$5.00

OWNER'S MANUAL

FOR THE PACKING AND MAINTENANCE OF THE

MINI HAWK & STUDENT HAWK

SPORT PARACHUTE SYSTEMS

Mini Hawk Part Number 114750

Student Hawk Part Number 114765/68

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THE PARACHUTE COMPANY WITH IMAGINATION

Manual Part # 510043 Revised October 1990

WARNING

PARACHUTING IS A HAZARDOUS ACTIVITY
THAT CAN RESULT IN INJURY OR DEATH

Even though the parachutes described in this manual are intended to be life saving devices, there is no guarantee that they will work if needed.

There are so many factors, both human and natural, beyond our control that we want you to clearly understand that by using or intending to use our parachutes, you are assuming a considerable risk of personal injury or death.

If you are not willing to assume that risk, please return the parachute to the dealer where it was purchased for a full refund.

DISCLAIMER

There are **NO WARRANTIES** which extend beyond the description of the parachutes in this manual, and neither the seller nor any agent of the seller has made any affirmation of fact or promise with respect to the parachutes except those that appear therein.

The liability of the seller is limited to the duty to replace 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 any accident, improper use, alteration, tampering, abuse or lack of care on the part of the purchaser.

CONTENTS

MINI HAWK COMPONENT LIST

QTY	COMPONENT		PART NUMBER
2 ea	Risers, Main		834505
2 ea	Toggles, Main, Yellow		866030
2 ea	Toggles, Reserve, Red		866062
1 ea	Reserve Static Line Lanyard with #5 rapide link		780621
1 ea	Ripcord, reserve		618290100.280100
1 ea	Cut away handle, red		862006
1 ea	Deployment bag, main	Spirit	720347
		KT-7	720357
		Wizard	720356
		Mighty Mak & KT-9	720352
		Master	720358
1 ea	Pilot Chute, Reserve, Grabber		790130
1 ea	Closing Loop, Main, 1” top loop		861010
2 ea	Pull Up Cord		984119
1 ea	Packing Data Card		58050
1 ea	Manual		510043
HAND DEPLOY FEATURE:			
1 ea	Hand Deploy Pilot Chute		790200
RIPCORD FEATURE:			
1 ea	Bridle, Main, 60” Tubular Nylon		810151
1 ea	Pilot Chute, Grabber		790130
1 ea	Ripcord, Main, Pinless		684260000
ROUND RESERVE FEATURE:			
1 ea	Closing Loop, 12” continuous		861030
1 ea	Bridle, Reserve, 40” tubular nylon		810150
SQUARE RESERVE FEATURE:			
2 ea	Closing loop, reserve, 1” top loop		861010
1 ea	Hesitator Loop, w/ washer		861035
1 ea	Bridle, reserve, 13 ft		810320
1 ea	Deployment Bag, Reserve,	G2R	730220
		G3R	730230
		Mighty Mak & Master	730324
AAD FEATURE:			
1 ea	Ripcord, Reserve, for AAD		61829010S.2801S

STUDENT HAWK COMPONENT LIST

QTY	COMPONENT		PART NUMBER
2 ea	Risers, Main		834505
2 ea	Toggles, Main, Yellow		866030
2 ea	Toggles, Reserve, Red		866062
1 ea	Reserve Static Line Lanyard with #5 rapide link		780621
1 ea	Ripcord, reserve, Standard		61329010S.28010S
	With One Handle Does All Option		61320410S.28010S
1 ea	Cut away handle, red		862006
1 ea	Deployment bag, main	Spirit	720310
		KT-7	720311
		Wizard	720312
		Mighty Mak & KT-9	720313
		Master	72031
1 ea	Pilot Chute, Reserve, Grabber		790130
1 ea	Main Closing Loop, 1”top loop		861010
	W/Assisted Freefall Main release		861515
2 ea	Pull Up Cord		984119
1 ea	Packing Data Card		580502
1 ea	Manual		510043

MAIN DEPLOYMENT FEATURES:

Hand Deploy	1 ea	Hand Deploy Pilot Chute	790200
Ripcord	1 ea	Bridle, Main, 60”	810151
	1 ea	Pilot Chute, Grabber	790130
	1 ea	Ripcord, Main, Pinless	684260000
Static Line	1 ea	Static Line	780400
Left Release	1 ea	Left Release Ripcord	862200
Drogue	1 ea	Drogue, Student	480017
	1 ea	Drogue Deployment Bag	780520

ROUND RESERVE FEATURES:

1 ea		Closing Loop, 12” continuous	861030
1 ea	Bridle, Reserve, 40” tubular nylon		810150

SQUARE RESERVE FEATURES:

2 ea	Closing loop, reserve, 1” top loop		861010
1 ea	Hesitator Loop, w/ washer		861035
1 ea	Bridle, reserve, 13 ft		810320
1 ea	Deployment Bag, Reserve,	G2R	730220
		G3R	730230
		Mighty Mak & Master	730324

SCOPE

This owner's manual constitutes the manufacturer's instructions for the packing and maintenance for the main and reserve of the Mini Hawk and Student Hawk sport parachute systems.

FAA APPROVAL

The Mini Hawk and the Student Hawk assemblies are approved by the FAA under FAA TSO C-23b in accordance with NAS 804 and FAR 21. These systems have been drop tested to shock loads in excess of 5000 pounds.

OPERATIONAL LIMITATIONS

The reserve canopy that is assembled and packed into the system dictates what the operational limitations will be for that particular system. The category that your reserve is rated for will be printed on the data panel located on the canopy. This information can also be obtained by consulting the manufacturer of the reserve canopy being used.

REPACK CYCLE

The Mini Hawk and the Student Hawk is subject to a 120 day inspection and repack cycle on the reserve canopy. This inspection and repack must be performed by an appropriately rated parachute rigger. If the system is subjected to water, excessive moisture or damage, it should be inspected sooner than the 120 day maximum repack cycle.

MINI HAWK DESCRIPTION

The Mini Hawk is an FAA approved, manually operated sport parachute system that can be fitted with most main and reserve canopies, both round and square, that are on the market today. The reserve container is ripcord activated utilizing a spring loaded pilot chute and is capable of excepting an FXC or Sentinel automatic activation device. It is designed to except either a round or square reserve. A static line lanyard is standard equipment on the Mini Hawk. The main container comes with the deployment option of your choice, hand deploy or ripcord. Other options include; B-12 snaps, step in or quick ejector snaps for the leg straps.

STUDENT HAWK DESCRIPTION

The Student Hawk is an FAA approved, manually operated sport parachute system designed specifically for the student parachutist. It can be fitted with most main and reserve canopies that are on the market today. The reserve container is ripcord activated utilizing a spring loaded pilot chute and is capable of excepting an FXC or Sentinel automatic activation device. It is designed to except either a round or square reserve. A reserve static line lanyard is standard equipment on the Student Hawk. The main container comes with any variation or all of the following deployment options: hand deploy, ripcord, drogue and conventional static line. In addition to these main deployment options, an assisted freefall main release ripcord is available. This option consists of a main release ripcord located on the left side of the main container. Used in conjunction with the conventional ripcord option, this ripcord would enable an AFF jumpmaster to activate the main parachute from the left side of the jumper should he fail to activate the main parachute himself.

CARE AND FITTING OF THE MINI HAWK AND STUDENT HAWK

Parachutes are made of nylon, a very strong and durable material, but even nylon has enemies. Small amounts of acid will eat right through it and ultra violet sunlight weakens nylon rapidly. This is a surface effect so that thicker material, such as webbing or pack material are not seriously affected, but canopy cloth is very vulnerable. Contaminations such as grease, oil and fresh or salt water will not adversely damage or hurt the system but should be cleaned off with the appropriate solvent.

To don the system, unsnap the leg and chest straps and loosen all adjustment points. Slip your arms through the main lift web (the vertical straps in front), much like putting on a jacket. Reach between your legs and grab a leg strap making sure it is not twisted. Secure the V-ring located on the leg strap to the snap located at the hip area on the same side as the leg that is being fitted. Snug the leg strap down tight, yet comfortably and stow the excess webbing in the elastic keeper provided. Repeat this procedure on the opposite leg strap. Next, snap and adjust the chest strap. The horizontal adjustments located at the bottom of the main container may be pulled tight to pull the container towards your body.

REQUIRED RIGGING TOOLS

QUANTITY	TOOL	PART NUMBER
1 ea	Seal Thread	961020
1 ea	Lead Seal	984205
1 ea	Seal Press	984190
1 ea	Screwdriver	984440
1 ea	Packing Paddle	984030
2 ea	Pullup Cords	984119
2 ea	Temporary Pins	984068

When using the Student Hawk with Drogue system, a Square reserve must be used.

ROUND RESERVE PACKING INSTRUCTIONS

If you are installing and AAD, go first to the AAD INSTALLATION section of this manual located on page 27.

1) Place the container on the packing table, face down, head toward canopy. Attach the canopy to the four risers so that it is flying forward with the steering vents to the wearer's rear. Perform a thorough continuity check and tighten the connector links. A round reserve that is set up on four risers performs much better then one set up on two risers. If you elect to use a reserve that is set up on two risers, hand tack the front and rear risers together near the connector links with two turns of 3-cord cotton doubled and waxed or the equivalent and attach the canopy to the front risers.

2) Clear the control lines and route them through the guide ring on the rear risers.

ATTACHING SOFT TOGGLES

3) Thread the steering line through the grommet in the toggle starting from the underside of the toggle (the side with Velcro®).

4) Lay the toggle on the riser where it will be when set, and measure where the steering line should be tied. There should be one or two inches of slack in the steering line after the rest of the lines are pulled tight. Figure-eight the line through the grommet as shown in illustration R-1.

5) When attaching the toggle, it is important that the steering line be firmly attached. To achieve this, you will probably need to add another figure-8 as shown in illustration R-2. If your steering line is very thick, this may not be necessary. What is important is that the grommet hole is filled up so that the knot can't pull through.

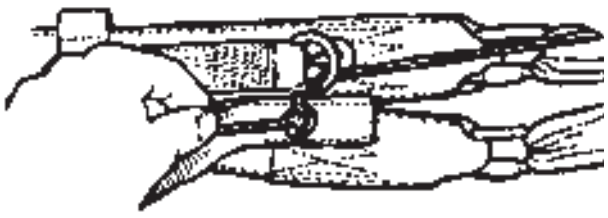


Illustration R-1

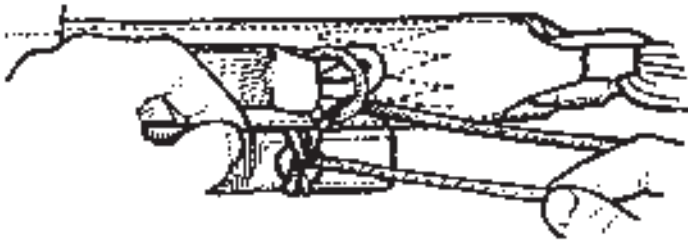


Illustration R-2

6) When your figure-8's are done, the line should come out on the top side of the toggle. Tie two overhand knots snugly against the grommet. Repeat on the other riser and toggle, measuring carefully so that the steering lines are of equal length. Attach the toggles to the risers on the Velcro®. Be sure the steering lines pass through the guide rings.

PREPARING CANOPY

7) Lay the canopy out and straighten the apex. Flake the canopy and split so that there are an equal number of gores on each side. Fold the skirt up so that the reinforcing band is parallel to the long radial seam, as shown in illustration R-3.

8) Fold The canopy in towards the center once, and then again, as shown in illustrations R-4 and R-4a.

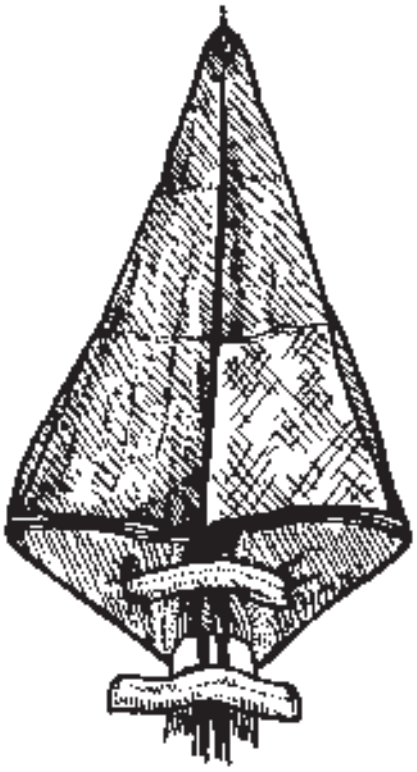


Illustration R-3

Illustration R-4

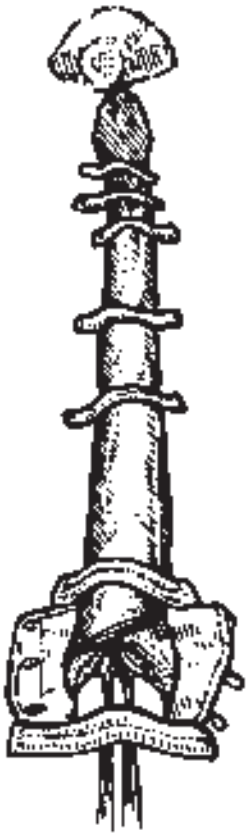


Illustration R-4a

9) The Mini Hawk is designed for round reserve canopies equipped with full diapers. After the canopy is folded, bring the lines up the center of the reserve, past the diaper as shown in illustration R-5.
NOTE: DO NOT tuck the lines inside the folded canopy as shown in illustration R-6. This can cause serious burns to the canopy and lines.

10) Close the diaper and secure with three bights of line as shown in illustration R-7.

11) Stow the remaining lines as shown in illustration R-8. There should be about 12 inches of line left between the last stow and the links.

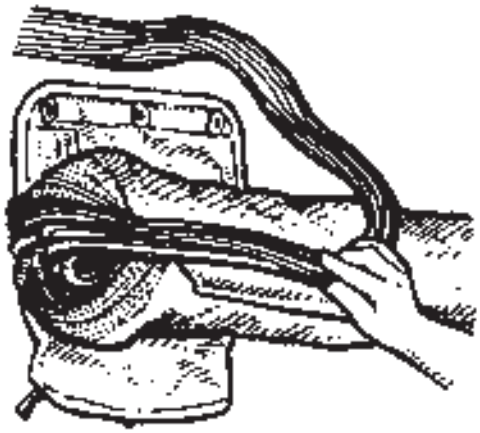


Illustration R-5

DO NOT DO THIS

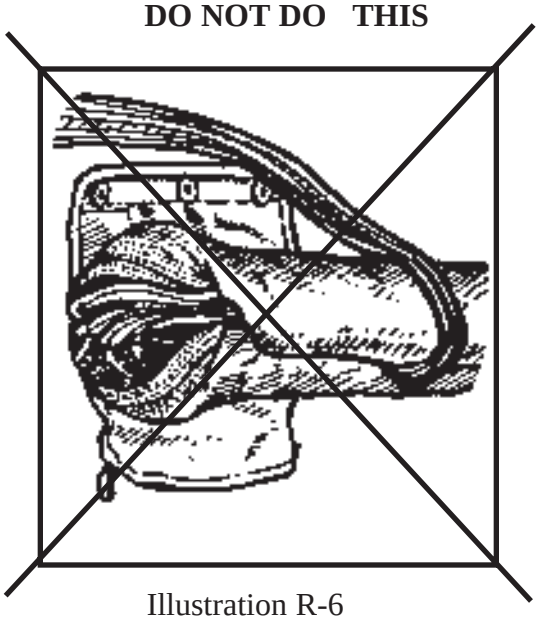


Illustration R-6

Illustration R-7

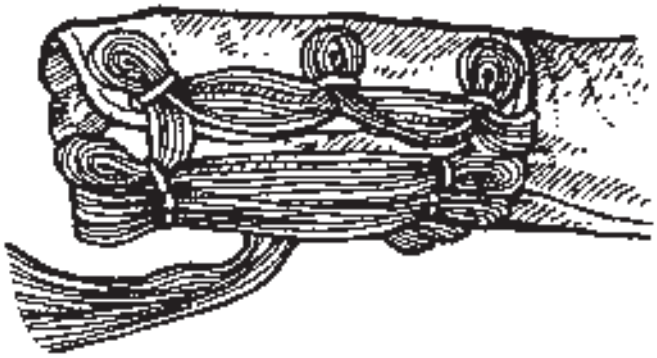


Illustration R-8

PLACING CANOPY IN PACK TRAY

12) Thread the closing loop through the channel in the reserve pack tray. To do this, pull the two layers of material apart, then carefully thread the loop through one grommet. Use a pair of tweezers to pull it through the other grommet as shown in illustration R-9. Thread long pull-up cords through each side of the loop and lay them over the top of the rig.

13) Before placing the diaper into the reserve container, mate the Velcro® on the bottom corners of the reserve pack tray as shown in

14) Lay the risers into the bottom of the pack tray and fan the links as shown in illustration R-11. This will prevent a large and uncomfortable bump in the back pad after the reserve is packed.

If you are installing an AAD, fan the links to the side of the pouch as shown in illustration R-20 located on page 25.

