

EQUIPMENT

Maintenance, packing and the gear check

One of the best ways to keep yourself safe is to be good to your gear. Knowing your equipment, packing carefully and maintaining your gear regularly can save your life!

MAINTENANCE

Approach each rig each time looking for the problem/mistake/wear etc.

MAIN

- pilot chute handle secure
- pilot chute fabric crisp and seams intact
- pin smooth and securely attached to bridle
- pilot chute collapsing system in good repair
- top grommet on deployment bag not warped
- stitches holding stow band loops not raveled
- pilot chute attachment point to canopy secure
- no fabric damage or broken stitching
- crossport vents not ripped or frayed
- stitching on line attachment points and cascades secure
- no damage to lines, especially steering lines at cascades and brake locking loops
- lines within trim limitation
- no damage to slider material
- slider grommets not warped, bent or worn through
- no corroded or cracked metal connector links; snug; Connector link protectors intact (alternately soft links correctly installed and not damaged)
- cloth connector links correctly assembled and not worn
- no rust on rings or other hardware on risers

BRAKE SYSTEM

- no corrosion on keeper ring
- stitching and webbing not worn
- no strains on elastic keeper loops
- toggles securely knotted
- Velcro on toggles not worn (if Velcro-less toggles, then are held secure)

HARNESS AND CONTAINER

- no fabric damage or broken stitching
- all Velcro still clings or if no Velcro then tuck flaps are secure grommets not deformed
- grommets not deformed
- remove cutaway cables and wipe clean (especially with hard cable housings)
- reserve cable swage (ball on end of cable) secure
- pilot chute pouch undamaged; elastic good
- replace main closing loop (make extras while you're at it)
- reserve closing loop not worn; rigger should replace

3-RING RELEASE

- Complete monthly 3-ring maintenance

KNOW THY GEAR!

PACKING

- brakes stowed
- no twists, turns or tangles in lines
- lines remain in center of canopy throughout pack job (especially D and steering lines)

- slider all the way up to stops and positioned correctly
- rubber bands/tube stows in good condition and the correct size
- line stows the correct length and tight
- enough line slack between bag and risers
- closing loop in good condition and the correct length
- washer present at knot of closing loop
- collapsible pilot chute cocked
- pilot chute bridle routed correctly
- slack in bridle above pin so pin extracts freely
- pilot chute folded correctly (per manufacturer's instructions)

THE GEAR CHECK Back To Front, Top to Bottom

RESERVE

- AAD on
- pin in place
- closing loop in good condition
- seal and thread intact if installed
- ripcord moves freely through housing
- RSL including Collins lanyard if fitted, routed correctly

MAIN

- pin seated in closing loop
- closing loop in good condition
- pilot chute bridle routed correctly
- pilot chute securely in pocket
- pilot chute handle accessible
- pilot chute cocked (check window)
- leg straps and harness not twisted

3-RING RELEASE

- rings free of corrosion
- only one ring through another
- loop through smallest ring only
- loop in good condition
- loop goes through riser and then grommet at end of cable housing; then cable goes through the loop

HARNESS AND EXTRAS

- chest strap threaded correctly through hardware
- ripcord and cutaway handles in view, secure and easily accessible
- B-12 leg strap snaps if fitted closed all the way
- Leg straps and harness not twisted
- straps threaded correctly through hardware and cinched tightly
- all excess webbing stowed
- altimeter zeroed
- audible altimeter set
- helmet/goggles/camera able to be secure
- hook knife secure

AEROPLANES

Getting on, getting up and getting out

Not every plane ride makes it to full altitude. What will you do if the engine quits at 1,000 feet? How about 500 feet? Establishing a game plan now with your pilot and fellow jumpers may determine the outcome of an airplane emergency.

LOADING

ARE YOU -

- approaching the airplane from behind?
- approaching a helicopter from the front?
- geared up and checked before boarding?
- protecting all your handles as you enter the aircraft and following procedures to avoid an accidental deployment?
- boarding in opposite order of exit?
- arranging groups to account for differing amounts of freefall drift?

