



Bluewater Sailing

Est. 1978, 25th Anniversary !!

A Division of Compass Rose, Inc.

SAFETY! FUN!! LEARN!!!™

Sailing, Power & Navigation Instruction
Yacht Management and Delivery

Our Professional Instructors Average More than 20 Years Experience On The Water
Only American Sailing Assn. & International Yachtmaster Certification Facility in U.S.

Boat Rentals & Yacht Charters
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CREW OVERBOARD & HYPOTHERMIA

SUMMARY OF "FIGURE EIGHT" OR "BLUEWATER / DAMISCH-MODIFIED BROAD REACH" METHOD

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Summary: Sail downwind away from victim for a short period of time, then tack by coming about
Approach with victim slightly to windward, then slightly round boat towards wind to slow down & make
contact

Note: 1) Some actions are taken simultaneously 2) This recovery assumes under sail

Advantages: Boat remains under control entire time & does not jibe
Crew has plenty of time to react
Distance sailed away allows speed control on approach

Disadvantage: if response is slow, boat can sail
too far away & may lose sight
of victim

Notes: specific methods & techniques may have to be modified based on each boat's particular design
crew overboards should be practiced as a "solo recovery"; i.e., conservatively assume that there is only one
remaining person on board who must conduct all of the actions (more people = easier)

- **YELL / SHOUT:** "Crew Overboard Port / Starboard Side" / Call All Crew on Deck
- **THROW** Overboard: Any Flotation / Life Ring Buoy / Type IV PFD / Cockpit Cushions / Fenders /
Life Jackets / COB Pole (if very careful)
 - throw everything (except COB pole) as close to the victim as possible
 - create "trail of breadcrumbs" leading back to victim
 - => day: "**litter the water**" / periodically tear apart book / magazine pages and toss overboard
 - => night shine light on victim / bend, shake and toss cyalume light sticks overboard
- **SPOT:** If available, assign One Person (Spotter or Lookout) to Constantly Point at Victim and Keep Victim in Sight.
(Do Not Look Away) (**spotter should have NO other duties**)
- Helmsperson should assist spotter in addition to maneuvering boat (do not intend to use engine except as back-up plan)
- Call out to Victim, Informing Them of Intentions / Continue Communications With Victim
- Note Compass Course If GPS: Press MOB
- **SAIL DOWNWIND:** Immediately and Aggressively Maneuver Boat to a Beam or Deep Beam or Broad Reach
 - usually the command will be "Fall Off, Ease Off" - Do NOT cast off jib at this time
 - focus on tiller control and properly trimming mainsheet / avoid the temptation to spend time on jibsheet trim
 - **DO NOT JIBE**
- *Hold course for Only 1 - 3 Seconds* Sail Away 2 - 3 Boat Lengths (More Experience = Less Distance)
- Sail Below a Reference Line Perpendicular to the Wind Direction
- Head Up / Harden Up and Tack by Coming About (**Hard** Alee in order to slow down and stay close)

MODIFIED BROAD REACH METHOD - Continued - Page 2

- Leave Jib Back Winded / “Hove To” for 1 Second to Slow Boat, Then Cast off Jib
- After Coming About: Determine if you are upwind or downwind of victim (must make final approach on close haul/reach)
Point Boat at Victim and Ease Out Mainsheet (jib already cast off & luffing)
 - If Mainsail Luffs (unlikely): Sail directly back to victim on Close Reach, hardening or
You are downwind of Victim easing mainsheet to achieve straight, slow and controlled approach
 - If Mainsail does not Luff & Must fall off aggressively - Do Not Jibe), to point where you can
Remains Full of Wind and Driving sail toward victim on Close Reach, then head up to close
You are upwind of Victim reach at least 1-2 boat lengths away from victim
- Briefly Sail on a Straight Course and approach victim on Close Reach (do not make large turns in vicinity of victim)
- Ease / Luff Cast Off the Mainsail to Slow the Boat (jib was previously cast off)
 - look to ensure mainsail is fully luffing
- If Necessary to Further Slow the Boat: Scull (Move Rudder Aggressively Back and Forth), Fall off Then Head up
- Place Boat Downwind of Person in Water / Victim Upwind / Victim to Windward Side (Strongly Preferred)
 - avoids boom impact on recovery crew – avoids snapping jibsheet injury to victim in water
 - prevents boat impact or drift onto victim, especially if high seas and / or high wind
- After Victim Passes Bow, Head Up Slightly (Towards But Not Completely In Irons) / **Do Not Come About**
- Immediately Establish Contact with Victim Via Heaving Line, Jib Sheet or Other Device (depending on boat)
 - primarily use jibsheet with bowline tied in – use "throwing sock" containing 75' of line & kapok bag
- Drop Mainsail and Harden Mainsheet to Prevent Boom Swinging While Boat is Stopped
(only consider spinnaker halyard as a back-up)
- Use Main Halyard attached to jibsheet bowline to Recover to Victim (Utilize Main Halyard Winch)
- Beware of the Boom & Recover Victim on Windward Side of Boat Depending on Wind & Sea Conditions
- Have Victim Face The Boat If Possible, Do Not Arch the Back of the Victim Upon Recovery
- Ensure Strong Swimmer / Crew Member Stands By
 - wearing harness, life preserver & lifeline secured to ship
 - ready to jump into water to assist victim back aboard.
(use only as last resort & primarily if victim is unconscious or requires in water assistance)
- Check and Treat Individual for Injuries, Especially Shock and Hypothermia
- If Engine Must Be Started (Last Resort Emergency Only)
 - ensure all lines are clear – and carefully monitor victim’s position
- If Victim Is Not Located Immediately
 - break out & hoist the Oscar flag
 - notify coast guard and all nearby vessels in the vicinity by radiotelephone (RT)
 - continue search until after RT consultation with the coast guard and / or released by coast guard, if at all possible

HYPOTHERMIA

GENERAL INFORMATION

- Hypothermia can occur under many conditions (cold, wind, wet clothing), but accelerates when one falls into cold water. Water conducts heat away 25 times faster than air at the same temperature.
- Personal susceptibility is increased by lack of food, fatigue, injury, anxiety or recent illness.
- There was only one confirmed drowning victim was found after the sinking of Titanic; *everyone else* died of hypothermia.
- 140,000 ‘drowning’ deaths per year occur worldwide.
- The British Navy study stated that 2/3 of all its water deaths were due to hypothermia.

