Nautical Musings

by Captain Stan Glatzer

Cold Water Kills

The way they were chattering so, I thought my teeth were going to chip. I could not stop shivering. Standing under a steaming hot shower while drinking hot coffee, I still could not stop shaking. I WAS COLD!

This memory of an incident in mid-March of 1982 inspires me to warn those hardy boaters who launch early in the season to educate themselves to both the dangers of, and the methods to prevent the potential disasters that await them when venturing out in cold weather when they possibly could be subjected to cold water immersion. I was lucky! No one should depend on luck to save him or her from such a situation. Cold water kills, and very quickly.

Each year there are stories of kayakers, canoeists, and duck-boat hunters who capsize in water 50 degrees Fahrenheit or lower. We read about commercial fishermen who are overturned or swamped and thrown into freezing water. Most, if not all, are lost due to the effects of cold water on their bodies.

An 18-year-old canoeist overturned in 50-degree water and sank before the rescuer towing the canoe could reach him. Nine marine water survival instructors died before they could swim the 50 yards to shore after they fell into 36 degree water. Sixteen Danish fishermen spent 2-3 hours in icy waters after abandoning a sinking trawler in a storm. Although being rescued by a ship, they all died before reaching land. The exposure to the cold water led to cardiac failure.

There are four ways that cold water can kill: (1) Shock to the respiratory system, (2) Dry drowning, (3) Cardiac and neuromuscular system failure, (4) Hypothermia.

Shock to the respiratory system: Sudden immersion in cold water can initiate a spasm to the trachea and cause a short period of inability to inhale followed by a sudden gasping for air. If the victim is facedown in the water or under a wave at the time of inhalation, water will be ingested into the lungs, resulting in panic and disorientation. This condition, if not brought under control immediately, will end in drowning. Entering the water with the knowledge that one is going into the drink helps to focus the thought process and control the possibility of panic. Try to keep your face free of the water and your back to the waves.

Dry drowning: Approximately one in five victims entering frigid water will succumb to dry drowning. This occurs when the muscles in the throat are affected so drastically by the rapid temperature change that they close down the airway, ending in suffocation of the victim and "drowning" without water in the lungs. Entering the water by rolling into it rather than jumping feet first will have give you a good shot at preventing this catastrophe from happening. If you must jump feet first, pinch your nose and close your mouth to reduce the chance of the water causing the throat muscles to spasm.

Cardiac and neuromuscular system failure: Sudden immersion in cold water cools the skin rapidly and triggers adverse cardiac and neuromuscular responses. The muscles cannot heat up, and trying to swim will be futile as more heat is lost from the activity. The muscles will be less and less capable to perform and may even reach a state of tetanus. The end will come more quickly from drowning than from hypothermia. The rule of 50 is quoted as a guide to the danger of coldwater immersion: "An average adult has a 50/50 chance of swimming 50 yards in 50 degree water." The odds become greater for failure to survive as the water temperature gets lower.

Hypothermia: This means the succeeding degrees of physiological response to cold, whether by immersion in water or by exposure to freezing air temperatures. The three stages of hypothermia are indicated by: (stage 1) shivering, chattering teeth, "chicken skin," blue lips; (stage 2) sleepiness, lethargy, confusion, slurred speech and muscle weakness; and (stage 3) unconsciousness, cessation of breathing, death. Hypothermia is the one type of killer that can be fought quite successfully if you are properly outfitted, for example wearing layered woolen clothing, "Polar Tec" type underwear, waterproof outerwear, and insulated, waterproof garments on the head, hands and feet. Try to reach a position out of the water. Climb onto anything that will keep you out of the water; the upturned boat, a piece of floating wreckage, etc. You will lose heat from your body 20-30 times faster in the water than when keeping as dry as you can.

Wearing a Type I PFD will be of great help in two ways. By keeping your upper torso out of the water, you will reduce heat loss by 50% through your head, and since you do not have to tread water (Type II and III require treading) to keep your face out of the water, you will conserve energy and loss of heat. The treading water activity cuts the survival time by half. Inflatable PFDs are Type V and will provide adequate floatation to keep your face out of the water, though Type I will keep more of your torso up out of the water.

Possibly the greatest safety factor for cold water survival is the proximity to a rescue vessel. My incident in 1982 would have ended differently had not a workboat been passing by me within five minutes of my immersion into the frigid waters. If you are going to boat early, boat with another vessel. Remember: all the planning and preparation is lost in the blink of an eye when the unexpected happens. Knowing you are going to have to enter the water helps you to adjust. Being thrown into the cold without warning requires you to overcome the initial shock before you can focus mentally and emotionally on the learned and practiced procedures you have developed in warmer times. You can enjoy early season boating if you are prepared to face the fact that cold water kills!