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OWNER'S MANUAL

FOR THE
PACKING AND MAINTENANCE OF THE

MINI-HAWK

SPORT PARACHUTE
SYSTEM

Assembly Part Number 1165-3
Harness/Container Part No. 1152
Catalog No. 240080

STRONG ENTERPRISES

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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.

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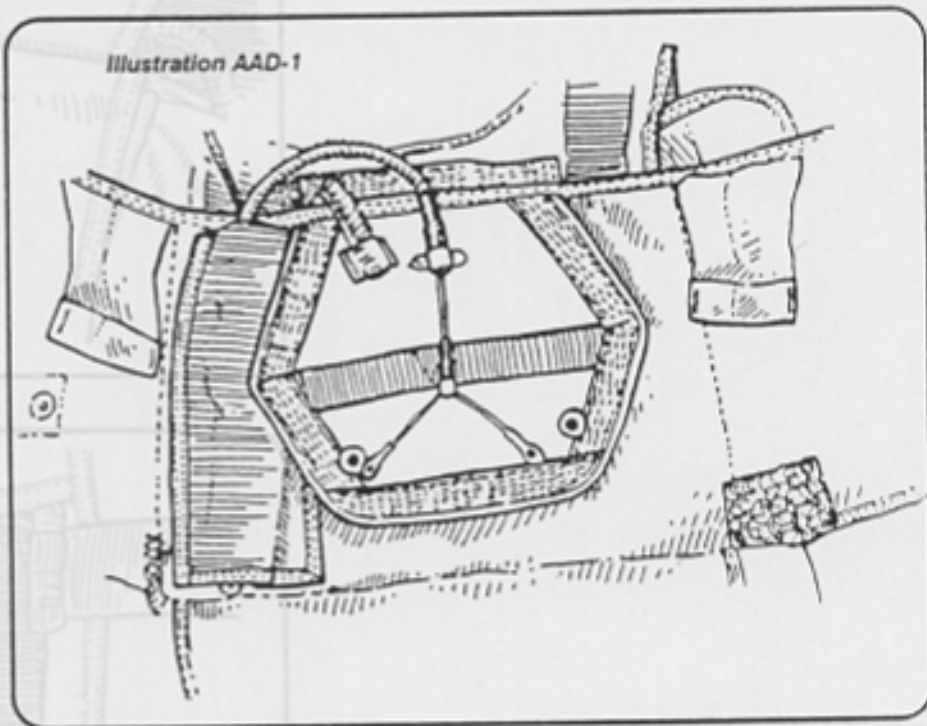
AAD INSTALLATION

When an AAD unit is to be used on a Minihawk, 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.

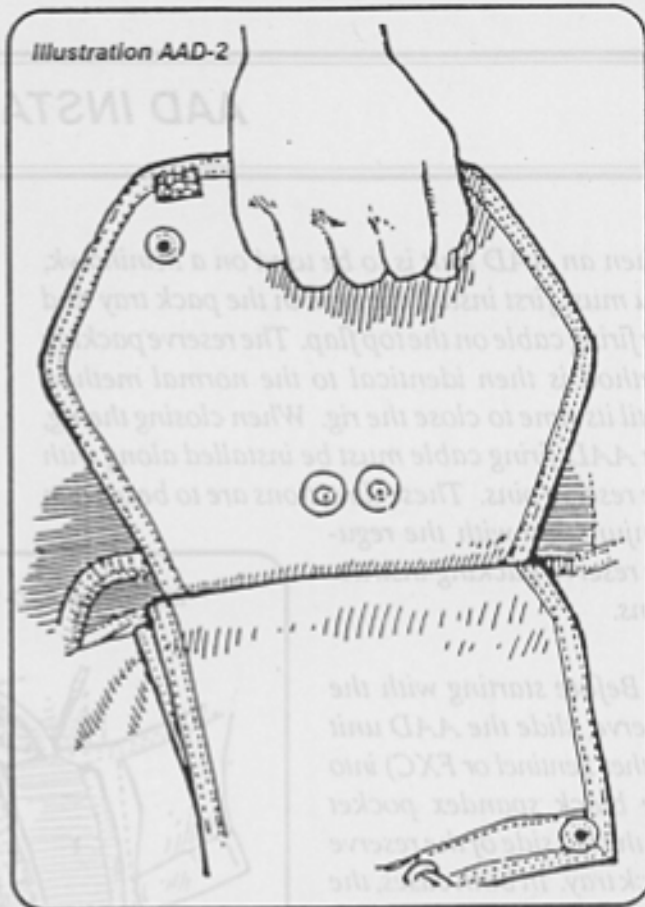
2) Both the Sentinel and FXC have cables which must be attached to the top flap. For this, a clamp must be screwed into the top flap, to the right of the ripcord housing end as shown in illustration AAD-1. Because placement of the AAD clamp is critical, all Mini Hawks come with pre-drilled holes in the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

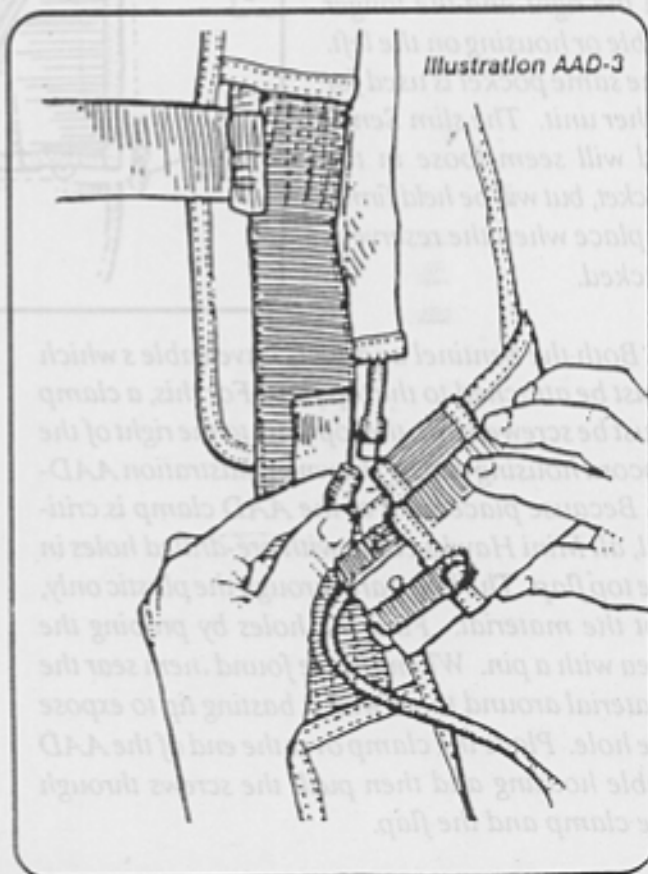


4) SENTINEL: Next to the firing cable housing is a long black plastic coated cable. Route this over the shoulder of the Minihawk and along the path of the Vetro channel running alongside the left main lift web. Mate the Vetro of the channel. Place the Sentinel sensing calibration unit in its pouch and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

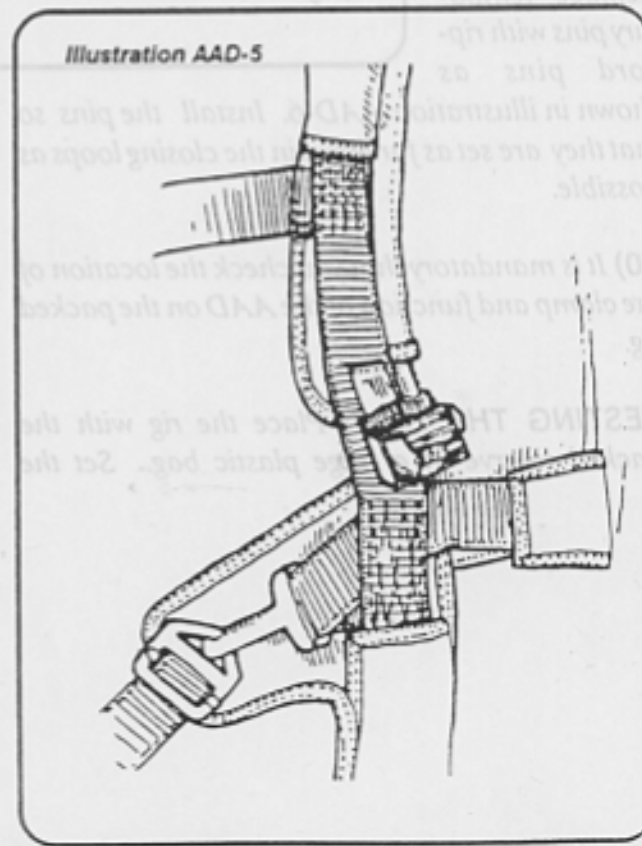
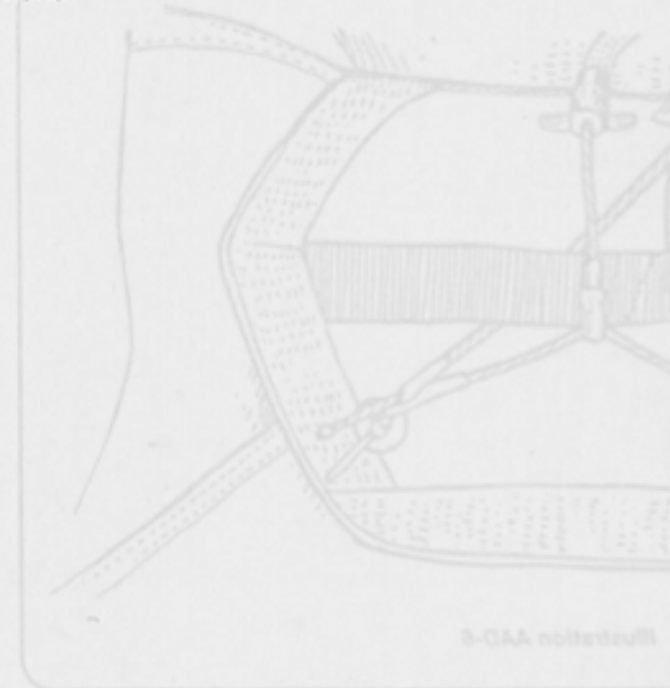
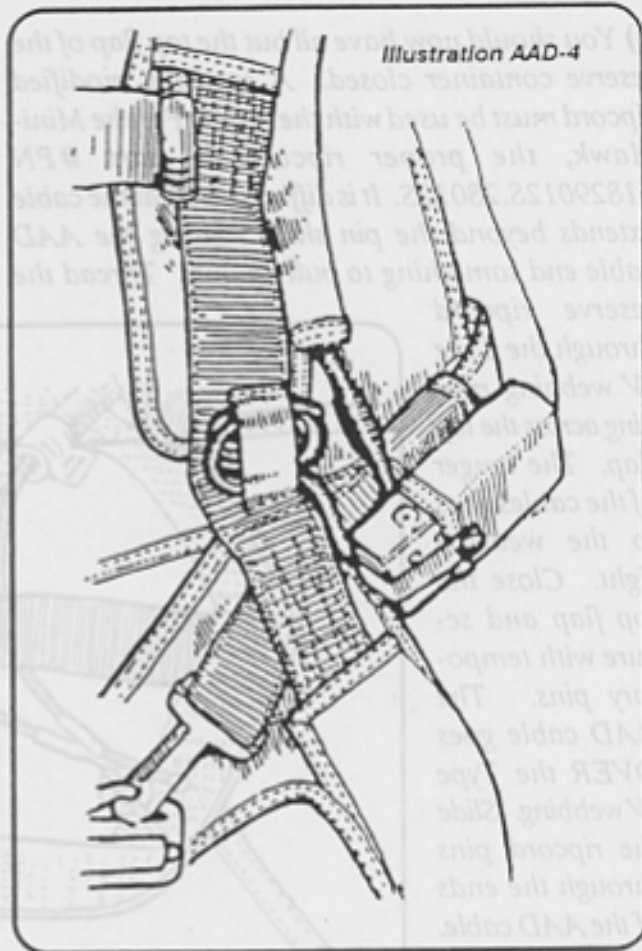


