

Basic Parachute for Pilots of All Stages

by Betty Pfeiffer

As spring approaches now is the time to take a better look at your parachute. If you have an older parachute, keep in mind that many were designed for the lighter weights and slower speeds of the single surface gliders and may no longer be adequate for today's more efficient wings. A qualified rigger familiar with hang gliding reserve parachutes can help you determine if your parachute is suitable for you.

In any event it is time to attend a parachute repack session and practice throwing your parachute. If there is no parachute repack program in your area, you will want to tie your parachute closed in the deployment bag, hang in your garage or from a tree and practice throwing your parachute at least twice...once with each hand. Do not forget to untie your parachute container before you place it back into your harness to fly.

Parachute deployment basics for all hand deployed units:

With most hand deployed systems the parachute deploys in this sequence: the bridle reaches full extension, the lines snake out of the line pocket, the canopy snakes out of the parachute canopy compartment.

The beauty of this system is that the parachute canopy is protected by the deployment bag until it passes the wreckage. Throwing the parachute in the direction you want it to go is a fairly natural maneuver.

When you have determined that it is time to use your emergency parachute **act quickly**, do not waste time. If you are in a spin or tumble your situation can quickly worsen. If you still have a control bar in hand you will have to decide whether to let go or hold on with one hand during deployment.

When you practice throwing, try holding onto the control bar and try with no control bar. If you are not holding onto the control bar, use both hands to throw your parachute. You will need all the power you can muster. Practice with both your right and your left hands. Practice with and without gloves.

Always carry an easy-to-reach hook knife in case you need to cut yourself free from the parachute once you have landed to prevent being dragged.

No Matter What...Memorize these steps:

1. **Look** for the deployment bag handle.
2. **Reach** and grasp the handle securely. Some pilots prefer to hook their thumb into the handle loop especially if they are wearing gloves.
3. **Peel** the handle down and away from you. You should now be holding the deployment bag containing your parachute.
4. **Look** for clear air. Avoid any cables or wreckage that might tangle with your parachute.
5. **Throw** the deployment bag towards the clear air. Throw the bag hard, *as if your life depended on it*, because it very well could. Your bridle should come to full extension followed by your lines and canopy.
6. **Yank** vigorously on the bridle. This will help to spread the suspension lines and open the air channel if your

canopy has not yet inflated.

7. If necessary pull your parachute back in with yanking movements and repeat steps #5 & #6.
8. In an actual emergency deployment, if your parachute is below you and you are falling into your canopy do not pull it all the way in. Instead continue to yank on the bridle until it inflates away from the wreckage.
9. **Prepare** for impact: Unzip, go upright, pull in dangling instruments or radios, and climb into the control frame if possible.

Ballistically Deployed Parachute Basics

A ballistically deployed parachute exits the container in this sequence: The rocket pulls the apex (top) of the canopy out followed by full line extension then full bridle extension. Ballistic systems get the parachute to full extension fast.

When you have determined that you need to use your parachute follow these steps:

1. **Look** for the activating handle
2. **Grasp** the handle securely
3. **Determine the direction** the rocket is pointing and when it is towards clear air pull the handle. A fast snap of the handle usually works best. If you have a BRS system you can expect about 12" of pull. A Second Chantz A.I.R. system needs travel only 3" to fire.
4. **Yank vigorously** on the parachute bridle and follow instructions #7 to #9 from the hand deploy sequence.

Landing Suggestions

Once your parachute has opened:

- If you have a POD style harness *open the doors* to let your feet out. If you have a cocoon, *get your feet out* of the harness and go to a feet down position.
- If possible *climb into the control bar* and stand with your feet spread on the base tube.
- Try to *stabilize the glider*. You may be able to steer your glider with control inputs from your feet. If possible try to face the glider into the wind for landing.
- Once you are standing in your control bar, keep your head up and arms in. If possible evaluate the condition of your equipment, pull in any instruments that have become dislodged and secure them for impact. At this time be sure your hook knife is readily available.
- Depending on your particular situation, you should attempt to *let the glider take most of the impact* of landing rather than your body. If you have good control and your glider is still flying, you may consider dropping into your harness for a good flare before impact.
- If you are not able to climb into the control bar try to get into a *feet-to-earth position*. Prepare for a PLF (Parachute Landing Fall) by keeping your eyes focused on the horizon, bringing your legs together with knees slightly bent, and your arms in. Try to allow your legs to take the landing impact as you roll from the side of your legs to the side of your hip, to the side of your shoulder.
- If you are drifting while you are under canopy, prepare to roll in the same direction you are drifting.
- Immediately upon landing, **unhook** from your glider and parachute to prevent the possibility of being dragged.