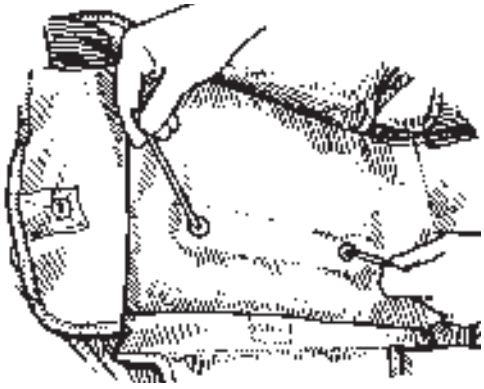


Illustration R-9

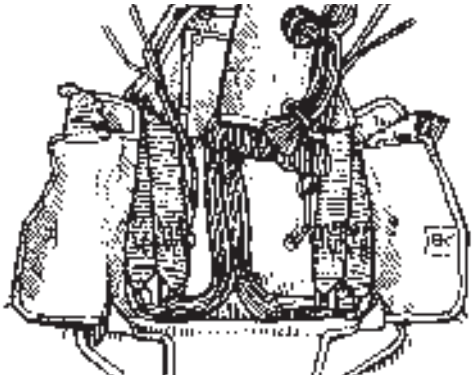


Illustration R-10

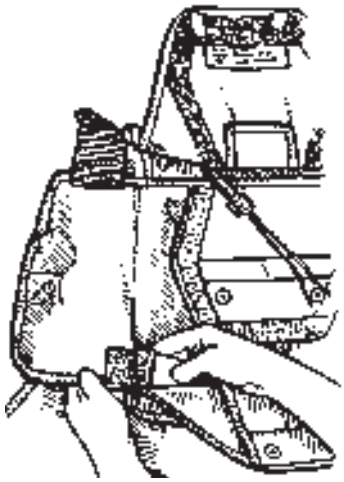


Illustration R-11

15) Place the diaper into the pack tray with the skirt of the canopy in the bottom left corner and the lines facing down as shown in illustration R-12.

16) Make three folds above the diaper and then move the pull-up cords down over the folds and diaper. S-fold the remainder of the canopy into the pack tray. Spread the apex over the S-folds as shown in illustration R-13.

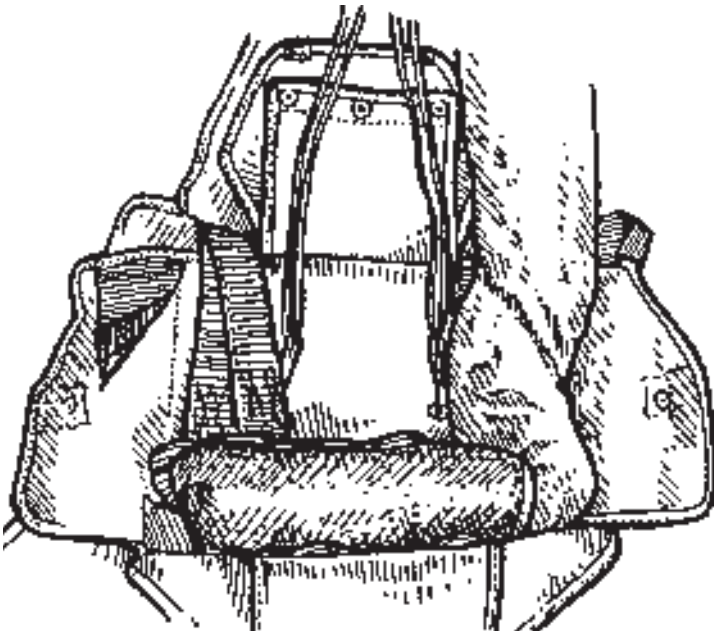


Illustration R-12

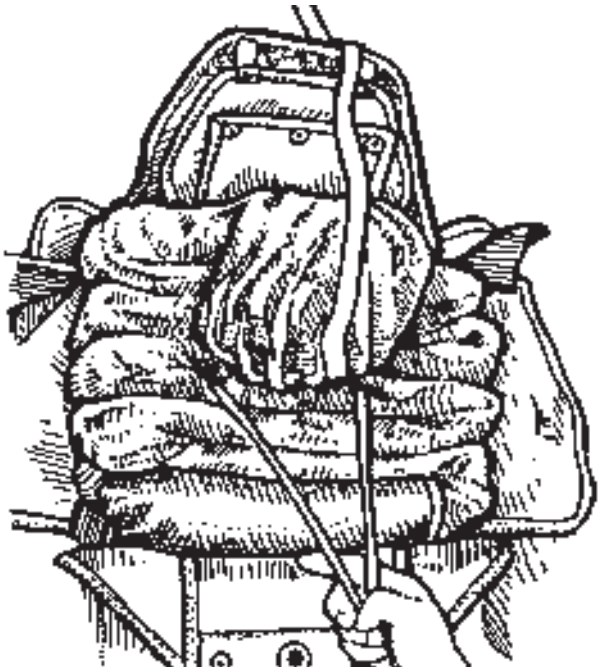


Illustration R-13

CLOSING THE CONTAINER

17) Thread the pull-up cords through the top sub flap first, then the bottom sub flap and secure with temporary pins. The bridle should be routed under the top sub flap and then back over it, as shown in illustration R-14. Keep the tension on either side of the loop as even as possible.

18) Close the side flaps and secure with temporary pins as shown in illustration R-15. Carefully tuck the edges of the canopy in with a smooth packing paddle.

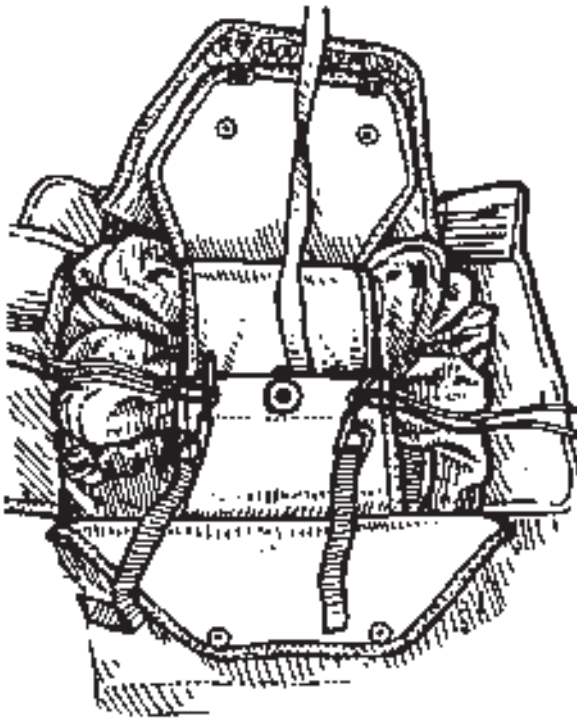


Illustration R-15

Illustration R-14

19) S-fold the bridle on top of the bottom sub flap, and compress the Grabber pilot chute on top. Thread the pull up cords through the grommets in the bottom flap and secure with temporary pins as shown in illustration R-16. To insure a neat pack job, keep the pilot chute centered on the sub flaps. Most of the pilot chute should now be held securely under the bottom flap. Only about 1/4 of the cap should be visible above the flap. The part that is visible should be centered between the two grommets.

If you are installing as AAD, refer now to number 9 in the AAD INSTALLATION section of this manual located on page 29.

20) Before closing the top flap, route the ripcord cables under the Type IV webbing running across the flap. The longer cable goes to the wearer's right.

21) Close top flap and remove the temporary pins and pin with the ripcord pins as shown in illustration R-17. Be sure the longer pin cable is on the wearer's right side.

22) Remove the pull up cords and count your tools. Dress the container with a packing paddle or fid. Log and seal the reserve.
The pin on the Wearer's right is the pin to seal.

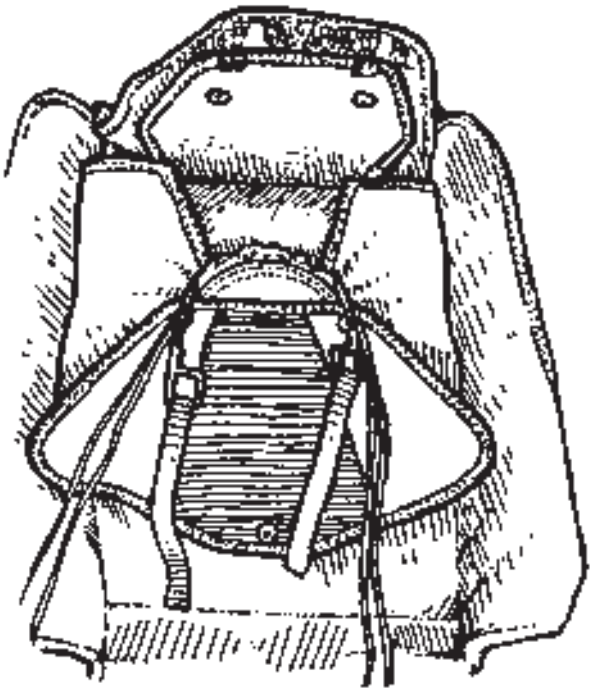


Illustration R-16

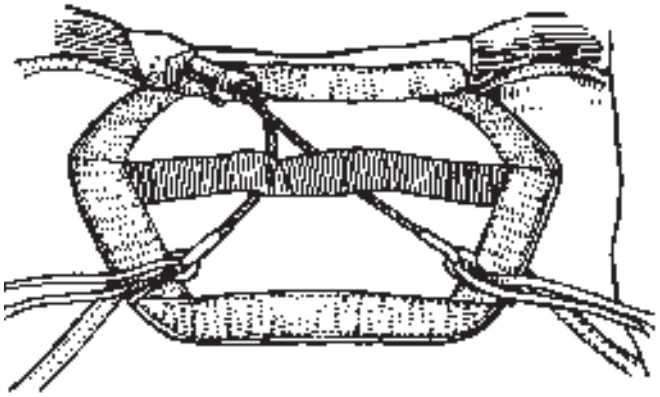


Illustration R-17

A WORD ABOUT STRONG RAM-AIR RESERVES

The Strong G2R and G3R reserves are both seven cell ram-air, high performance canopies. Both have steering systems similar to Strong Enterprises main ram air canopies, meaning a complete control range (including the ability to stall and fly backwards). Turns may be made with toggles, back or front risers or back lines. Properly executed landings are very soft for appropriate weights. For example, with a load of 170 lbs, and the brakes in the set position, the rate of descent is only about 13 fps on the Strong G3R and 14 fps on the Strong G2R.

Having good forward speed and handling capabilities is fine in a ram air reserve, but lets face it, what's really important to anyone who's paying attention is structural integrity. This is something you think about for a main because you want it to last a long time. Its something you think about in a reserve because you want it to be there when you need it.

Strong Enterprises has gone beyond the necessary requirements when constructing its ram air reserves. First, the suspension line used is 700 lb test strength; most reserves have 500 lb test line. That line is attached with a knot at the attachment tab and then finger trapped and sewn. A structural tape runs from the line attachment tab to the upper surface, and there are reinforcing tapes in all rolled seams. All this adds up to a superload transfer and dispersement network.

To keep pack volume small, we've used the latest in lightweight materials, such as Kevlar tapes and lines, as well as advanced construction techniques. The G2R reserve with everything (#6 rapide links, toggles, keepers, slider, diaper and 6 ft bridle) is just 7.1 lbs. The G3R reserve similarly set up weighs just 8.5 lbs.

FLIGHT CHARACTERISTICS

The bottom line on the Strong G2R and G3R ram air reserves is speed. Level flight with a jumper weighing 170 lbs is nearly 30 mph with the G2R. If you are not an experienced jumper, you should not jump this canopy. The question in everyone's mind with the purchase of a ram air reserve is how to land it properly. During our test jumps, 95% of the landing made (by jumpers with widely varying experience level) were stand ups. The secret of success is to flare completely at the right level from full flight. Both the G2R and G3R have an excellent flare, because of their exceptional forward speed.

Both reserves are steered with soft toggles secured to the reserve risers with Velcro. Releasing the brakes is simply a matter of pulling down on the toggles (same as a main). The stall on both canopies is gentle and predictable. Either canopy will fly backwards. Always find the stall point immediately after opening. This will give you a good idea of how your landing flare should proceed.

Turns are quick with either risers or toggles. From straight forward flight, the first 360 degree turn will take about three seconds. The next turn will take only one second or less. Both canopies dive steeply through hard turns. **DO NOT MAKE LOW HOOK TURNS.**
Countless people have been hurt in the sport of skydiving on all kinds of canopies after miscalculating a low hook turn. If you are under your ram air reserve, take the hint and take it easy! Lets put it in terms of physics. The average canopy comes down 1000 ft in just 20 seconds. That rate of descent into the ground could be very uncomfortable, besides making you look like a real fool.

A properly executed landing begins by facing into the wind by no lower than 100 ft AGL. The toggles should be as high up as your arms will go (in other words, the canopy should be in full flight).
Initiate the flare at 15-20 ft AGL at sea level, and slightly higher at higher field elevations. A smooth application of the brakes will have you reaching a perfect stall point a foot or two off the ground.

Openings are brisk. These are reserves after all, and that's the general idea. During test jumps, 10 % of the openings had a single line twist that cleared immediately after opening, with the slider pushing down and clearing the lines. All such cases of line twist were attributed to the body position of the jumper.

During all test jumps, there were no problems with broken lines. It should be noted however, that the lines are untreated Kevlar. This means that you must treat them with great care. Any abrasive such as hook Velcro® is very hard on untreated Kevlar. If an A line was to break on a ram air reserve, it would cause a spin or a high stall point. To remedy the situation you would reach back and cut the C line on the same cell. This would allow the canopy to fly straight and would put the stall point back to a safe point. You do have a hook knife don't you?

Lastly, before you hand this reserve over to your rigger to pack, make sure you have complete confidence in his/her abilities. We cannot stress enough the reliance we all place on the rigger. If your rigger does not understand and part of this manual, have him call Strong Enterprises, or have someone else more familiar with the assembly pact it.

Have fun skydiving, be careful and have confidence in your reserve, its one of the finest on the market.

RIGGER QUALIFICATIONS

We strongly recommend that the rigger packing the reserve be completely familiar with ram air canopies. Although we do not require a special rating to pack these parachutes, you the owner/jumper should be sure that your rigger jumps and intrinsically understands ram air parachutes. In other words, a non jumping rigger with hundreds of round reserve repacks and lots of "on the ground looking up" time should not learn on your reserve!
Assembly must be done by a Master rigger, although the reserve can be packed by a Senior rigger. Either way, any rigger who touches your reserve should be thoroughly familiar with ram air canopies. A reserve attached backwards could be a serious matter.

SQUARE RESERVE PACKING INSTRUCTIONS

ASSEMBLY

If you are installing an AAD, refer now to the AAD INSTALLATION section of this manual located on Page 27.

1) Lay the reserve container on a smooth clean surface as if the wearer was face down, head towards canopy. The front line groups go to the front risers, the rear groups to the rear risers. The steering lines pass through the slider grommets and the guide ring on the back of the rear riser. Perform a very thorough continuity check. The owner and rigger may also inflate the canopy at this point to be absolutely sure it is straight.

2) Attach the steering toggles by slipping the loop on the end of the steering line first through the grommet in the toggle (starting from Velcro side) and then over the end of the toggle as shown in
illustration SR-1.

3) Set the brakes as shown in illustration SR-2. Note that the setting loop goes first through the guide ring, then through the finger trapped slot in the steering line.

Illustration R-16

Illustration R-16

4) Lay the canopy on its side with the nose at the right and the tail at the left (from standing behind the canopy). Flake neatly. Fold the entire nose over up to the A line group as shown in illustration SR-3.

5) Hold the top of the canopy just above the B line group, and stack the canopy so that the B lines are just on top of the A lines. Continue stacking so that the C lines are on top of the rest of the lines, as shown in illustration SR-4. With each stacking movement, be careful to keep the canopy material taut and neat.

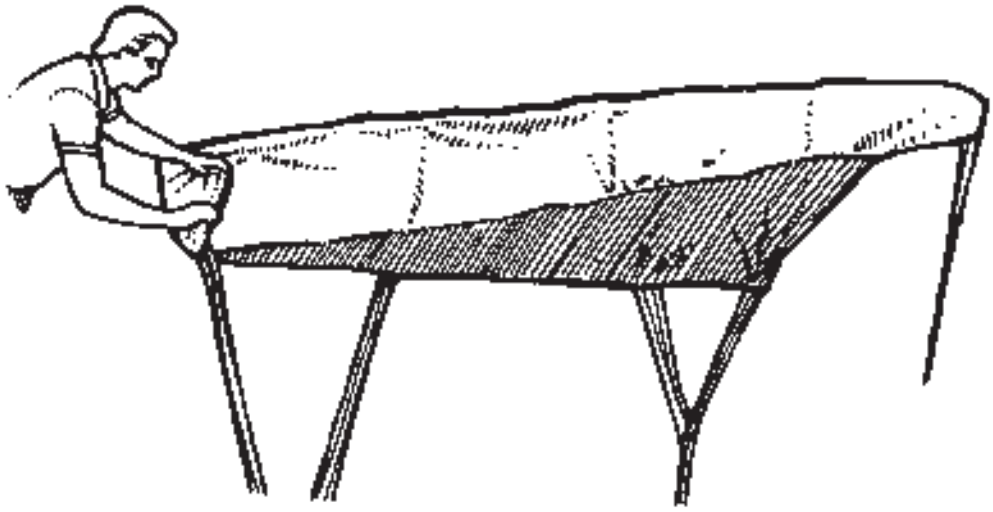


Illustration SR-3

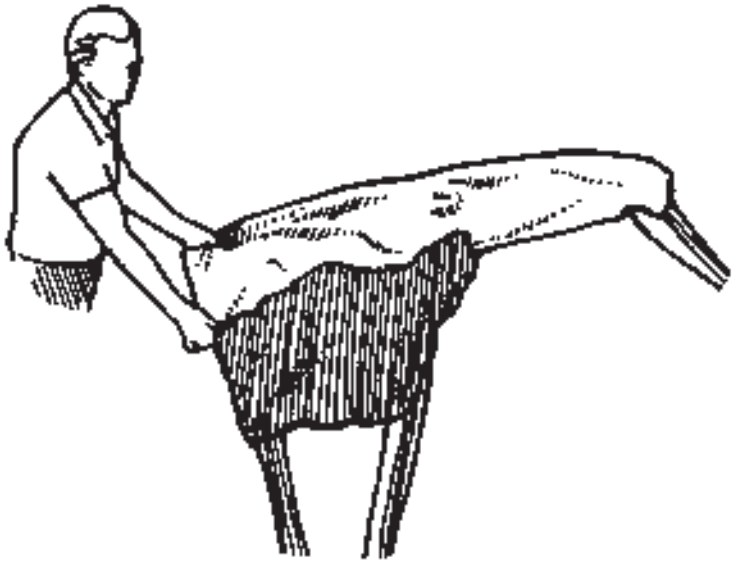


Illustration SR-4

6) Continue stacking the canopy so that the D lines are on top of the rest of the lines. Carefully clear and flake the stabilizers as shown in illustration SR-5 (there are three on each side).

