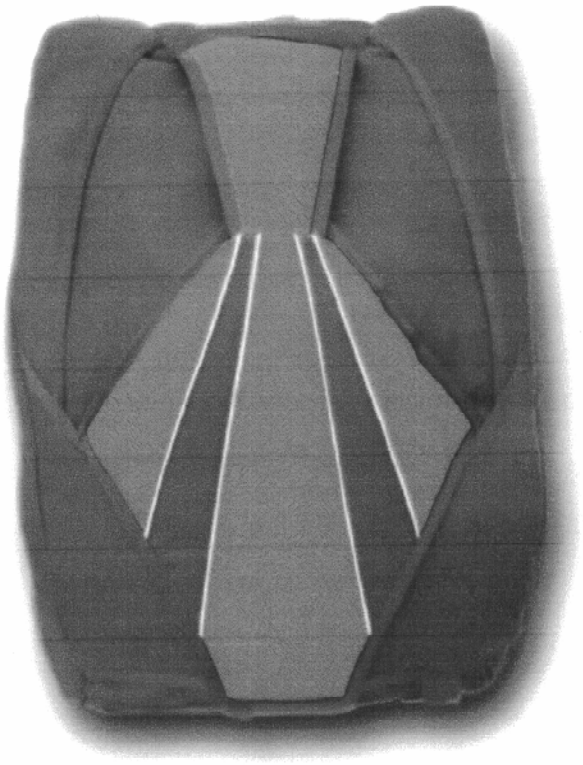
Centaurus

Owners Manual



NAA

North American Aerodynamics, Inc.
110 Carver Drive/Roxboro, NC 27573

INTRODUCTION

Welcome to the ***North American Aerodynamics*** family. We're confident that you will find the new ***Centaurus*** tandem harness and container system to be well constructed and designed. With proper care, you and your *Centaurus* will share many hundreds of memorable jumps.

Because we at NAA are continually striving to improve our products, this *Centaurus* may be different from the model you previously owned or saw at the drop zone. Change is an inevitable and desirable facet of our sport.

In order for you to become thoroughly familiar with the Centaurus system, we strongly urge that you read this manual carefully.

You must have your *Centaurus* inspected and packed by an FAA certified rigger. If at all possible you should be present when the rigger inspects, assembles and packs this system. There is no better way for you to become completely familiar with the *Centaurus*.

If you have any questions that your local FAA certified rigger can't answer, please give us a call.

NORTH AMERICAN AERODYNAMICS
PARACHUTE SYSTEMS

COMPONENTS

The **Centaurus** comes complete with these components:

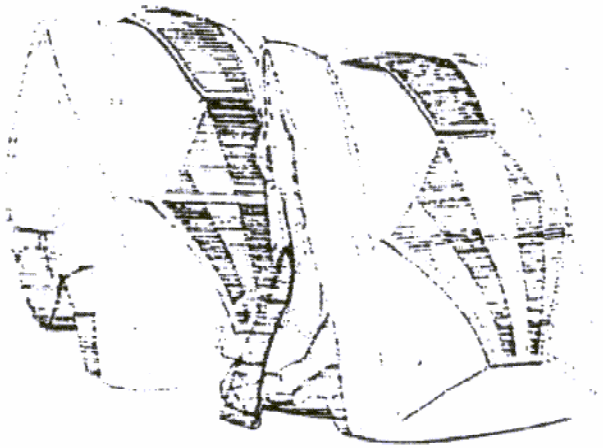
- Harness and container
- Hand deploy pilot chute
- Main pilot chute bridle
- Main deployment bag
- Main locking loop
- *Centaurus* reserve pilot chute
- Reserve ripcord
- Reserve locking loop
- Reserve pilot chute bridle
- Main risers & steering toggles
- 3-ring release handle
- *Centaurus* Owners' Manual

Replacement components are available from **NAA**.

TWO NOTES OF CAUTION

As with any parachute equipment it is critical that you maintain your *Centaurus* in an airworthy condition. Follow the maintenance advised in this manual. Consult your FAA certified rigger frequently.

Do not allow another jumper to use your *Centaurus* unless you are certain the person is fully trained and competent, has read this manual, and is thoroughly familiar with the *Centaurus* system. Consult your local USPA Instructor.



ASSEMBLING AND PACKING THE RESERVE

INTRODUCTION

An FAA senior or master rigger certificate is required to pack any reserve parachute that will be carried for use in the U.S.

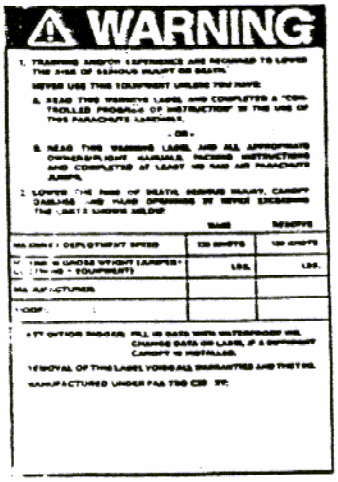
This manual does not contain instructions for inspecting, assembling and folding the reserve parachute canopy. The rigger must refer to the packing instructions provided by the canopy manufacturer for this information.

Dan Poynter's The Parachute Manual is an excellent scurce of useful information and background and may be used as a general guideline to safe and proper rigging.

North American Aerodynamics, Inc. may be contacted for further information on the *Centaurus* container system.

RIGGERS:

Do not pack any reserve into a ***Centaurus*** *that has had its warning label removed. Removal of the warning label voids any and all FAA TSO approval.*



FOR A RAM AIR RESERVE WITH THE *CENTAURUS* FREE BAG, BRIDLE AND PILOT CHUTE SYSTEM:

CAUTION

The ***Centaurus*** depends on the full interaction of all its components for safe operation. Use only the components listed below when installing and packing a reserve canopy into this container. Use of other components, materials and techniques, or the omission of any of them will invalidate the TSO and may lead to improper functioning of this container.

1. BRIDLE - Made of 2" type II tape, MIL-T-5038 with a sewn loop at one end which has a 3" opening. The stitch pattern is 3 inches long with either 2 rows of double throw zig-zag stitching or a 4 point cross-stitch in nylon E thread. The finished length of bridle is 13'3" + or - 1".

A larks head knot is used to attach the bridle to the reserve pilot chute.

2. LOCKING LOOP - Made of sheathing from type III suspension line MIL-C-5040, AKA "550". Sew a length of the sheathing to form a loop end with a 1" opening. The length of the sheathing from end of loop to adjustment knot will depend upon the canopy being packed and the relative temperature and humidity which affect pack volume. *A short loop will make a neater pack job. With the Molar freebag, a loop length of 2 ½ inches is average.*

Cut the line about ¼ inch below the knot, and with the sides of the hot knife, melt the ends of the knot; be careful not to sever or melt into the sheathing of the knot.

A washer is provided with the container. Pass the free end of the loop through the washer to prevent the knot from being drawn through the grommet in the bottom of the container.

NOTE

The parachute rigger should adjust the length of the locking loop so that the necessary extraction force is 8 - 12 lbs.

3. RESERVE RIPCORD- Factory replacement is required.

4. RESERVE PILOT CHUTE- Factory replacement is required.

INSTALLATION OF CANOPY

1. Thoroughly inspect the pilot chute, bridle, deployment bag, canopy, lines, links, locking loop, risers, steering toggles, container and harness.

2. If the canopy is on two links, install them on the front (Type 7) set of risers. The rear (Type 8) set of risers should be folded under the front set and tacked into place with waxed 5-cord or the equivalent. (Alternately, they may be tacked to the bottom of the container at the far outside edge on each side. Do not tack through the backpad.) If the canopy is on 4 links, install the links on both sets of risers on each side.

3. Check line continuity. Install steering lines (if any) according to the canopy manufacturer's instructions. Tighten connector links.

4. Attach the bridle of the *Centaurus* reserve free bag to the *Centaurus* reserve pilot chute by first passing the sewn loop on bridle through the loop on bottom of pilot chute, then passing the entire d-bag and bridle through loop, securing with a larks head knot.

5. Follow the canopy manufacturer's instructions for assembling and packing the reserve parachute.

PACKING PROCEDURES

Tools required:
- 84" pull-up cord
- temporary locking pin with flag
- packing paddle
- gun cleaning rod or hook wire
- optional: T-bar bodkin, short pull-up cord, "bolo tie" (not necessary for Molar freebag)

Count your tools!

After following the canopy manufacturer's instructions for folding the parachute, you may place the folded parachute into the reserve free bag by either one of the two methods commonly used when packing containers which have a single "thru-loop" such as the *Centaurus*.

1. Fill the corners of the bag behind the "thru-loop", then short stack the folded parachute in front of the "thru-loop", even with the mouth of the d-bag.

2. The more common method and the method recommended for the *Centaurus* is the "elephant ears" or "Molar Method". This method is easier and generally has a better finished appearance.

Regardless of which method is used, the following procedures are employed to complete the packing of the reserve container.