4) **SENTINEL:** Next to the firing cable housing is a long black plastic coated cable. Route this over the shoulder of the Minihawk and along the path of the Velcro channel running alongside the left main lift web. Mate the Velcro of the channel. Place the Sentinel sensing/calibration unit in its pouch 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.



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 one 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 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 part #PN 61829012S.28012S. 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 that 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.

TESTING THE FXC: Place the rig with the packed reserve in a large plastic bag. Set the

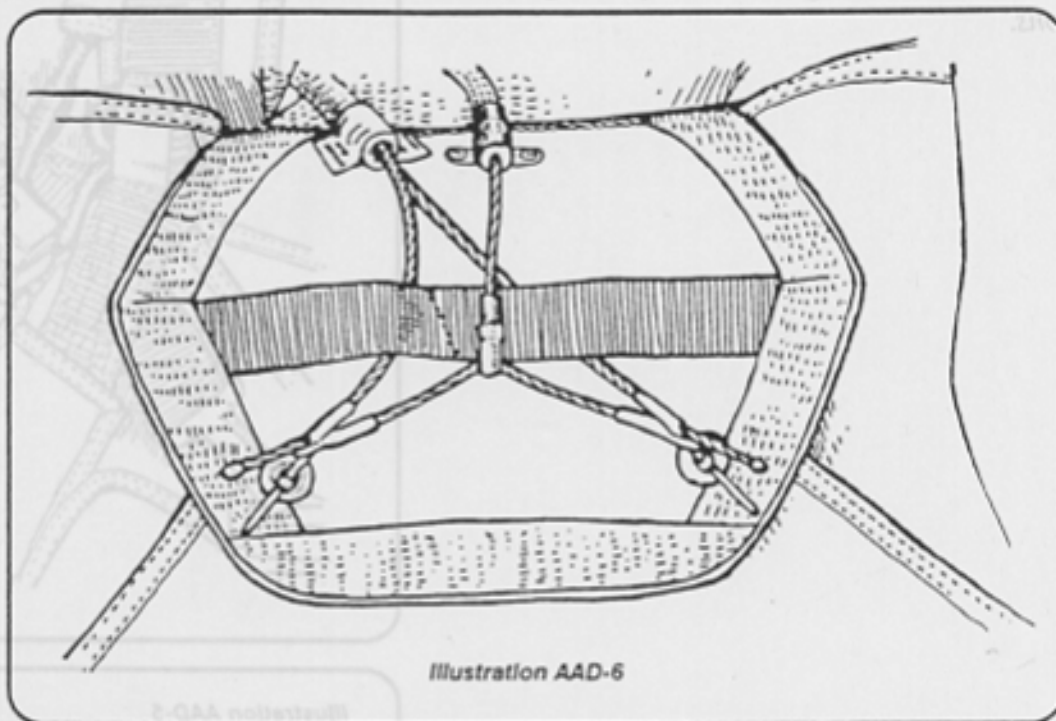


Illustration AAD-6

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 test, reclose container.

TESTING THE SENTINEL: Check the electrical circuit on the Sentinel using the test button on the unit according to the manufacturer's instructions.

ROUND RESERVE PACKING INSTRUCTIONS

(If you are installing an AAD, go first to the **AAD INSTALLATION** section of this manual)

1) Place 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.

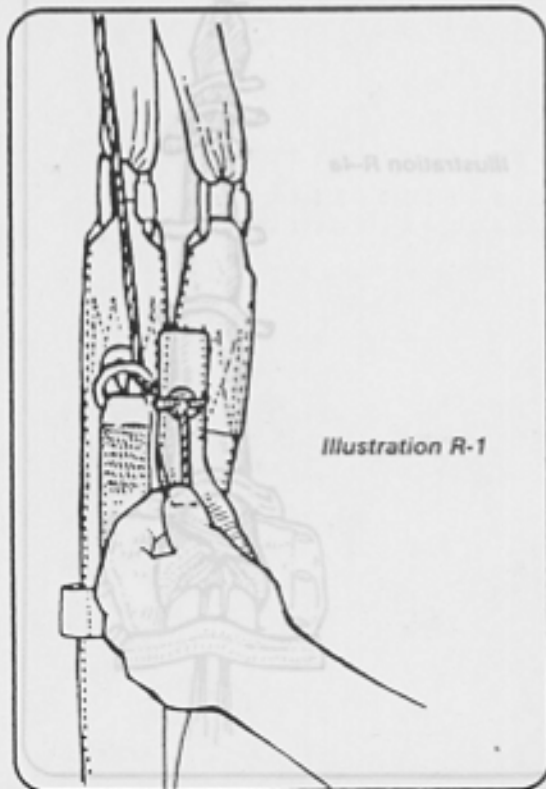
NOTE: The Mini Hawk reserve comes with four risers. Using a reserve set up for two risers is not recommended. If you must use a two riser reserve, hand tack the front and rear risers together near the connector links with two turns of 3-cord cotton doubled and waxed. Attach canopy to front risers.

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).

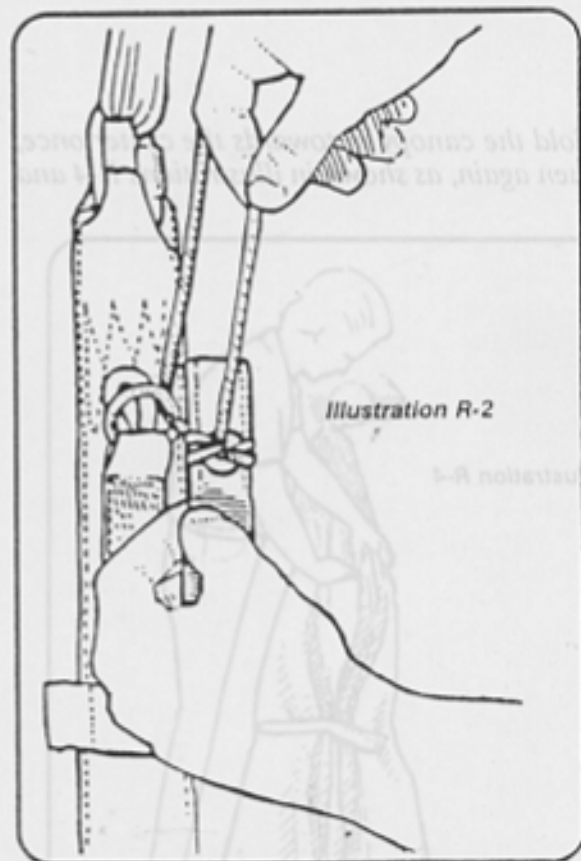
4) Lay the toggle on the riser where it will be when



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.

5) Figure-8 the line through the grommet as shown in illustration R-1.

6) 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.



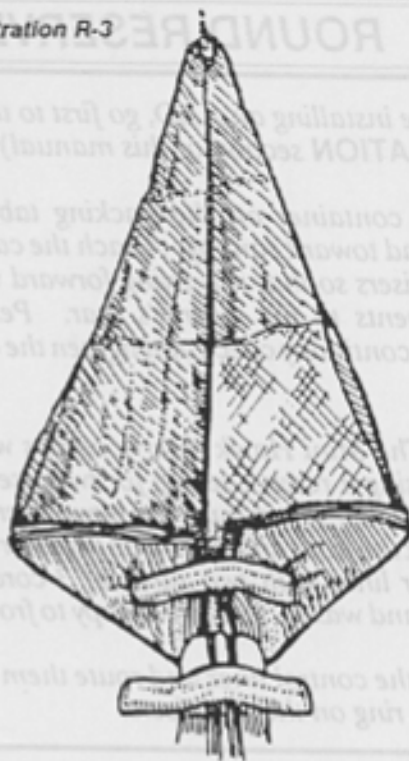
7) When your figure-8's are done, the line should come out on the top side of the toggle. Tie two overhand knots snugly against the grommet. Repeat on the other riser and toggle, measuring carefully so that the steering lines are of equal length.

