual for Packing, Donning, and Maintenance  
of the TPDS Military Student System (MSS).



**TACTICAL PARACHUTE DELIVERY SYSTEMS, Inc.**

4035 Correia Drive  
Zephyrhills, FL 33542 USA

Phone: +1 813 782 7482  
Fax: +1 813 788 2799  
E-mail: info@tpdsairborne.com  
Website: www.tpdsairborne.com

Manual P/N: TPDS-MSS-700

2020

SERIAL NUMBER \_\_\_\_\_

TPDS-MSS-700 MSS Owner's Manual



## Chapter 13

# Care and Maintenance

## 13.1 General Storage Requirements for Personal Parachute Systems

The following is an advisory statement and each country/unit may follow its own protocol:

### General Storage Requirements:

To ensure that serviceability standards of the stored harness/parachute assembly are maintained, every effort will be exerted to adhere to the following general storage requirements:

1. When available, a climate controlled building should be used to store the harness/parachute assembly.
2. The harness/parachute assembly shall be stored in a dry, well ventilated location and protected from pilferage, dampness, fire, dirt, insects, rodents and direct sunlight.
3. The harness/parachute assembly will **NOT** be stored in a manner which would prevent ventilation or interfere with light fixtures, heating vents, fire fighting devices, cooling units, exits or fire doors.
4. The harness/parachute assembly will **NOT** be stored in a damaged, dirty or damp condition.
5. All stored harness/parachute items will be marked, segregated and located for accessibility and easy identification.
6. The harness/parachute assembly will **NOT** be stored in direct contact with any building floor or wall. Storage will be accomplished using bins, shelves, pallets, racks or dunnage to provide airspace between the storage area floor and the equipment.
7. All available material handling equipment should be used as much as possible in the handling of the harness/parachute assembly.
8. Periodic rotation of stock, conversion of available space, proper housekeeping policies and strict adherence to all safety regulations will be practiced at all times.



## Storage Specifics for Parachutes:

In addition to the storage requirements stipulated in the general storage requirements paragraph, above, the following is a list of specifics that must be enforced when storing parachutes:

1. Except for those assemblies required for contingency operations, parachutes will **NOT** be stored in a packed configuration.
2. Stored parachute assemblies will be secured from access by unauthorized personnel.
3. A parachute that is in storage, and is administered a cyclic repack and inspection, will **NOT** be exposed to incandescent light or indirect sunlight for a period of more than **36** hours. In addition, exposure to direct sunlight will be avoided entirely.

## In-Storage Inspection:

General information:

1. An in-storage inspection is a physical check conducted on a random sample of parachutes that are located in storage.
2. Parachutes in storage will be inspected at least once every 180 calendar days and at more frequent intervals if prescribed by the local parachute maintenance officer.
3. Inspect the parachute to ensure that it is ready for use.
4. Check the parachute for proper identification.
5. Check that no damage or deterioration has incurred.
6. Ensure that all modifications or similar requirements have been completed.
7. Check the adequacy of the storage facilities, efforts should be taken to control pests and rodents and unfavorable climatic conditions.

## 13.2 Water Contamination Guidelines



**If the parachute or any of its components have been immersed in salt-water for more than 24 hours the equipment will be condemned.**

**Equipment made of cotton fabric immersed in salt water shall be condemned.**

If the parachute or any of its components have been immersed in water, be it fresh water or salt-water, the parachute and any components immersed shall be rinsed immediately or placed in a double plastic bag with the top securely closed to keep the contents in a wet state until they can be rinsed. If they cannot be rinsed within 24 hours, **they shall be condemned.**

Once a parachute or any of its components have been immersed in water, be it fresh or salt-water, then the system shall have 50 jumps or 5 years, whichever comes first, to be used before **it is condemned.**

### **! CAUTION !**

**REMOVE ALL INSTRUMENTS! BEFORE RINSING THE PARACHUTE ASSEMBLY**

Rinsing the Parachute Assembly after Water Immersion:

1. Place the parachute assembly in a large container filled with enough fresh water to completely cover it.
2. Agitate the contents of the container by hand for 5-minutes.
3. Remove the parachute assembly from the container and suspend or elevate it in a shaded area for a period of 5–10 minutes to allow it to drain. Do not wring the fabric nor the suspension lines.
4. Repeat the procedures in steps 1. through 3. above, twice (2x), using fresh, clean water for each rinse.
5. After the 3rd rinse, allow the parachute assembly to drain thoroughly. Upon completion of draining, dry the assembly by elevating or suspending the item in a well ventilated room or a heated drying room with the temperature not to exceed 130° Fahrenheit or 55° Celsius. When heat is used it shall not exceed 160° F or 71° C. The preferred temperature is 140° F. / 60°C. The use of electric circulating fans will reduce the drying time.
6. When dried, perform a technical/rigger-type inspection of the parachute assembly. Corroded metal components or corrosion stain fabrics or suspension lines will be either repaired or replaced.
7. Record the immersion and rinsing and any repairs made to the parachute assembly in the parachute log record.