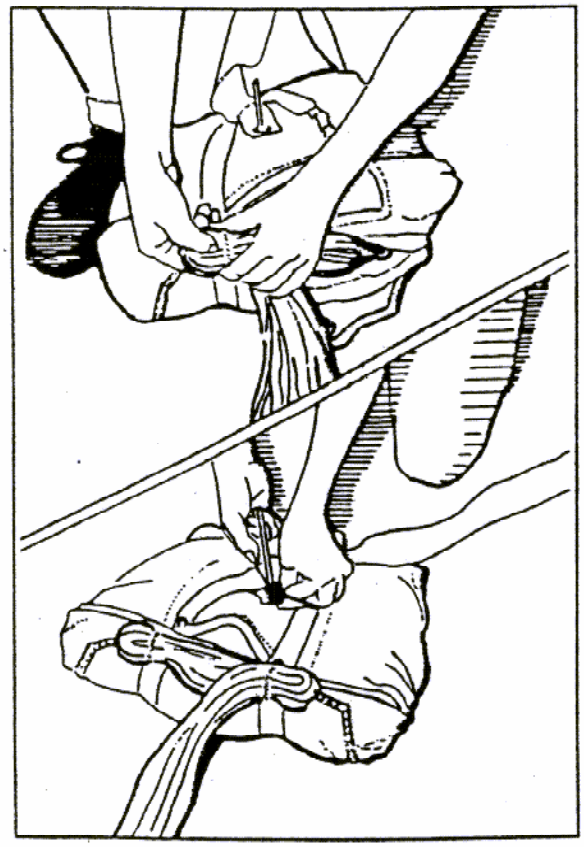
NOTE

The *new Centaurus* is equipped with a single grommet Molar freebag. The procedures outlined in this manual generally apply to either type of Centaurus reserve freebag.

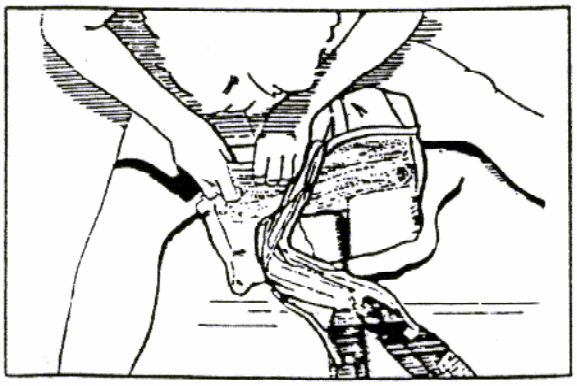
⚠ WARNING ⚠

Parachuting is a high risk activity which may cause or result in serious injury or death.

1. Carefully place the stacked canopy into the bag. Close the bag with the two locking stows. A shock cord safety stow is used, not rubber bands.

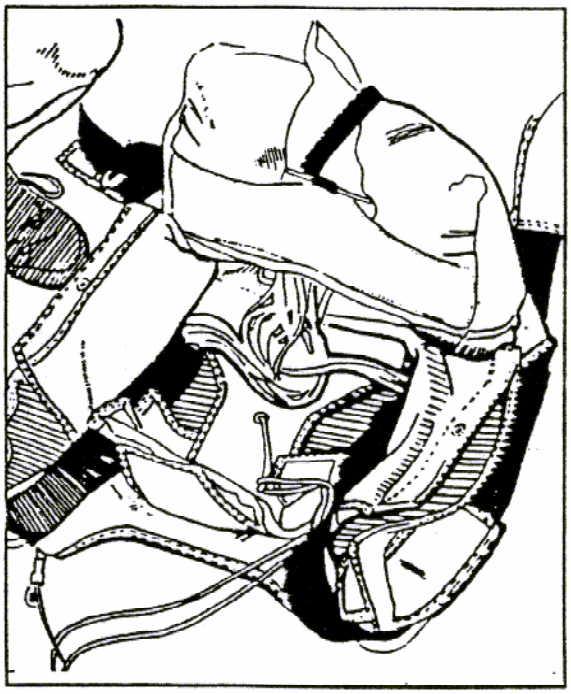


2. Stow the remainder of the suspension lines into the pouch on the underside of the bag using s-folds that extend from one side of the bag to the other.

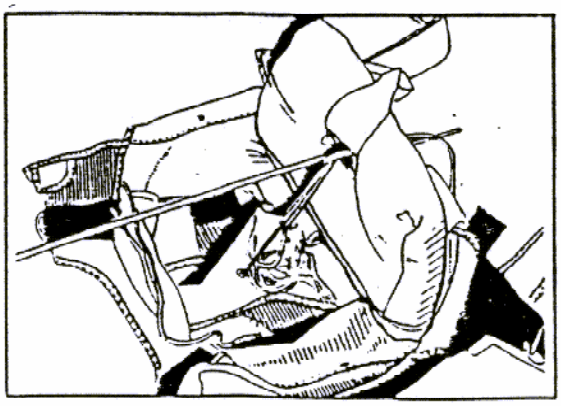


PLACING THE BAG IN THE CONTAINER

1. Set the bagged canopy on the main container and position the reserve risers in the pack tray. Fan the links slightly to distribute their bulk, with the rear riser to the outside of the front.

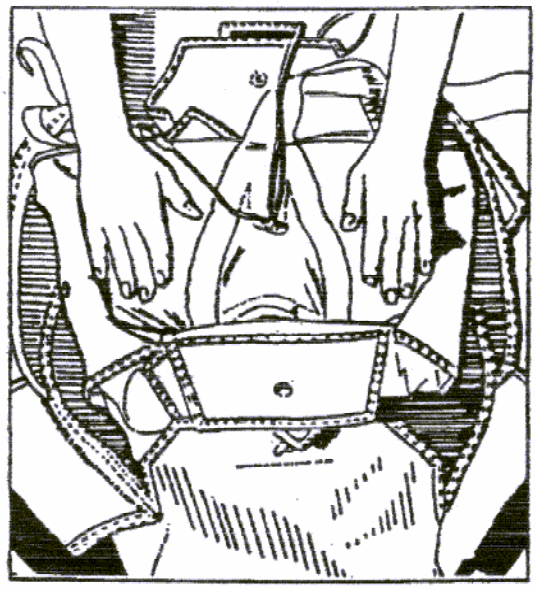


2. Pass a pull-up cord through the locking loop, and through another pull-up cord (or bolo tie, as shown). Remove T-bar if used. Molar freebag: Pass pull-up cord directly through the single grommet.



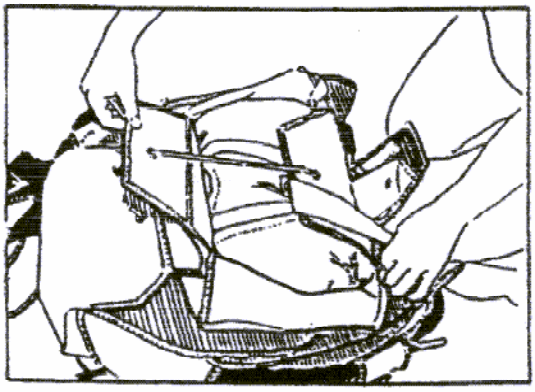
3. Place the bagged canopy in the pack tray, taking extra care to fill the lower corners. Use a pull-up cord to draw the locking loop up through the grommets in the bag, then lock the loop with the temporary pin.

NOTE: Do not allow any canopy material to interfere with the locking loop.

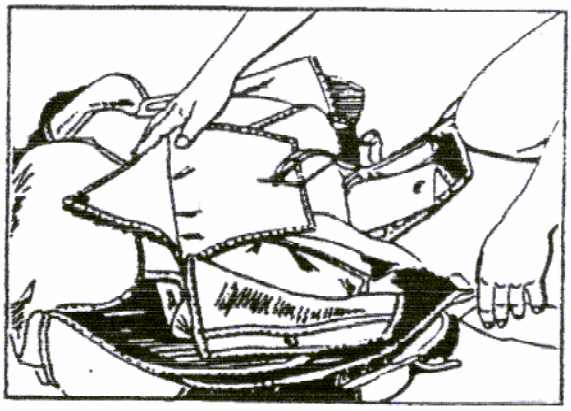


CLOSING THE RESERVE CONTAINER

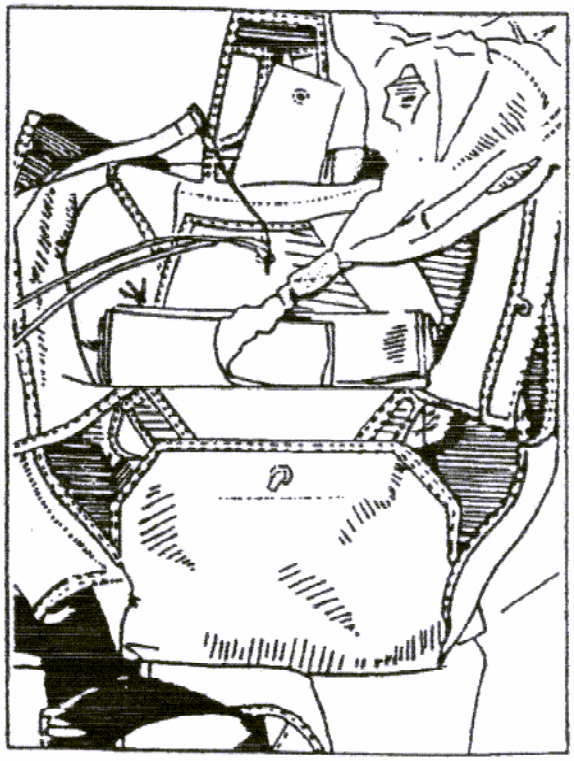
1. Thread pull-up cord through the grommets of the top flap and bottom flap, routing the pilot chute bridle over the top flap.