8) Attach the toggles to the risers on the velcro. Be sure the steering lines pass through the guide rings.

PREPARING CANOPY

9) 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.

Illustration R-3



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

Illustration R-4



Illustration R-4a



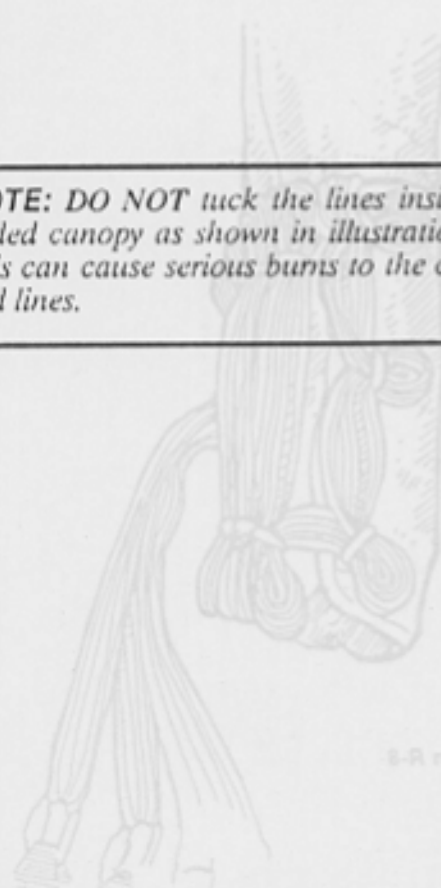
11) The Mini Hawk is designed for round reserve canopies equipped with full diapers. After the canopy is folded, bring the lines up the center of the reserve, past the diaper as shown in illustration R-5.



Illustration R-5

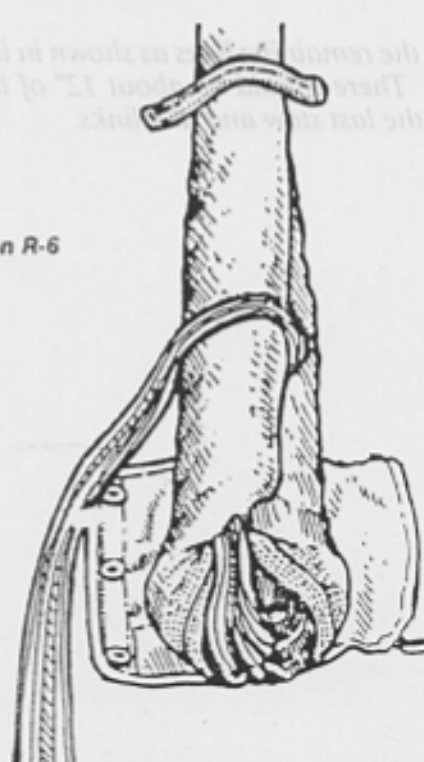


NOTE: DO NOT tuck the lines inside the folded canopy as shown in illustration #6. This can cause serious burns to the canopy and lines.



**FOR ILLUSTRATION ONLY
DON'T DO THIS!**

Illustration R-6



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

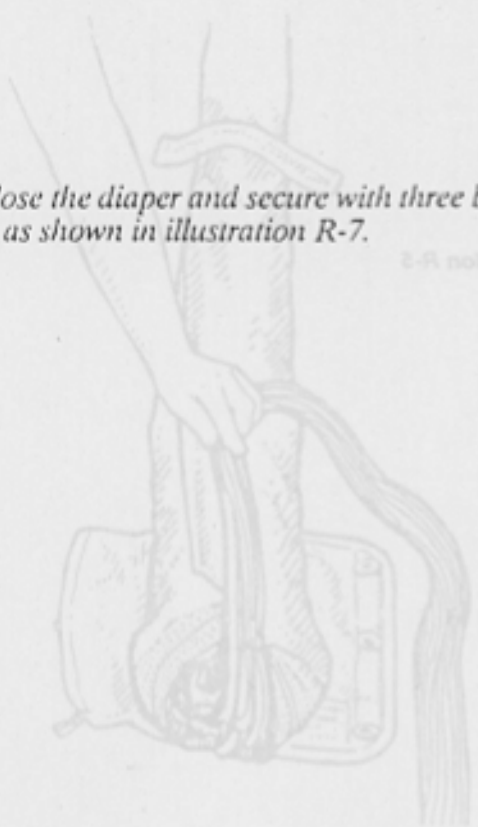


Illustration R-7



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

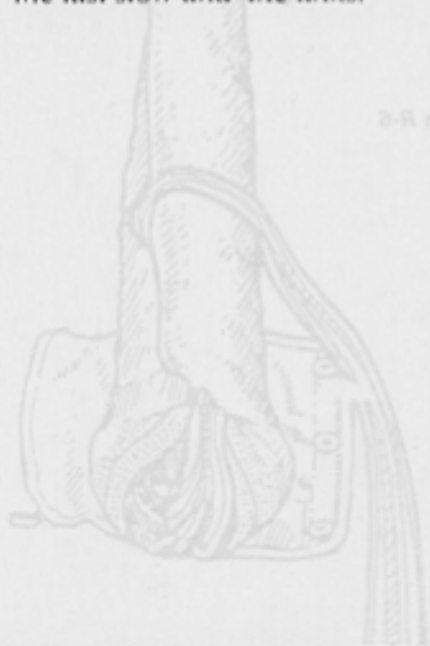
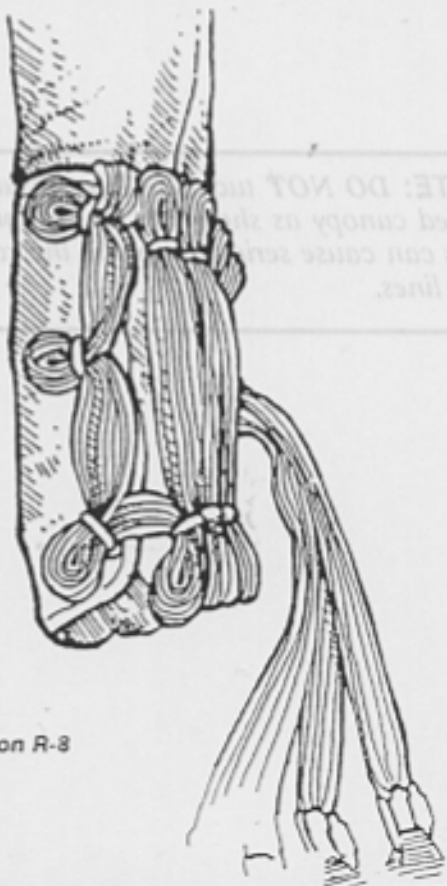


Illustration R-8



PLACING CANOPY IN PACK TRAY

14) 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.

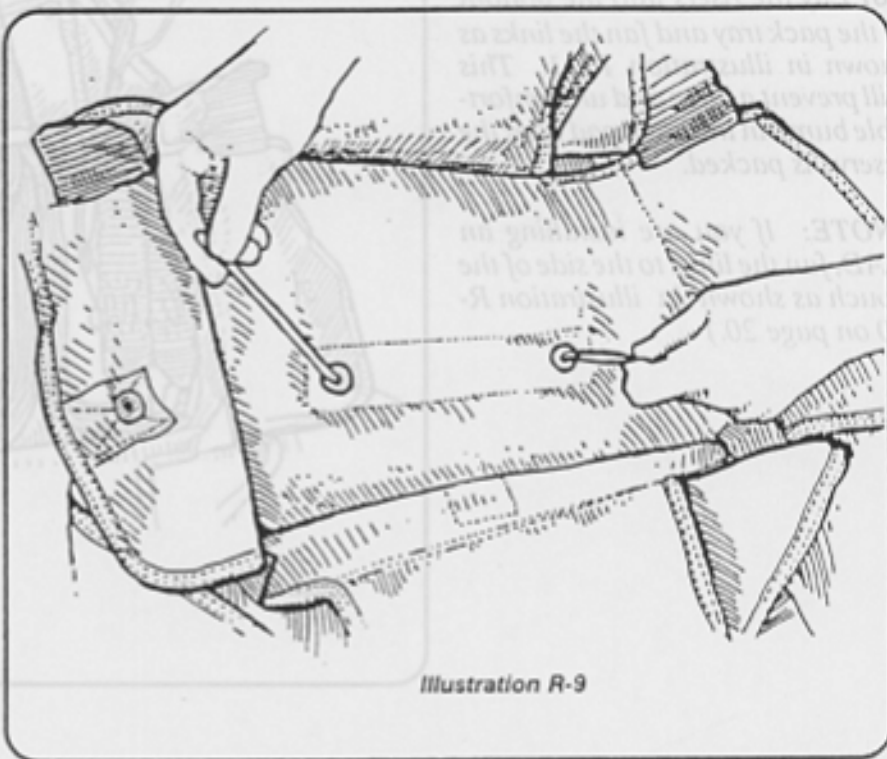


Illustration R-9

15) Before placing the diaper into the reserve container, mate the velcro on the bottom corners of the reserve pack tray as shown in illustration R-10.

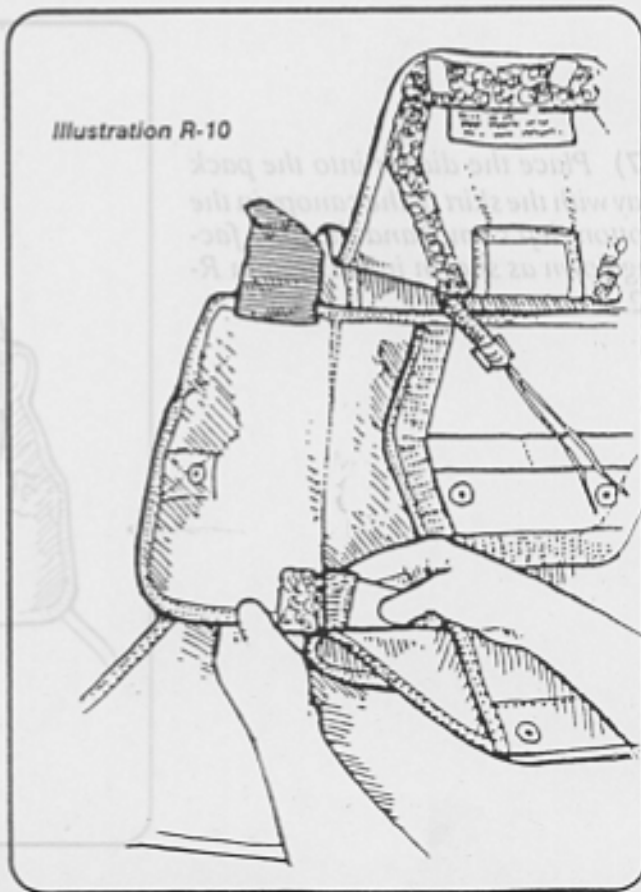


Illustration R-10

16) 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.