TAKEOFF

- Have your restraint fastened.
- Look around and make sure everyone has their restraints fastened.
- Put on and fasten your helmet.
- If you have a camera helmet, strap it on or strap it in—it can become a dangerous projectile.

Don't Panic!!!

IN AN EMERGENCY

- Don't panic.
- Listen to the pilot; follow his instructions (as relayed by the jumpmaster).
- Try not to shift or move around in the airplane—the pilot's already working hard to control it.
- If you're landing with the plane, make sure your restraint is fastened.
- Put on your helmet.
- Once the plane has landed, get out and away from it if you're able.
- Do not turn off any of the airplane's electrical switches; this could cause a spark and ignite fuel.

**Watch out for
the spinning
propeller!**

YOU AND YOUR PILOT

A SAFE PILOT WILL -

- conduct a thorough pre-flight inspection of the aircraft at the start of the day
- ensure enough fuel for the flight
- know the current local weather and forecast
- have a restraint for you and ask you to use it
- ensure that the aircraft is within weight and balance limitations
- use a runway of sufficient length for the aircraft

A SKYDIVER MAY ASK THE PILOT -

- Are you licensed, rated and current for the flight?
- Have you checked the aircraft's weight and balance?
- Is the aircraft in compliance with an approved maintenance program?
- Does the weather allow for visual flight rules?

A SKYDIVER MAY NOT ASK THE PILOT -

- To fly through clouds or reduced visibility
- to allow a jump through or near clouds (unless operations are running under an APF/CASA approved Cloud Operations Manual)
- to perform aerobatics or abrupt maneuvers
- to place the importance of the jump over the safety of the flight
- to fly the aircraft outside of its center of gravity limits
- to carry more people than weight and balance and the number of restraints allow
- to fly the aircraft outside of its centre-of-gravity limits

***Is your restraint
fastened?***

THE SKYDIVE

Falling, fleeing and opening

Here's what it's all about! This is the fun part.

But it can only be fun if it's safe. Review the basics to stay in top form. From the time you leave the aeroplane until the time you land on the ground, your life is in your hands. Protect it. Planning and preparation for the freefall go a long way toward reducing your chance of a high-speed collision. Know your limits. With proper guidance and coaching, you can gently push those limits, but avoid getting in over your head with large or complicated formations you're not ready for.

EXITING

- ❑ Agree on the spot and exit order before getting on the plane – slow fallers earlier, high openers later
- ❑ Pick a jump run that will work for all the groups on the load. Crosswind or diagonal jump runs sometimes work best.
- ❑ Leave more separation between groups when the upper winds are stronger.
- ❑ Groups should exit in logical order (although the horizontal, over-the-ground distance between groups is more important than exit order).
- ❑ For rear-door aircraft, let the pilot know the number of people who will exit together. Too many people in the door can stall the aeroplane.

BREAK-OFF

HOW HIGH -

Plan break-off according to jumper experience and the size and type of dive. Break by 1,000 feet above the highest planned deployment (not counting camera flyers) for groups of up to five. Consider higher break-off for larger groups.

EXCEPTIONS -

Add to the break-off altitude for a variety of circumstances, including lower experience, bigger groups, faster canopies, slower opening canopies, unfamiliar landing area, faster freefall speeds and freefall toys (skyboards, tubes, hoops, flags, smoke, etc.).

TRACKING

THE GOAL -

You want to fly as far as you can in one direction away from the formation while conserving as much altitude as possible.

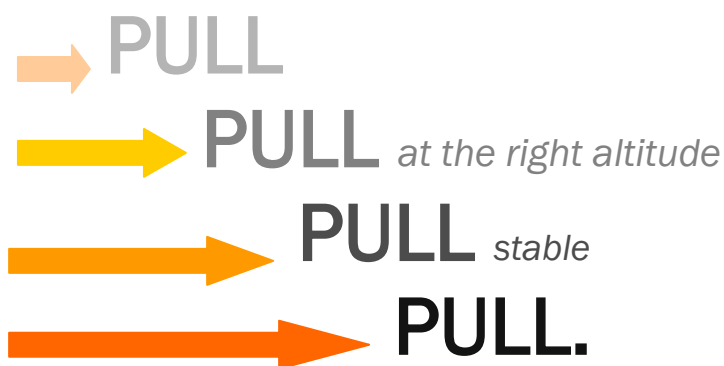
- ❑ Turn and face outward from the center.
- ❑ Extend your legs and lock your knees for propulsion while conserving altitude with your upper torso (slow fall position). Keep your knees about six inches apart.
- ❑ Extend your arms out 20-60 degrees from your hips

while extending your shoulders forward and down.