2. Exerting even pressure, push both flaps together so that they center over the grommet of the reserve bag. Pull up smoothly on locking loop and secure with temporary pin.

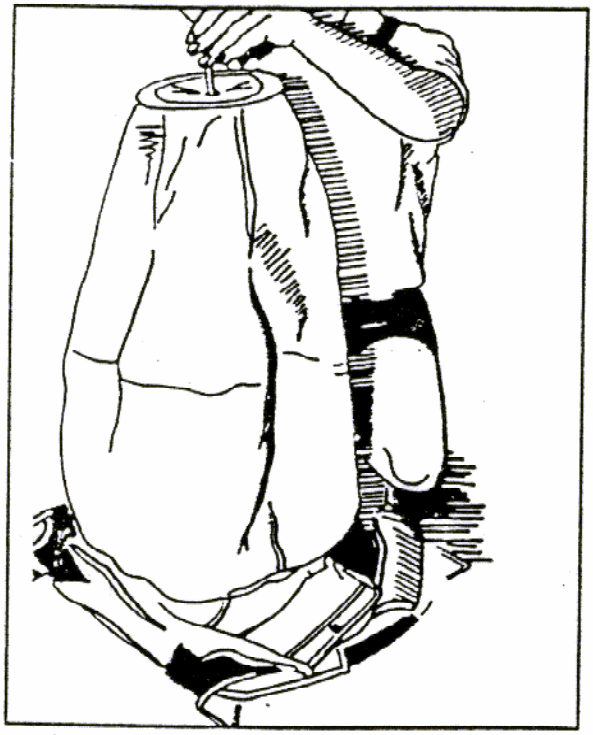


3. S-fold the length of free bridle onto the top of #2 flap up to the base of the pilot chute.



NOTE: When packing the *Centaurus* equipped with a Molar freebag, place several short folds of bridle between the freebag grommet and the top of bag in order to fill in the "valley" between the ears of the Molar freebag. Close the reserve no. 1 flap over these folds. With the no. 1 & no. 2 flaps closed, the orange assistor pockets should be visible. Fold the remaining bridle to form a "V" with the point towards the main container.

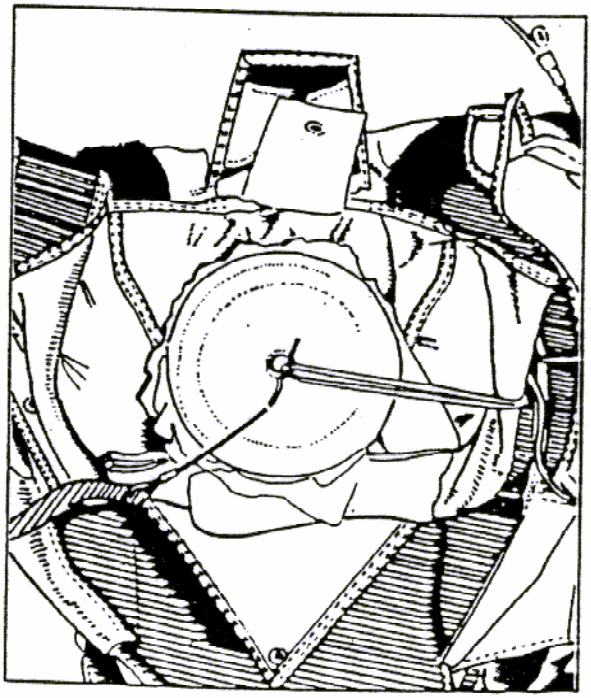
4. Thread a hooked wire through the grommet in the pilot chute cap and down through the pilot chute until it emerges from the bottom. Attach pull-up cord and thread the pull-up cord through the bottom and out the top. You will have to stand the pilot chute upright on the "launching platform" (flap #2) to complete the threading.



5. Center the base of the pilot chute on the "launching platform" over the grommet, taking care not to disturb the stacked bridle. The swage at the pilot chute cap should be toward the front of the container, so that it will be covered by the plastic stiffener of the top flap.

6. Compress the pilot chute, continuously holding tension on the pull-up cord (use your teeth if necessary). As you compress the spring, work pilot chute fabric between the coils. When the pilot chute is fully compressed, most of the fabric will be positioned properly.

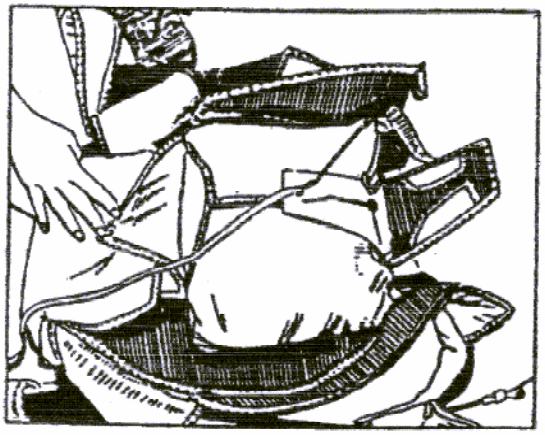
7. Remove the temporary pin and replace it on top of the pilot chute. Again check the swage on the pilot chute cap, making sure it is properly located.



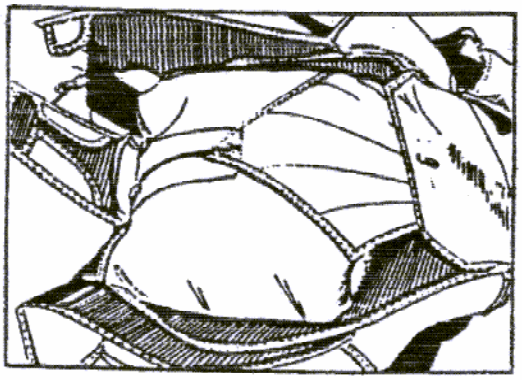
8. Thread the pull-up cord through the side flaps (#3 and #4). Using even pressure and working the flaps together towards the center, pull the locking loop through the grommets and secure with the temporary pin. Make sure that the folded and stacked free bridle is not disturbed.

9. Thread the pull-up cord through the outside top flap (#5), pull the locking loop through and secure with the temporary pin.

10. Thread the pull-up cord through the outside bottom flap (#6). Pull the locking loop through and secure it with the temporary locking pin.



11. Replace the temporary pin with the reserve pin, routing the cable through the RSL ring. The end of the pin slides into the channel in the bottom flap.



NOTE

The new Centaurus is ready to accept the Cypress AAD. Refer to the Cypres Rigger's guide for installation instructions.

CAUTION

If the force necessary to close the last two flaps seems excessive, the loop may be too short. Use a scale to determine how much force is needed to extract the pin. 8 to 12 pounds is correct.

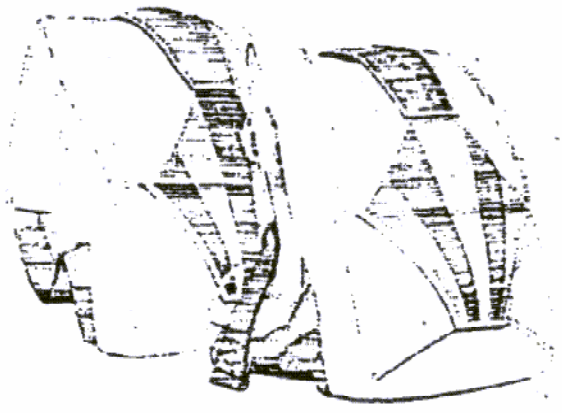
12. Dress the container as needed, forcing the bag into the corners with the packing paddle. Kneed and bend the container to expel air and make the rig more flexible.

13. Sign, seal and log the reserve. Close the reserve pin protector flap.

14. COUNT YOUR TOOLS.

15. RE-COUNT YOUR TOOLS.

NORTH AMERICAN AERODYNAMICS PARACHUTE SYSTEMS



ASSEMBLING AND PACKING THE MAIN

INTRODUCTION

The ***Centaurus*** is compatible with most main sport canopies currently manufactured. Be certain, however, that your particular canopy fits your container system. If you have any doubt about your main canopy, consult with your local FAA certified rigger or contact NAA.