7) Place one hand at the top of the D line attachment point and with the other hand, bring the tail of the canopy down over the rest of the stacked reserve as shown in illustration SR-6.

8) Neatly flake the tail, placing the respective steering lines on either side of the center line group as shown in illustration SR-7. The warning label is on the center of the tail of the canopy and should be visible when this step is complete.

Illustration SR-5

Illustration SR-6

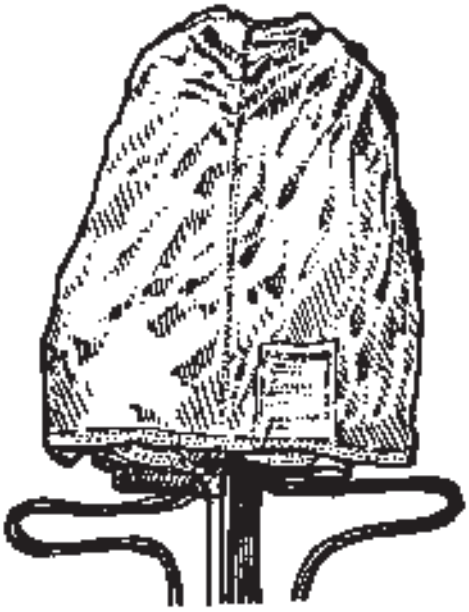


Illustration SR-7

9) Stow the excess control lines in rubber bands installed on the steering line attachment tabs as shown in illustration SR-8.

10) Pull the slider up, place under tail, and fan the grommets as shown in illustration SR-9.

11) Wrap the tail around the stacked canopy, making it the same width as the bag as shown in illustration SR-10. Expel as much air as possible from the canopy by flattening the entire stack with arm or knees.

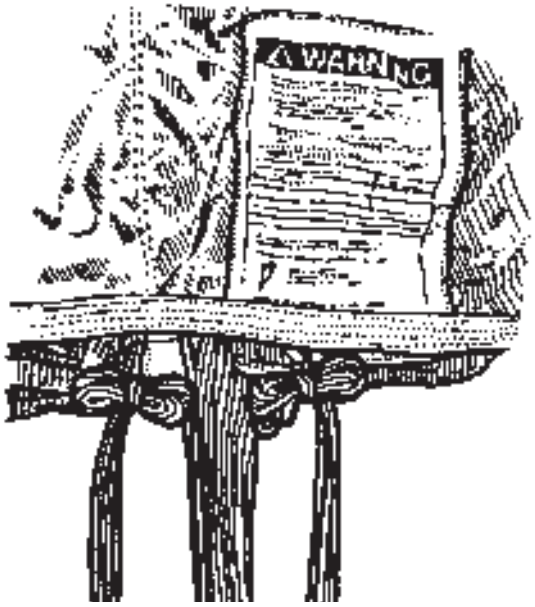


Illustration SR-8

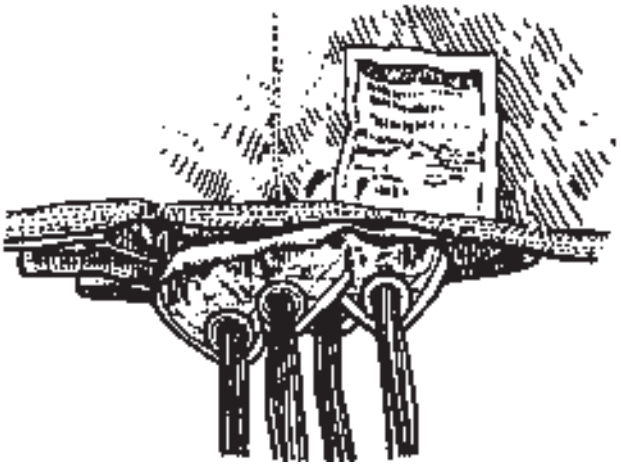


Illustration SR-9

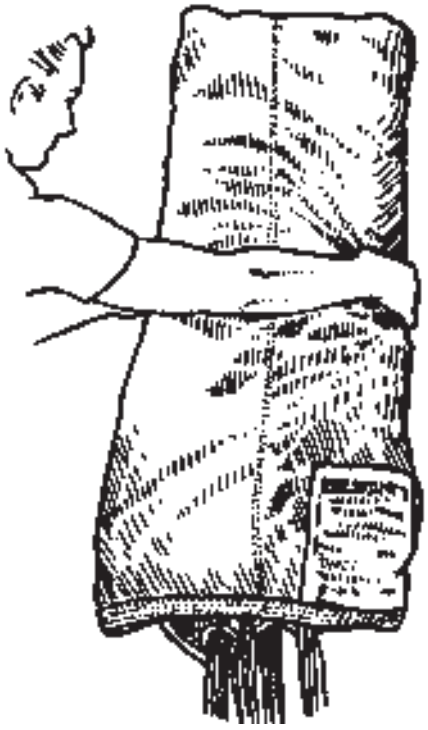


Illustration SR-10

12) Grasp the entire line group at the base of the canopy and fold about 18” of the canopy on top of itself as shown in illustration SR-11.

13) Place one hand on the slider grommets, and with the other, reach under the canopy as far up towards the end of the stack as possible. Lift the top end of the stack up and over as shown in illustrations SR-12 and SR-13. Keep the other hand on the slider grommets to held the rest of the canopy in place.

Illustration SR-11

Illustration SR-12

Illustration SR-13

14) Hold the canopy down on top of the stack with one hand, grab the underside of the bundle and fold it back up as shown in illustration SR-14.

15) Place your knees up against the edge of the stack and roll the remaining canopy using one arm to define the edge and the other to roll the canopy under as shown in illustration SR-15.

16) When the canopy is stacked, it should look like illustration SR-16.

Illustration SR-14

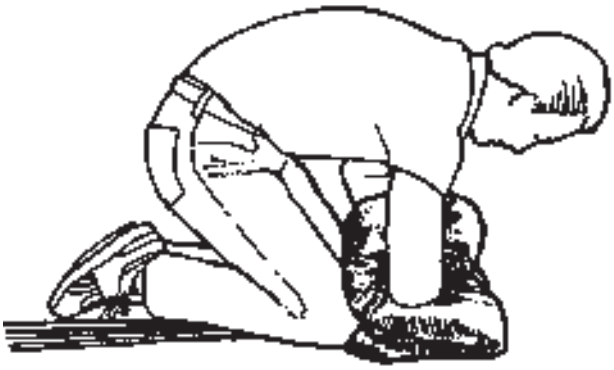


Illustration SR-15

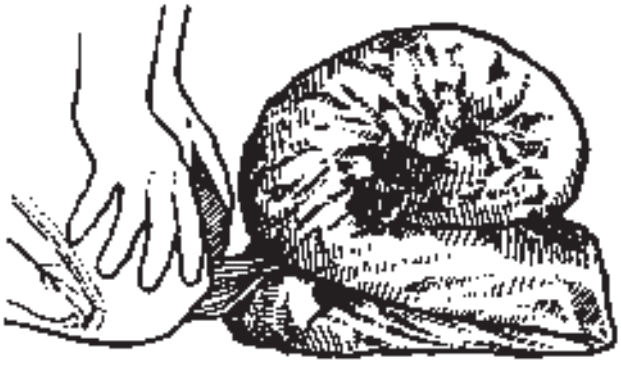


Illustration SR-16

THE BAG

17) Keep the stacked canopy tightly compressed and slide it into the bag so that the rubber bands are on the top as shown in illustration SR-17.

18) Close the bag with two bights of line in rubber bands through the center grommets as shown in illustration SR-18.

19) Close the rest of the bag with bights of line in rubber bands through the outer grommets. Stow the remaining line in the rubber bands on the top flap of the bag as shown in illustration SR-19. There should be 6 to 10 inches of line left over after the last stow is made.

Illustration SR-17

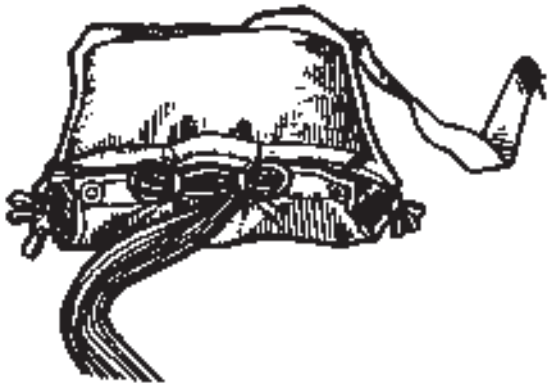


Illustration SR-18

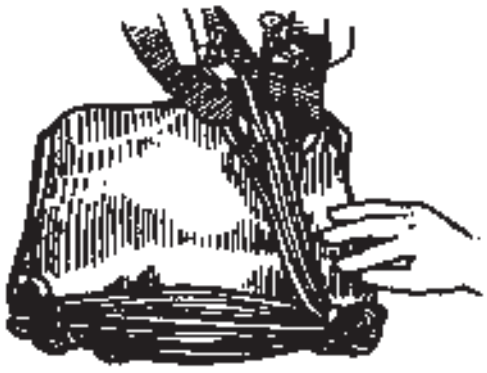


Illustration SR-19

CLOSING THE CONTAINER

20) Bring the bag over the rig and lay it on the main container. Run the risers straight down the reserve pack tray and fan the links as shown in Illustration SR-20 to avoid an uncomfortable lump. Mate the Velcro on the bottom outside of the reserve container to make neat corners.

NOTE: If you are installing an AAD, fan the risers to the inside of the pouch as shown in illustration SR-20.

21) Place the bag in the reserve container so that the lines are in the bottom of the pack tray (in the corners you've just made with the Velcro). Fold the bridle down over the bag. Thread closing loops and pull up cords through the grommets in the top sub flap. Next, thread through the bottom sub flap and secure with temporary pins. The bridle must come out between the top and bottom sub flaps on either side of the center grommet. The elastic loop goes through the center grommet in the top sub flap. Thread it through the middle grommet in the bottom sub flap and secure with a small bight of bridle (no more the 1 inch) as shown in illustration SR-21.

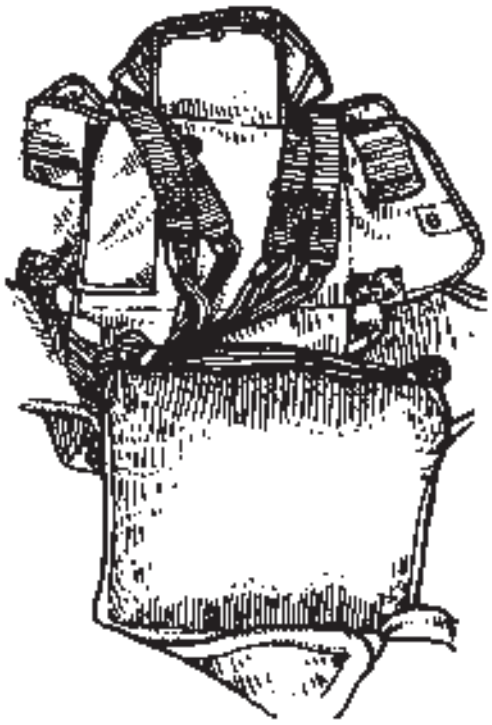


Illustration SR-20

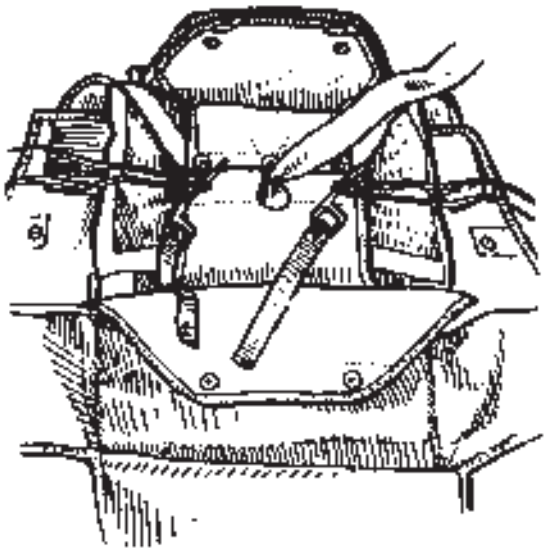


Illustration SR-21

22) Close the side flaps and secure with temporary pins as shown in illustration SR-22 Use a packing paddle or fid if necessary to wedge the bag neatly under the flaps.

23) S-fold the bridle neatly on top of the bottom sub flap and then split the stack into a V as shown in illustration SR-23.

24) Compress the pilot chute over the folded bridle and close the bottom flap as shown in illustration SR-24. To insure a neat pack job, keep the pilot chute centered on the sub flaps. Most of the pilot chute should now be held securely under the bottom flap. Only about 1/4 of the cap should be visible should be centered between the two grommets. (If you are installing an AAD, refer now to number 9 in the AAD INSTALLATION section of this manual located on page 29.)

25) Before closing the top flap, thread the ripcord cables under the Type IV webbing running across the flap. The longer cable goes to the wearer's right.

26) Close the top flap. Remove temporary pins and secure with ripcord pins. Log, and seal the right side. Count your tools.

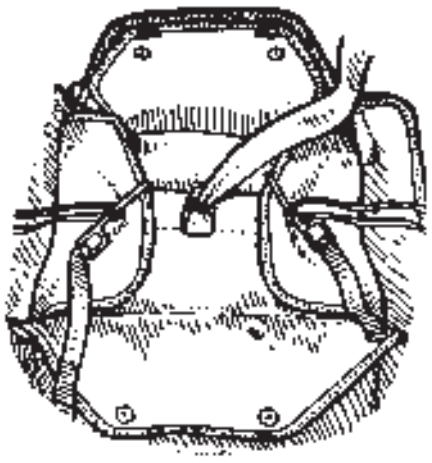


Illustration SR-22

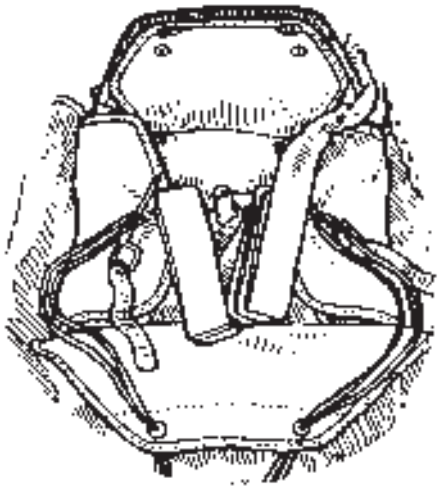


Illustration SR-23

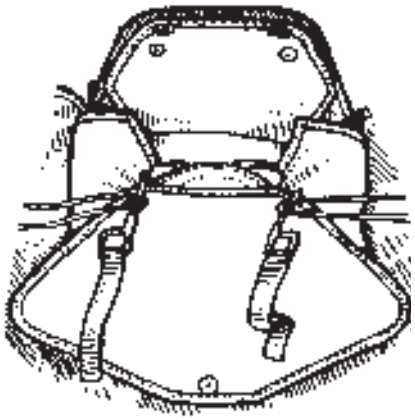


Illustration SR-24

AAD INSTALLATION

When an AAD unit is to be used on a Mini Hawk, you must first install the unit in the pack tray and the firing cable on the top flap. The reserve packing method is then identical to the normal method until its time to close the rig. When closing the rig, the AAD firing cable must be installed along with the reserve pins. These directions are to be used in conjunction with the regular reserve packing instructions.

1) Before starting with the reserve, slide the AAD unit (either Sentinel or FXC) into the black spandex pocket on the left side of the reserve pack tray. In both cases, the short firing cable should be on the right and the longer cable or housing on the left. The same pocket is used for either unit. The slim Sentinel will seem loose in the pocket, but will be held firmly in place when the reserve is packed.