- ❑ Bend forward at the waist slightly while pushing your thighs and shins down.
- ❑ Track in a straight line until you are clear or must open. Look ahead, down and to the sides.
- ❑ Slow down and wave off before you open. Check above.

DEPLOYMENT

- ❑ Tell other groups if you plan to pull high.
- ❑ Look for potential traffic problems while your canopy opens.
- ❑ Once you're open, check for other canopies.
- ❑ If you're on a collision course, be ready to get out of the way as soon as you're fully open. Steer away with your rear riser. If it's a head-on, turn right.



Under Canopy

Planning, avoidance and landing

Between 1999 & 2009 around 50% of the total of skydiving fatalities worldwide have been as a result of canopy control issues. Learn everything you can to improve your canopy skills and ensure you get down from every skydive safely.

PLAN THE DESCENT

BEFORE YOU LEAVE THE GROUND -

- ❑ Plan a final approach that will steer you clear of obstacles, turbulence and crowds.
- ❑ Plan the best direction for a base leg that will provide you the most alternatives in case you end up too low or too high on the turn to final.
- ❑ Plan an altitude and position to begin your downwind approach.
- ❑ Know the altitude at which you will pick an alternate landing area and the good and bad areas near your DZ.
- ❑ Know the DZ rules for standard landing procedures or high performance approaches.

STEER CLEAR

BACK-RISER DEFENSE -

- ❑ As soon as your canopy begins to inflate, use your back risers to steer clear of other jumpers in your area. Once you are headed in a safe direction, adjust your canopy as necessary (slider, end cells, etc.) and release your brakes. With line twist, shout to others and keep track of altitude.

UNDER CANOPY

UP HIGH -

- ❑ Once you're open and clear of traffic, do a control check.
- ❑ Always look before you turn.
- ❑ Minimize turns in traffic.
- ❑ Yield the right of way to lower canopies.

FINAL APPROACH -

- ❑ Avoid spiraling down into earlier groups' traffic.
- ❑ Follow the landing pattern. (If in doubt, follow the first jumpers to land.)
- ❑ On no-wind days, land in the same direction as the first jumper.
- ❑ When on an unfamiliar DZ or at a boogie, avoid high-speed landings.
- ❑ Never swoop objects or people.

KNOW YOUR CANOPY

HOW FAR WILL YOUR CANOPY FLY -

- ❑ from 300 feet to landing in no wind?
- ❑ from 300 feet to landing against a 10-mph wind?
- ❑ from 600 feet to 300 feet perpendicular to a 10-mph wind (base leg)?
- ❑ downwind from 1,000 feet to 600 feet in a 10-mph wind?
- ❑ How about all these in a 15-mph wind?

- ❑ What brake or back-riser position will get you the flattest glide for returning from a bad spot?
- ❑ How fast can you turn your canopy without starting a line twist?
- ❑ If you were to open with a disabled brake line, would you cut away or land using back risers to flare?

HOW MUCH ALTITUDE DO YOU LOSE -

- ❑ during a 180-degree toggle turn? 360-degree?
- ❑ from a 90-degree front-riser turn? 180-degree? 360-degree?
- ❑ Can you even use your front risers?
- ❑ What is your best brake position for a flat, altitude-conserving toggle turn?

DRILLS FOR FUN AND SAFETY

DRILL #1: RISER TURNS (ABOVE 2,500 FEET)

- ❑ Once you're open, leave your toggles stowed. Practice turning with your rear and front risers. Try to see whether you can control the canopy simply by shifting your weight in the harness. Practice flaring with your rear risers with the toggles still stowed. Do this same series of exercises with one brake released, simulating a broken steering line.

