



# *Mayday Square 100/140*

USER MANUAL

## **THANK YOU**

*We are happy to be chosen to take you to your future adventures.*

*As manufacturers of sports aviation equipment for over 45 years, we understand how important is to have a reliable and durable equipment, with this in mind, we carefully choose the best materials and technologies available in the market, produce them under the supervision of our team with the high standards at our own facility located in Israel.*

*With this manual, we would like to share and introduce you to our new harness model, the "GOAL".*

*Following our philosophy, like all of our products, this harness was intensively tested by our team to be launched.*



*Here you will find important information on using your paraglider, we strongly recommend you to read it carefully before flying your wing for the first time, if you have any doubts or suggestions, please, don't hesitate to contact your APCO dealer or us at [www.apcoaviation.com](http://www.apcoaviation.com).*

*We wish you awesome and safe flights.*

*TEAM APCO.*

# *Mayday Square*

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## **WARNING**

This is not a training manual. It is extremely dangerous to yourself and others to use this product without first completing a flying course given by a qualified instructor.

Apco Aviation's products are carefully manufactured and inspected by the factory. Please use the product only as described in this manual. Do not make any changes to the product.

***AS WITH ANY SPORT - WITHOUT TAKING THE APPROPRIATE PRECAUTIONS, PARAGLIDING CAN BE DANGEROUS.***

# **1 DISCLAIMER OF LIABILITY**

In designing and manufacturing the Mayday parachutes and any of its subassemblies or accessories, our aim has been to create a rescue system that will allow the user to engage in the sport of paragliding in a safe and confident way.

However, paragliding is a high-risk activity, which may cause or result in serious injury or death. When you take it upon yourself to participate in this sport, you accept the risk inherent therein. You may reduce the risk by receiving proper instruction and by following the basic safety requirements. The Mayday Reserve Parachute System is a sensitive device, which may easily be damaged. Before each flight, the container should carefully be inspected for evidence of damage or wear and proper closure. Any deviation from the manufacturer's specifications concerning maintenance, repair, alterations and modifications constitutes wilful negligence. It is expressly understood and agreed that by

the use hereof by the buyer or any subsequent user that Apco Aviation Ltd. And/or the seller shall in no way be deemed or held liable or accountable and makes no warranty, either expressed or implied, statutory, by operation of law or otherwise, beyond that expressed herein. Paragliding equipment is sold with all faults and without any warranty

of merchantability or fitness for any purpose, expressed or implied. Apco Aviation Ltd.

disclaims any liability in tort for damages, direct or consequential, including personal injuries, resulting from a malfunction or from a defect in design, manufacturing, materials or workmanship, whether caused by negligence on the part of Apco Aviation Ltd. or otherwise.

By using any Paragliding equipment manufactured or sold by Apco Aviation Ltd

Or allowing it to be used by others, the buyer and/or user waives any liability on the part of Apco Aviation Ltd., for personal injuries or any other damages arising from such use.

The liability of Apco Aviation Ltd. is limited to the replacement of defective parts found under examination by manufacturer to be defective in material or workmanship within 120 days after purchase, and which has not been caused by an accident, striking, improper use, alteration, tampering, excessive use, misuse or abuse. The damages of the buyer and/or user shall be deemed liquidated in the costs of replacement as above.

## 2 INTRODUCTION

Even pilots flying the safest paragliders, can sometimes find themselves with their glider damaged, disabled or tangled and out of control.

In such cases a reliable

Emergency system with a fast opening parachute can make the difference between a simple scare and a fatal accident. APCO is happy and proud that its emergency systems, developed and perfected over nearly three decades have saved the lives of many pilots, from beginners to world champions.

### **WARNING**

Your emergency system has been designed for a fast opening at a low air speed. Do not, under any circumstances use this emergency system for free fall parachuting.

**SPEED WARNING** – Not suitable for use at speeds in excess of:  
32 m/s (115 km/h) (strength test 5.3.5.1 passed)

### **DEPLOYMENT SYSTEM WARNING**

This parachute system has been tested and found compliant using the original manufacturer's inner container. Use of any other inner container may produce different results, including failures.