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

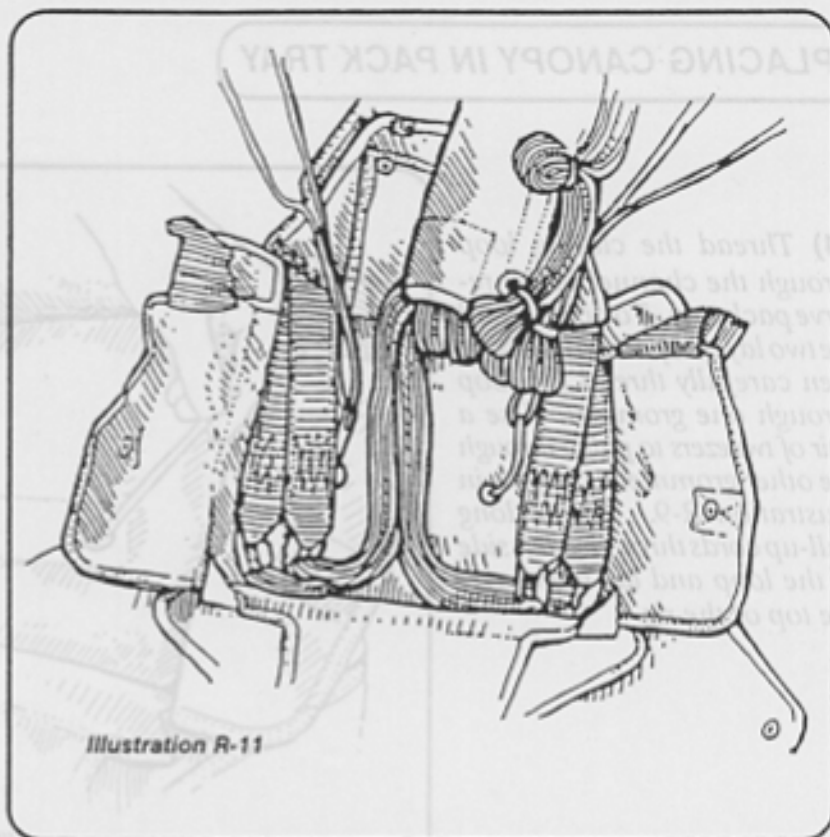


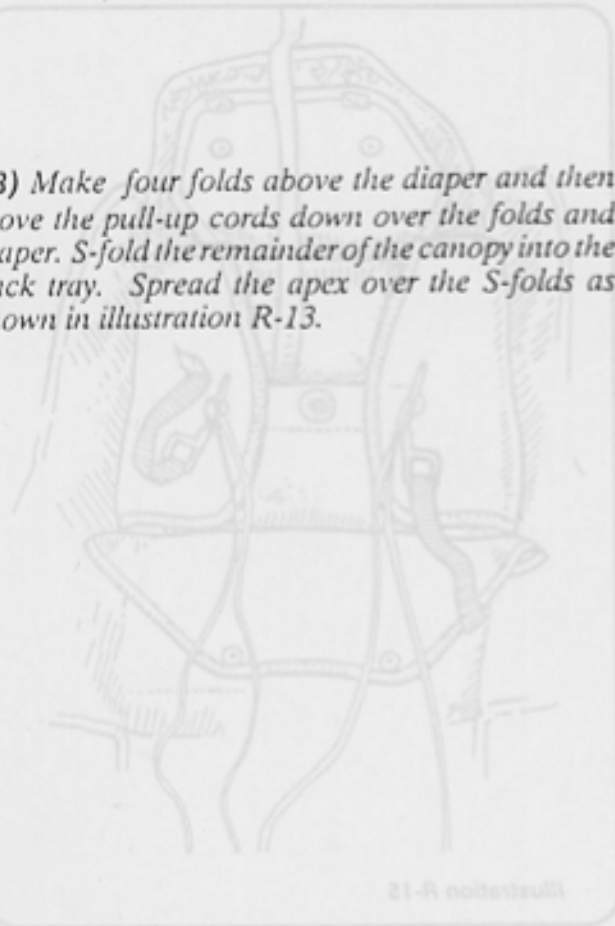
Illustration R-11

17) 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.



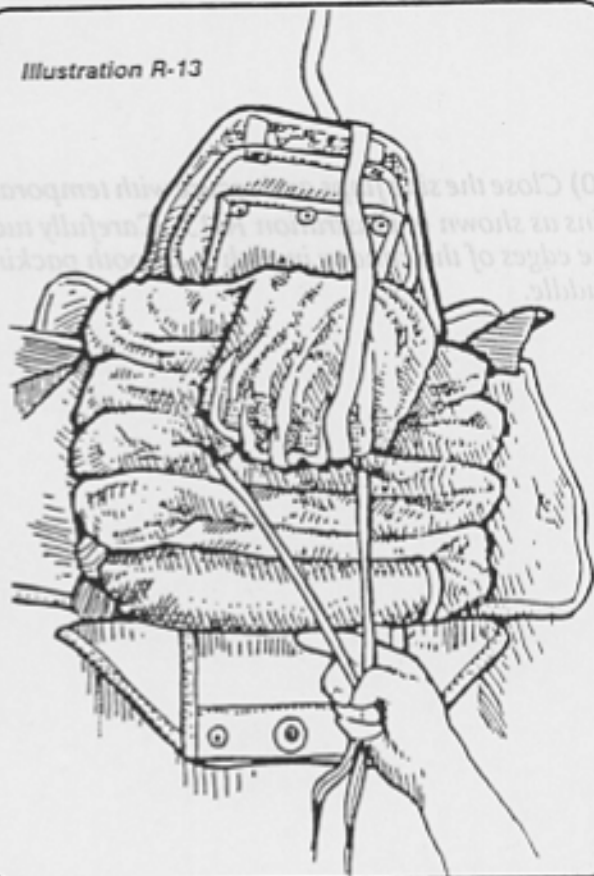
Illustration R-12

18) Make four 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.



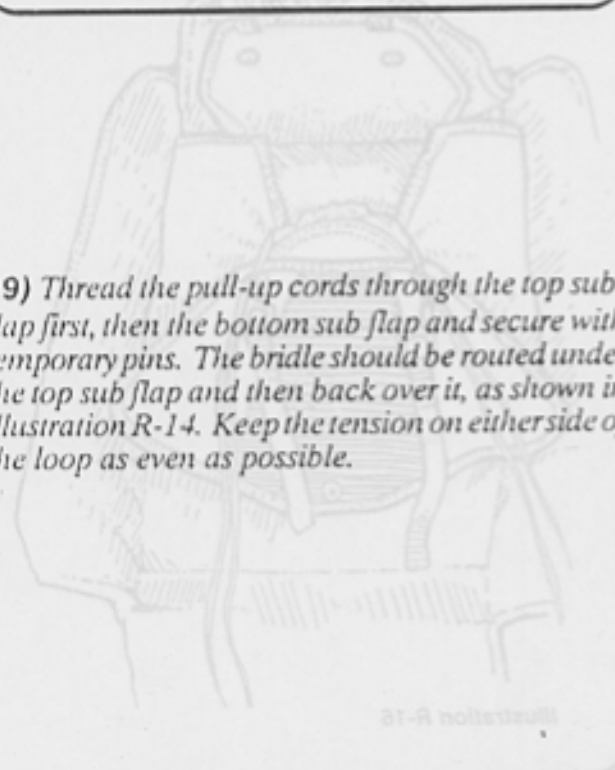
21-R nollstruill

Illustration R-13



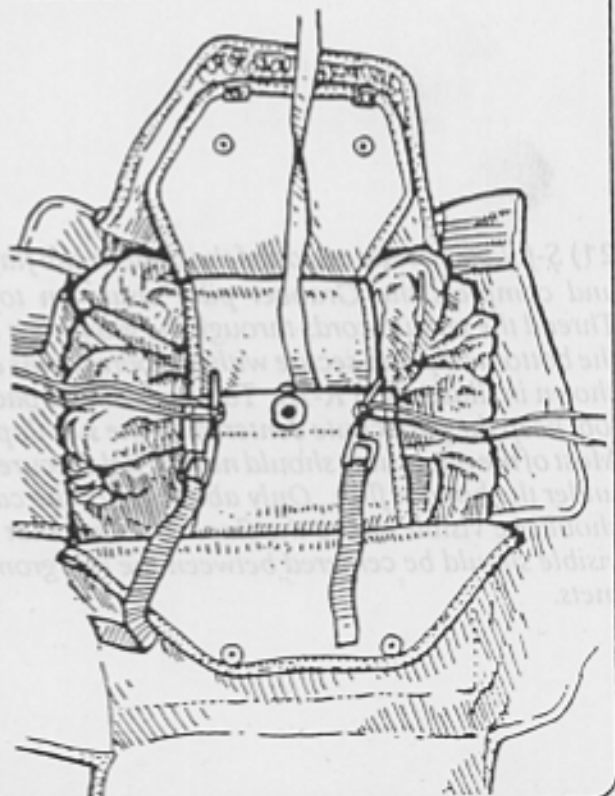
CLOSING THE CONTAINER

19) 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.



21-R nollstruill

Illustration R-14



20) 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.

