

V1.03 2020 06 02

Mayday *Square*



Manual

APCO Aviation 
Setting Future Standards

Factory: 7, Chalamish Street - Industrial Park - Caesarea 38900 ISRAEL www.apcoaviation.com
Tel: +972 4 6273727 Fax +972 4 6273728



SETTING FUTURE STANDARDS



TABLE of CONTENTS

INTRODUCTION

- Warning
- Disclaimer of Liability and Warranty
- Maintenance
- Cleaning
- Repairs
- Periodical Repacks
- Identification
- Attachment Procedure
- Preliminary Notes on Packing
- Intended Use
- Technical Specifications
- Parachute Durability
- Operating Conditions
- Storage
- Parachute Installation
- Parachute Function
- Parachute Assembly
- Technical Specification of Individual Parachute Parts
- Materials
- Instructions for use
- Pre-flight checks
- Deployment
- Controlling the Parachute:

PACKING INSTRUCTIONS

- Airing
- Tools
- Checking the canopy
- Checking lines
- Folding

FINAL NOTES

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.

Disclaimer of Liability and Warranty

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.

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.

Intended Use

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

Technical Specifications

Model	Area m ²	Line Length mm	Weight kg	Volume cc	Packed Size mm	Sink Rate m/s @ 100kg	Sink Rate m/s @ 120kg	Min / Max Load kg	Gr/Kg	Certification
MD SQ 100	25	4730	1.010	3000	200x190x80	5.4	5.6	50 / 120	9.16 @ 120kg	EN @ 100kg

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 Maillon 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.

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 with an area of 25 m² 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.

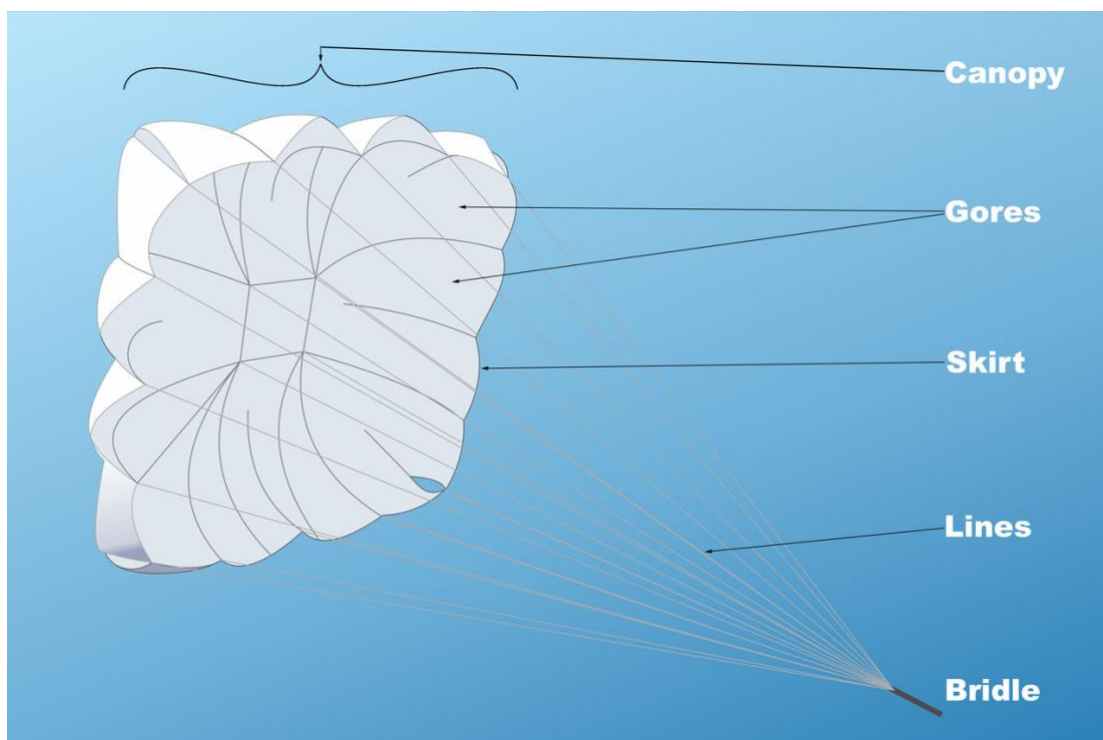
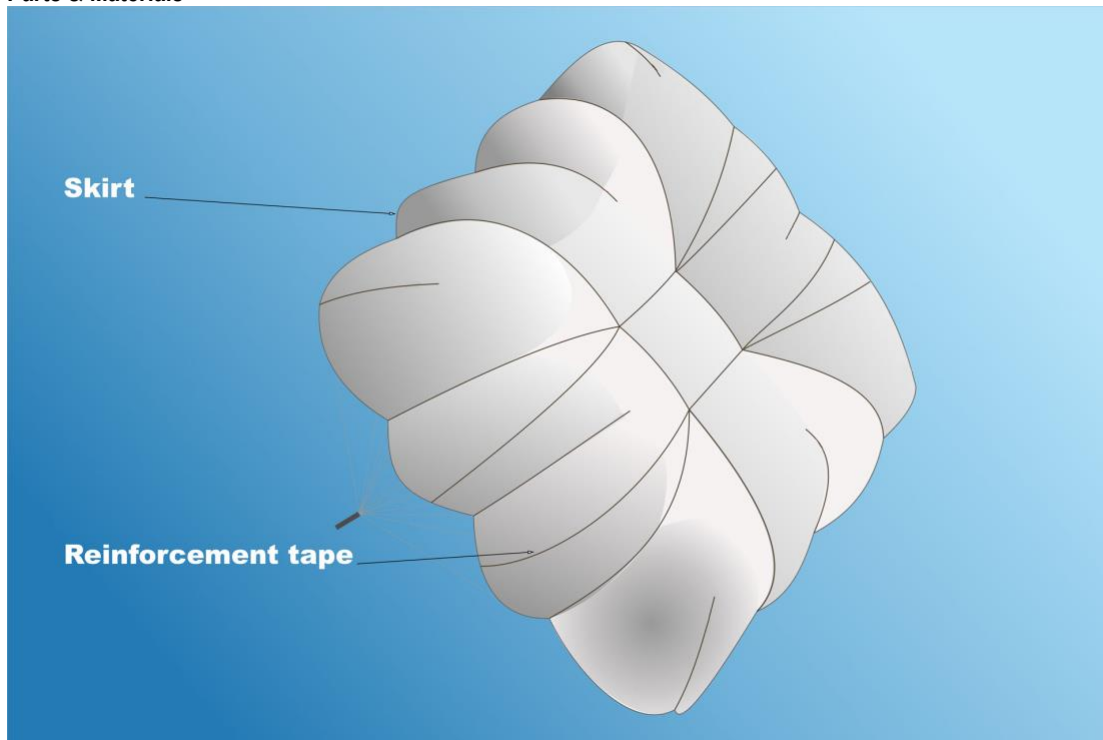
Bridle:

The single bridle 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	PN9
Reinforcement Tapes	MIL-T-5038-III-9/16" 4166/15
Lines	CTT55000B003
Centre Lines	Nylon – 30058-115
Bridle	12mm Dyneema XTape SP212K 09/590P 1700
Thread	Bonded Nylon RN78 060

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.

Controlling 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.

PACKING / RE_PACKING 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 or weights

1x Line Comb

1 x Tie-point

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, attach the bridle to the end of the table and tension the reserve by hand by pulling in the areas where you may expect to find packing tabs / apex area. Now separate the lines into groups and ensure there are no crossed or tangled lines.

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

Folding

Once the lines are sorted and combed, tension on the canopy by searching for the 'high-points' on the canopy where you would normally expect to find the packing tabs, have a friend hold the canopy here by hand while you continue. 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.

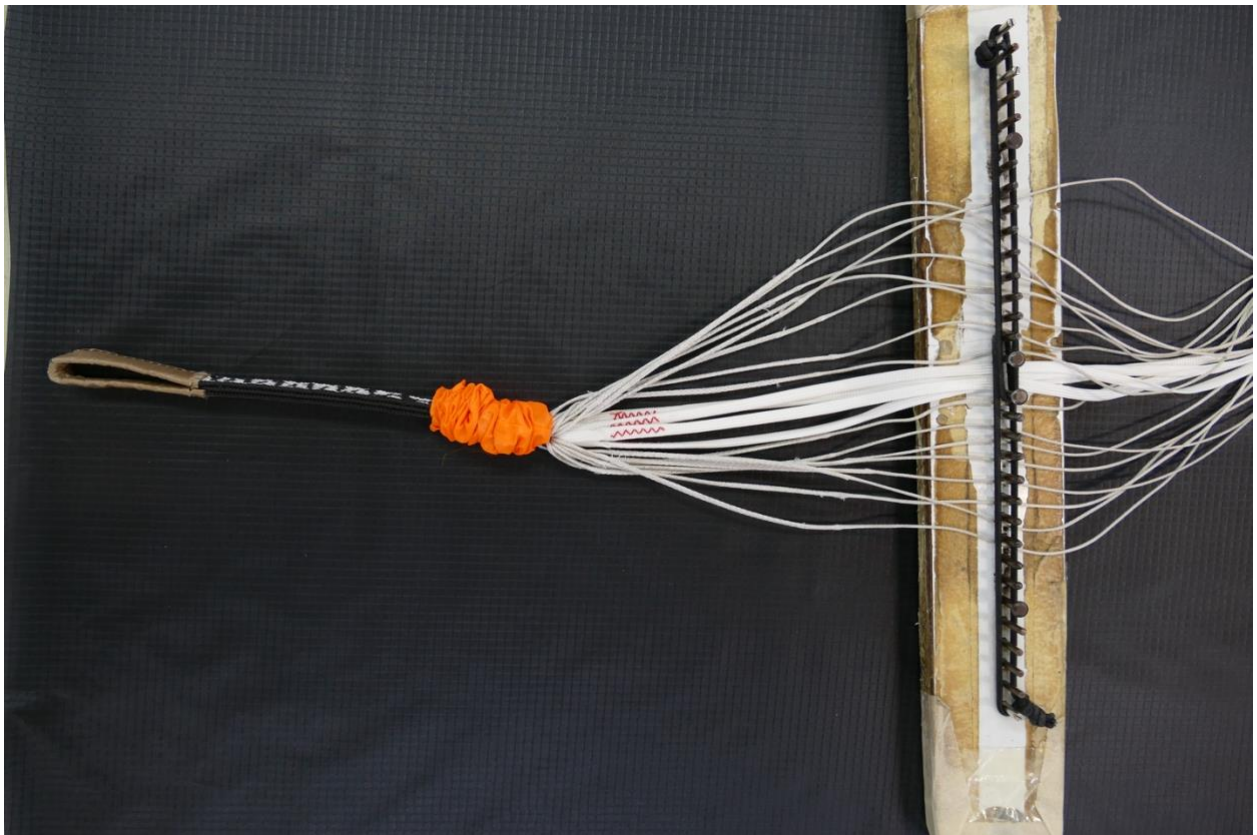








Finally, you should have an equal number of gores on each side, with one of the four corners of the canopy at the bottom, two between the sets of gores on the left and right, and the last in the centre on top.