2) Both the Sentinel and FXC have cables which must be attached to the top flap. For this, a clamp must be screwed into the top flap, to the right of the ripcord housing end as shown in illustration AAD-1. Because placement of the AAD clamp is critical, all Mini Hawks come with pre-drilled holes in the top flap. The holes are drilled through the plastic only, not the material. Find the holes by probing the area with a pin. When you've found them sear the material around them with a hot knife basting tip to expose the hole. Place the clamp over the end of the AAD cable housing and then push the screws through the clamp and the flap.

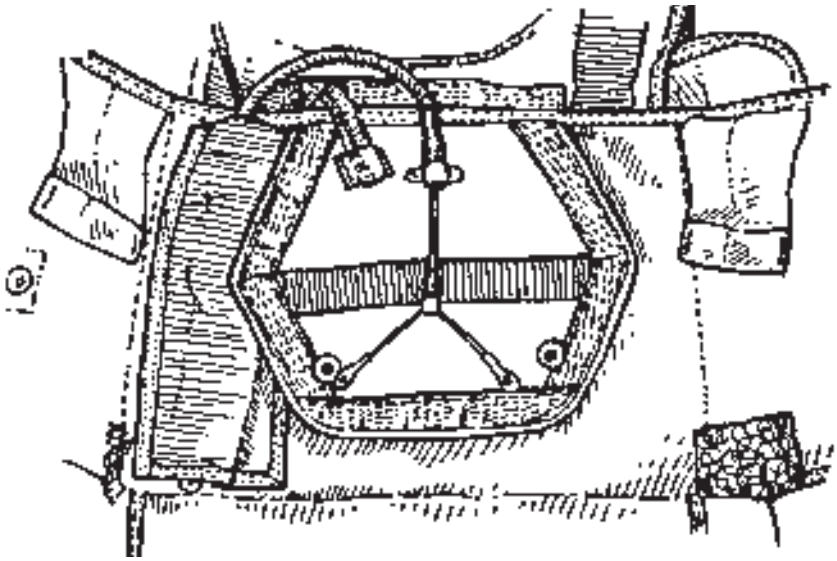


Illustration AAD-1

3) Fasten the clamp screws on the back of the top flap with the large washers and nuts supplied by Strong Enterprises as shown in illustration AAD-2.

4) SENTINEL: Next to the firing cable housing is a long black plastic coated cable. Route this over the left shoulder and along the path of the Velcro channel running alongside the left main lift web. Mate the Velcro of the channel. Place the Sentinel sensing/calibration unit in its pouch and attach to the left diagonal and attach the cable ends as shown in illustration AAD-3.

5) Loop up the excess cable and tack it inside the Type IV webbing loop on the main lift web as shown in illustration AAD-4.

6) Return now to regular reserve packing instructions.

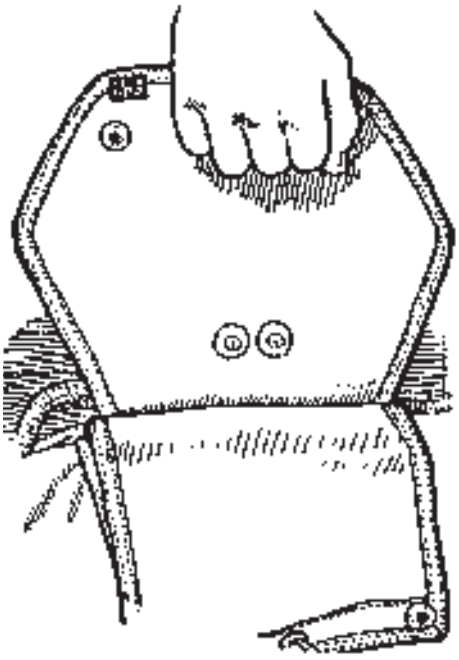


Illustration AAD-2

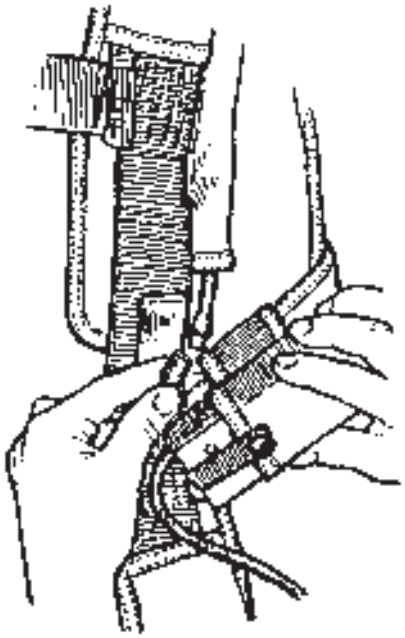


Illustration AAD-3

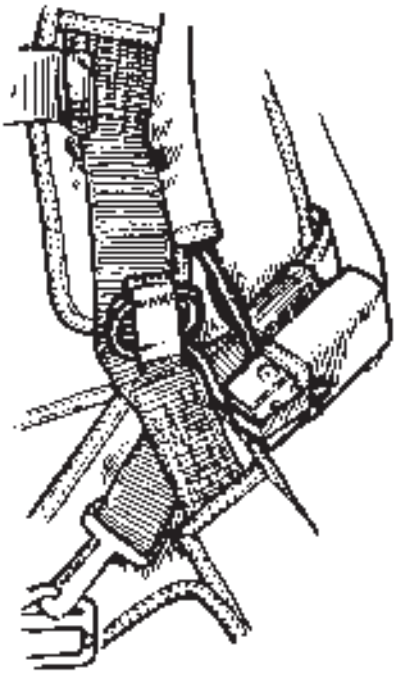


Illustration AAD-4

7) FXC: The FXC “Y” ripcord cable extension is available in two sizes: a small hole variety and a large hole variety. The large hole version (FXC PN 411-00097/Strong PN 920603) must be used. Next to the firing cable housing is a long metal mesh housing with the FXC sensing/calibration unit on the bottom. Route this over the shoulder of the rig and along the path of the Velcro channel running alongside the left main lift web. Mate the Velcro of the channel. On the back of the sensing/calibration unit is a metal plane with screws on the side. Loosen these screws and slip the unit onto the Type IV webbing sewn onto the main lift web. Tighten the screws so that the metal plate holds the sensing/calibration unit firmly in place as shown in illustration AAD-5.

8) Return now to the regular reserve packing instructions.

9) You should now have all but the top flap of the reserve container closed. A specially modified ripcord must be used with the AAD. For the Mini Hawk, the proper ripcord is PN 61829012S.28012S. For the Student Hawk, the proper ripcord is PN 61329010S.28010S. It is different in that the cable extends beyond the pin shaft, giving the AAD cable end something to pull against. Thread the reserve ripcord through the Type IV webbing running across the top flap. The longer of the cables goes to the wearer’s right. Close the top flap and secure with temporary pins. The AAD cable goes OVER the Type IV webbing. Slide the ripcord pins through the ends of the AAD cable. Replace temporary pins with ripcord pins as shown in illustration AAD-6. Install the pins so the they are set as far down in the closing loops as possible.

10) It is mandatory that you check the location of the clamp and function of the AAD on the packed rig.

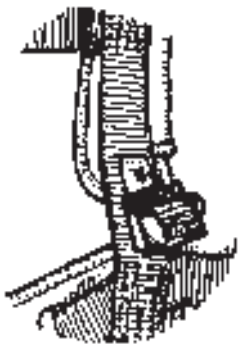


Illustration AAD-5

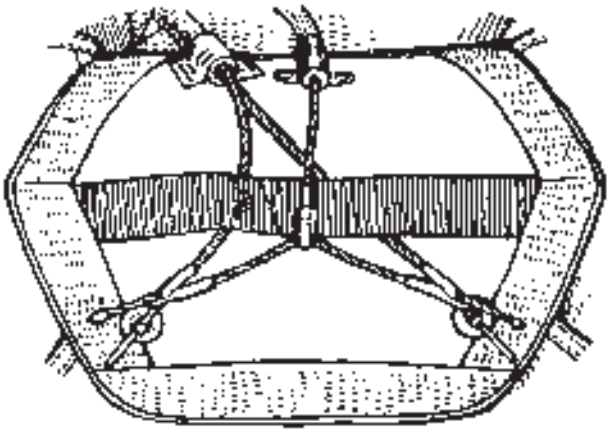


Illustration AAD-6

TESTING THE FXC

Place the rig with the packed reserve in a large plastic bag. Set the Safety/Lockout knob on “JUMP”. Squeeze the bag hard to rapidly increase the pressure inside and cause the unit to fire. Both pins must be extracted completely from their locking loops. NOTE: The FXC must be fired ONLY with a load provided by the packed reserve. After the test, re-close the container.

TESTING THE SENTINEL

Check the electrical circuit on the Sentinel using the test button on the unit according to the manufacturer’s instructions.

PACKING THE MINI HAWK AND STUDENT HAWK

When packing a main that has been manufactured by Strong Enterprises into the Mini Hawk, it is important that these packing directions be followed carefully. The method shown here has been proven effective at providing comfortable openings. Use of any other method for the initial jumps on the canopy can result in very hard openings. After the canopy has been "broken in" (50-100 jumps), you may try other packing methods.

ASSEMBLING THE MAIN

It is not required that a rigger assemble a main parachute. However, if you are unfamiliar with the process, we strongly recommend that you have your main assembled by a rigger.

ATTACHING SOFT TOGGLES

1) When the canopy is straight and correctly installed on the risers, double check to see that the steering lines are clear, that each passes through the correct back slider grommet that corresponds with the correct riser.

2) Strong Enterprises main canopy steering lines are made with a finger trapped loop at the end of the steering line to facilitate attachment of the toggle. Thread one steering line through the guide ring on the riser and then through the grommet in the toggle. Start from the underside of the toggle (the side with Velcro®) as shown in illustration A-1. Position the loop snug around the grommet on the toggle.

3) When the toggle is installed, the steering line should run out the back of the toggle (the side with Velcro®).

Illustration A-1

When your main has been assembled, it should meet all these criteria:

A) Steering lines are clear of all other lines.

B) Each steering line passes through its correct rear slider grommet.

C) Each steering line passes through the guide ring on its correct riser.

D) The canopy is set up so that as the rig lays on the floor with the harness down, the nose of the canopy is also facing down (in other words, the canopy is facing forward).

E) All canopy lines are straight, with the front outside line leading directly to the outside of the link on the front riser etc... In other words, the whole canopy passes a thorough continuity check.

ATTACHING 3-RING RISERS

4) Thread each cable on the cutaway handle into its housing and mate the Velcro® on the handle to the Velcro® on the harness. Make sure the short cable goes through the short housing and the long cable through the long housing. The handle should be positioned as close to the ends of the housing as possible so that no cable is exposed.

5) When the canopy is straight and ready to be attached, the risers should be on the floor with the rings facing down. Pass the ring on the end of the riser through the large harness ring from above. Fold it back toward the canopy and risers as shown in illustration A-2

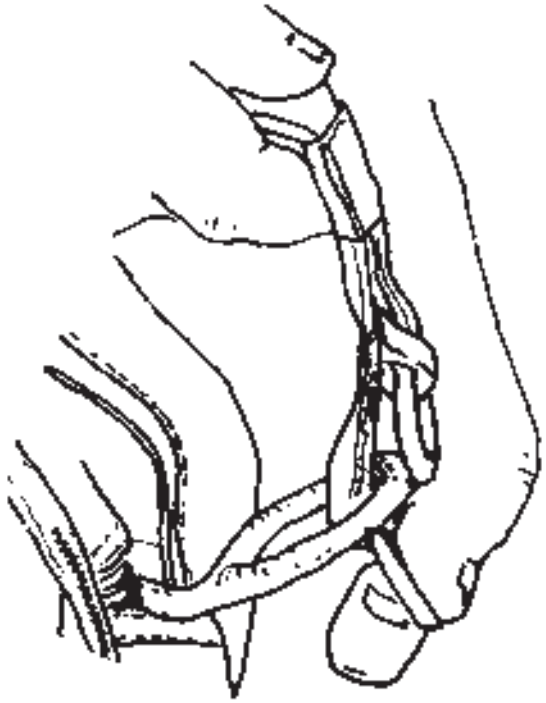


Illustration A-2

6) Thread the smaller ring through the middle ring as shown in illustration A-3 in the

same way, but make sure it doesn't pass through the large ring.

7) Bring the white loop over the small ring only and then through the riser grommet so it pokes out the back of the riser as shown in illustrations A-4 and A-5.

Illustration A-3

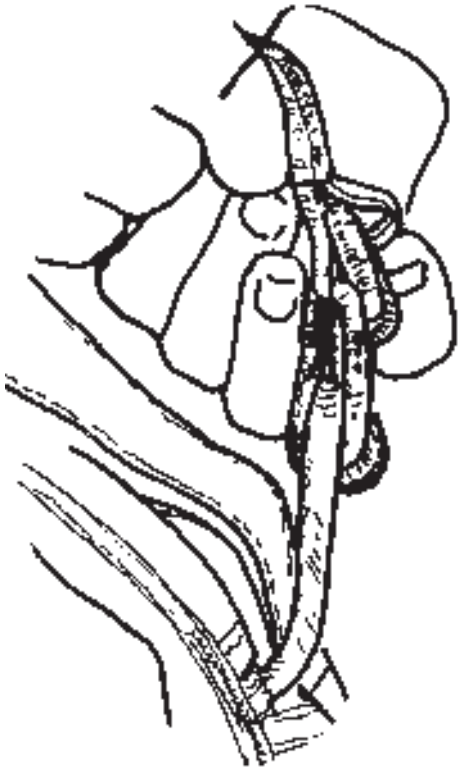


Illustration A-4

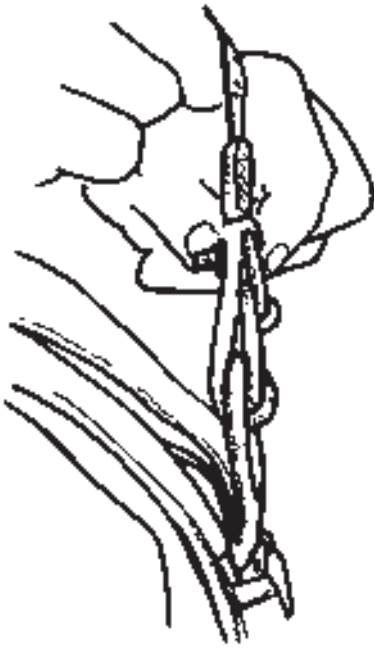


Illustration A-5

8) Hold the loop in place and thread it through the grommet on the end of the housing a

shown in illustration A-6. The flat side of the cable housing grommet should be against the riser.

9) Thread the yellow cable through the white loop as shown in illustrations A-7 and A-8 making sure the loop isn't twisted. Be careful with the cable so you do not bend it too sharply or kink it.

10). Insert the free end of the cable in the channel on the back of the riser as shown in illustration A-9. Repeat the above steps with the other riser.

When finished, your 3-ring riser should look like illustration A-9.
Check to see that each ring passes through only one other ring.

Illustration A-6

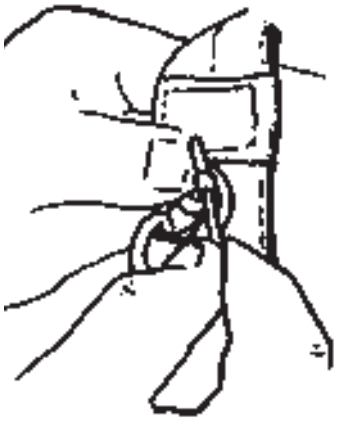


Illustration A-7

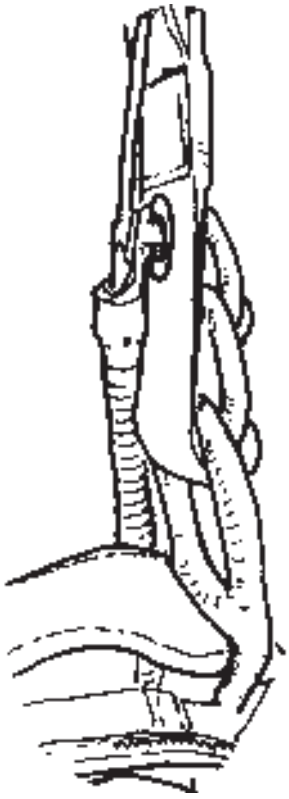


Illustration A-9

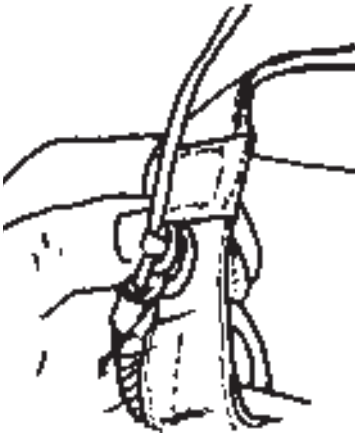


Illustration A-8

ASSEMBLING THE MINI HAWK DEPLOYMENT BAG

11) Flake the canopy on its left or right side. Locate and expose the metal ring that is attached to the canopy bridle attachment point. Lay the deployment bag (mouth toward the canopy) in front of the bridle attachment point ring as shown in illustration A-10.

A) For installation of a hand deployed pilot chute, run the bridle through the grommet at the top of the bag from the top through the inside of the bag to the bottom of the bag towards the canopy as shown in illustration A-11.