## 3 *Maintenance*

The materials we use to manufacture the Mayday range of parachutes are carefully selected from the best mil. spec. products available on the market today. These materials are however sensitive to sunlight (UV). The container or harness will protect the canopy from ultra-violet rays. When storing the parachute, it should be kept in a cool dry place. Beware of mildew. Should your parachute be exposed to any moisture, it must be opened and air dried, out of direct sunlight, and repacked when completely dry.

### *Cleaning*

If your parachute requires cleaning, it should be soaked in lukewarm water with a little mild soap. No rubbing or scrubbing of the canopy fabric! It should then be thoroughly and repeatedly rinsed with fresh water and allowed to drip / air dry out of direct sunlight.

### *Repairs*

Should your Mayday parachute require any repairs or you suspect it may be damaged, it must be referred back to APCO Aviation Ltd. or a professional parachute loft, with a certified parachute rigger to carry-out the repair.

### *Spare Parts*

The only part that needs periodic replacement is the elastic band used for stowing the lines. These can be obtained from Apco, and should be replaced each time the canopy is re-packed. The rubber bands used are aviation grade , 1" rubber, or silicone bands.

## *Periodical Repacks*

Even though the Mayday Emergency System should remain in good condition and work

properly over a number of years, that the parachute be repacked by a qualified person once every six months. Packing by an unqualified person is undertaken at the pilots own risk, and is not recommended by Apco.

## *Lifespan*

Your Mayday reserve should last you for many years for security if well cared for. We recommend that a annual airworthiness check be done by a qualified person to ensure the airworthiness of your system. Any mayday product older than 10 years must by default be retired, even if it appears to be airworthy. The materials used in the manufacture of reserve parachute products may age even when stored in ideal conditions and the product is never used.

## *Identification*

The individual serial number, canopy type and manufacture date, is located on the bridle sleeve of the reserve. In any correspondence to Apco regarding your Mayday, please quote this information.

## *Attachment Procedure*

There are many different harnesses on the market today, with several different reserve stowing systems. Make sure your harness is certified and has an adequate instruction manual.

For attaching and fitting your reserve to your harness follow your harness manual instructions carefully.

## *Preliminary Notes on Packing*

The following Instructions apply only to the Mayday Squared Range, and not to Inverted Apex or Rogallo style reserves. When first delivered, your new emergency parachute system has been inspected and packed by Apco or an Apco approved dealer and is ready for use. The following set of folding instructions is intended for a qualified packer familiar with conventional parachute packing, to guide him/her in packing of these particular types of parachutes.

## 4 Intended Use

The Mayday Square is intended for paragliding and paramotoring use, and should be installed into a certified paragliding harness or external container.

As the Mayday Square was designed and tested to be applied in paragliding and paramotoring, it was not tested to be used in any kind of towing activity.

## 5 Technical Specifications

<b>Model</b>	<b>Area m2</b>	<b>Weight kg</b>	<b>Volume cc</b>	<b>Packed Size mm</b>	<b>Sink Rate m/s</b>	<b>Min / Max Load kg</b>	<b>Certification</b>
Mayday Square 100	25	1.341gr	4000	200x190x 80	5.1	50 / 100	EN @ 100kg
Mayday Square 140	33	1.675gr	4100	260x210x 100	5.1	70 / 140	EN @ 140kg



## *Parachute Durability*

If any damage or wear of parachute material is found, contact the manufacturer or your dealer immediately.

The parachute owner is obliged to inspect and check the condition of the parachute after every use, and after 10 deployments the parachute must be returned to the manufacturer or authorized person for thorough inspection.

## *Operating Conditions*

The parachute functions are guaranteed in an air temperature range from - 30°C to +60°C and relative humidity corresponding to this temperature range.

## *Storage*

The parachute may be packed for a maximum period of 1 year prior to use. Parachutes should be stored in a cool, dry, dark and well-ventilated area. If the parachute will be stored for longer than one year, it must be stored unpacked. Parachutes shall under no circumstances be stored together in the proximity of fuel, oils, acids or other aggressive chemicals / substances.