ATTACHING THE MAIN

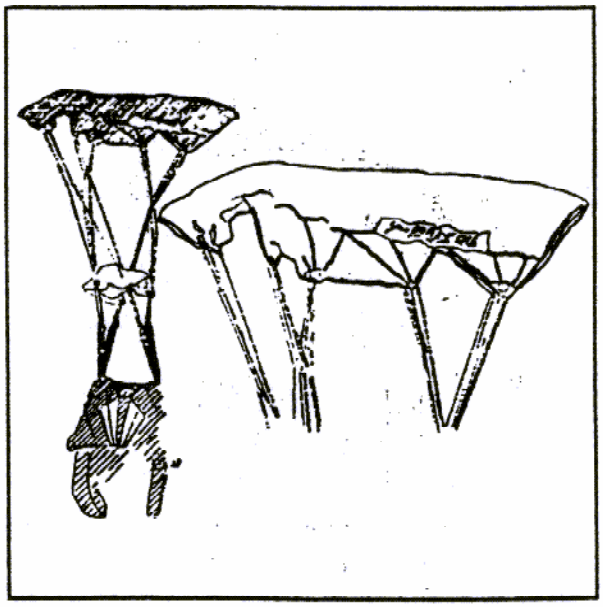
Great care must be taken when attaching the parachute to the main risers (provided by NAA) to ensure correct line continuity. Consult your FAA rigger for assistance. Be certain the connector links are properly installed. If your canopy uses Rapide Links, make sure the barrel nut completely covers the thread. Hand tighten, then 1/4 turn more. *Check tightness each time you pack.*

ATTACHING THE STEERING TOGGLES

Your canopy comes from the manufacturer with steering lines marked at a point approximately correct for attachment of the steering toggles. This point may need to be adjusted following a few orientation jumps to arrive at the precisely suitable position for you. Consult your FAA rigger. Attach the steering toggles by following these steps:

1. Check the steering line continuity by following each line from the tail of the parachute, through the rear slider grommet, through the guide ring on the main riser, ensuring that the steering line does not pass around any other suspension lines.

2. Double check each side. Repeat double check. *Check Again.*

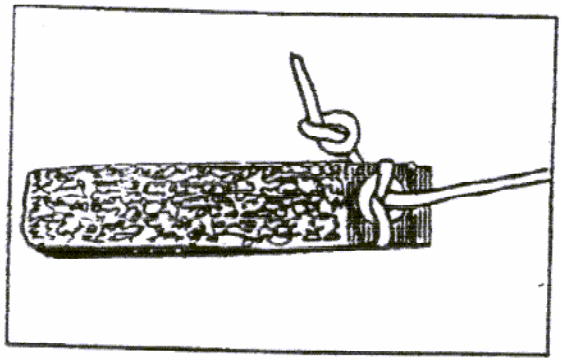


2. Pass the end of the steering line through the grommet in the ***Centaurus*** steering toggle, adjusting the length to position the mark at the grommet.

3. Loop the running end around the toggle and thread it back through the grommet. Check your mark and pull line snug.

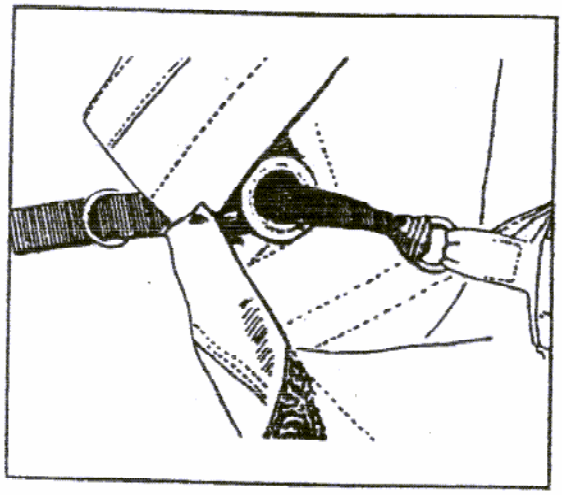
4. Loop the running end around the other side and back through the grommet, pulling it snug.

5. When the mark is properly positioned, pull the line tight and then tie an over-hand knot in the free end, snugging the knot to the grommet. Don't cut off the excess line, you may need to readjust toggle position.



INSTALLATION OF PILOT CHUTE AND DEPLOYMENT BAG

1. Pass the free end of the pilot chute bridle through the grommet of the deployment bag, orienting the open mouth of the bag towards the top of the parachute. Pass the free end of the bridle through the ring on top of the parachute. Open the large loop on the bridle and feed the deployment bag, bridle, and pilot chute through the loop. Your installation should look like this.

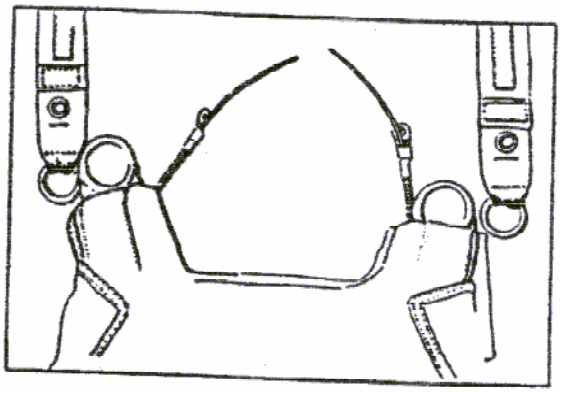


The stop ring on the bridle lies between the deployment bag and the pilot chute.

INSTALLATION OF MAIN RISERS AND 3-RING RELEASE SYSTEM

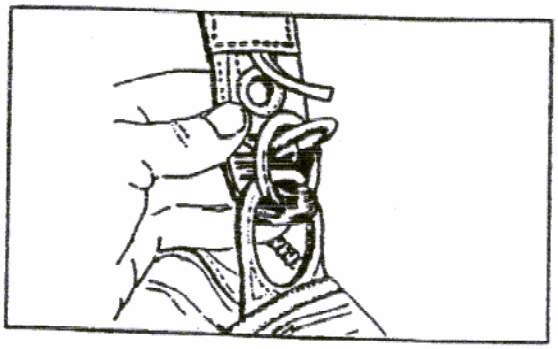
1. Thread the cable through the housings so that no cable is exposed between handle and end of housings. Mate velcro.

2. Orient the parachute for attachment to the harness by laying it on its side and following steering line from tail to risers. Lay riser out with rear risers on top, right risers on right, left on left. lay Centaurus face down and position risers next to harness in correct orientation.

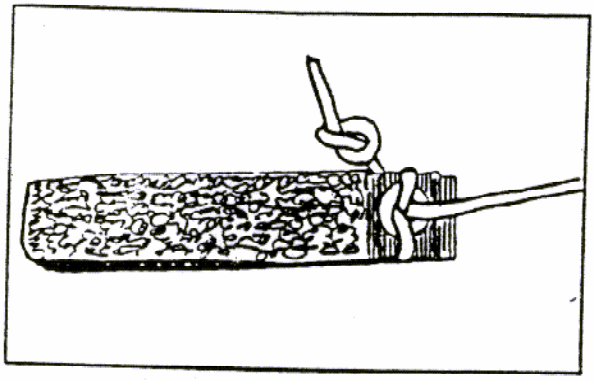


3. With the riser rings facing down, pass the middle ring (on end of riser) through the large harness ring and fold it back up toward the small ring.

4. The smallest ring is now passed through the middle in the same manner.



5. When the mark is properly positioned, pull the line tight and then tie an over-hand knot in the free end, snugging the knot to the grommet. Don't cut off the excess line, you may need to readjust toggle position.



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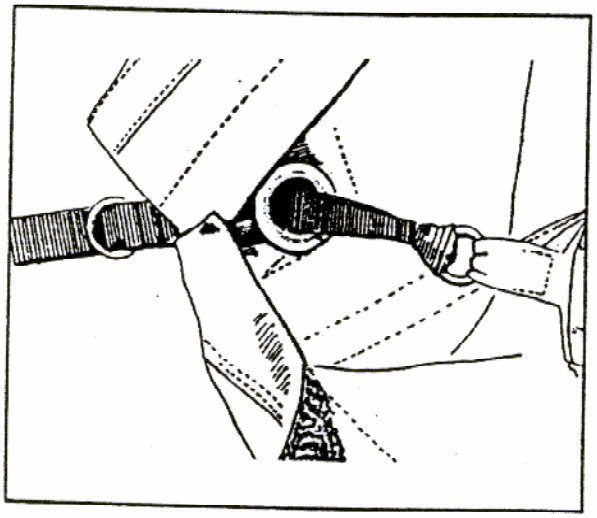

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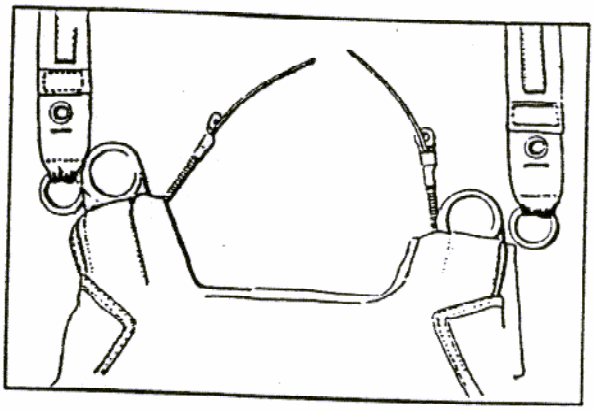

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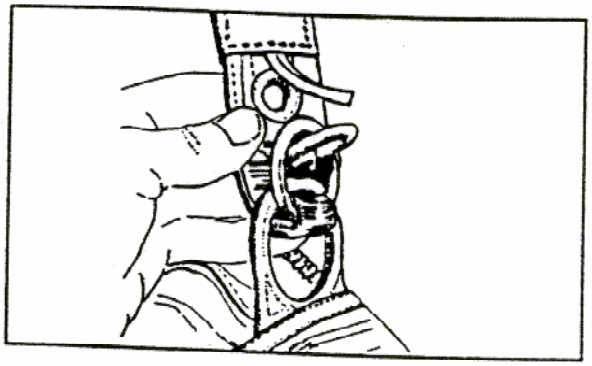


3-RING RELEASE INSPECTION

This installation should be checked before every jump.