1) Run the loop at the end of the bridle through the ring on the canopy bridle attachment point and pass it back up and through the grommet at the top of the bag as shown in illustration A-12.

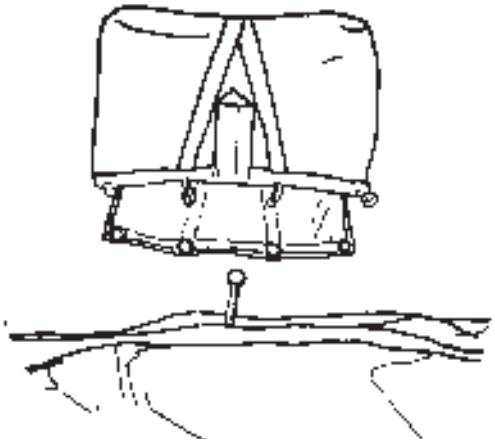


Illustration A-10

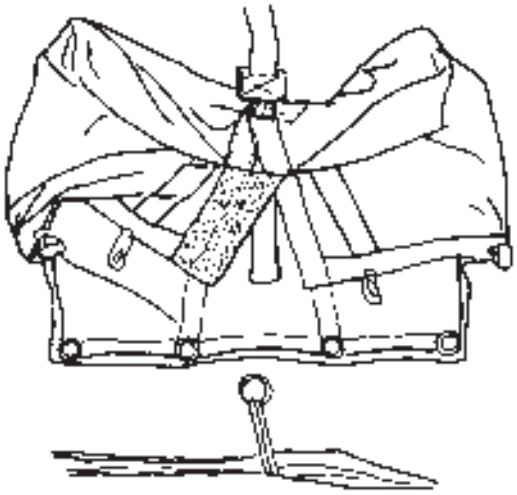


Illustration A-11

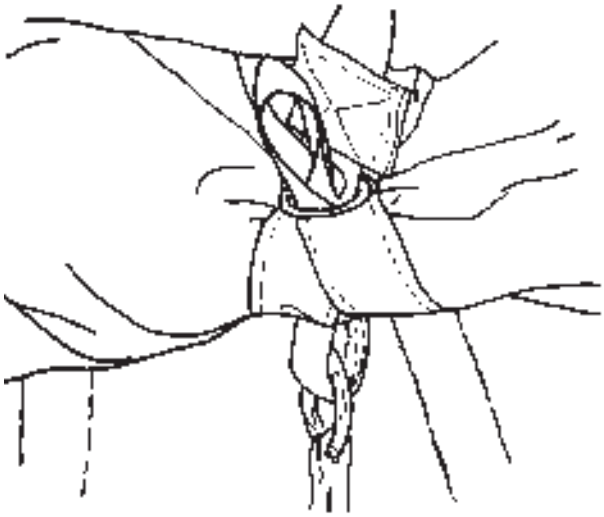


Illustration A-12

2) Thread the entire pilot chute through the loop. Doing this will create a loose larks head knot at the deployment bag grommet. Pass the loose knot threw the grommet and tighten the larks head knot snug against the ring on the bridle attachment point as shown in illustration A-13.

B) For installation of a spring loaded pilot chute, install the bridle onto the ring located on the canopy bridle attachment point with a larks head knot. Pass the bridle threw the mouth of the bag and the grommet located on the top of the bag and secure the bridle to the pilot chute using a larks head knot as shown in illustration A-14.

Illustration A-13

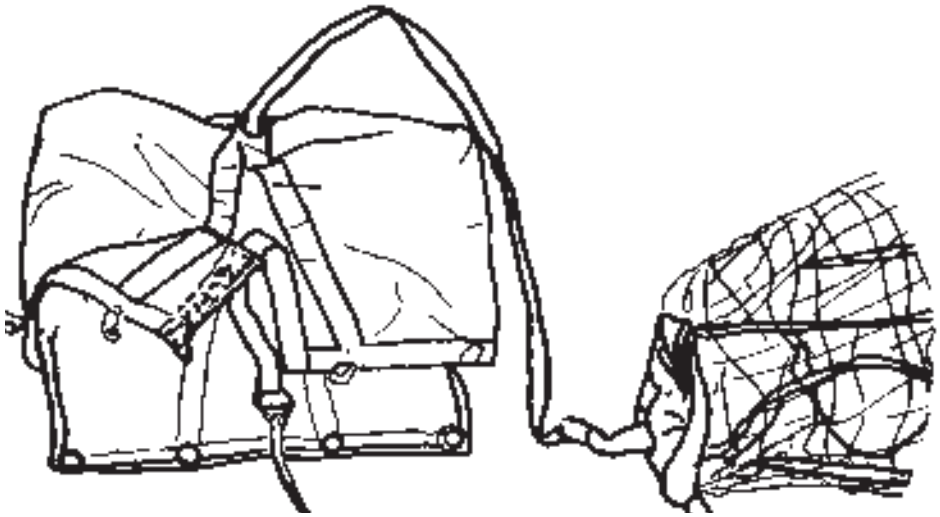


Illustration A-14

ASSEMBLING THE STUDENT HAWK DEPLOYMENT BAG

12) When using the following deployment methods: hand deploy pilot chute, spring loaded pilot chute, ripcord activation, ripcord activation with assisted freefall main release and conventional static line, the assembly procedure is as follows.

Attach the 13 inch bridle (short bridle) to the deployment bag at the attachment loop located at the top of the bag using a larks head knot. Route the other end of the short bridle through the grommet on the deployment bag and secure it to the #5 rapide link located on the bridle attachment point as shown in illustration A-15. Attach the long bridle or static line to the same attachment loop as the short bridle, located on the deployment bag using a larks head knot as shown in illustration A-16.

13) Attachment procedure when installing the drogue system.

Attach the drogue bridle to the attachment loop located at the top of the deployment bag using a larks head knot as shown in illustration A-17. Route the deflation line directly through the grommet at the top of the bag securing it to the #5 rapide link located on the bridle attachment point as shown in illustration A-18.

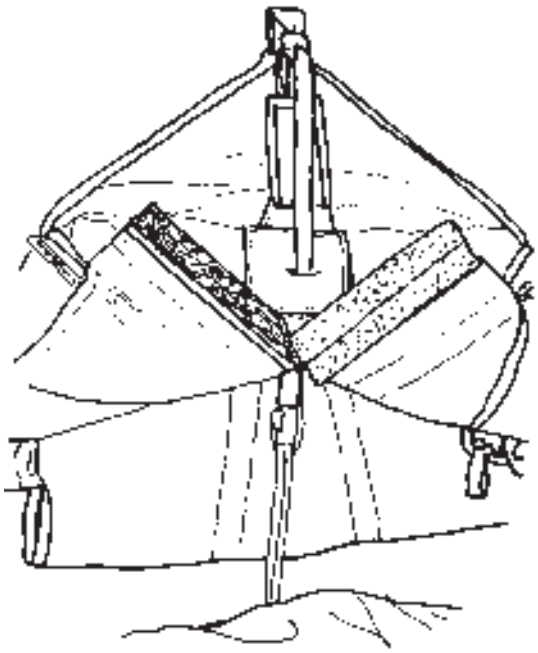


Illustration A-15

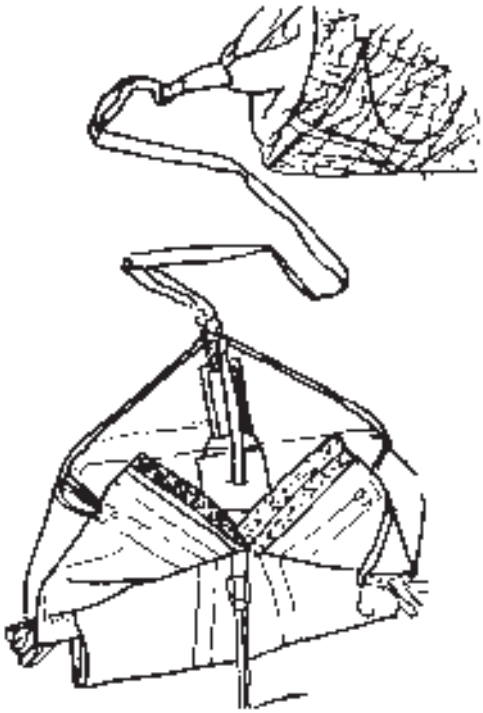


Illustration A-16

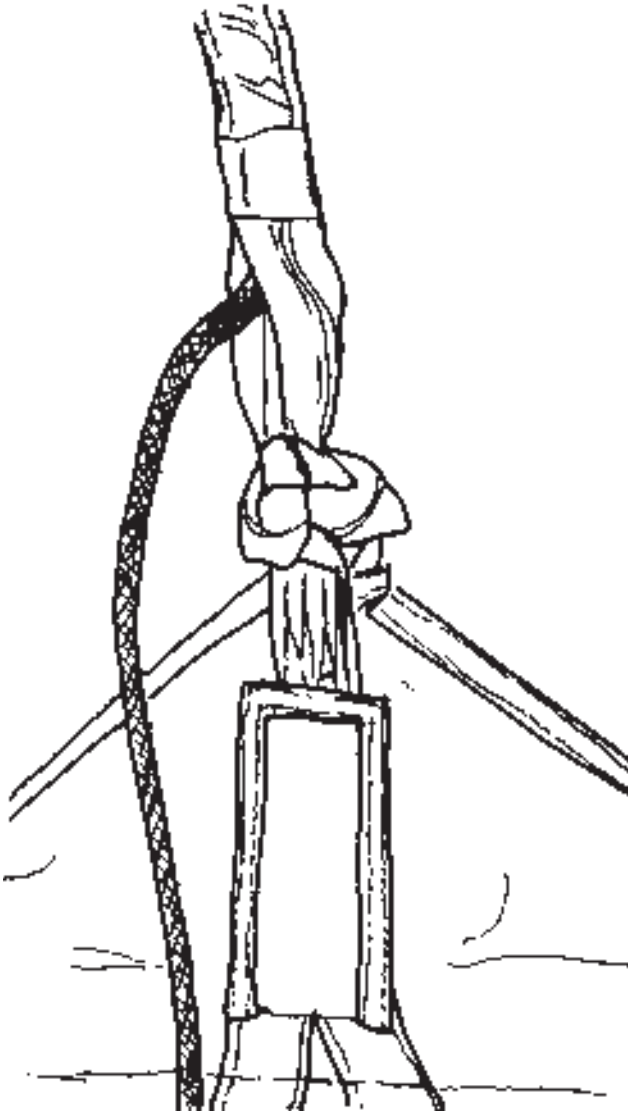


Illustration A-17

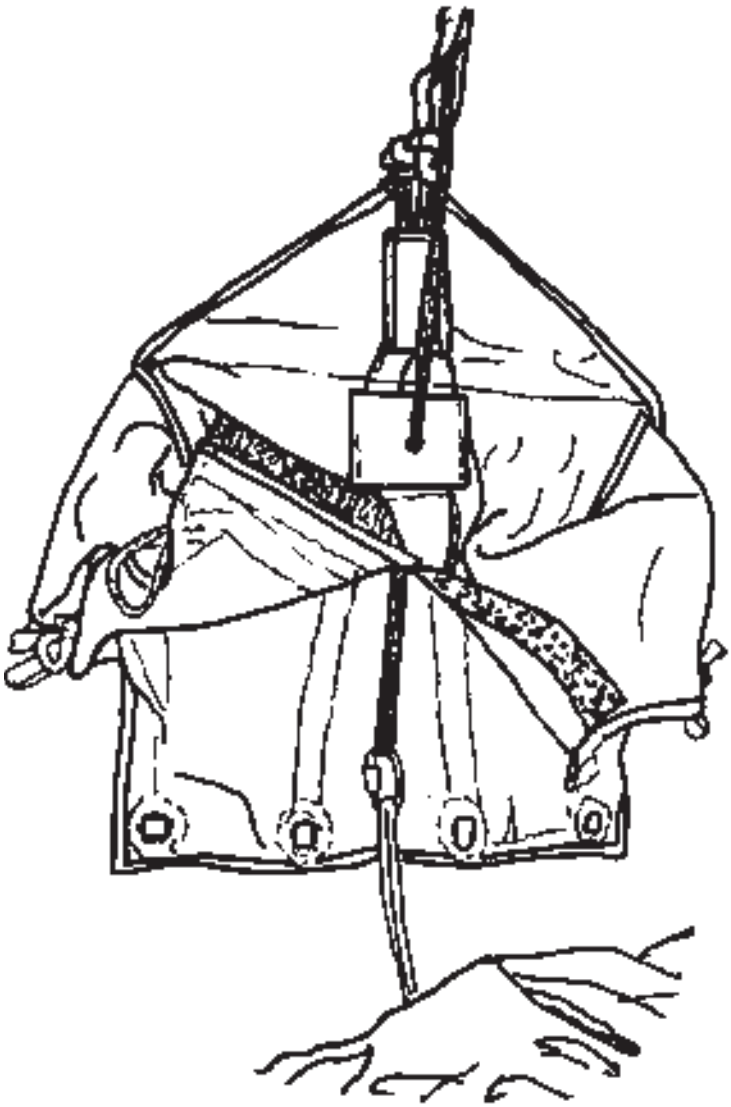


Illustration A-18

PACKING THE MINI HAWK AND STUDENT HAWK MAIN

1) Run a very thorough continuity check to be sure the canopy is straight. Flake the canopy on its left or right side. Make sure the nose of the canopy is clear, then fold it over to the A-lines as shown in illustration M-1.

2) FOLD (do not stack) the canopy again half way between the A-line group and the B-line group as shown in illustrated in M-2. Continue with one more fold to the B-line group as illustrated in M-3. At this point the A-line should be laying directly on top of the B-line group.

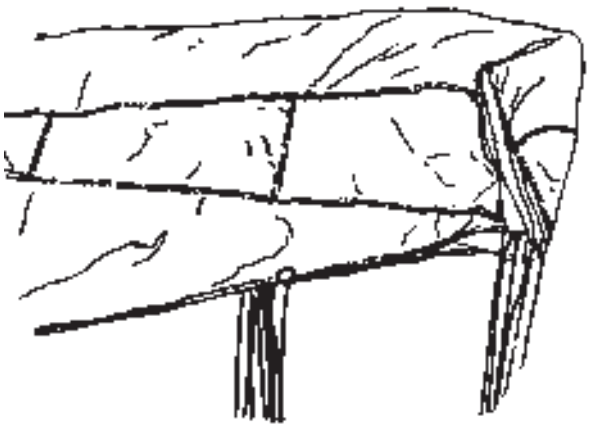


Illustration M-1

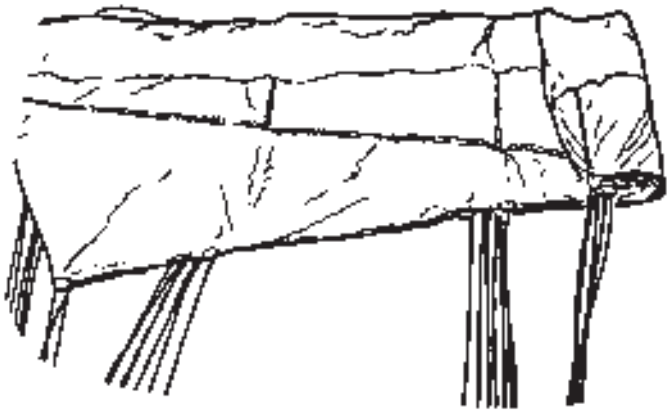


Illustration M-2

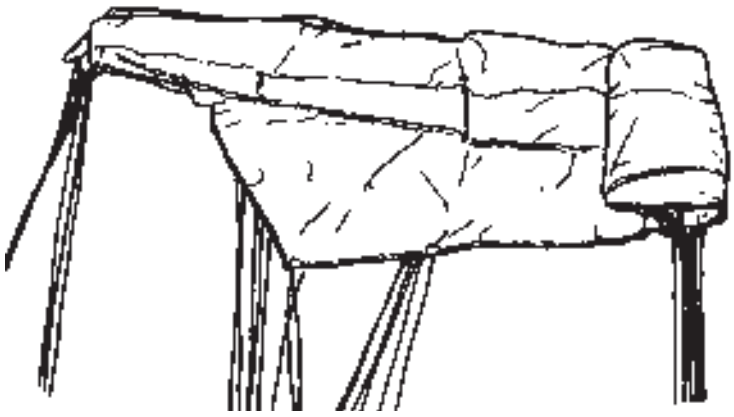


Illustration M-3

3) Moving to the tail, fold the steering lines on top of the C-lines. The steering line attachment points should rest on top of the C-line slider stops as shown in illustration M-4.

4) Set the brakes. To do this, pull the toggle down till the finger trapped loop on the steering line is at the guide ring on the riser (the steering line must be through the guide ring). Pull the loop just through the ring, then thread the loop on the riser through BOTH the loop on the steering line and the ring. Thread the stiff section at the top of the toggle through the riser loop as shown in illustration M-5.

5) S-fold the excess steering line and tuck just below the riser grommet as shown in illustration M-6. Attach toggle firmly to Velcro® on riser. Repeat procedures 5 and 6 on the other riser.