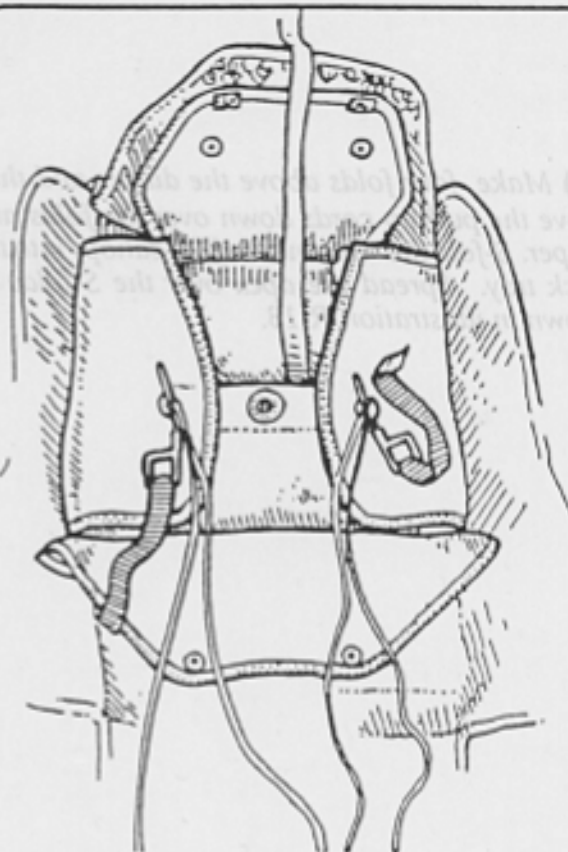
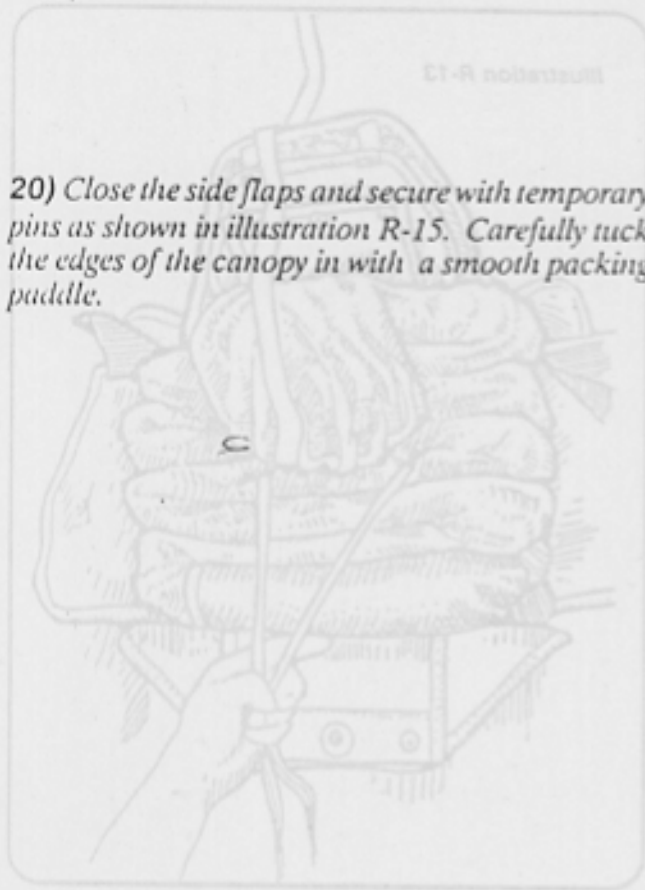


Illustration R-15

21) 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.

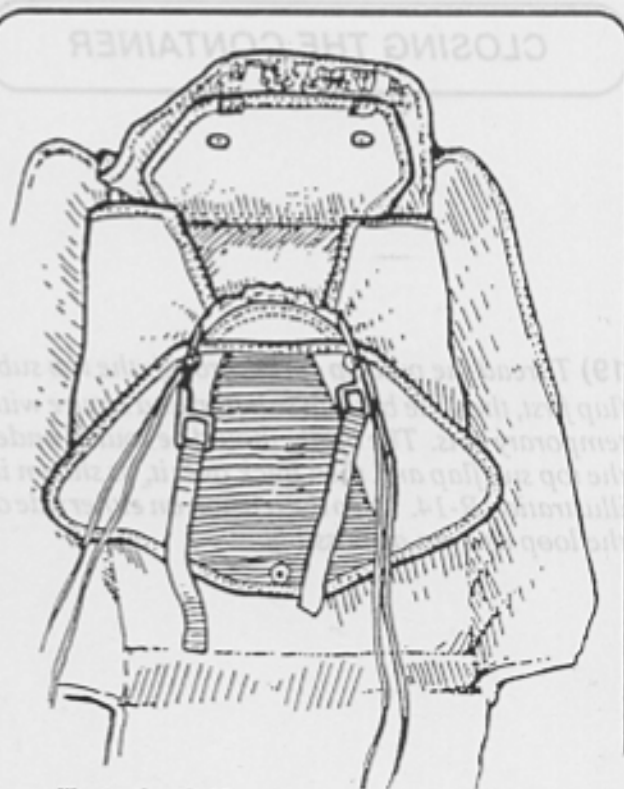
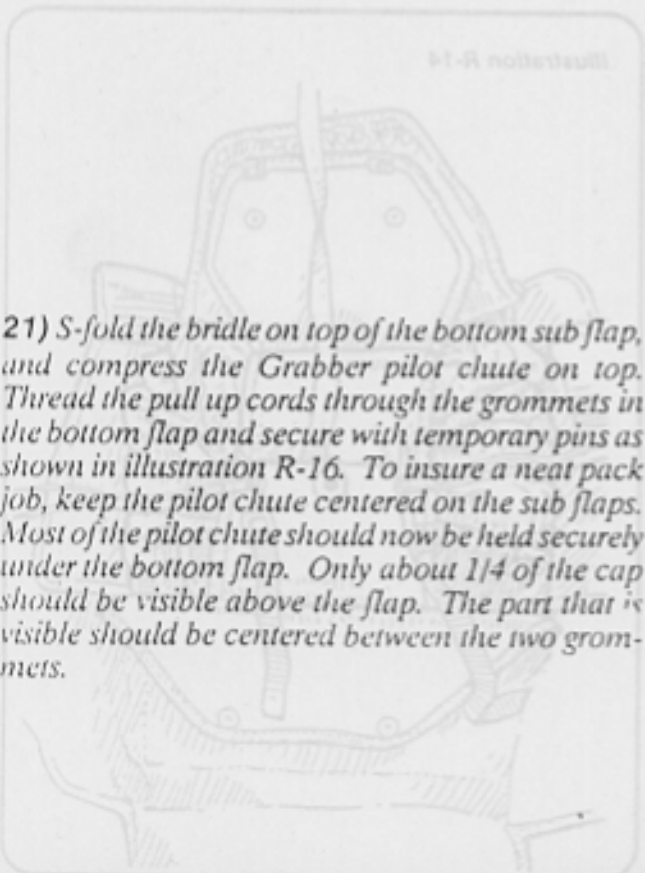


Illustration R-16

(If you are installing an AAD, refer now to #9 in the **AAD INSTALLATION** section of this manual on page 25.)

22) 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.

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

24) 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.

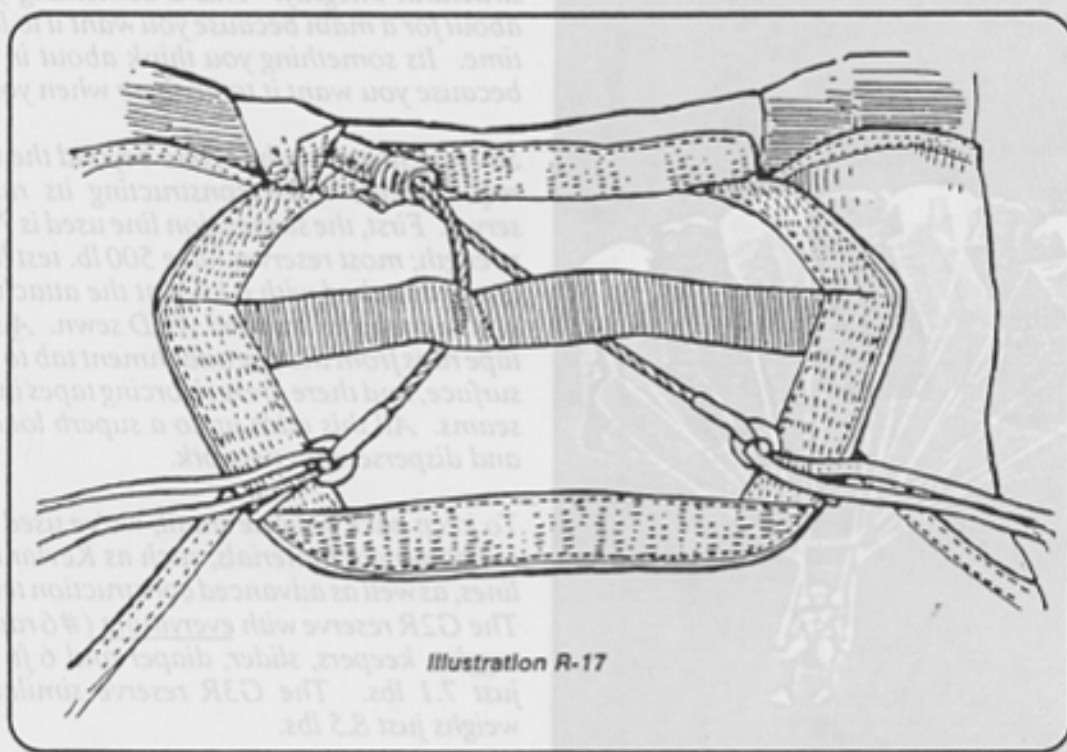


Illustration R-17

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, 92% of the landings made (by jumpers with widely varying experience levels) were stand-ups. The secret of success? Flare completely at the right level from full flight. Both the G2R and G3R have an excellent flare, because of their exceptional forward speed.