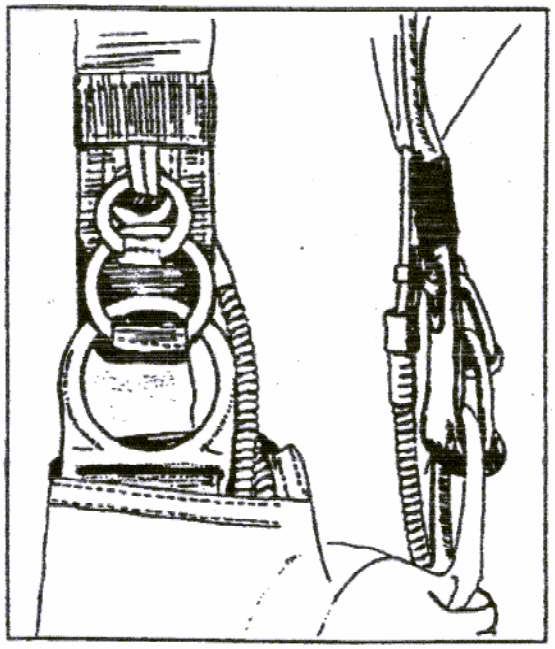
1. The 3-ring release handle is properly mated to the harness with no cable visible between the handle and the end of the cable housing.

2. Each ring passes through only one ring: large through middle, middle through small.

3. The white loop passes through only the small ring.

4. The white loop passes through the grommet on the end of the cable housing without twisting.

5. Nothing passes through the white loop except the yellow cable.



SETTING THE DEPLOYMENT BRAKES

The steering toggles on your parachute must be compatible with the *Centaurus* risers. Check with your FAA certified rigger.

1. After the canopy is inspected, your line continuity is double checked, and the steering toggles are correctly tied to the steering lines, pull the steering line down until the brake loop is just below the riser guide ring.

2. Insert the tapered end of the steering toggle into the loop. Seat the toggle against the guide ring by pulling up on the steering line. Mate the toggle velcro to the riser velcro.

3. Fold the excess line into 3 inch bites and stow using the velcro tabs. Repeat procedure on other side.

PACKING THE MAIN CONTAINER

BAG PACKING

While the bags supplied with some main canopies and bags made for other containers may fit into the Centaurus tandem main container, in general they will not fit perfectly. For the best fit and to ensure reliability, a custom bag built for the Centaurus is recommended.

CAUTION

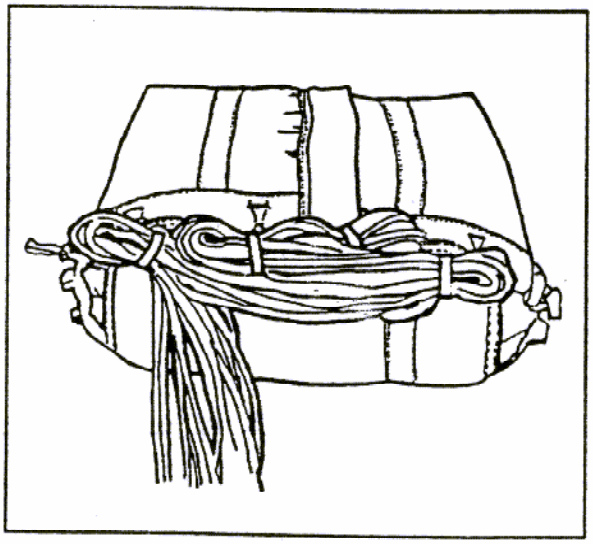
*Due to the probability of suspension lines entangling with the side of flaps of the main container, **DO NOT FREE PACK** your canopy into this container.*

Also, DO NOT FREE COIL YOUR LINES, even if the canopy is in a bag. Stow your lines on the bag as directed below.

1. Pack the canopy according to the manufacturer's instructions. When folded, the canopy should be about 4 inches wider than the bag. make the folds only as long as the bag is so that the bag can close completely. A bag packed wide and short is important for a good fit and appearance.

2. Slide the canopy into the deployment bag being sure to fill the corners completely. Pull the slack bridle out of the bag until the attachment ring contacts the bag grommet.

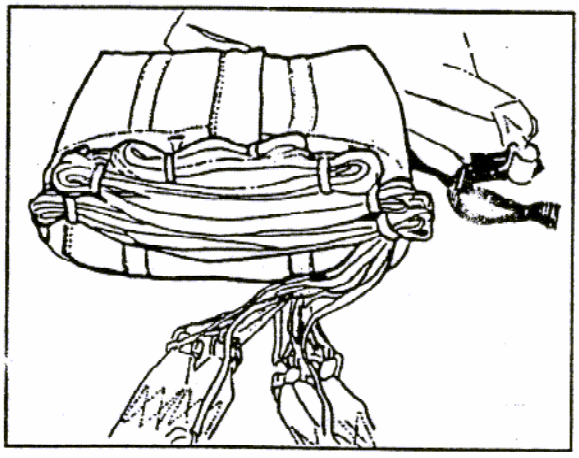
3. Close the bag by forming a 1 to 2 inch bite of suspension lines and inserting into one of the two center locking bands which you have passed through the corresponding locking flap grommet, then insert another bite into the other center locking stow. Finish locking the bag by inserting bites into the end locking stows.



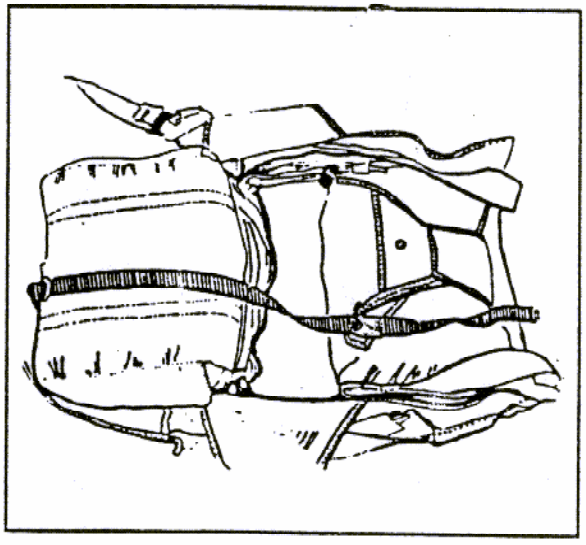
4. Stow the remaining lines across the bag until only about 12-15 inches remain unstowed.

5. By kneeling or "walking" on the bag, redistribute the bulk and squeeze the air out. The flatter the bag, the better.

6. Pick up the bag holding the last stow of lines



and place it in the main container, grommet side up and mouth side down. Rotate the bag out of the way.



7. Follow the risers from the harness rings and lay them flat along the sides of the container. Distribute the connector links along the sides of the packtray. Route suspension lines neatly.

8. Lay the deployment bag flat in the pack tray, insuring that the corners of the bag fill the corners of the container and the risers are in place against the sides. Pull up on the side flaps while kneeling on the bag in order to firmly snug the bag into the container. Secure the risers with the riser covers and route the pilot chute bridle to the upper right.

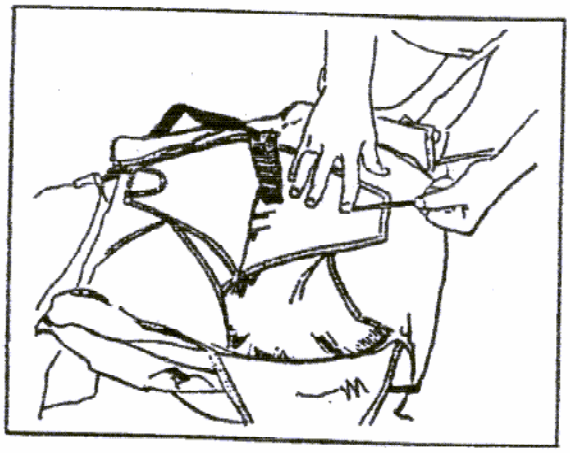
CLOSING THE MAIN CONTAINER

The *Centaurus* is equipped with a curved pin and nylon locking loop. Always use gutted 1000 lb. suspension line for the loop. The loop should be sewn along its length leaving an opening of no more than 1 inch to receive the pin. The loop should be about 2 1/2 inches long from end to knot. The final adjustment for length will be determined by the bulk of your parachute. A short loop will generally allow a better locking pack job. The extraction force on the pin should not exceed 20 pounds; 8-12 lbs. is recommended. Place a small metal washer (provided) between the adjustment knot and the grommet of the lower flap. Place the free end of the loop under the elastic retainer and secure with waxed 5 cord.