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

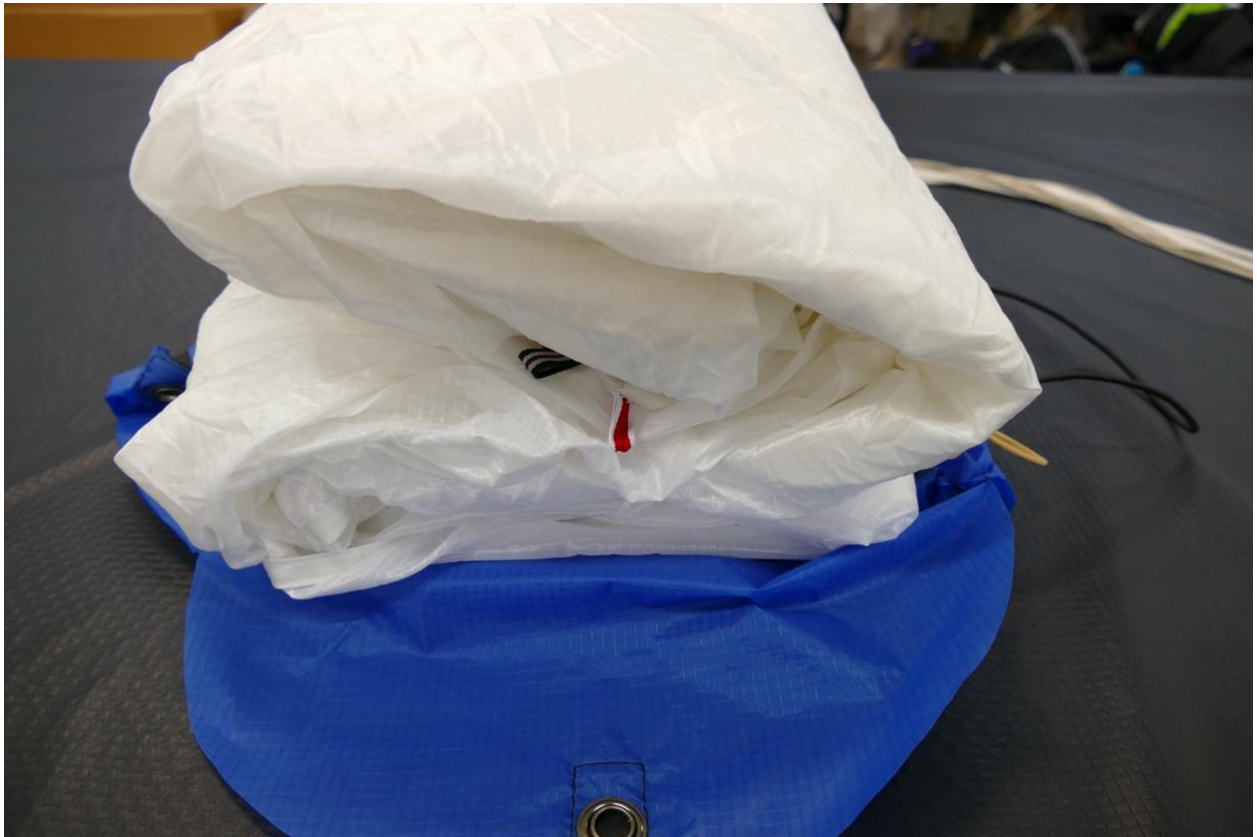




S-Fold the canopy into the deployment bag, removing any clamps as you go







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



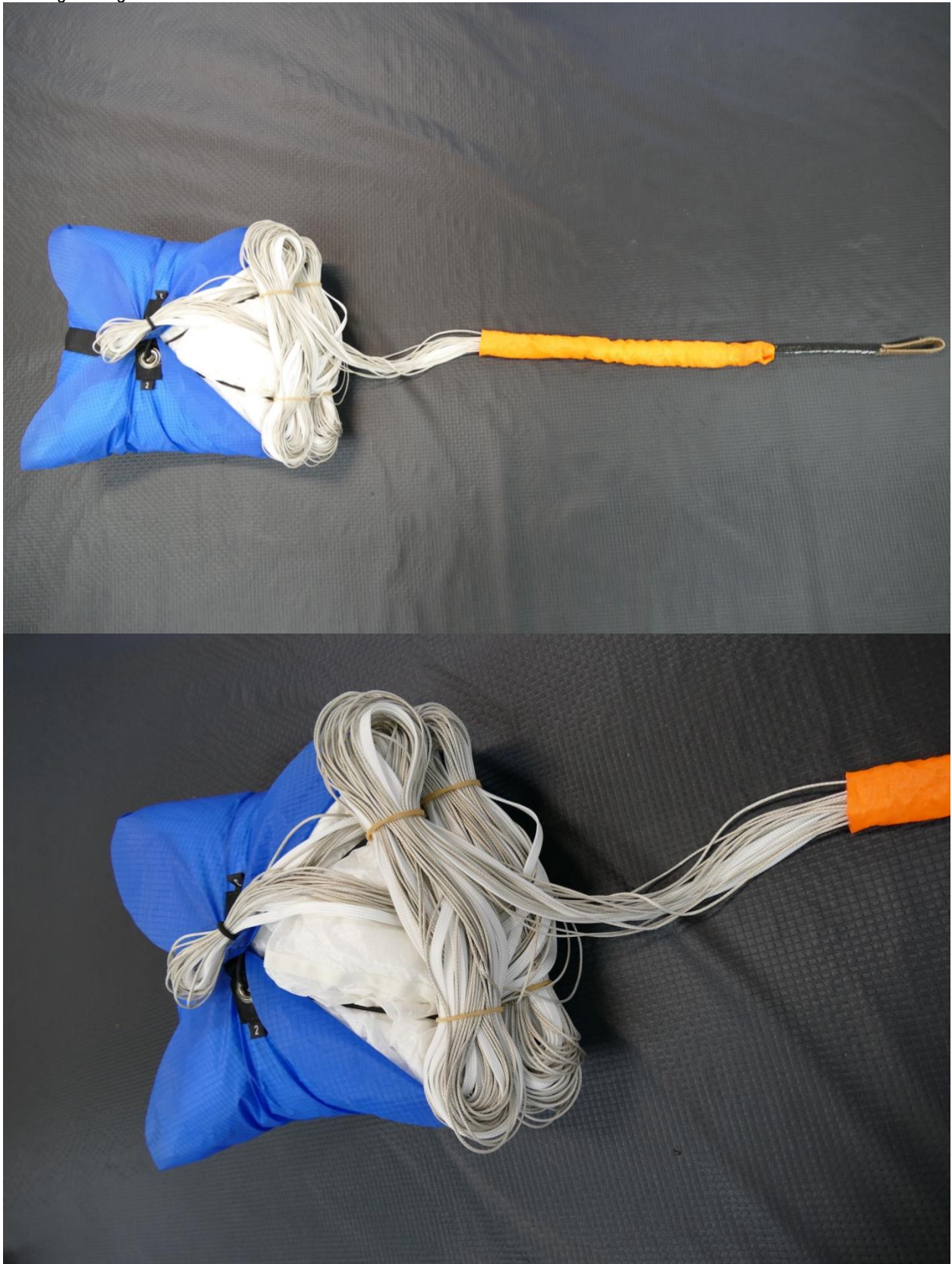


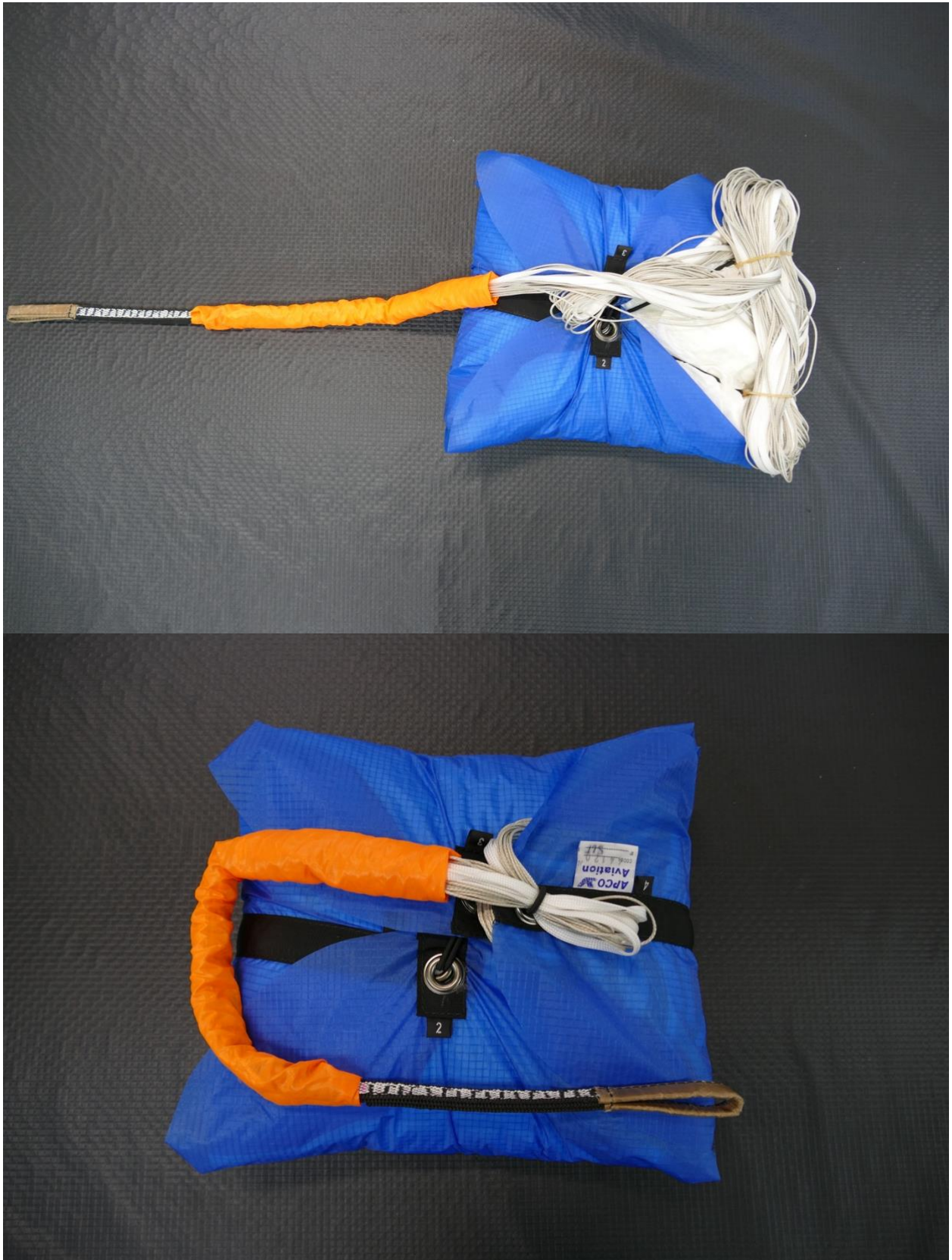


Partially close the deployment container using the integral bungee as one of the four flaps, leaving the 4th flap to close after line stowing. Lock the bag with a bight of the lines.



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.

Post folding 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 Guided 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