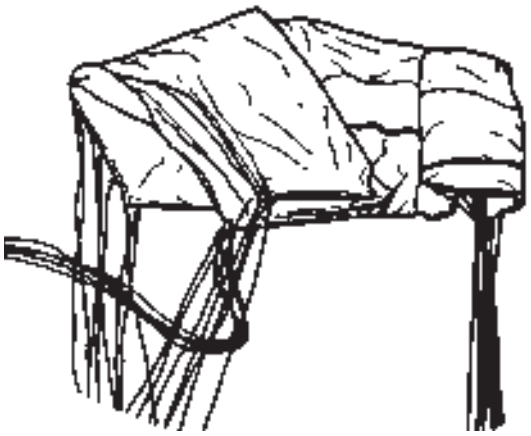


Illustration M-5

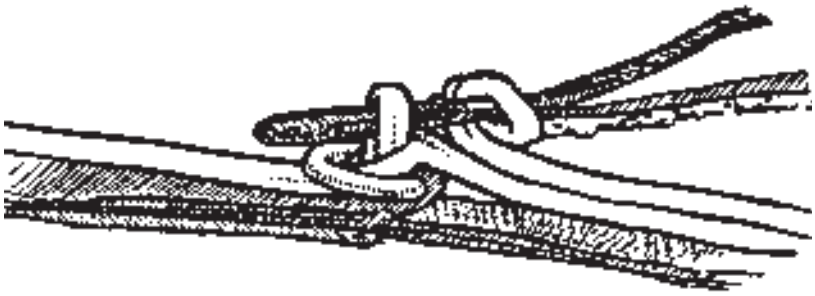


Illustration M-4

Illustration M-6

6) Move back to the tail section of the canopy and take up any slack in the suspension lines so they are straight and even. Fold the D-lines over on top of the C-lines as shown in illustration M-7.

7) Pull the slider up and tuck it between the stabilizers as shown in illustration M-8.

8) Fold the entire tail section into the center of the canopy, and then flop the whole nose section on top of that as shown in illustrations M-9 and M-10.

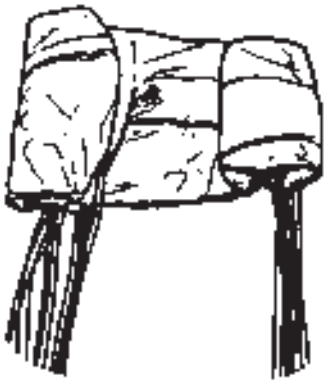


Illustration M-7

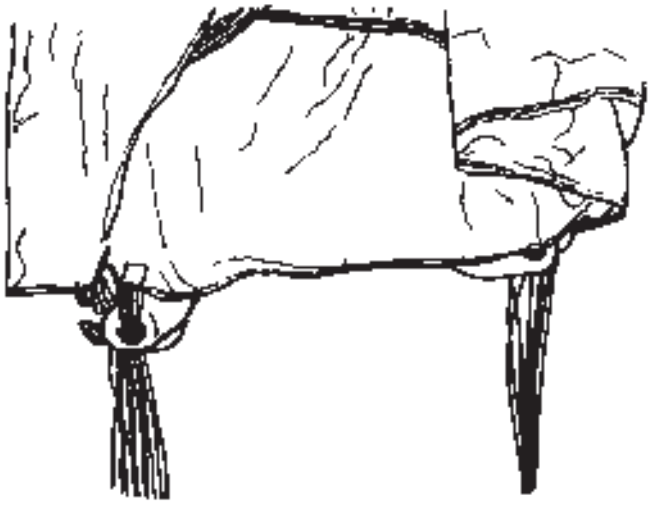


Illustration M-8

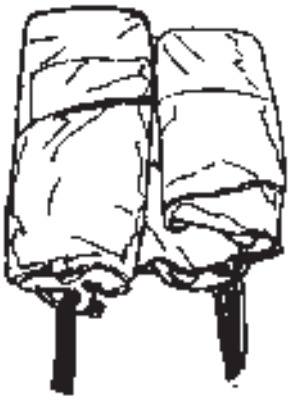


Illustration M-9

Illustration M-10

9) Expelling the air from the canopy at this point will result in a neat pack job.

10) Hold all the steering lines at the base of the canopy in one hand and fold about 10” up on top of itself as shown in illustration M-11.

11) Folding the canopy back over itself, making one S-fold in the canopy on top of itself as shown in illustration M-12.

Illustration M-11

Illustration M-12

12) Place your knees up against the edge of the stack and roll the remaining canopy inside the S-fold as shown in illustration M-13.
Expose the steel ring that is attached to the bridle attachment point on the canopy.

13) The canopy is now stacked and ready to slide into the bag.

14) Keeping the bundle tightly compressed, slide the canopy into the deployment bag and mate the Velcro® on the top of the bag.

If you are packing a Student Hawk, refer now to number #1 of STOWING THE LINES ON THE STUDENT HAWK on page 52 of this manual.

Illustration M-13

STOWING THE LINES ON THE MINI HAWK

15) Close the bag with the four locking stows at the mouth of the bag starting at the center and working out (the Student Hawk has two) as shown in illustration M-14.

16) Continue stowing the lines as shown in illustration M-15.

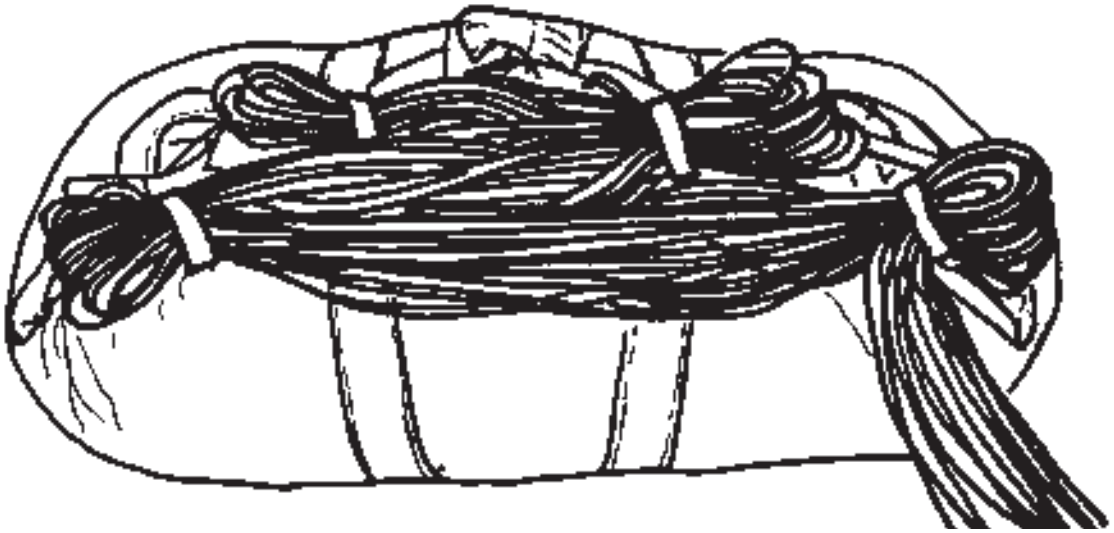


Illustration M-14

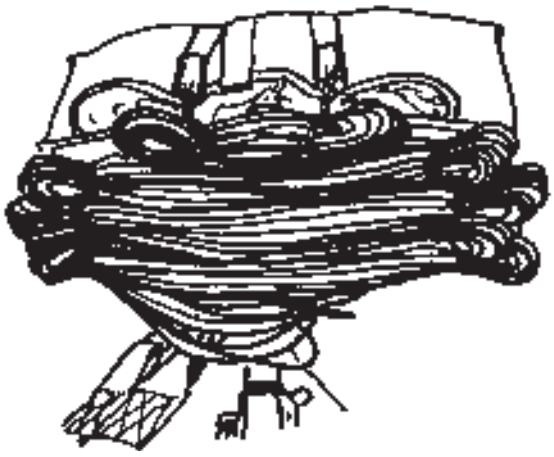


Illustration M-15

CLOSING THE MAIN CONTAINER ON THE MINI HAWK

17) Pick up the bag and lines carefully and place them below the container. Run the risers along the side of the rig and straight down the sides of the main pack tray as shown in illustration M-16.

18) Pick up the bag carefully and place it in the pack try so that the lines are at the bottom of the container, as shown in illustration M-17. Run the bridle up over the reserve container to the right.

Go now to the section describing the deployment method on your Mini Hawk, either hand deploy or ripcord.

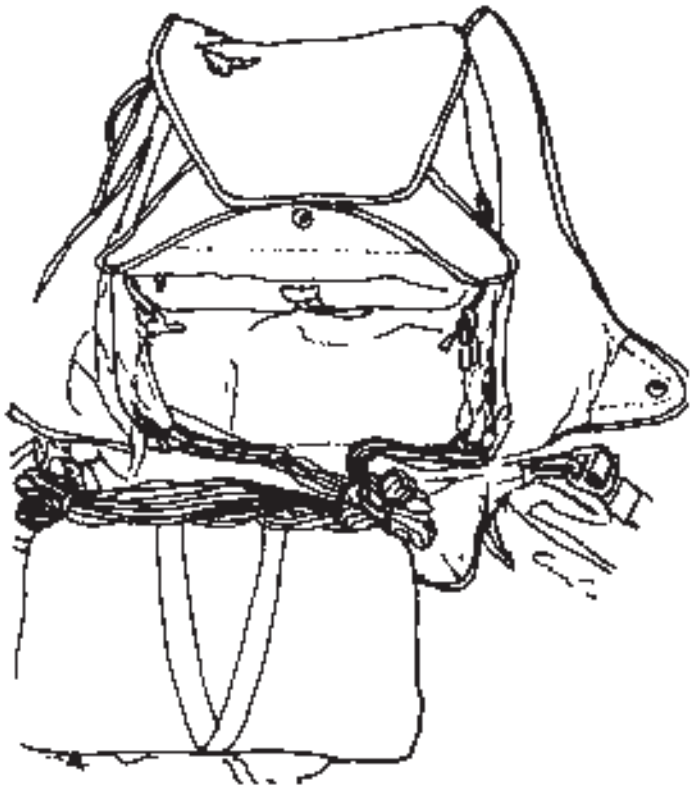


Illustration M-16

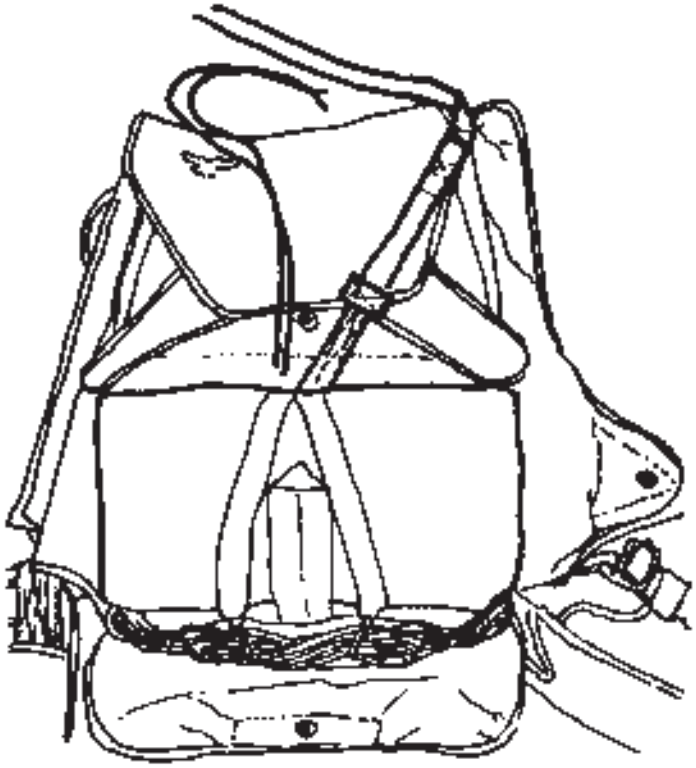


Illustration M-17

HAND DEPLOY

1) Thread the pull up cord through the closing loop located at the bottom flap grommet. Run the bridle down over the bag and flap on the right side. The bridle should come out under the right side flap as shown in illustration HD-1. Close the container in the following sequence, bottom, top, left side, right side and secure with the curved pin located on the bridle.

2) Close the Velcro® tabs on the bridle as shown in illustration HD-2.

3) Fold the bridle back over itself as shown in illustration HD-3.

Illustration HD-1

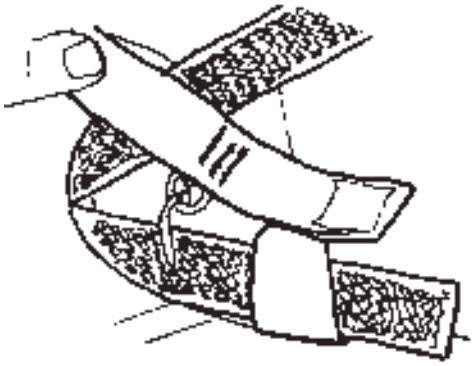


Illustration HD-2

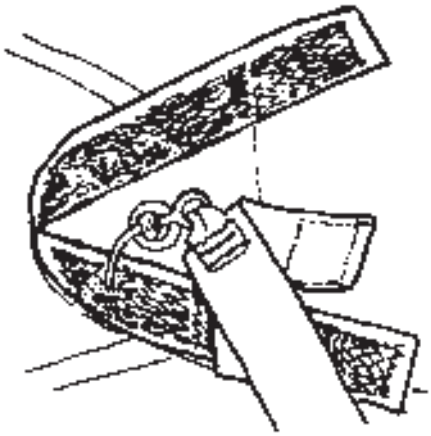


Illustration HD-3

4) Run your hand down the bridle and find the beginning of the Velcro®. Attach this end to the hook Velcro® on the right side flap of the rig. Tuck the excess bridle under the flap as shown in illustration HD-4.

5) Turn the rig on its side and mate the bridle to the Velcro® track running along the side flap tab and the leg strap as shown in illustration HD-5.

6) Lay the pilot chute out next to the leg strap, mesh side up and S-fold the bridle on the mesh as shown in illustration HD-6.

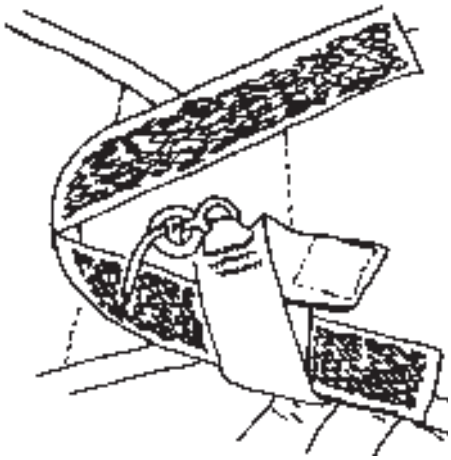


Illustration HD-4

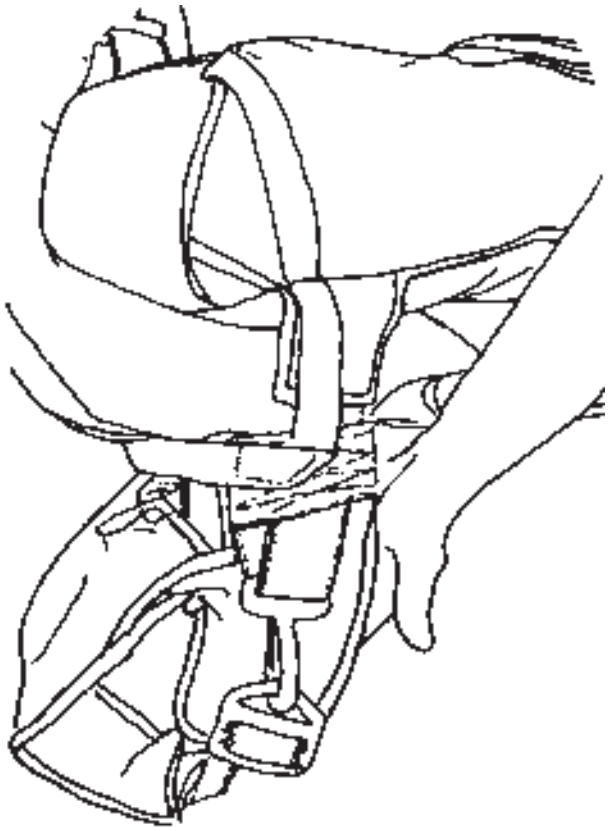


Illustration HD-5

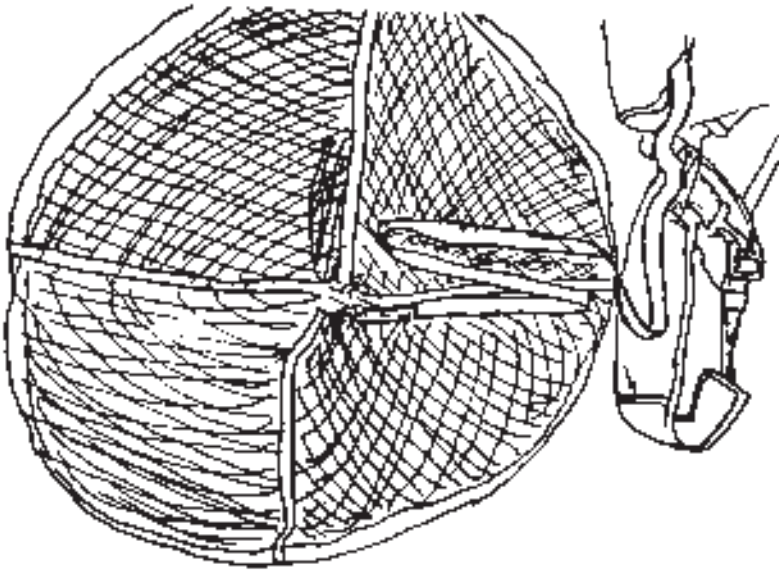


Illustration HD-6

7) Fold the pilot chute in half towards the leg strap, as shown in illustration HD-7.