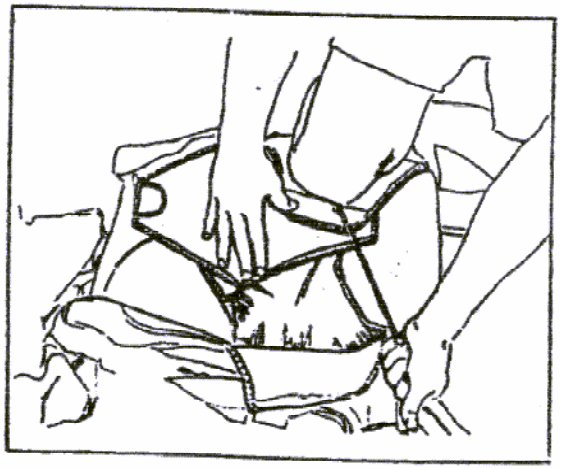
NOTE

Do not allow this locking loop to show the slightest sign of wear. ***Replace the loop frequently.*** Jumping a rig with a worn locking loop is a lazy and dangerous practice. Such carelessness endangers other jumpers and is a completely avoidable hazard.

1. Insert a pull-up cord through the loop and grommet of the top flap. The bridle should be routed to the right with the excess neatly stowed under the top flap. Pull up on the cord and simultaneously pat the flaps inward until they overlap and the grommets meet. Hold the locking loop with your fingers or knee.



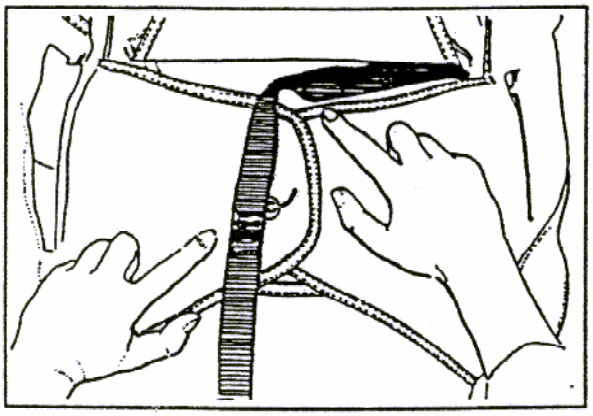
2. Thread the pull-up cord through the right flap. Pull and pat until the loop comes through the grommet. Hold in place with your knee.



3. Repeat with the left flap, pulling and patting until the loop is in position to secure with the curved pin.

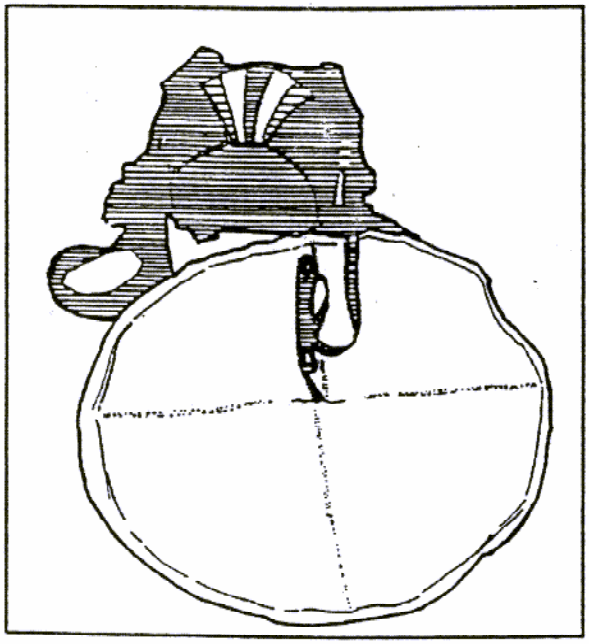
4. Remove pull-up cord slowly in order to reduce friction heat and abrasion. First pull the cord underneath the pin, then pull out slowly.

5. Mate the velcro patch on the bridle to the velcro on the top flap.

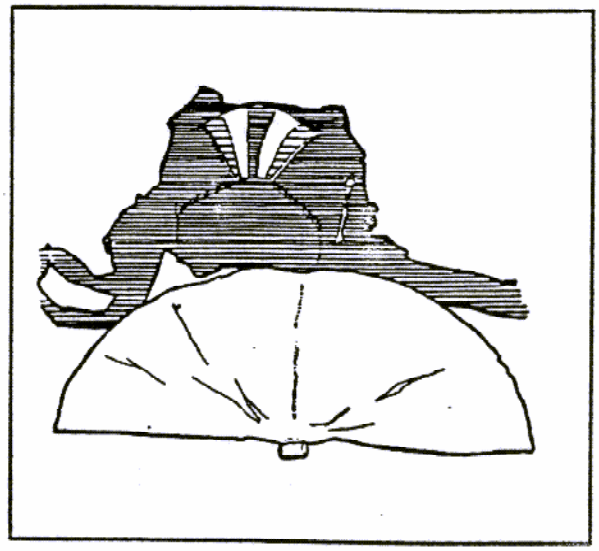


FOLDING THE PILOT CHUTE

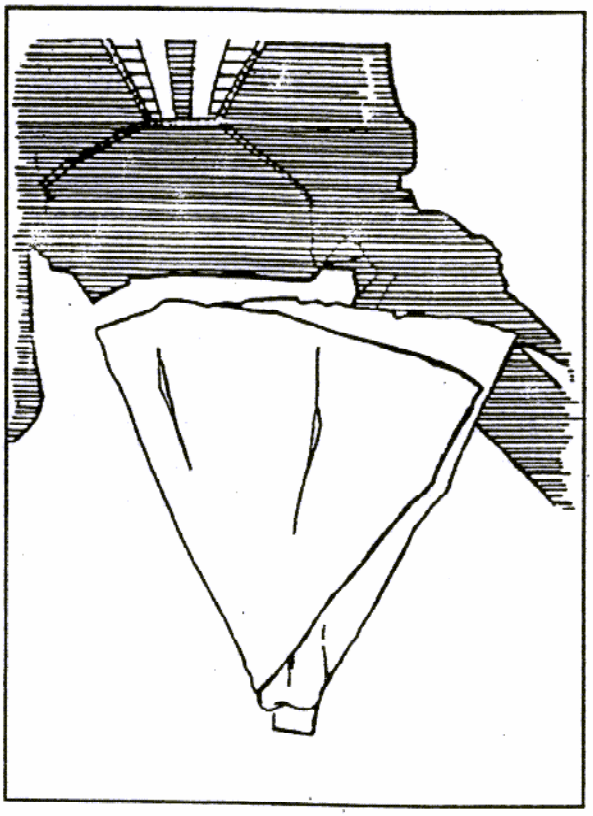
1. Lay the pilot chute flat, mesh side up. S-fold the bridle.



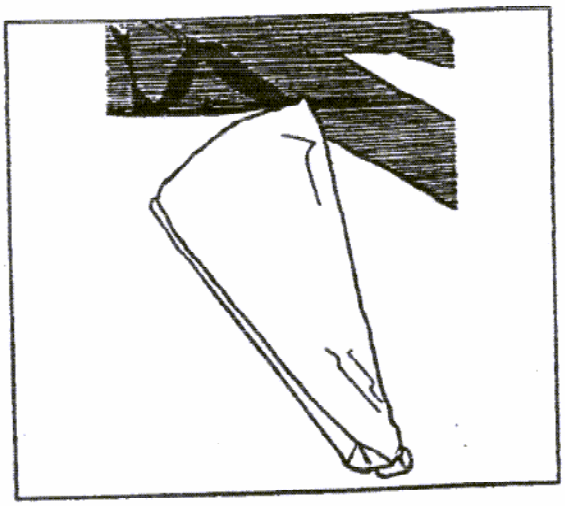
2. Fold pilot chute in half.....



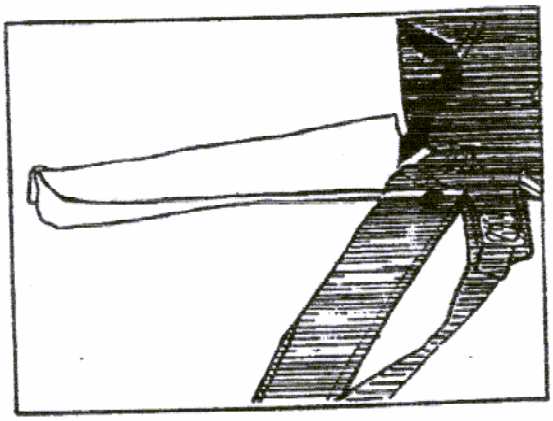
3. .....then in thirds.....