## *Parachute Installation*

The parachute is designed for use in paragliding harnesses as a rescue parachute. The parachute is attached to the harness by means of a larks-head knot or Maillion Rapide with a minimum declared strength of 2000kg. The placement of the rescue parachute into the rescue parachute casing is subject to technical specification of the harness in use. The parachute can be used in all standard locations (front, rear, bottom or side).

Only qualified persons or the manufacturer may install the rescue parachute into the harness.

## *Parachute Functionality*

The rescue parachute is used as a safety measure for paragliders, and requires some height above ground for it to function. This height depends on factors such as airspeed and rate of vertical descent, strength and direction of the throw and more, so the exact minimum functional height cannot be determined or specified. The parachute is deployed by pulling the release handle which is fixed to the container where the rescue parachute is located, and throwing this container to the side. The container must be thrown in such a manner as to avoid it getting tangled in the paraglider. After the container is thrown and reaches full line extension, it is released from the deployment bag, and the rescue parachute will inflate due to airflow.

## **6 CONSTRUCTION and ASSEMBLY**

### *Container (Deployment bag):*

The container accommodates the folded canopy and lines. The release handle is attached to the container. The release handle can be connected to the centre or side of the container, and must be attached according to the type of harness or external container. The container has four flaps and is locked in a two-stage deployment closure using an internal "5th flap" made with a bungee cord.

**WARNING – Use of this parachute with any alternative inner container:**

**the speed of opening and opening shock test has been completed using the inner container supplied.**

**Use of any other inner container may produce different results (including failure)**

### *Canopy and lines:*

The canopy is made of nylon. The canopy is square in shape and has 16 shroud lines and an additional four "apex" lines, All 20 lines are permanently sewn into the canopy. The shroud line material is Dyneema, which has excellent mechanical properties, but is sensitive to high heat and the centre lines are nylon. Do not expose your reserve parachute to extreme temperatures, chemicals or moisture.

### *Riser:*

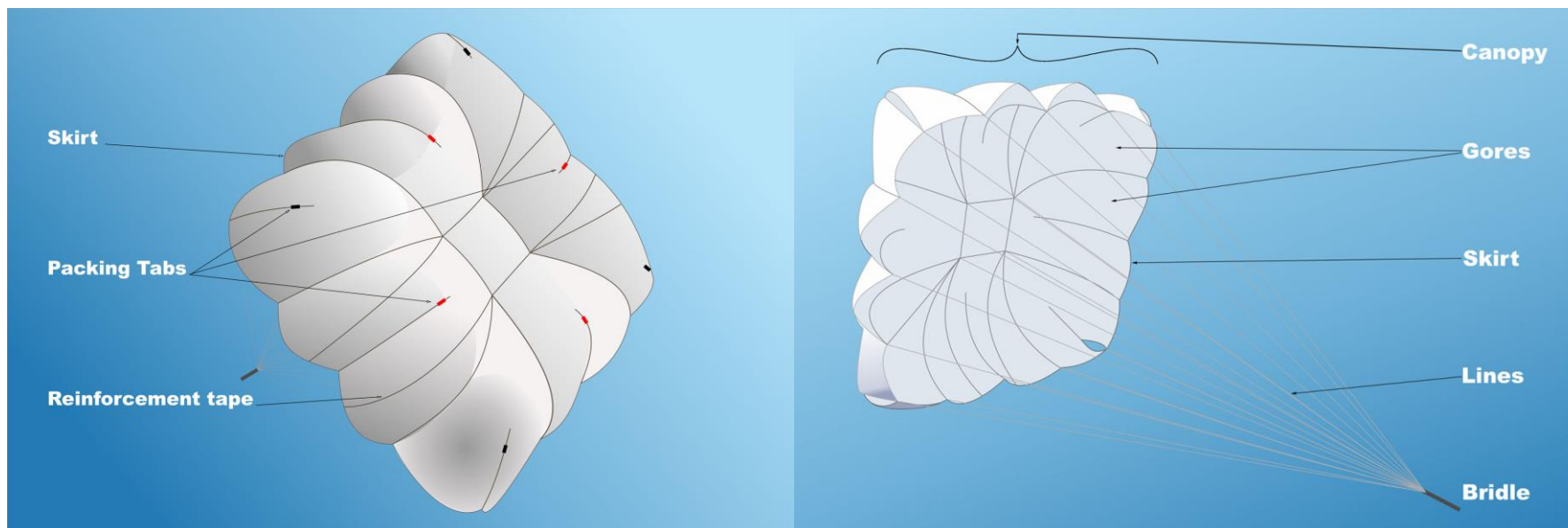
The single riser is made from Dyneema, and is protected with a Teflon sheath to reduce the chances of damage due to friction generated during opening. It is essential that any larks-head knots used are pulled tight, and locked in this position with silicon stretch insulation tape (or similar inert stretch wrap tape).