8) Fold the round edges of the pilot chute back towards the handle as shown in illustration HD-8.

9) Fold the pilot chute in thirds along its length as shown in illustrations HD-9 and HD-10.

10) Fold the pilot chute in thirds once again as shown in illustration HD-11.

11) Open the Velcro® on the leg strap pocket, and slide the pilot chute in.

12) Tuck any excess bridle behind the pilot chute, and close the Velcro® on the pocket as shown in illustration HD-12.

Illustration HD-7

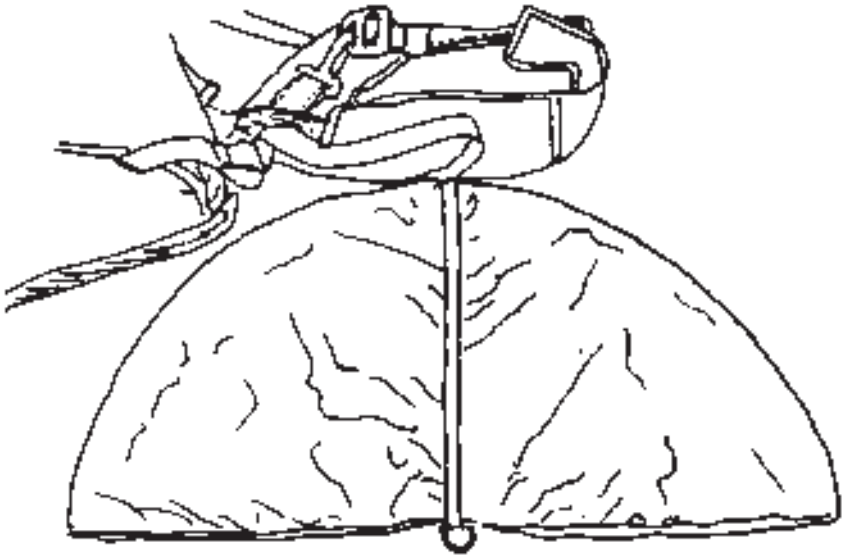
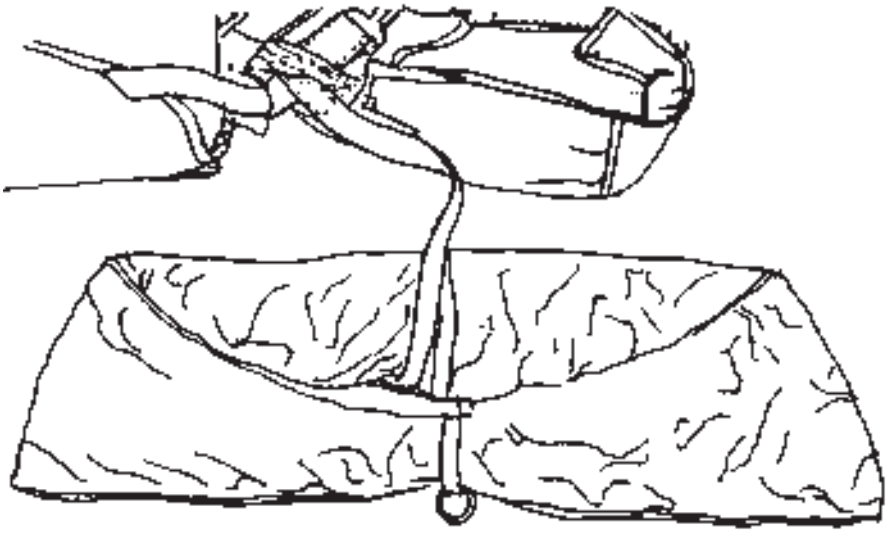


Illustration HD-8



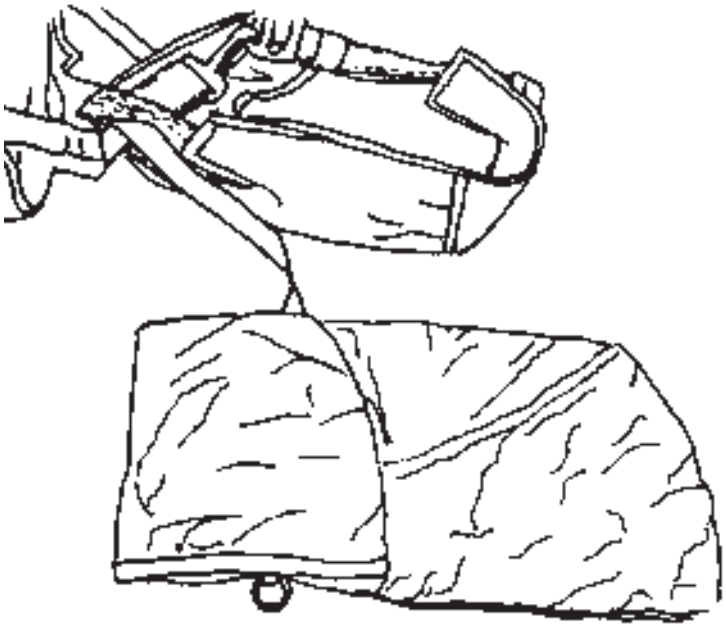


Illustration HD-9

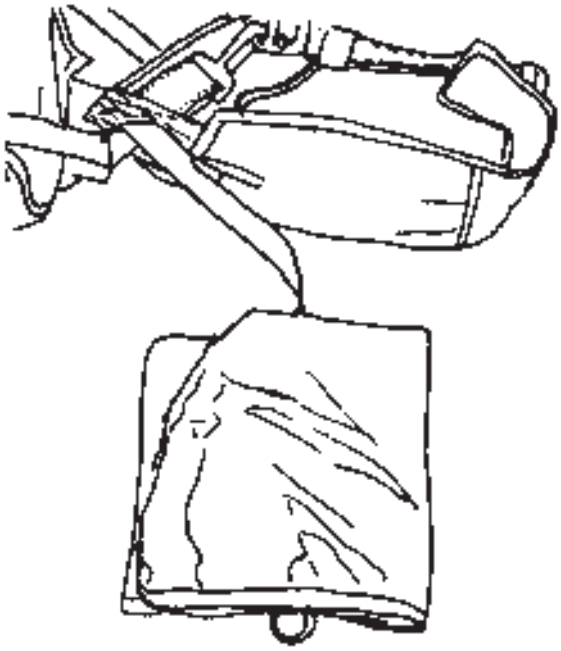


Illustration HD-10

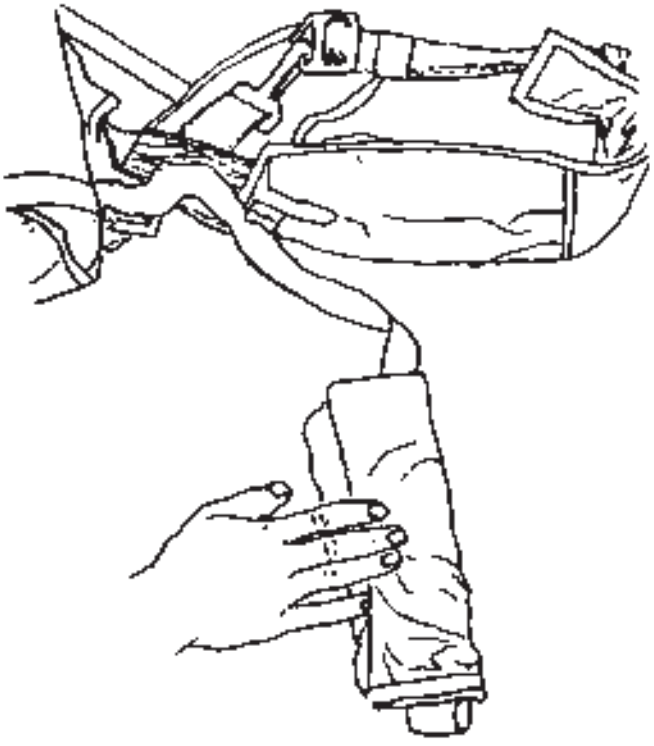


Illustration HD-11

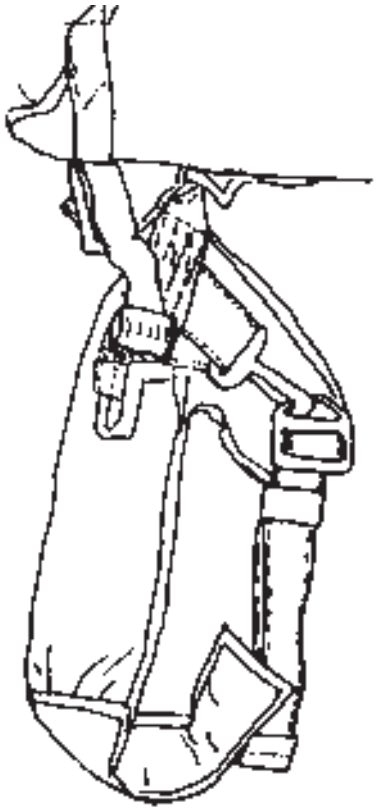


Illustration HD-12

RIPCORD

1) Thread the ripcord cable through its housing beginning on the right main lift web as shown in illustration RC-1. Stow the handle securely in the elastic pocket.

2) S-fold the bridle vertically across the main bag as shown in illustration RC-2.

3) Compress the pilot chute onto the middle of the main bag as shown in illustration RC-3. Close the container in the following sequence, bottom, top, left side, then right side, and secure with the ripcord cable as shown in illustration RC-4.

4) Close the main container pin protector flap as shown in illustration RC-5. It is normal for the ripcord cable to protrude 3 to 4 inches outside the closed flap. This extra cable will prevent the main container from being accidentally opened (as could happen with a pin).

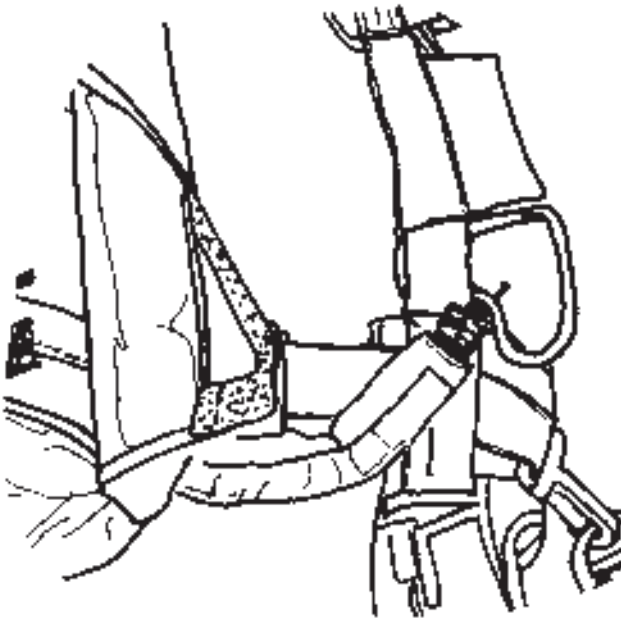


Illustration RC-1

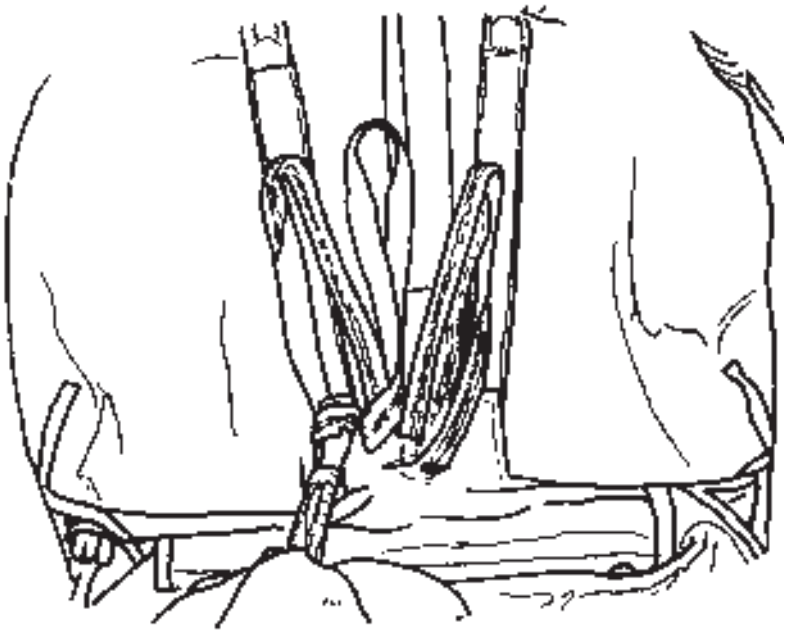


Illustration RC-2

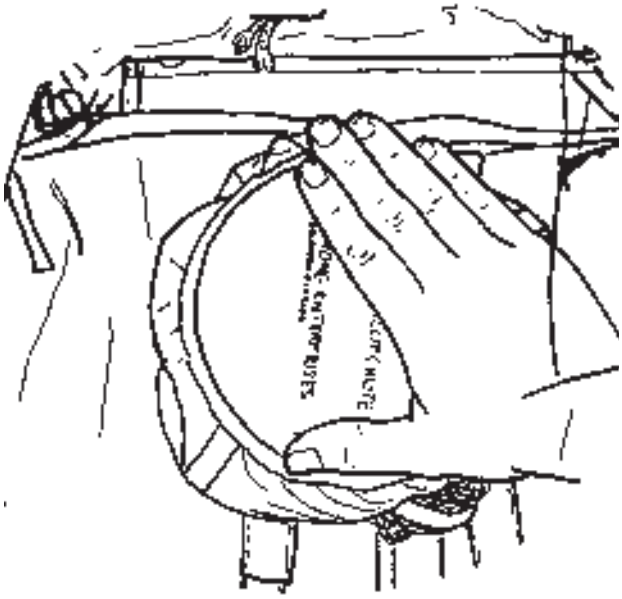


Illustration RC-3

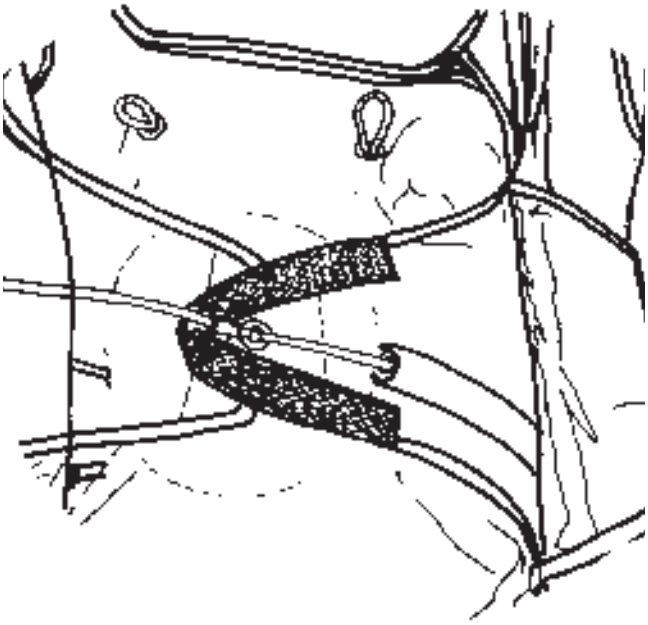


Illustration RC-4

Illustration RC-45

STOWING THE LINES ON THE STUDENT HAWK

1) Close the mouth of the bag by routing the two center locking stow bungees through there respective stow holes and lock with a 1 1/2 inch bight of suspension line. The next two stows will be the outer locking stows. Stow the remainder of the lines with the rubber bands on the side of the bag to within 12 inches of the connecter links as shown in illustration M-19.

CLOSING THE MAIN CONTAINER ON THE STUDENT HAWK

2) Pick up the bag and lines carefully and place them below the container.. Run the risers along the side of the rig and straight down the sides of the main pack tray. Pick up the bag carefully and place it in the pack try so that the lines are at the bottom of the container, as shown in illustration M-20. Run the bridle up over the reserve container to the right.

