

## Water Survival and proper flotation

- I: First principle: Man is a land animal. Water is an alien environment.
- A. Challenge to stay alive in the water
    - 1. Initial hazards
      - a. Gasp reflex
      - b. Throat constriction
    - 2. Subsequent hazards
      - a. Inability to maintain clear airway
      - b. Hypothermia
  
  - B. Adequate flotation helps from the beginning
    - 1. Returns victim to the surface quickly, even with lungs partially full of water, allows throat to open and admit air to lungs.
    - / 2. Provides sufficient freeboard to keep mouth and nose out of the water to allow breathing.
    - 3. Allows victim to assume various heat conservation measures to combat the onset of hypothermia.
    - 4. 35# flotation minimum is needed for these purposes.
  
  - C. Hypothermia is the long-term enemy
    - 1. Water robs heat from the body quicker than air.
    - 2. Activity (swimming) uses heat quicker than inactivity.
    - 3. Colder water accelerates problem.
    - 4. Body size is a factor—bodies with fat layer may conserve heat better (but risk of heart failure higher in overweight men)
  
  - D. Physiological effects: (as function of body core temperature)
    - 1. <97°F Shivering starts, to use muscles to generate heat
    - 2. <93°F Loss of physical coordination and logic functions
    - 3. 85°F Unconscious, body shutting down.
    - 4. 80°F Death by hypothermia
  
  - E. Without adequate flotation, 93°F will cause drowning due to loss of physical coordination.

F. Adequate flotation extends your life in the water—to as much as 3hrs in 50deg, or indefinitely in 85deg water.

1. HELP and Huddle postures help even more (but only possible with adequate flotation).

## II: Survival Tips for sailors:

A. Stay on board—use harnesses and clip on always at night, any other time you need to hold on, or when working forward offshore.

B. WEAR adequate flotation to ensure you have it if you need it.

1. Now quite easy with good inflatables.

2. Question: Automatic or manual activation?

C. Stay warm (takes 2x longer to warm back to normal than to be chilled below normal).

D. If you go in the water, conserve heat and get out of the water as quickly as possible.

## III: Flotation options

A. USCG approved/SOLAS Type I Lifejacket—inherent buoyant, and bulky to wear. But very good for long time in the water. Provides good freeboard for the airway and a lot of reserve buoyancy to lift your airway above the water in a wave.

B. USCG-approved Type II yoke device—inherently buoyant, but insufficient to turn over an unconscious adult reliably. Good corpse market but lousy life preserver.

C. USCG-approved Type III vest—inherently buoyant, but with little reserve buoyancy, really designed for inshore use in smooth water and short periods in the water. Good for dinghy sailing, not for offshore use. Will not turn over an unconscious adult.

D. USCG-approved Type IV jackets—inherently buoyant, provide good hypothermia protection, but vary widely in flotation capabilities. Most will not turn unconscious adult onto his/her back.

E. USCG-approved Type V inflatables. 35# needed for offshore use, best are yoke types that are already in place (not in a belt-pack). Must be worn to count for USCG requirements. Harnesses are often included in the rigging of these devices.

F. USCG-approved Type III inflatable belt-packs. For bright sunny days at sea with little seas, or along shore use. Require physical dexterity enough to remove the device and put it around your neck before inflating.

- G. All inflatable devices must be regularly tested and serviced.
- H. Buy something for yourself that you will wear. Not a good place to buy the least expensive. Think of your flotation as your parachute and purchase accordingly.

KEY TO SURVIVAL IS WEARING adequate flotation when you enter the water.