### *Deployment:*

Deployment must be done in accordance with the instructions provided with the harness or reserve external container.

In general, deployment is done by taking the deployment handle firmly, pulling it to release the locking mechanism, and then throwing the reserve with the handle in a direction that is not towards the paraglider, and if possible, with the airflow direction. Once open, the glider should be released, stalled or pulled in to reduce interference with the reserve and to reduce pendulum or down-plane effect if the reserve and glider oppose each other.

## Parts & Materials



Part	Material
Canopy	PN1
Reinforcement Tapes	10mm DYNEEMA WHITE TAPE 116KG
Lines	DYNEEMA 1.2mm 250KG
Centre Lines	3mm NYLON 6.6 CORD MBL 180KG
Bridle	5mm DYNEEMA MBL 2300KG
Thread	Bonded Nylon RN78 060

## 7 *Instructions for use*

### *Pre-flight checks*

Prior to flight, the parachute and release / deployment system must be checked. If any defects are found, do not fly.

### *Deployment*

The rescue parachute should be used as a last resort, and only deployed when the paraglider becomes uncontrollable due to turbulence, pilot error, collision or is damaged to such an extent that it doesn't allow for safe landing. The parachute is deployed by pulling the release handle which is fixed to the container where the rescue parachute is located, and throwing this container with the handle to the side. The container must be thrown in such a manner as to avoid it getting tangled in the paraglider. After the container is thrown and reaches full line extension, it is released from the deployment bag, and the rescue parachute will inflate due to airflow. Once the rescue parachute is fully inflated, ideally, the paraglider should be suitably collapsed, disabled or released, so that it doesn't affect the reliable function of the rescue parachute.

If the connection between the paraglider and harness allows for quick release, this function should be used to dispose of the paraglider and to then land using only the rescue parachute as this usually results in a lower sink rate with less pendulum effect.

### *Steering the Parachute:*

The Mayday Square is not steerable, and will drift with the wind. The higher the altitude and wind speed, when deployed, the further you will drift before reaching the ground.

In windy conditions it may be necessary to collapse the reserve once you are on the ground to avoid being dragged. Do this by reaching for a single line and reeling in, until you reach the canopy and then bundle the canopy.

In extreme circumstances using a hook-knife on the bridles (bridles are simple and inexpensive to replace) may be the best option to avoid injury by dragging.

## 8 *PACKING / REPACKING INSTRUCTIONS*

Folding & Packing should be done by a qualified person.

### *Airing*

The canopy should be inflated, and / or aired by hanging it open for at least 24 hours before inspection and repacking.

### *Tools*

The following items will be useful to make packing easier and neater.

4 x Clamps

1 x Bungee Octopus

1x Line Comb

2 x Tie-down straps

2 x Pull-up lines (if installing into harness or external container - not covered by this manual)

Always count all items before and after packing, to ensure that no items have been packed into the reserve.

### *Checking the canopy*

Prior to actual packing, the parachute must be thoroughly checked and in case any defects are found the parachute must not be packed for use. Inflation in suitable conditions is a good way to check and air a canopy before a repack, but each panel must still be inspected visually for damage or wear to fabrics and sewing.