DRILL #2: FLARES (ABOVE 2,500 FEET)

- ❑ Once again, leave your brakes stowed. Pull down on the rear risers as quickly and as far as you can until the canopy starts to stall. Next, pull down on the rear risers smoothly and evenly, inches at a time. The canopy will eventually stall, but much more gently. Find the stall point by seeing how far you can pull before the canopy begins to stall.
- ❑ Repeat the riser drills with both brakes unstowed. Then, repeat the drills with the toggles.

DRILL #3: FINDING YOUR HANDLES

- ❑ If clear below you and all around, start spiraling down. Turn carefully but quickly in either direction. Now try to find both of your emergency handles. Can you get to them easily?

LANDING EMERGENCIES

KNOW HOW TO LAND IN OR ON -

- ❑ power lines
- ❑ trees
- ❑ water
- ❑ buildings
- ❑ Consult an APF Instructor for a review. Practice in a training harness, and practice what you can under canopy.

PLAN AND PRACTICE

- ❑ Always pick a place to land before you jump, and try to land there exactly.
- ❑ Use every opportunity to learn your canopy's controls and capabilities.

EMERGENCIES

Malfunctions, collisions and other dangers

Are you prepared to handle a malfunction? Skydiving fatalities do occur when jumpers responded incorrectly to a problem with their main canopy. Knowing what to expect—and more importantly, how you'll respond—can save precious time when dealing with a malfunction and make the difference between tragic consequences and an uneventful reserve ride.

Sometimes, no matter how well you prepare, things go wrong. If you have a natural reaction for every mishap, you'll be a safer skydiver. But natural reactions come only with consistent practice. And you just can't practice too much.

PARTIAL MALFUNCTIONS

DEFINITION

Any malfunction accompanied by a full or partial deployment.

EXAMPLES

Pilot-chute in tow*, lineover, streamer, bag lock, slider up, broken lines, horseshoe, severe line twists, big tears in the fabric, broken or disconnected riser

PROCEDURES

- Arch.
- Look at the cut-away handle.
- Reach for the cut-away handle.
- Look at the reserve ripcord handle.
- Reach for the reserve ripcord handle.
- Pull the cut-away handle.
- Pull the reserve ripcord.
- Check canopy.

* Pilot Chute In Tow

Note: Pulling the reserve without first cutting away may result in a double deployment and two canopies out. Common procedures in Australia are to cutaway first for this malfunction. Decide before you go up!

TOTAL MALFUNCTIONS

DEFINITION:

Any malfunction in which nothing is deploying.

EXAMPLES:

lost or missing deployment handle, hard or impossible pull, container lock.

PROCEDURES:

- Arch.
- Look at the reserve ripcord handle.

- Reach for the reserve ripcord handle.
- Pull the reserve ripcord and clear the cable.
- Check canopy.

TWO CANOPIES OUT

- Find the stable (natural) configuration.
- If in a side-by-side or down-plane, disconnect the RSL (if time) cut away.
- If in a biplane, steer with the dominant (larger) canopy in the front. (Leave the other canopy's brakes stowed.)
- If entangled, try to clear and control to the ground.
- Land two canopies without flaring.
- Prepare to do a PLR.

CANOPIY COLLISIONS

- If a canopy collision is unavoidable, try to miss the other skydiver's body.
- Spread as wide as possible to distribute the force of the collision and to avoid going between lines.
- Protect your handles.
- Have a hook knife accessible.
- Try to communicate with the other jumper right away, before you start pulling handles or cutting lines.
- Consider disconnecting your RSL before cutting away from an entanglement.

CAN YOU CUT AWAY?

TRY THIS TEST ON YOUR RIG

- Hang your risers from a very strong point overhead.
- While you're in the harness, have two people hold on to it, pulling down to increase the tension on the 3-ring release. (A padded mat underneath would be a good idea.)
- Cut away the risers. (Be sure to disconnect your RSL before you do this exercise.)

DID IT WORK?

PRACTICE & REVIEW

WHEN:

- after a long layoff
- before exit
- often

WHERE:

- in a training harness
- at your rigger's house at repack time
- in your head
- in the air after deployment