## 13.3 15 Year Maximum Life Limitations

### 15 year Maximum Life Limitations for TPDS Military Student System (MSS).

Without further limitations, each **TPDS Canopy** has a maximum life limitation of **15 years** from the date of manufacture.

Further limitations include:

	<u>Reserve</u>	<u>Main</u>	<u>Harness/Container</u>
Service Life Limitation-	15 years	15 years	15 years
Useful Life Limitation-	20 deployments	500 deployments	500 deployments

#### WATER JUMPED CANOPIES:

**Reserve- Non-Deployed** - if the Reserve Parachute is used in a water jump but **NOT** deployed- it shall have 5 years or 20 jumps (**which ever comes first**) remaining for its Useful Life Limitation.

**Reserve- Deployed**- if the Reserve Parachute is used in a water jump and has been deployed- **It Shall be Condemned.**

**Main Parachute**- if the Main Parachute is used in a water jump- it shall have 5 years or 50 jumps (**which ever comes first**) remaining for its Useful Life Limitation.

#### HARNESS/CONTAINER:

If the Harness/Container is jumped into water, it shall have 5 years or 50 jumps (**which ever comes first**) remaining for its Useful Life Limitation.

If at any time the unit is discovered to be B.E.R. (beyond economical repair) it will be removed from service and dispositioned by the equipment activity officer.

Main canopy limitations are similar to reserve canopy limitations with regard to total calendar time; however their initial Useful Life Limitation is **500** deployments, at which time they may be relined and evaluated by an appropriately rated parachute technician for extended service period.



## 13.4 Factory Authorization of One Year Reserve Repack

All of the materials, purchased items and parts used in the fabrication process for **Tactical Parachute Delivery Systems (TPDS)** Main and Reserve Parachutes are acquired from suppliers on our Approved Supplier list as part of our Federal Aviation Administration (**FAA**) approved Quality Control System for parachutes produced under **FAA TSO C-23d**.

There are no component parts utilized in these parachutes that necessarily require re-certification at a specific repack cycle. Our experience indicates that a repack cycle of one year should not adversely affect the performance of the parachute or compromise safety based on the element of time alone.

Factors that might affect a parachute's airworthiness could come into play during any repack cycle and include:

1. Storage temperature, humidity, and ultraviolet radiation
  - a. When not in use, the parachute should be stored in an environment wherein the temperature is controlled between 60°- 85° F. (15°-30° C.) and within the relative humidity limits of 30% and 60%. Ultraviolet radiation (daylight) in the storage facility should be zero.
2. Damage from normal handling and use
  - a. The entire system should be inspected prior to each use as well as after each use to determine if any damage has occurred during normal use. If the parachute ever becomes damp, a thorough drying, inspection, and repack are strongly recommended, and the wetting agent should be analyzed for elements that may cause deterioration of nylon and other synthetic components that make up the parachute system.
3. Other components that make up the system
  - a. Other components like the container, or the reserve deployment free bag and pilot chute, or any other component that contains material unsuitable for an extended repack cycle could disqualify the system from the extension.
4. Chain of custody
  - a. Our approval of extending the repack cycle to one year is authorized only if a logbook is maintained describing a chain of custody and documenting storage and use as outlined in each of the previous items.

When in compliance with these four detailed elements, we approve a repack cycle of both our **Main** and our **TSO'd Reserve Parachute** canopies to **1 year** for certain military and civilian applications, in countries that do not impose a more restrictive repack cycle for parachute products.



## Chapter 14

**Repairs****14.1 Repair Guidelines**

Stitching and re-stitching on parachute items constructed from cloth, canvas, and webbing should be accomplished with thread, which matches the color of the original stitching, when possible.

All straight stitching should be 7-11 stitches per inch, and locked by over stitching the existing stitching by at least 2-inches. Zigzag stitching should extend at least 1/2-inch into undamaged stitching at each end. Re-stitching should be made directly over the original stitching, following the original stitch pattern as closely as possible.

All thread on the canopy should be VT-295E, Type II, Class A, Size E, VY, and sewn with a light or medium duty machine.

**Canopy**

<u>Type of Repair</u>	<u>Limitations</u>
Re-stitching:	No limit as to length or number.
Patch, single side:	Size Limit: Maximum 50% of panel area. Limit of 3 per panel, 15 per canopy.
Panel replacement:	Limit 9 per canopy
Radial Seams:	Size Limit: 12", no more than 4 per canopy.
Lateral bands:	Size Limit: 2", no more than 10 per canopy
Upper	Size Limit: 4", Limit 1 per canopy
Lower	Size Limit: 36", Limit 4 per canopy

**Static Line**

A Damaged Static Line should be replaced.

**Container**

Standard military single side patches or replacement of the damaged area is authorized.

**RipCORDS**

Damaged ripCORDS should be replaced.



## 14.2 Keeping Track of Repairs and

### Data Card

Data cards should not be discarded or replaced. When filled, they should be attached to the new card so that a complete log of packing, repairs, and alterations is recorded. This is the history of the parachute.

### Note!

Darning and Ripstop Tape are **NOT** authorized for Certified Canopies as they may weaken the fabric. Single side patches are recommended for even small damaged areas.



**NOTES:**