### *Checking lines*

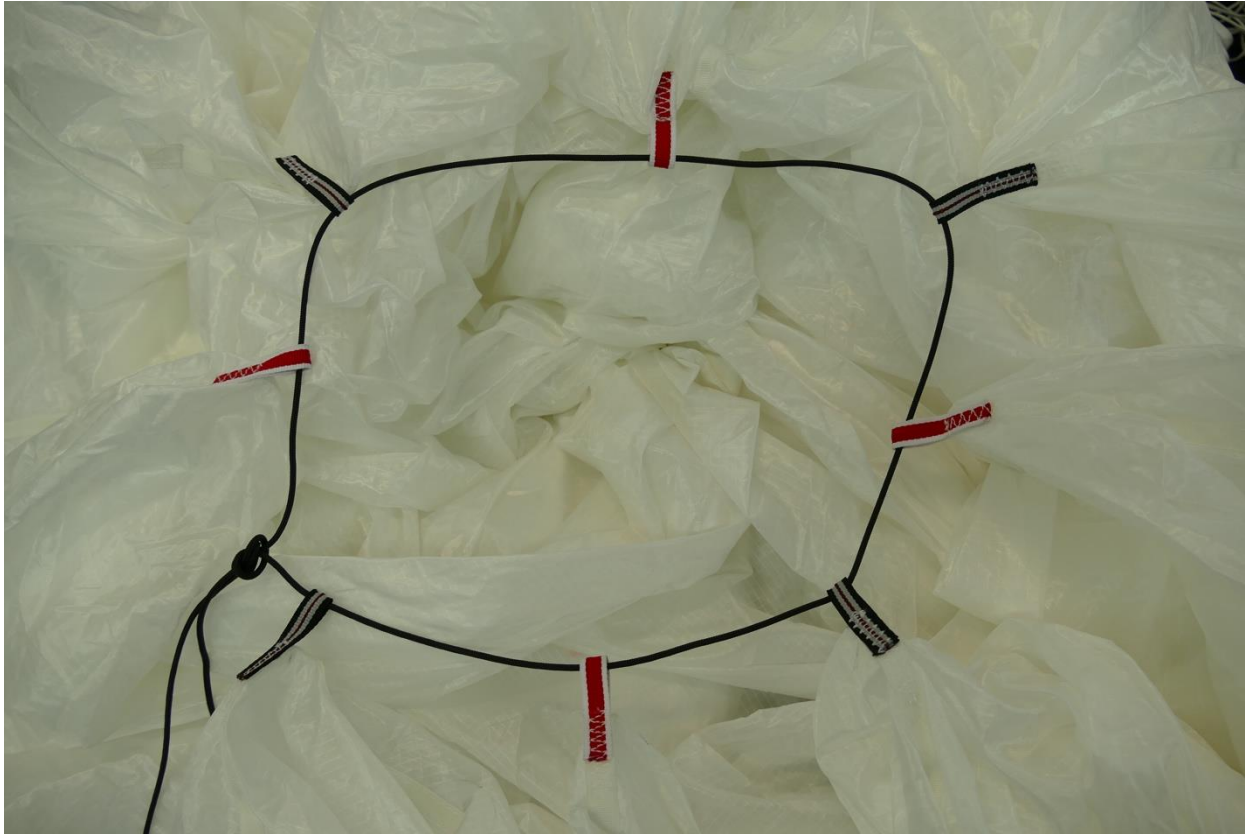
Lay the canopy on the packing table and attach bungees to the packing tabs on the top of the canopy and attach them to the end of the table, attach the bridle to the opposite end of the table and tension the reserve. Now separate the lines into groups and ensure there are no crossed or tangled lines.

## **RECYCLING**

If you need to dispose the wing, do so in an environmentally responsible manner. Recycling of many parts of the wing is possible, and there are some organizations that manufacture reusable shopping bags, windsocks, backpacks and more using old donated wings. Funds raised are often used for charitable donations. Search the web, or contact *The Cloudbase Foundation* for more information or advice. Do not dispose of a retired wing with normal household waste.

*Paragliding and Paramotor flying should always be done in a way that has minimum impact on wildlife and the environment. Respect access regulations and the wishes and rights of landowners. Do not litter or start fires, do not smoke near your or other people's wing and equipment. Do not launch, fly or land in a manner that harasses, disturbs or endangers people, wildlife or property.*

Inspect the condition of each line and sewing of the lines on both the canopy and bridle ends.