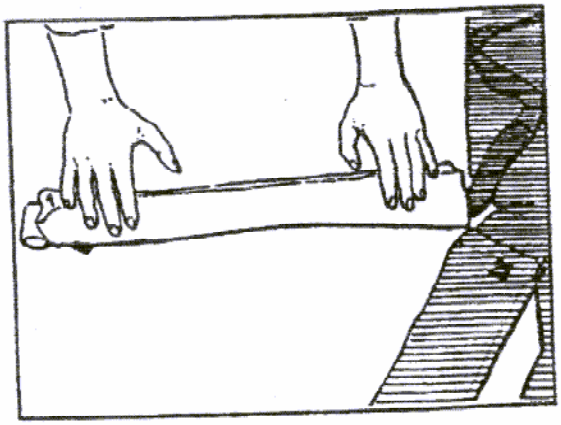
4. .....then in half again.....



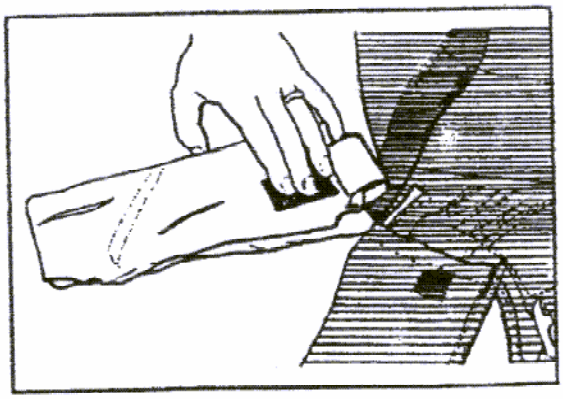
5. .....again in thirds.....



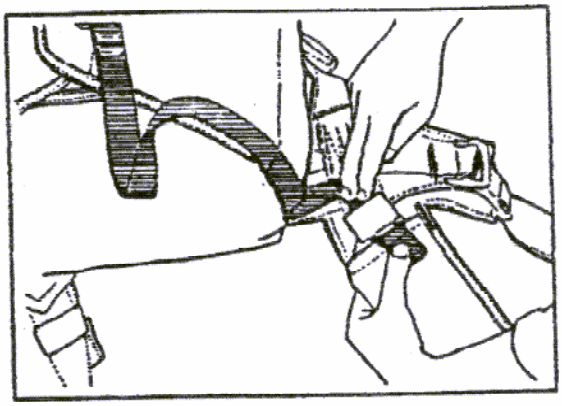
6.....again in half.



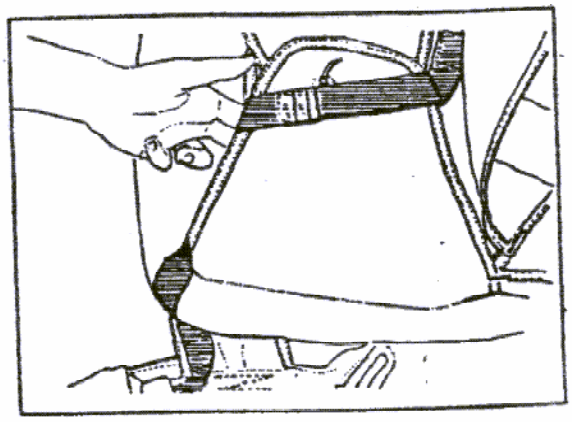
7. Fold pilot chute to half its length, skirt to handle.



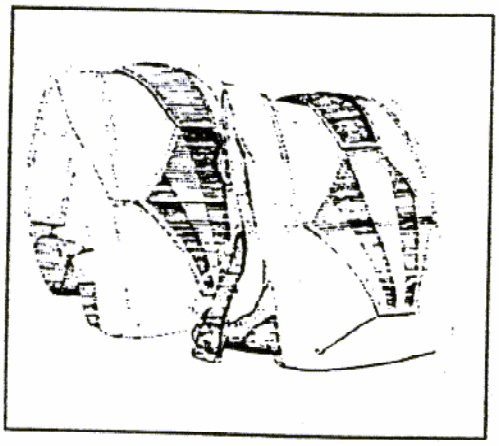
8. Slide pilot chute into pouch and dress neatly.



9. Mate the velcro on bridle to the harness velcro. Tuck excess under the bottom of the right flap.



10. Close the protector flap by tucking the tab under the bottom of the top flap.



DOUBLE CHECKS

▫ Check the bridle routing and velcro mating from the mouth of the pilot chute, up the side of the container, and around the right side of the top flap.

◦ Check the condition of the velcro on the bridle and where it mates to the top flap. Make sure it is not worn. Clear it of any debris.

◦Check the pull force necessary to extract the curved pin from the locking loop. It should not exceed 12 lbs., nor should it be loose. Adjust length of loop as required.

Never open the main container of a packed rig without removing the pilot chute from its pouch and extending the entire bridle.

MAINTENANCE, CARE AND REPAIR

PERIODIC MAINTENANCE FOR 3-RING RELEASE SYSTEM

The riser release system used on the *Centaurus* tandem is reliable and durable; however, it does require periodic maintenance and inspection to insure proper operation.

The following procedures should be done at least once a month, especially if the rig has not been used recently. **DO NOT simply attach the risers to the harness and forget them.** If the rig is subjected to unusual abuse, such as exposure to excessive dust, sand, or water, or if it is dragged, it should be inspected immediately.

1. At least every month, operate the 3-ring release system on the ground. Extract the cable completely from the housing and disconnect the risers.

2. While the system is disassembled, closely inspect it for wear:

- check the white nylon locking loops
- check the velcro on the breakaway handle and main lift web to be sure it is clean and adequately holds the handle
- check the cable housing ends for a smooth tapered finish, and the cable ends for irregularities
- check the stitching, including that which holds the large rings to the harness.

3. Pull downward on the housings. They shouldn't move downward more that 1/2 inch, but should be free to move upward 1 to 2 inches.

4. Vigorously twist and flex the webbing near where it passes through each ring in order to remove any "set" or deformation in the webbing. Do the same thing with the white loop. Failure to do this might result in a hesitation when the release is activated in a low-drag malfunction.

5. Check the inside of the cable housing for gravel or other obstructions. Use the cable to do this. Inspect the housing for dents or other damage (this is unlikely to occur unless the rig was smashed in a car door or suffered similar abuse).

6. Clean and lubricate the release cable with a light oil such as "3-in-1". Put a few drops on a paper towel and firmly wipe the cable a few times. A *thin* invisible film should remain. Too much will attract grit and dirt. Failure to do this could result in a higher than normal activation force on the release handle during a breakaway.

7. Inspect the fittings at the end of each housing. If one of these fitting were to come off the housing, a riser might release prematurely.

8. Reassemble the system properly, in accordance with the instructions given in this manual. Double-check to make certain the canopy is straight and the risers are not reversed.

9. If any wear is found, consult your local FAA certified rigger immediately.

10. If you have any problems, call NAA.

Regular, careful and thorough compliance with these maintenance procedures will prolong the life of your rig's release system and help to insure its proper operation during breakaways.

GENERAL INSPECTIONS

Your rigger is required to closely inspect the entire system when the rig is repacked every 120 days. However, every jumper should habitually perform a thorough general inspection *before every jump*. Lives would inevitably be saved if every jumper followed this advisory.

If your inspection is systematic, it can be performed quickly and yet carefully. Develop a habit of inspecting your rig in the same pattern, such as described below:

1. Starting with the right 3-ring component, check the system as recommended earlier in this manual.

2. Move down the main lift web to the release handle and check again, as recommended earlier.

3. Move down the main lift web, always hands on, always inspecting for frayed webbing or broken stitching. Inspect the chest strap and hardware.

4. Check the leg strap hardware and routing of webbing, particularly if you "step through".

5. Move across to other leg strap.

6. Move up main lift webbing, checking the chest strap again.

7. Examine ripcord handle, pocket, cable, and swedged end.

8. Move up to left 3-ring release components.

9. Turn rig over. Lift the reserve protector flap and examine locking loop (check for riggers' seal), pin and cable housing end for obstruction. Feel the end of reserve pin under the nylon channel to ensure it is not bent.

10. Lift main container protector flap and examine bridle, velcro and curved pin. Velcro must be clean and functional and locking loop must show no signs of wear.

11. Follow routing of bridle to pilot chute pouch, checking velcro for proper mating and function.

12. Examine pilot chute handle for cracks. Check nylon attachment tape.

If the above sounds suspiciously like a "jumpmaster check", it is. It can be performed easily and quickly; why not do it instead of the so called "pin check" before each jump? Fatalities would be prevented each year if every jumper would head this advice.

In addition to the above inspections of your harness and container system, you should always check your canopy suspension lines, connector links, risers, steering toggles and lines, bridle, d-bag and pilot chute. Your entire system can be inspected while you pack, and it won't slow you down a bit.

CARE

Certain things are simply beyond your control. Children, dogs, whuffos, and unconscious sky-divers will step on your gear. It's inevitable, but you can minimize such abuse by not leaving your gear unattended or unpacked. Don't drag your rig when you stow lines. Don't set your soda next to your gear while you pack.