A WORD ABOUT STRONG RAM-AIR RESERVES

The Strong G2R and G3R reserves are both seven-cell ram-airs. Both have an aspect ratio of 2.2 and fine forward speed. Both have steering systems similar to Strong main 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 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 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. It's 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 superb load 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 228. 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 landings made (by jumpers with widely varying experience levels) were stand-ups. The secret of success? 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, then take the hint and take it easy! Lets put it in terms of physics. The average canopy comes down 1,000' in about 70 seconds. While in a serious turn, that same canopy will go through that same 1,000' 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' 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' 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 any part of this manual, have him call Strong Enterprises, or have someone else more familiar with the assembly pack 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. 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.)

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.

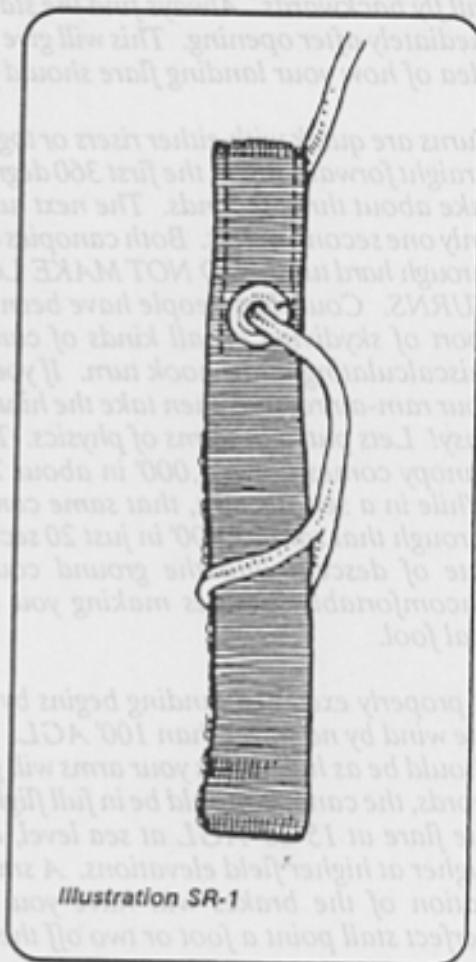


Illustration SR-1

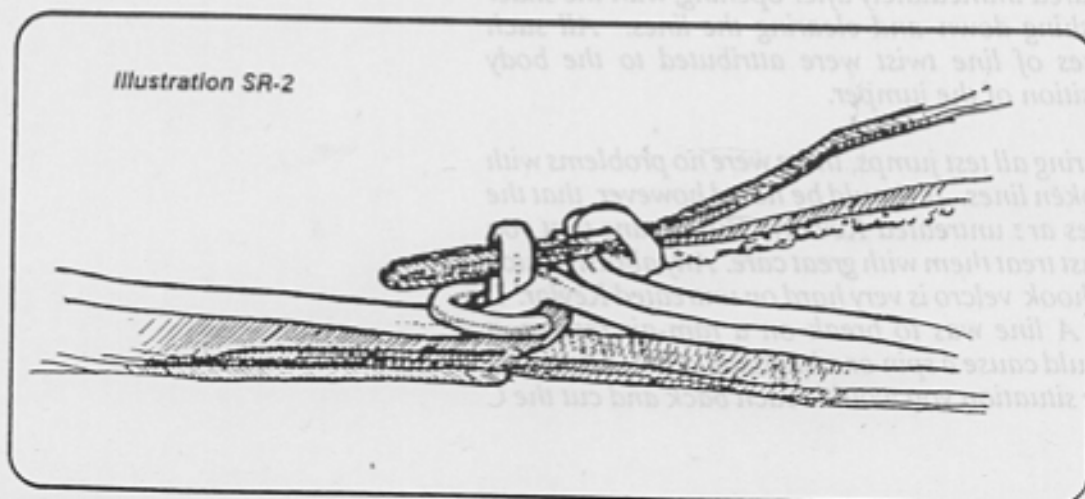
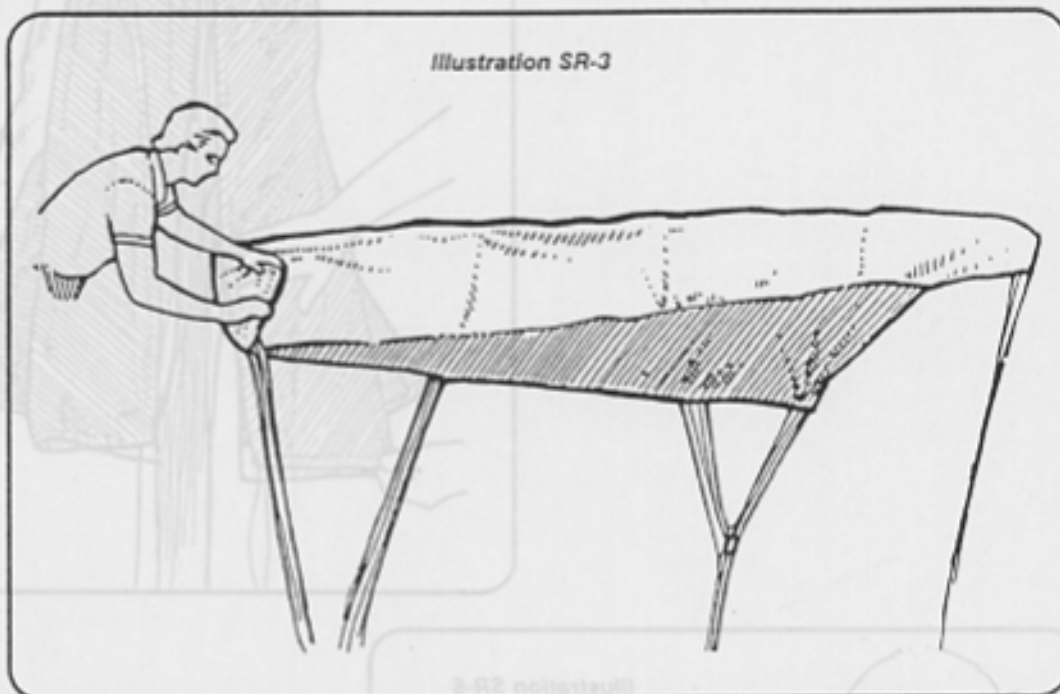


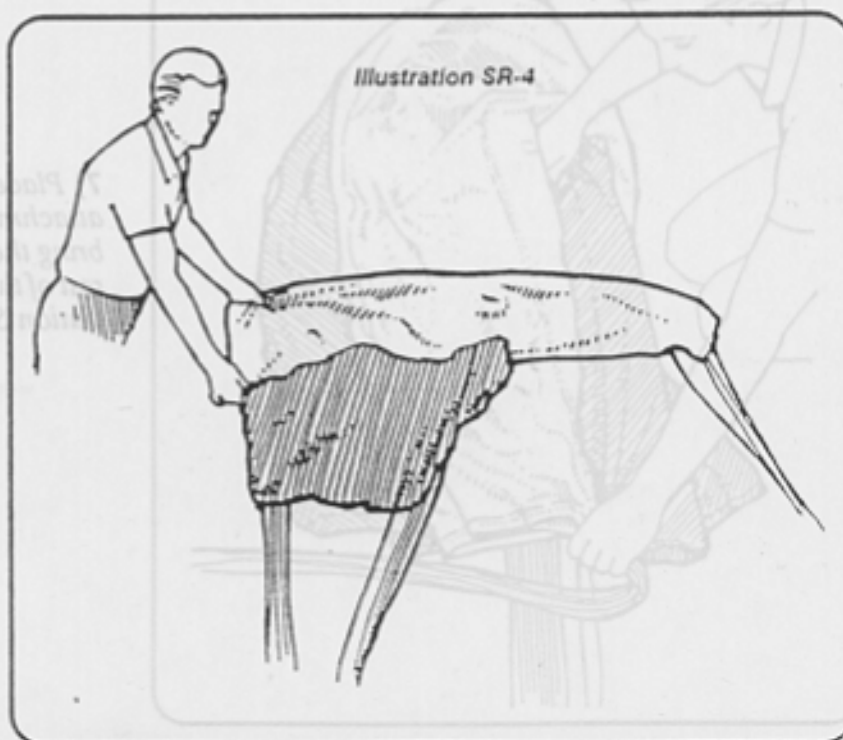
Illustration SR-2

THE "STACK PACK"

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.



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).

Illustration SR-5



Illustration SR-6



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-7

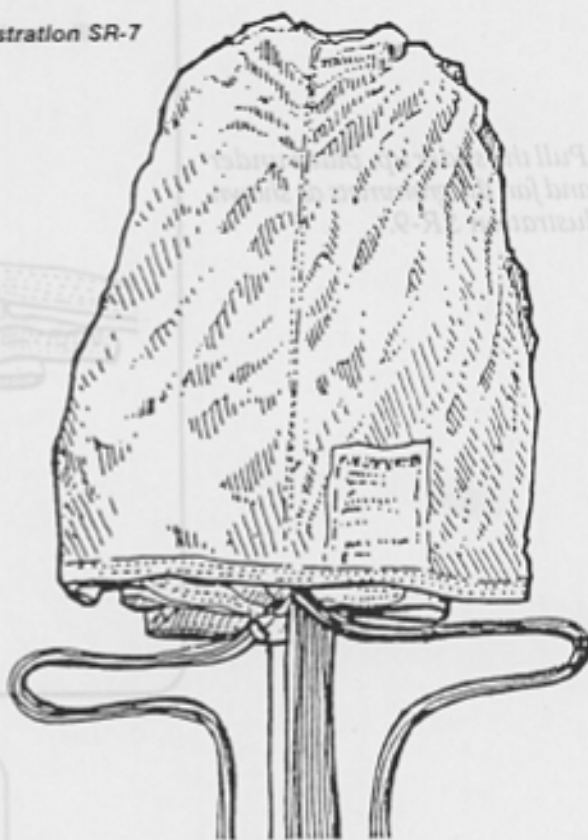
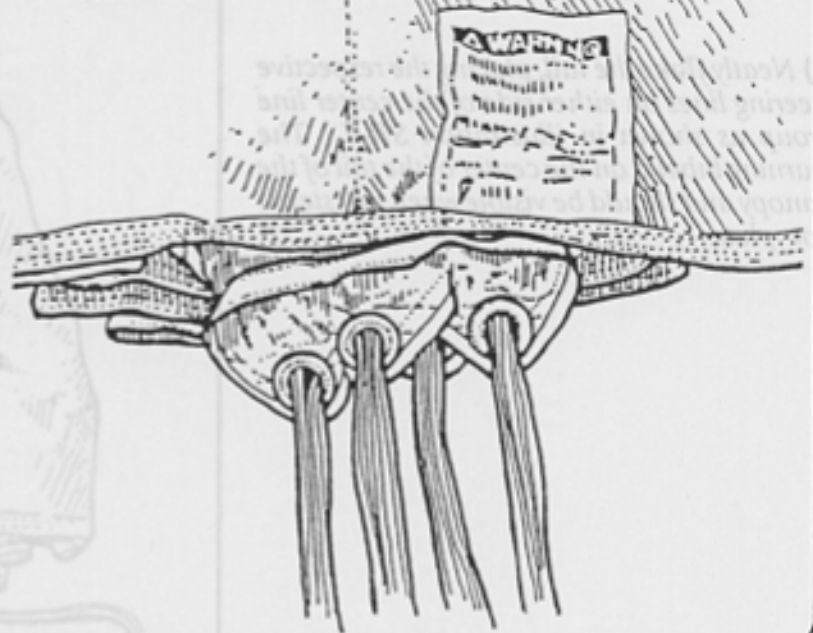