Packing Tabs



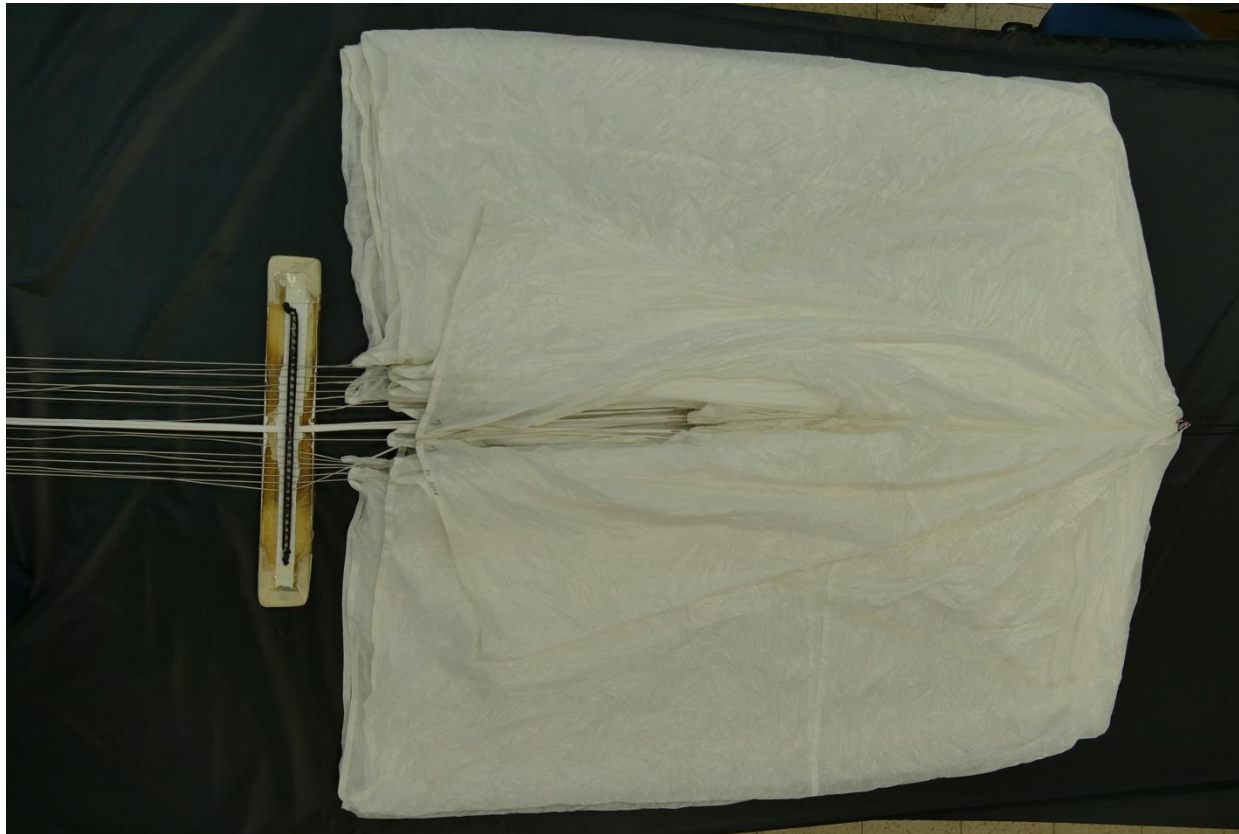
## 9 *Folding*

Once the lines are sorted and combed, increase the tension on the canopy using the tie-down straps attached to the bridle and bungee octopus on the crown / packing tabs. Next, starting with line 1, then 2, and so on, page through each gore of the canopy, laying each one flat from the skirt up to the crown, and ensuring that the inner part of each gore is also laid out evenly, until half way through the canopy at number 8. Now flip the second side on top of the folded side, and repeat the process, again going from line 1 through to line 8 on the second side.