If your rig does get soiled, wash it carefully with warm, soapy water.

Oils and grease can be removed using several common cleaning solvents such as tetrechloraethylene and dry cleaning solvent, type L. Consult your local FAA certified rigger.

Acid is an enemy. Wash immediately in warm, soapy water. Baking soda will help neutralize acid. Consult your rigger for a thorough inspection to assess damage.

Your gear is degraded by the ultraviolet rays in sunlight. Don't leave an unpacked rig baking in the sun. Cover your packed rig between jumps. Pack indoors.

REPAIRS

FAA regulations require that minor repairs be done by a senior or master rigger. Only a master rigger may perform major repairs, which the FAA defines as anything which affects the air worthiness of your rig.

IF YOU HAVE ANY QUESTIONS OR PROBLEMS, CALL NAA.

CENTAURUS STUDENT TRAINING SYSTEM

INTRODUCTION

The *Centaurus* Student Training System (CST), and the military version (MST) is an integrated and versatile **7- way deployable** harness and container assembly. It has been designed to provide the jumpmaster and student with the utmost in efficiency, convenience, and comfort. This system may be quickly configured to the following 7 methods of operation:

1. Direct static line attachment
2. Static line deployed pilot chute w/ assist
3. Conventional outboard ripcord
4. Side-pull flex cable
5. Leg pouch throw-out pilot chute
6. Bottom of container (BOC) pilot chute
7. AFF Jumpmaster assist (optional)

COMPONENTS

The CST and MST systems are complete with the basic **Centaurus** components and the following additional parts:

- Main D-bag for static line attachment
- Static line
- Canopy intermediary loop
- 10" velcro pilot chute assist (2 parts)
- Spring loaded main pilot chute
- Bridle for main pilot chute (spring type)
- Side-pull flex cable & handle
- Outboard ripcord
- Reserve static line assembly (RSL)

NOTE

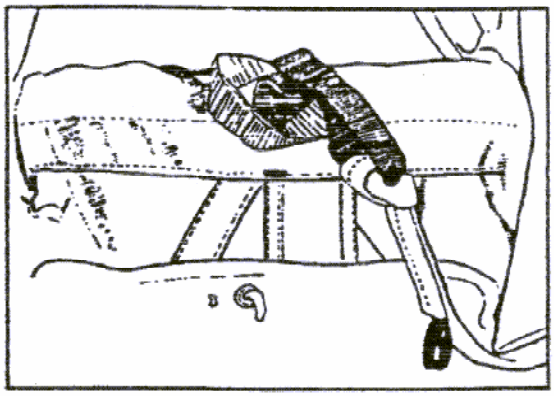
The canopy intermediary loop (red) has been provided to allow convenient transition from one to another deployment method without repacking the main parachute. Attach the red loop to the attachment ring on the top of the canopy. The loop is passed through the ring, and secured with a larks head knot. Pass the canopy intermediary loop through the grommet on the top of the D-bag.

When used with either type of pilot chute (hand deploy or spring), the pilot chute bridle is tied with a larks head knot to the canopy intermediary loop. ***The canopy intermediary loop must never be tied directly to the static line.***

CONFIGURING THE CST & MST

DIRECT BAG STATIC LINE DEPLOYMENT

1. Attach the static line to the top of the main deployment bag by passing it's looped end through the d-bag bridle, then loop it through it through itself (larks head knot), and tighten securely.



CAUTION

DO NOT ROUTE THE STATIC LINE THROUGH THE RED INTERMEDIARY LOOP. MIS-RIGGING THIS CONNECTION COULD RESULT IN SEVERE CANOPY DAMAGE OR AN "IN-TOW" SITUATION!

The CST and MST depend upon the full interaction of all components for safe operation. Use of other components, materials, and techniques, or their omission will invalidate the TSO and may lead to improper function of the container.

NOTE

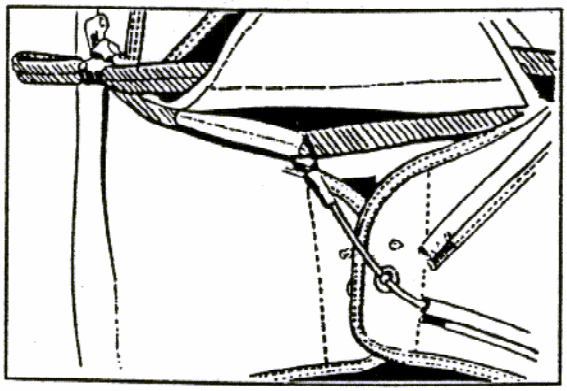
It is not necessary to "assist" a freebagged ram-air canopy by creating a connection between the deployment bag and the canopy. However, should this configuration be desired, there are two methods to accomplish this:

a. Tie the canopy intermediary loop to the deployment bag bridle with two turns of 1/4" type 1 (80#) cotton break cord.

b. Attach the 10" velcro assist device to the deployment bag bridle (hook component), and to the canopy intermediary loop (pile component) by means of a larks head knot. The velcro assist device should be positioned inside of the deployment bag.

2. Stow the excess static line under the main #2 flap. Route the static line to exit from the upper right hand corner of the container.

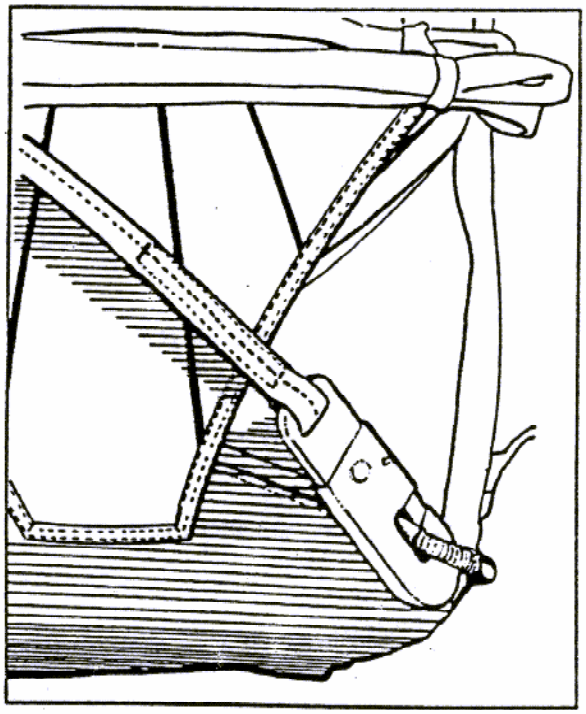
3. Insert the flex cable through the closing loop and route the free end into the cable housing.



4. Triple stow the first fold of static line in the rubber stow band. ***It is important to triple stow in order to prevent the drag on the static line from prematurely pulling the cable free and opening the container.***

5. Close the container flap and stow the remaining static line from left to right across the container. The static line snap can be clipped to the cable housing until ready for use.

CAUTION

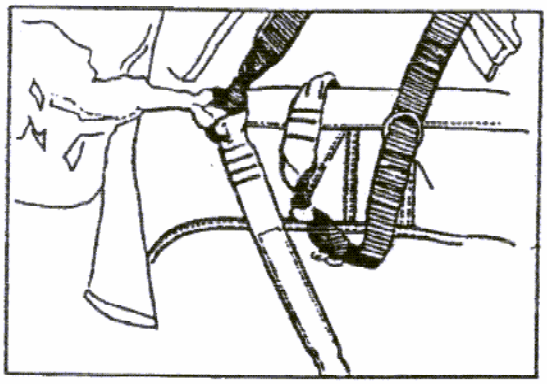


Check the condition of all components frequently. Direct bag static line deployment can subject the D-bag, static line, and other parts to stress and wear. Replace any components that show signs of damage.

STATIC LINE DEPLOYED PILOT CHUTE WITH VELCRO ASSIST DEVICE

1. Attach the black type 4 bridle to the base of the pilot chute and to the red canopy intermediary loop by threading a larks head knot.

2. Attach the pile 10" velcro assist device to the base of the pilot chute and the hook velcro assist device to the black loop on the static line by threading a larks head knot.



3. Mate the velcro. Stow the bridle,then the excess static line in an orderly manner under the #2 main flap, arranging the static line to exit from the top right of the container.

4. Compress the main pilot chute spring, evenly arranging the canopy fabric, and close the main container flaps in sequence over the pilot chute, and pass the flex cable through the closing loop. Finish packing as described previously, steps 3-5, fig. 2 &3.

CONVENTIONAL RIPCORD AND SIDE-PULL FLEX CABLE DEPLOYMENT

1. Attach the black type 4 bridle to the base of the pilot chute and to the red canopy intermediary loop by threading larks head knots to each component.

2. Route the cable through the cable housing and position the handle.

3. Compress the main pilot chute spring, evenly arranging the canopy fabric, and close the main container flaps in sequence over the pilot chute. Secure the locking loop with the ripcord pin or the side-pull flex cable.

LEG POUCH AND BOC THROW-OUT PILOT CHUTE DEPLOYMENT

Refer to the section of this manual "Assembling and Packing the Main".

NORTH AMERICAN AERODYNAMICS PARACHUTE SYSTEMS