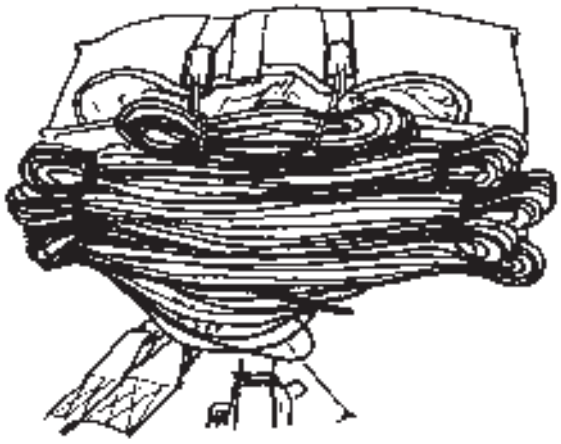


Illustration M-19

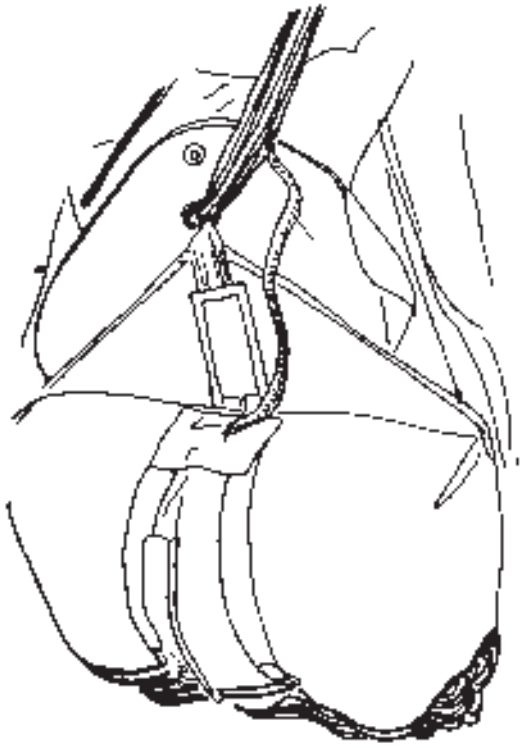


Illustration M-20

WARNING!! When using the assisted freefall main release, the ripcord deployment system with the spring loaded pilot chute MUST be used. Using the assisted freefall main release in conjunction with any other deployment system would result in a very ugly malfunction.

Go now to the section describing the deployment method you wish to use on your Student Hawk. The five sections are: hand deploy, ripcord, ripcord with assisted freefall main release, conventional static line and drogue deployment.

HAND DEPLOY

1) The closing loop used for the hand deploy pilot chute is a 1 inch top loop with washer. It is installed in the bottom flap closing grommet. When using the hand deploy pilot chute, the two inner flaps are not used. The bottom inner flap is tucked down out of the way of the deployment bag between the line stows and the bottom flap. The top inner flap is folded in half and lays over the drogue riser underneath the top closing flap as shown in illustration SHM-1.

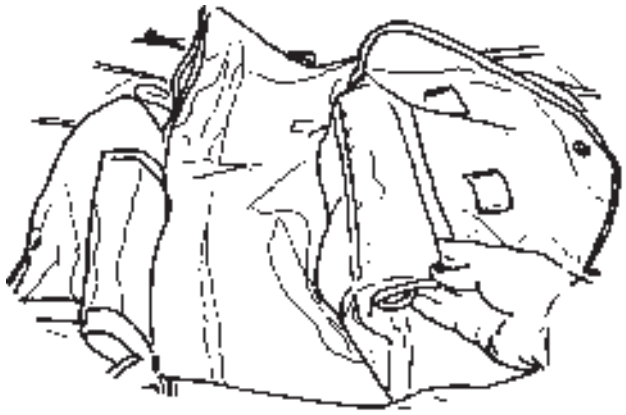
2) Go now to the Mini Hawk hand deploy section, Page 46.

RIPCORD

1) The closing loop used for the ripcord with spring loaded pilot chute is a 1 inch top loop with washer. It is installed in the bottom flap closing grommet. When using the ripcord with spring loaded pilot chute, the two inner flaps are not used. The bottom inner flap is tucked down out of the way of the deployment bag between the line stows and the bottom flap. The top inner flap is folded in half and lays over the drogue riser underneath the top closing flap as shown in illustration SHM-1.

2) Go now to the Mini Hawk ripcord section, Page 50Note

Illustration SHM-1



RIPCORD WITH ASSISTED FREEFALL MAIN RELEASE

WARNING!! When using the assisted freefall main release, the ripcord deployment system with the spring loaded pilot chute MUST be used. Using the assisted freefall main release in conjunction with any other deployment system would result in a very ugly malfunction.

1) When using the ripcord deployment system with the spring loaded pilot chute along with the assisted freefall main release, a 1 1/2 inch continuous closing loop is used. When using the ripcord with the assisted freefall main release, the two inner flaps are not used. The bottom inner flap is tucked down out of the way of the deployment bag between the line stows and the bottom flap. The top inner flap is folded in half and lays over the drogue riser underneath the top closing flap as shown in illustration SHM-1 on page 53.

Install the AFF main release onto the container by routing the cable through the grommet located at the lower left corner of the main container as shown in illustration AFF-1. Continue routing it through the channel located on the bottom flap. Using the through loop provided, route the cable through one end of the through loop and finish routing the cable through the channel as shown in illustration AFF-2. The through loop is then routed through the bottom flap closing grommet. Place the bag into the container, lines facing down and close the container in the following sequence. Bottom, top, left side, right side.

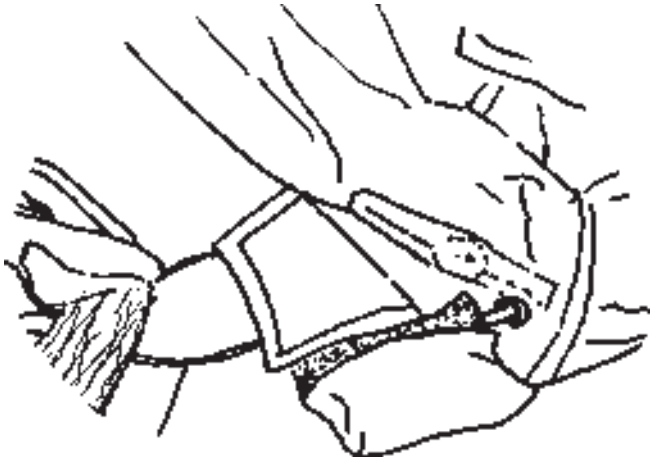


Illustration AFF-1

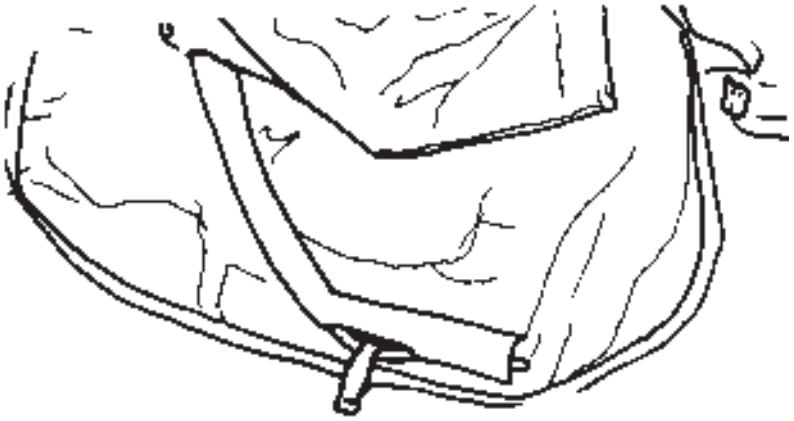


Illustration AFF-2

WARNING When using the assisted freefall main release, the ripcord deployment system with the spring loaded pilot chute MUST be used. Using the assisted freefall main release in conjunction with any other deployment system would result in a very ugly malfunction.

CONVENTIONAL STATIC LINE

The closing loop used for the conventional static line is a 1 inch top loop with washer. It is installed in the bottom flap closing grommet. When using the conventional static line, the two inner flaps are not used. The bottom inner flap is tucked down out of the way of the deployment bag between the line stows and the bottom flap. The top inner flap is folded in half and lays over the drogue riser underneath the top closing flap as shown in illustration SHM-1 on page 53. Place the bag into the container with the lines facing down. Route the static line out the top left or right side of the container. The type of aircraft used will determine witch side the static line is routed. If the door is on the right side of the aircraft the static line will be routed out the left side and vice versa. Close the container in the following sequence. Bottom, top, left side, right side and secure with the flex pin located on the static line. Stow excess static line on the top closing flap in the bungee loops provided as shown in illustration SL-1.

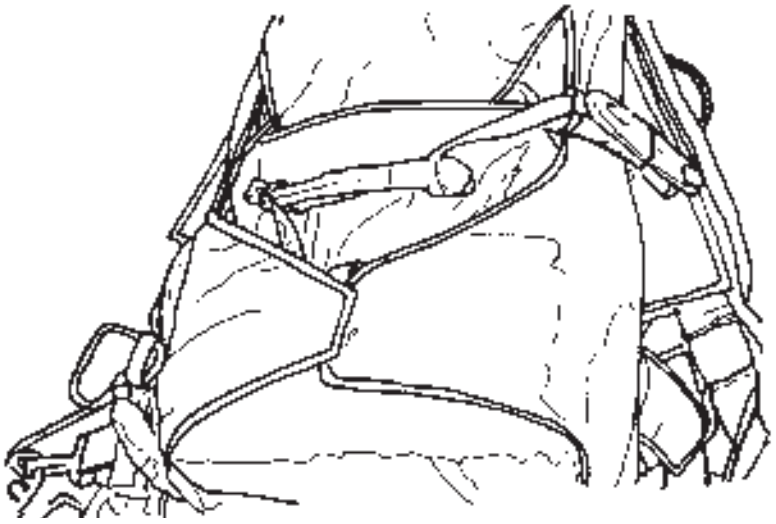


Illustration SL-1

DROGUE

The closing loop used for the drogue is a 1 inch top loop with washer. It is installed in the bottom flap closing grommet. Place the bag into the container with the lines facing down. Using two 1 inch top loops with washer, close the bottom then top inner flaps routing the drogue bridle out the middle. Secure the closing loops with the double flex pin located on the drogue bridle stowing the tips of the flex pin in the channels provided on the bottom inner flap as shown in illustration D-1. Install the 3-ring assembly and secure with the main ripcord coated cable pin. Close the protector flaps located on the drogue riser and tuck the bridle and double flex pin in the spandex pocket located on the top inner flap as shown in illustration D-2. Route the entire drogue and bridle through the drogue deployment bag as shown in illustration D-3. At this point the drogue should be protruding out the same end of the deployment bag where the static line is attached to the bag. Stuff the drogue back into the deployment bag starting with the bridle and smooth out flat as shown in illustration D-4. Close the mouth of the bag with the draw string provided. Place the drogue deployment bag across the bottom of the container turning the ends up forming a U shape as shown in illustration D-5. Route the static line out the top left or right side of the container. The type of aircraft used will determine witch side the static line is routed. If the door is on the right side of the aircraft the static line will be routed out the left side and vice versa. Close the container in the following sequence. Bottom, top, left side, right side and secure with the flex pin located on the static line. Stow the excess static line on the bungee loops provided on the top main closing flap.

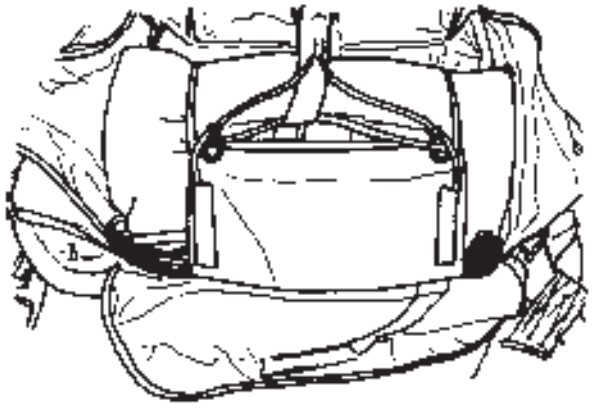


Illustration D-1

When using the Student Hawk with the Drogue system,
a Square reserve must be used

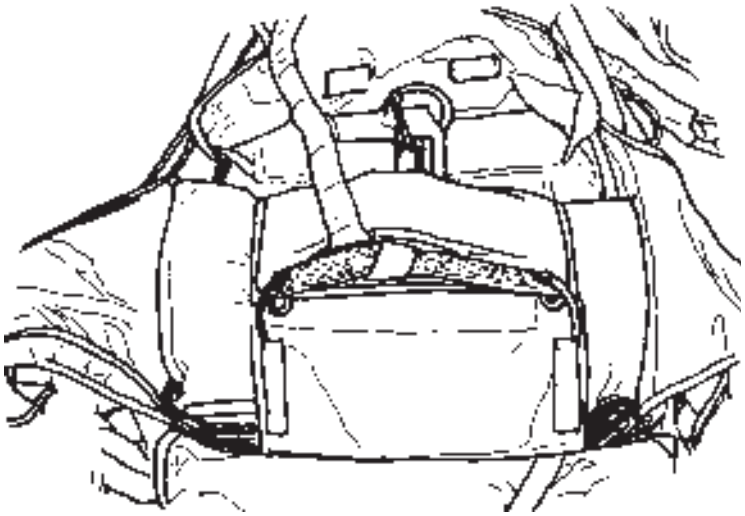


Illustration D-2

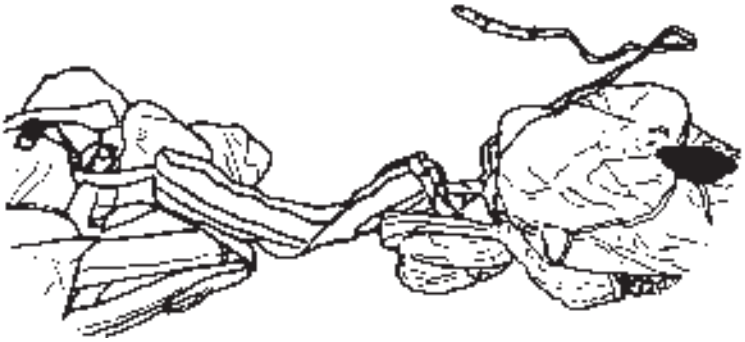


Illustration D-3

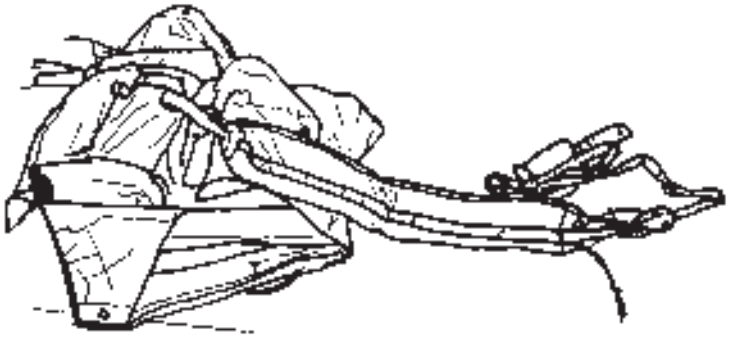


Illustration D-4

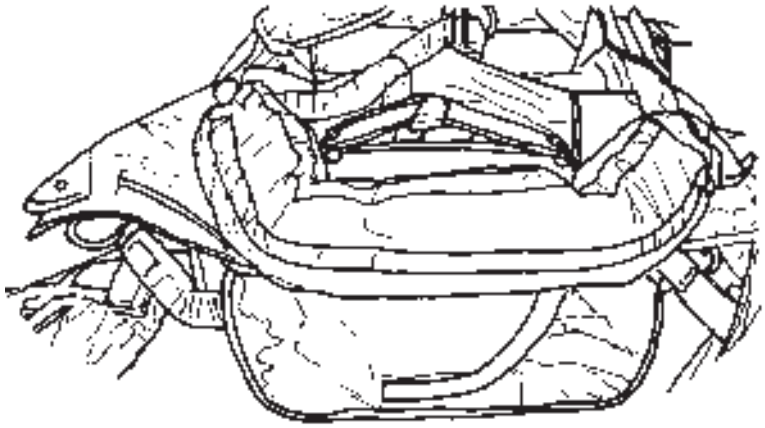


Illustration D-5

MAINTENANCE & REPAIR GUIDELINES

FAR 149.9 requires that “Only the following persons may maintain or alter a parachute:

(1) Any person as authorized by Part 65 of this chapter (FAA licensed senior or master parachute rigger with an appropriate rating).

(2) A certificated parachute loft with an appropriate rating.

(3) The manufacturer.

(4) Any other manufacturer that the Administrator considers to be competent.

FAR 65.129 requires that “No certificated parachute rigger may pack, maintain, or alter a parachute in any manner that deviates from procedures approved by the Administrator of the manufacturer of the parachute”.

Strong Enterprises recommends the following:

HARNESS: Any portion of the harness which is structurally damaged should be replaced in a manner to duplicate the original. (Ref: Poynter’s Parachute Manual, 7.60)

CONTAINER: Standard military single side patches or replacement of the damaged area. (Ref: Poynter’s Parachute Manual, 7.40 and 7.47 for grommets.)

CANOPY: Any holes or tears in the canopy fabric should be patched with a military single side patch using a french fell seam. (Ref: Poynter’s Parachute Manual, 7.14.) Worn suspension or steering lines should be replaced. (Ref: Poynter’s Parachute Manual, 7.26.1.)

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

RIPCORD: Damaged ripcords should be replaced.

BRIDLE: Damaged bridles should be replaced

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 if recorded. This is the history of the parachute.

CANOPY REPAIR LIMITATIONS

ROUND CANOPIES:

TYPE OF REPAIR	LIMITATIONS
Restitching	No limit as to length or number.
Patch, single side	Size limit: 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	Damage: size limit 2”
Upper	Limit: 1 per canopy
Lower	Limit: 4 per canopy
“V” tabs	No limit
Suspension Lines	No Limit

SQUARE CANOPIES:

TYPE OF REPAIR	LIMITATIONS
Restitching	No limit as to length or number
Patch, single side	Size limit: 15% of cell surface Limit of 2 per cell
Cell replacement	Not authorized
Reinforcement tape replacement	Not authorized
Suspension line replacement	No Limit