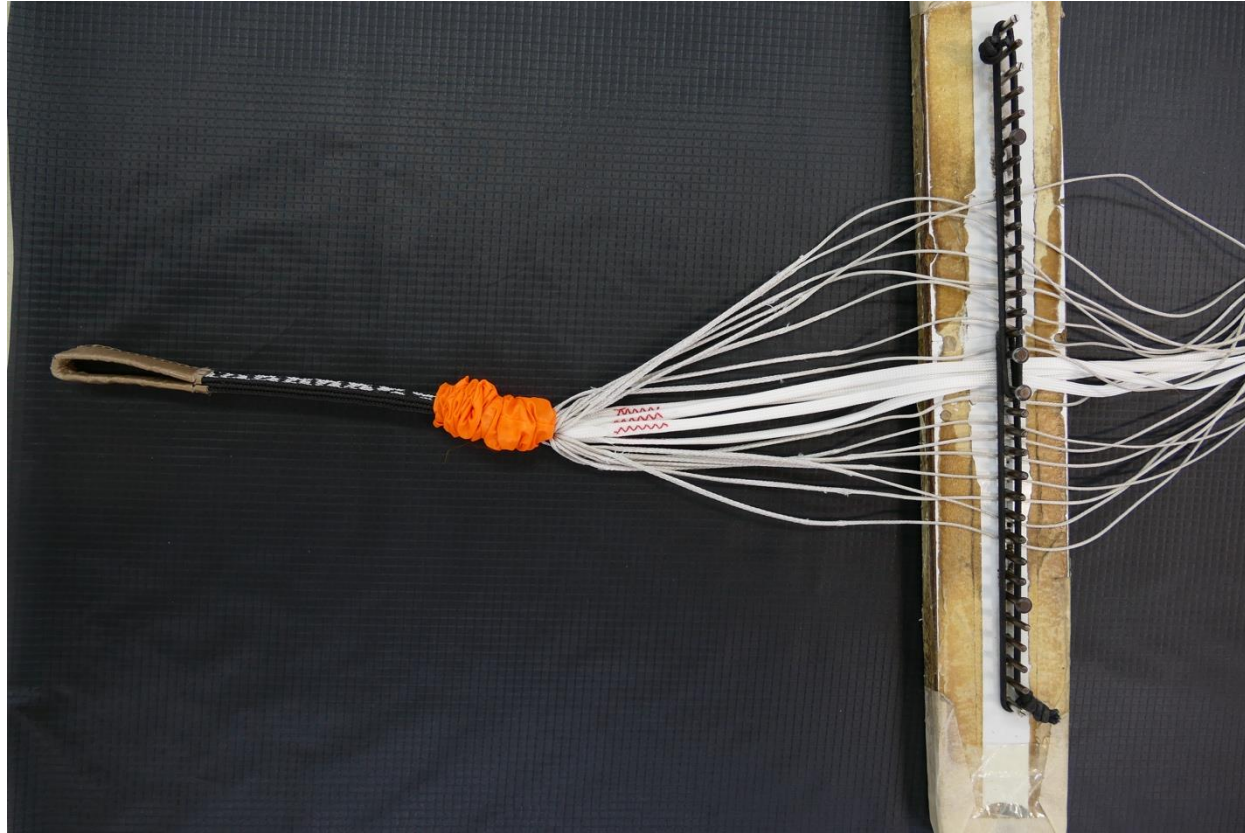






Finally, you should have an equal number of gores on each side, with one of the four corners of the canopy at the bottom, two between the sets of gores on the left and right, and the last in the centre on top.







