Unintentional Water Landings
by Bryan Burke

Training for unintentional water landings is mandatory for a B license. The reason water training is required by the USPA is simple: over the history of the organization there have been more than a dozen fatalities due to skydivers drowning after unintentionally landing in water.

However, pool training is not very realistic. The water is not murky or cold and there are no currents to deal with. You may not be wearing your normal jumpsuit, helmet, and accessories. The canopy is not fully inflated and the container does not have a reserve packed into it. Solid ground is very near, and there is someone there to pull you out if a problem develops. In other words, pool training is better than nothing, but should not be considered thorough preparation for a real water landing situation.

With this in mind, the question becomes, "Why have people landed in water in the first place, and how do we prevent this from happening?" A review of water fatalities shows that one of two factors are responsible for the overwhelming majority.

Exiting over solid cloud cover is the first. If you are jumping at a site near a large body of water, never, ever trust the pilot or spotter to ensure that your exit point will keep you out of the water unless they have solid visual contact with the ground and an accurate knowledge of conditions. Even experienced pilots with GPS have been known to make mistakes. Ironically, two of the more high-profile incidents of this water fatality scenario took place on exhibition jumps, when the skydiving would not have been visible to the crowd due to the clouds. In one case, the skydivers landed in a cold lake and most of them died of hypothermia before they could be rescued.

In the second case, at a California beach, one skydiver chose to cut away above the water because he was going to land in surf. He underestimated his height above the water, was knocked out by the impact on landing, and drowned before he could be reached. Others in the group were rescued by surfers.

A second major factor is landing in water with heavy gear – cameras or weight vests – and not being able (or in two cases with cameras, willing) to abandon the equipment. The cameramen eventually entangled themselves and their cameras with their parachute lines after attempts to save their equipment and were dragged down. In another example, two experienced skydivers were wearing weights *under* their jumpsuits when they went in the ocean. Neither was able to release the weights before they were pulled down and drowned.

The moral of these stories is clear: don't exit over solid clouds, or with heavy gear that could be difficult to release, if you are anywhere near water. If you do find yourself going into water, here are some things to keep in mind.

Almost any body of water you land in throughout North America will be cold enough to potentially cause hypothermia. Exceptions would be lakes and rivers in the east and south during summer time, and waters on the southern coast of the eastern US. All western waters are potential hypothermia risks. Water conducts heat 25 times faster than air. For that reason the Coast Guard considers any water cooler than 70 degrees F. to be dangerous. In addition to hypothermia, there is a phenomenon called "cold water shock." Sudden, complete immersion in cold water causes a gasping reflex. Disorientation, panic, and loss of coordination are common.

It is important to anticipate both cold water reflexes and the possibility that the water will be too murky to allow you to see your equipment. Therefore, before you land, prepare to get out of your gear quickly by loosening your chest strap and getting the ends of your leg straps free from their stowed position and elastic keepers so you can loosen them quickly. Check to make sure you will be able to get your hands out of the toggles easily. If you wear weights, can they be removed quickly while you are flying your parachute?

Land as you normally would, into the wind. Keep your feet and knees together (PLF) if there is any question about the depth of the water, such as a river or lake shore. Do not cut away above the water. Simply flare as you would on a normal landing. Even after you land, there is usually no reason to cut away the main canopy. If there is any wind at all, once you are in the water the canopy will fall behind you, then you simply release your chest strap, loosen the leg straps, and swim forward out of the harness.

In calm conditions, the parachute may drape over you. This is complicated by the fact that if you went below the surface of the water, you will rise through lines and have them around you, and canopy fabric may need to be pushed up to create a breathing space. At this point it is very important not to thrash around in a way that will tie lines around you. Float or tread water gently as you extricate yourself from the canopy.

Luckily all the main components of a parachute will float for several minutes. The inflated canopy will usually have large bubbles of air trapped inside. The container (with or without a reserve) has some foam padding that will keep it from sinking, although it will not be particularly buoyant. Lines are neutrally buoyant, which means they remain suspended in the water at whatever level they come to. They neither float nor sink. You have at least a couple of minutes to safely remove your gear, so don't panic!

First, get the rig off. Then get to work removing the canopy from overhead, and finally extricate yourself from the lines. If the canopy comes down over you, you may need to push upward on it to create a breathing space. Then, follow a seam until you are out from under. All seams eventually lead to the edge of the parachute.

Carefully free yourself from any lines around you by pushing them gently off. You can push them down over you so that you can keep your head above water, or, if they are only around your head and arms, lift them over you. Once you are clear of the rig, you may need to give some thought to your jumpsuit and shoes.

Removing a tight RW suit with booties is hard enough on land. If you wear one, how do you plan to get rid of it if you need to?

A pair of pants or a jumpsuit can make a nice improvised floatation device. Tie each ankle off with an overhand knot, then scoop the waist through the air to catch air in the legs, which will hold air for a while. You can continue to re-fill the pants as needed by scooping more air into them. Your container will also float for some time. It will not provide a lot of buoyancy, but might be helpful.

Stay close to your gear, except in the case of surf or rapids. Rescuers will naturally go to the point where they saw the parachute go in the water. If a boat comes to your rescue, after you are aboard you may be able to recover your rig if it is still afloat. A square canopy full of water weighs tons, so you need to empty the water out as you pull it aboard. Do this by grabbing it by the tail end of the canopy.

Surf or river rapids present a serious threat. If you are going into either one, you will want to get out of the gear and away from it as rapidly as possible. This is one instance when cutting away (once you are in the water) might be a good choice. In the case of a landing near a surf zone, you will probably be better off landing outside the surf zone (further from shore) in calmer water, and then working your way to shore once you are clear of the rig and jumpsuit.

Finally, if several people are going into the water, it might be best to land close to each other so that if a boat comes to the rescue, little time will be lost moving from jumper to jumper. In a recent drowning fatality, two people went in the ocean and only one boat came to the rescue. Since one skydiver had attempted to get close to shore and landed in surf, the boat considered him to be at the most risk. While they rescued the first jumper, the second, unable to extricate himself from his gear, drowned. Had they landed close together the boat crew may have been able to save both.

Notes for Instructors

Have the trainee put the harness all the way on, with the leg and chest straps fastened and stowed as normal. Before they enter the pool, have them drill on loosening (or removing, if they are comfortable with that) the chest strap and getting the ends of the leg straps ready for removal. Remind them to face into the wind.

Once in the water, have them get out of the harness and clear of the canopy. Now that the trainee is comfortable with the situation, have them get back under the canopy and practice creating an air space and following a seam to the edge of the parachute. They should also practice getting out from lines over their head.

Point out that lines will remain at whatever depth they reach, that the harness will be floating, and that there will be large air bubbles in the canopy.

Have the trainee assist in pulling the rig from the pool by finding the tail of the canopy and then hauling it out.