How to stop deployment problems before they begin

Repack often.

If there is any question about whether your parachute is properly placed in the deployment bag, hook the handle on a solid object and pull on the bridle. The bridle, lines, then canopy should snake out of the deployment bag in a smooth orderly sequence.

Note: When you have your ballistically deployed parachute repacked ask the packer to disconnect the rocket and pull the lanyard to simulate the rocket pulling the parachute out of the container. It should pull out smoothly. This process should be repeated after repacking if there is any question about how the parachute is packed.

(DO NOT ATTEMPT TO REPACK YOUR OWN PARACHUTE WITHOUT APPROPRIATE GUIDANCE OR TRAINING.)

Inspect Bridle.

Check the bridle for signs of damage that may have been caused by dirt, abrasion or friction. Pay special attention to the carabiner loop since damage caused by friction from the harness is common. The point of bridle entry into the parachute container (about 5' from the carabiner loop) may show signs of fraying due to Velcro damage. One way to avoid such damage is to mask off the Velcro hook at the point of entry.

Most current parachute bridles come with a protective sleeve built onto the first 5' of bridle. Hang glider emergency parachute bridles should be 25' long and made out of Type XVIII webbing or an equivalent. Some manufacturers use Kevlar bridles...should be sewn with Kevlar thread.

Inspect Deployment Bag Handle

Be sure it is securely mounted to the deployment bag, has reinforcement at the attachment points, and has curved pins properly attached to the handle.

Inspect Safety Pins

They should be curved with smooth ends. They may be made from solid wire or die cut. If they have any burrs, file them smooth. If they are made from clevis pins or cable, replace with standard curved pins. If they are rusty, clean them or replace.

Check Line Stowage

All lines should be enclosed in the deployment bag or in a line stowage compartment. Deployment bags with line rubber bands on the outside are subject to line dump, entanglement and Velcro damage.

Inspect Safety Pin holders

Be sure the bungee (or rubber safety pin holder) is tight enough to hold the safety pin without slipping. The bungee should be secured around the safety pin shaft only. If the bungee slips above the shaft to the safety pin attachment on the handle it will not deploy. If your bungee is too loose, just slide the knot towards the loop of the bungee and thus tighten it up.

Inspect Rubber bands

Be sure your rubber bands are strong. Replace rubber bands often. Do not double stow (wrap them around the lines more than once). Use only the appropriate size rubber bands as recommended by the deployment bag manufacturer.

Check Grommets

Brass grommets have a chemical reaction with rubber bands that quickly deteriorates the rubber. If your deployment bag has brass grommets, consider updating your deployment bag or at the very least changing to nickel grommets.

After you place your parachute into your harness:

Be sure the handle releases the safety pins before it pulls on the deployment bag. Be sure the harness has the appropriate size grommet to easily allow bungee or rubber restraining loop from binding and restricting the opening of the parachute container.

If your parachute is too small for your parachute container, the handle may not want to release properly. You can add foam to the bottom of your parachute container to help the parachute ride higher in your harness container.

Do the "knee test" to assure that your parachute is not going to pop out of the harness in flight.

Knee Test:

1. Place your knees on the back of the parachute container (inside the harness where your body would normally lie)
2. Hold the harness where the sides of your body would normally fit.
3. Pull the sides of the harness towards you while you push against the parachute with your knees in a manner that simulates your body weight.
4. If you hear Velcro opening sounds, reattach the Velcro and sit on your parachute container. Try to squeeze the air out of your parachute by rocking back and forth.

Check your bridle routing to make sure it will not get hung up. Make sure the bridle is attached to the carabiner on the opposite side of the gate.

Before Every Flight

Preflight your parachute

- Check your safety pins.
- Be sure your handle loop is accessible.
- Look at your bridle routing making sure *extra bridle* has not slipped out of your parachute container.
- Be sure the bridle is on the 'biner opposite the gate.
- Double check your parachute container Velcro. Be sure it is closed appropriately.

If you have a Ballistically Deployed System

- Check to make sure your safety is off and your handle is available.
- On landing do not forget to secure your safety.

Practice, Practice, PRACTICE!

Of all the pilots I know who have come down under canopy, not one has ever thought it would happen to him (her). The consensus is practicing deployments on the ground, attending parachute clinics, looking and reaching for the deployment handle each flight, imagining and repeating your deployment sequence at home and talking to pilots who have come down under canopy all help prepare you for a safer deployment.

Remember: even under the best conditions your parachute may not work so above all else...**FLY SAFELY.**