Illustration SR-8

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.

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-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.

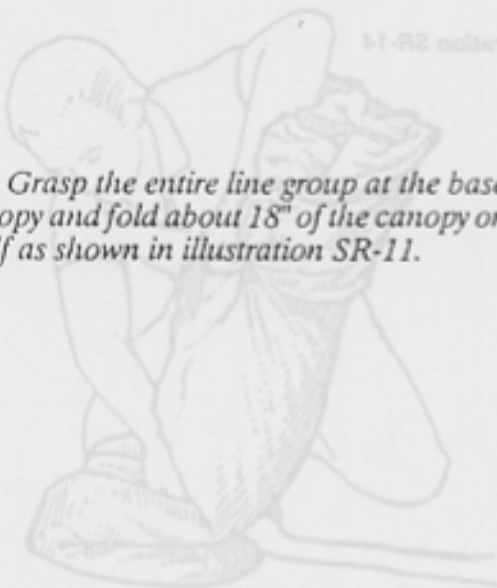


Illustration SR-11

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 hold the rest of the canopy in place.



Illustration SR-12



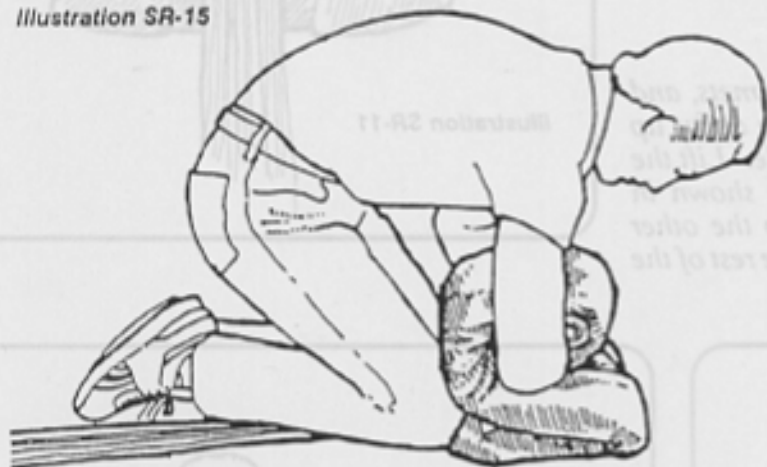
Illustration SR-13

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.

Illustration SR-14



Illustration SR-15



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.

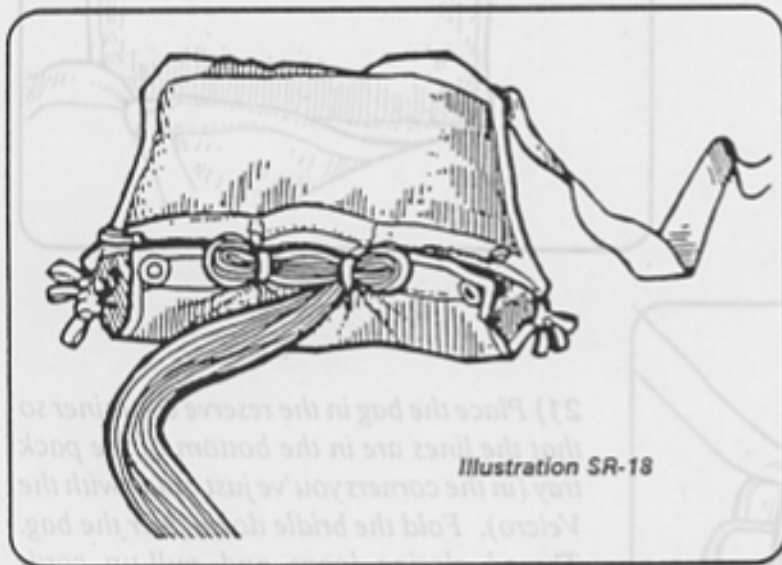
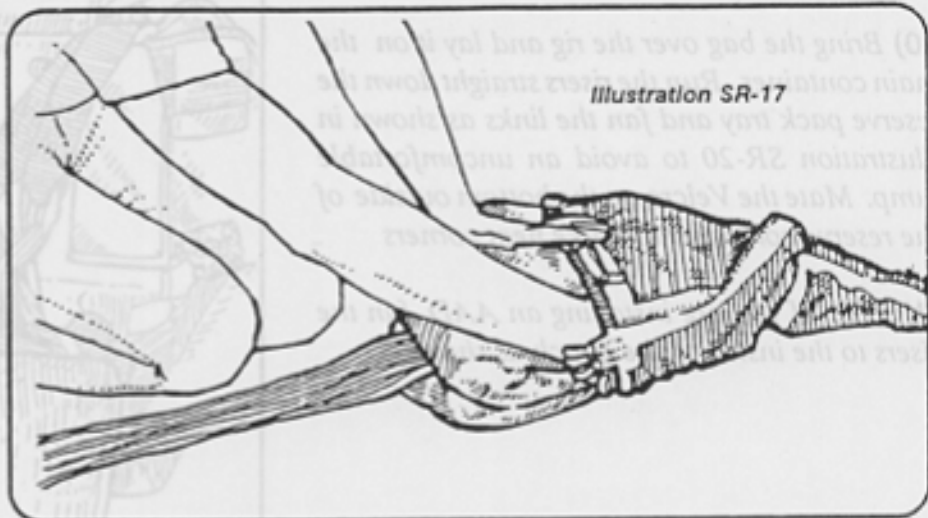


Illustration SR-16

Illustration SR-20 THE BAG

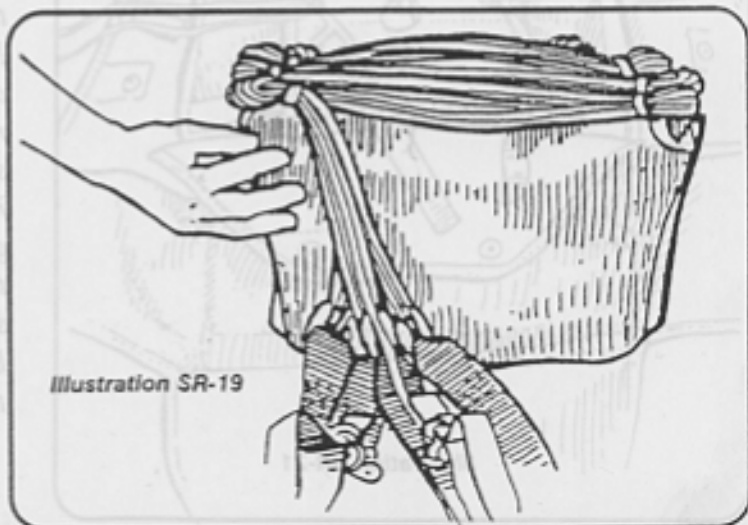
CLOSING THE CONTAINER

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.

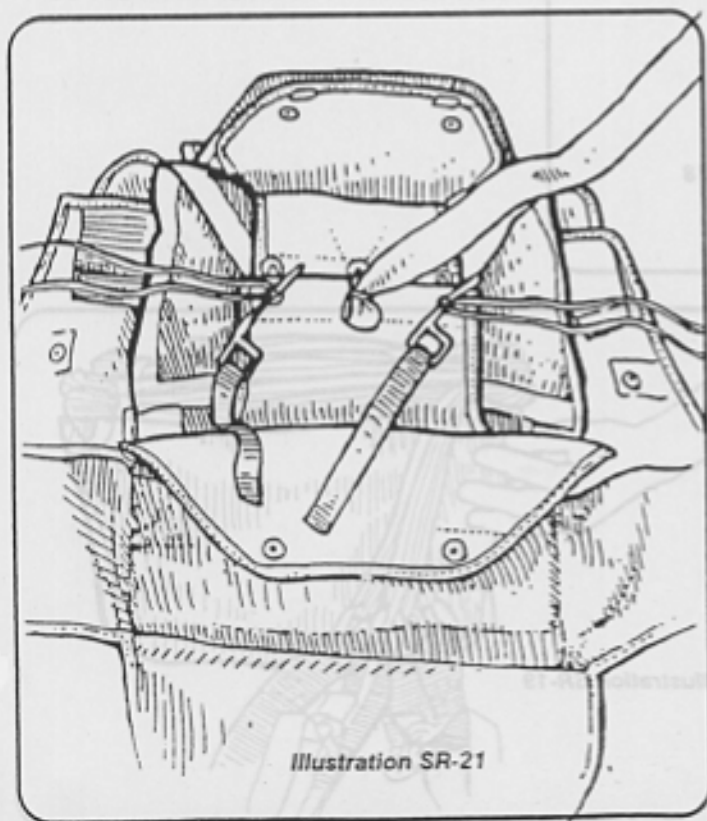
19) Close the rest of the bag with bights of line in rubber bands through the outer grommets. Stow the remaining line in the rubber bands on the top flap of the bag as shown in illustration SR-19. There should be 6-10" of line left over after the last stow is made.