Now **S-Fold** the sides to reduce the width to one third of the original



Then fold the two sides onto one another to halve the width



Remove the bungees from the packing tabs









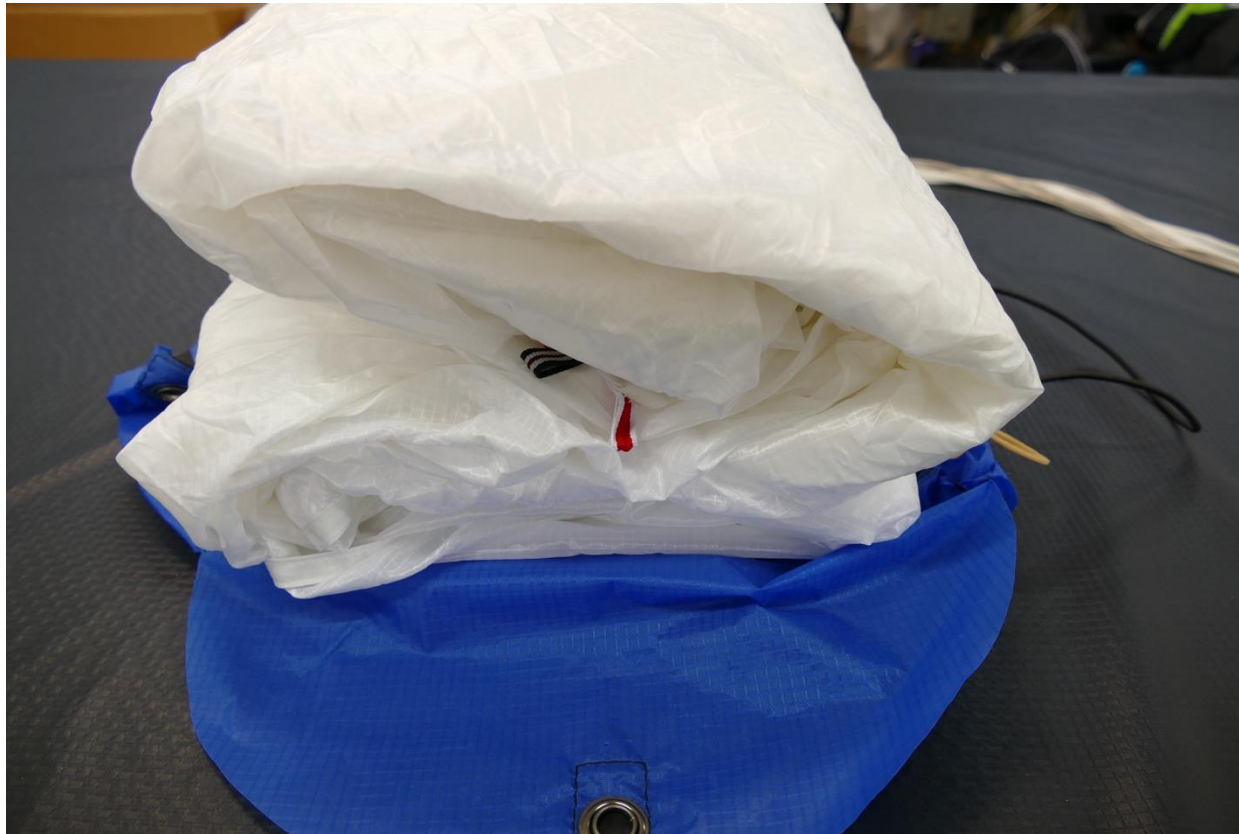
**S-Fold** the canopy into the deployment bag, removing any clamps as you go











Fold the last "S" to the inside to tidy the pack











Partially close the deployment container using the integral bungee as one of the four flaps, leaving the 4<sup>th</sup> flap to close after line stowing. Lock the bag with a bight of the lines.







Stack and stow the lines in two bundles, using 4 aviation grade rubber bands (available from Apco), or silicon bands attached to the integral bungee.









Close the 4th flap over the line stack and lock with another bight of lines.



## 10 Post packing checks

### *Pull Test*

Do a Pull test by holding the bridle of the rescue parachute and attempting to lift the parachute, the bight should begin to slide through the bungee before the canopy lifts from the table.

### *Extraction Test*

Do a reserve extraction test pull to ensure that the reserve has been installed into the container or harness correctly, then reinstall by same procedure.

### *Important:*

If during packing you used "weights" or other objects to hold down the already folded section of the parachute, check that you have the same number after finishing packing.

**Weights or any other objects must NOT be packed into the rescue parachute!**

Place the container with rescue parachute into the harness as per instructions supplied with the harness or external container.

## FINAL NOTES

*If any questions or doubts arise during assembly or folding of the Mayday, please contact APCO Aviation or a qualified person.*

*Your APCO emergency system has been designed to provide maximum protection in emergencies. Please help it to fulfil the task by taking good care of the product*



# Take Air

*from the APCO Team*