6 Minutes for Safety Topic: Ditching Procedures

It may come as a surprise to you that when flying in the mountains; the best emergency landing area may involve a water landing, or commonly called a ditching. Here are some reminders and helpful hints to prepare you for this event. The truth is, overall, ditching is one of the most survivable emergency procedures any pilot can perform. Although survival rates vary by time of year and water-body type, the overall general aviation ditching survival rate is 90 percent, and if you ignore blue water ferry operation statistics, fatalities are actually quite rare. It is also important to do a little on-line investigation to separate the facts from the hangar-tales when it regards the best procedures for ditching.

Pick a spot: Good Situational Awareness and constant use of "What If" scenarios during flight operations will provide a head start to a favorable outcome if an emergency occurs. As in any emergency landing, the most difficult decision may be in picking the best spot to land. Assuming you have exhausted all other options and an emergency landing is imminent, your next task is to pick the best available spot. In steep terrain, the bottom of the canyon is often the best spot, and it may be wet. Use the time during glide or auto rotation to look for calm water or pools in a river. Ponds or small lakes make even better landing areas. This offers the chance for a simple egress from the aircraft.

Rivers and Streams: Water current's can be a problem during landing. Try to land down-stream when possible. Lower speed relative to the direction of the aircraft helps to avoid flipping upside down during landing. Use the combination of lowest airspeed with the direction of water flow for ditching.

Lakes: Over large bodies of water try to land parallel to the shoreline. This gives best reference to height above the surface during the flair, and offers the least distance to shore for swimmers. If surf or swells are present, set up your final approach to land parallel to the swell, ideally landing at the peak of the swell while avoiding dragging the wing tips in water. Lakes will generally offer time to get set up into the prevailing wind.

Egress: Once in the water, be prepared for any number of egress situations. The aircraft may be floating if lucky, and it may float long enough to make a planned escape with survival equipment.

If the door cannot be opened because of water pressure from outside the cabin, open a window and wait for water entering the cabin to equalize the pressure. The door should then open quite easily. If it still cannot be opened because of structural jamming, someone should crawl into the back of the cabin (where a pocket of air usually can be found). They should place their back against one side of the cabin, extend legs and push out a window on the other side with their feet.

Hypothermia: A disabling condition in which the temperature of the human body drops below normal (98.6 degrees F). Hypothermia occurs most rapidly when the body is

immersed in cold water because water carries off body heat much more rapidly than does air.

When body temperature drops to 96 degrees F, shivering becomes uncontrollable; below 90 degrees F, shivering gives way to muscular rigidity and impaired mental acuity. With a body temperature of less than 80 degrees F, the average person loses consciousness and eventually experiences heart failure.

Although the ability to endure hypothermia varies among individuals and circumstances, the U.S. Navy claims that no one can survive in 32 degrees F water for more than one hour. As water temperature increases, however, the likelihood of survival increases dramatically. But hypothermia can occur eventually even when the water is relatively warm, especially if exposed to constant wind.

Ditching Checklist: This is not intended to be all inclusive, but a thought jogger!!

Establish best glide, or autorotation airspeed
Broadcast mayday and intentions
Prepare passengers for ditching
Secure all loose items in the cabin
Secure seatbelts and harnesses
Open all doors, jettison doors if able
Open windows and emergency escape hatches
Use available power to maintain control of the approach and flair
Use a nose-high approach angle with minimal airspeed at touchdown
If aircraft has retractable gear, land gear-up
Fly the aircraft until all motion is stopped

Egress Checklist:

Upon impact, take a deep breath, wait for motion to stop
Wait for 5 to 10 seconds for bubbles to settle before unlatching seatbelt
Unlatch seatbelt, assist passengers with belts if able, and use caution if inverted
If totally submerged, be mentally prepared for lack of visibility and disorientation
Locate nearest exit, door or window then exit
If doors are jammed, open windows enough to allow water pressure to equalize
Follow bubbles to surface
Orient yourself to location and direction to shore, and location of survival gear
Gather survivors, direct them to shore

In conclusion: All things considered, when faced with landing on the water or impacting trees, rocks, or other rough surfaces, the water is more likely to be survivable. Where this might come into play is during an emergency landing where the choice may be between a rough mountainside or wooded area and a small expanse of open water. This should be no contest; the water wins.

References: section 6-3-3 in the AIM (Aeronautical Information Manual) describing safe ditching procedures