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.)



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 than 1") as shown in 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.

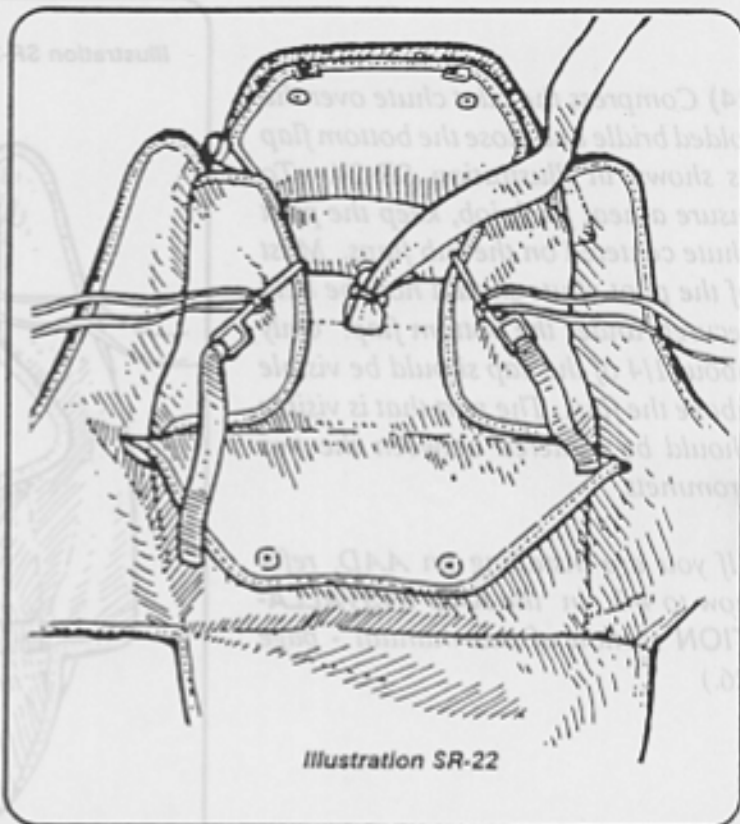
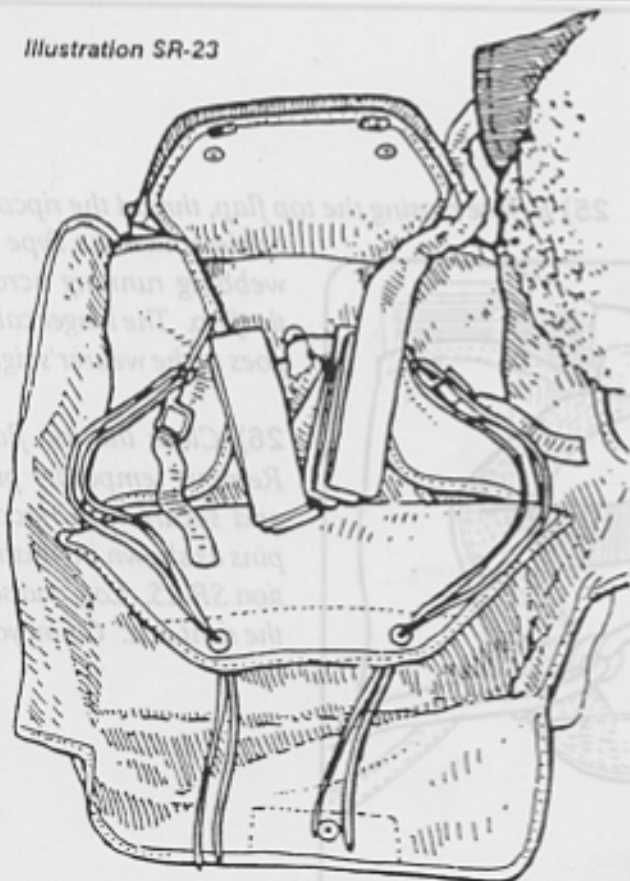


Illustration SR-23

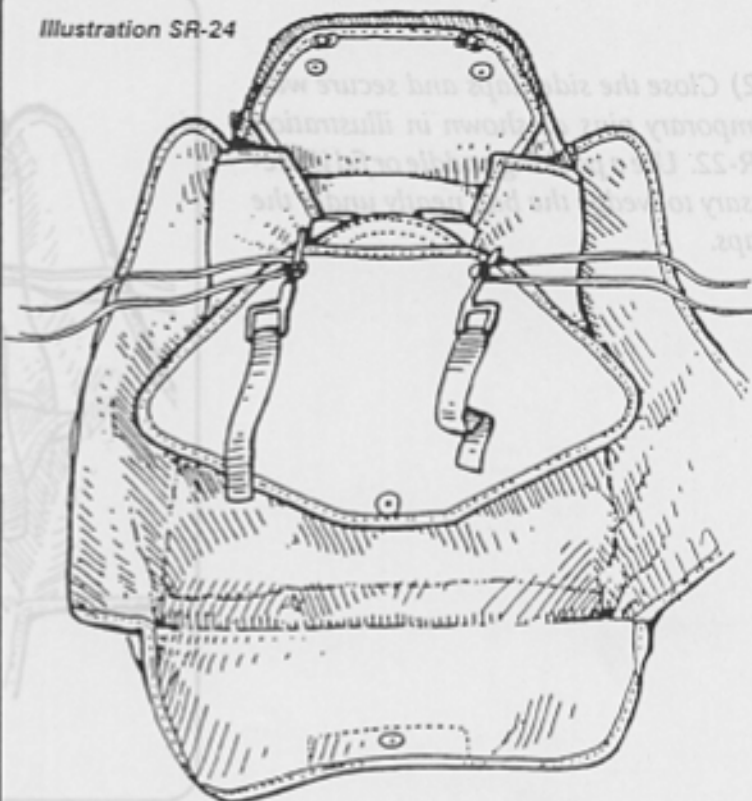


23) S-fold the bridle neatly on top of the bottom sub-flap and then split the stack into a V as shown in illustration SR-23.

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 above the flap. The part that is visible should be centered between the two grommets.

(If you are installing an AAD, refer now to #9 in the **AAD INSTALLATION** section of this manual - page 26.)

Illustration SR-24



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 as shown in illustration SR-25. Log, and seal the right side. Count your tools.

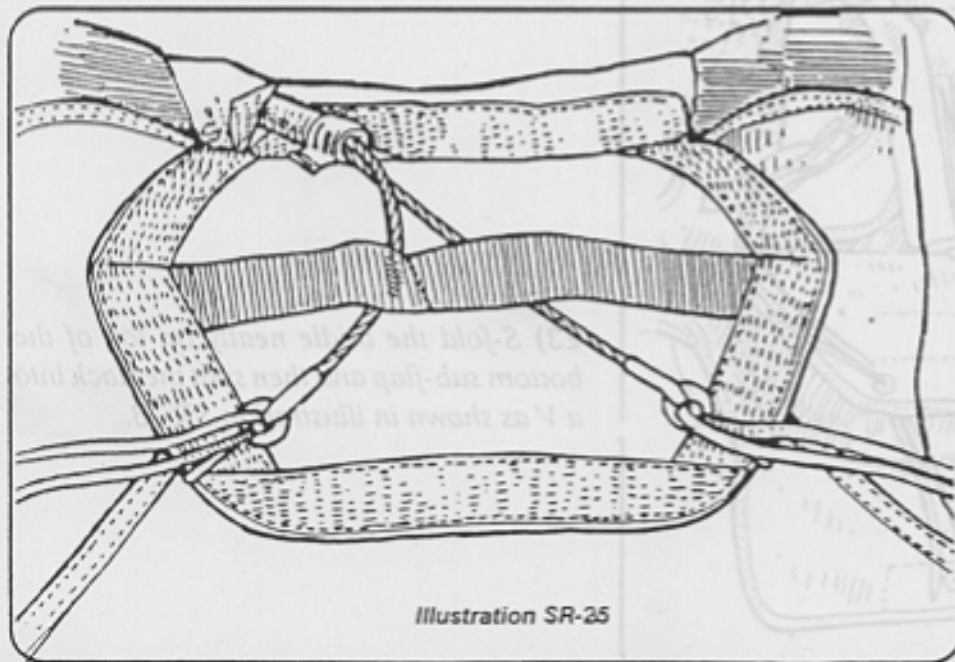


Illustration SR-25

**PARTS LIST
FOR RESERVE**

<u>COMPONENT</u>	<u>ALTERNATIVE PARTS</u>
Pilot chute	Grabber, PN 790130 Lil Grabber, PN 790120 MA-1, PN 53J7205
Bridle	40", PN 810150 (1162) (for rounds) 6 ft, PN 810310 (for diapered squares) 13 ft, PN 810320 (for free-bagged squares)
Canopy	Strong 26' Lopo, PN 1012-6 Strong 26' Mid-Lite, PN 1012-x Strong 26' Lite, PN 1014 G-228R ("G2R"), PN 430040 G-300R ("G3R"), PN 430060
Optional Free Bag for squares	730225 (G2R), 730230 (G3R)
Ripcord	613290100-280100 (2 cables, 29 1/4 and 30 1/2"; 2- pin, Martin Baker handle; cloverleaf handle alternate) 61829012S-28012S (with cable exten- sions for AAD)
Harness/Container assembly	Mini-Hawk, PN 1152

**SPARE PART LIST
FOR MAIN**

Ripcord	693260000 (Pinless; Throw- out and Pull-out alternates)
Cutaway Handle	862006 (17" short cable approx. plus 24" difference = 41" approx long cable)

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 or 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.)

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 is recorded. This is the history of the parachute.