LEVELS

SYMPTOMS (victim will often make no complaint)

Mild

Shivering (*don't ignore!*)

Slurred, Vague or Slow Speech

Tiredness / Exhaustion

Lethargy / Drowsiness

Clumsiness

Frequent Stumbling

(Cold reaches the body: starts draining energy reserves)

Moderate

Loss of Muscular Control

Immobile, Fumbling Hands

Incoherence

Memory Lapses

Difficulty Seeing

Sense of Unreality

Irrational Behavior

(Cold reaches the brain: you will not realize this is happening)

Severe

Collapse

Unconsciousness

Cardiac Arrest

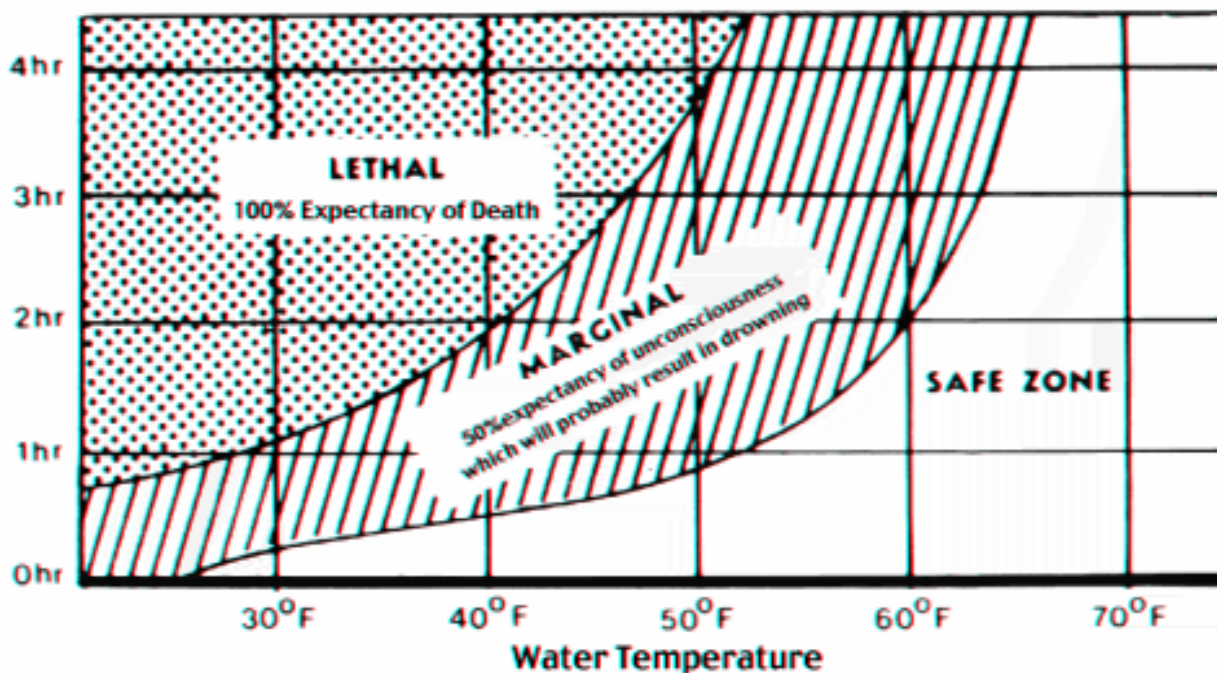
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FOUR HURDLES TO SURVIVAL (Tested at 15° C = 59° F)

- 1) Initial shock of entering water. First 10 -15 minutes is critical to survival
 - a) Many die in first 5 minutes due to involuntary, uncontrolled gasping for air; breathing is 5 - 10 times normal rate; victim may draw water in, panic and die of cold shock
 - b) Many die in first 10 - 15 minutes due to shock and cardiac arrest
- 2) Outer Body Cooling
 - a) Shivering: body’s response to skin cooling, not core hypothermia (try to generate heat)
 - b) Blood vessels constrict, shrink leading to dramatic cooling of skin, surface nerves and muscles
 - c) Within 10 - 15 minutes: difficult to coordinate muscles (but not yet core hypothermic)
- 3) Hypothermia (cooling of core)
 - a) Lethargic, confused, irrational behavior
 - b) Hear beat slows, low blood pressure at limits of maintaining consciousness
 - c) INCAPABLE OF SELF RESCUE
- 4) Point of Rescue (still in danger)
 - a) Victim relieved at potential rescue, relaxes and needed adrenalin stops flowing
 - b) Physical effort by victim to assist rescue may be too much for physically exhausted body

BLUE WATER SAILING : CREW OVERBOARD
HYPOTHERMIA Page 2

HOW HYPOTHERMIA AFFECTS ADULTS			
RELATIONSHIP OF HYPOTHERMIA TO EXPECTED SURVIVAL TIME			
Water Temperature Degrees		Exhaustion or Unconsciousness	Expected Time of Survival
Fahrenheit	Centigrade		
32.5°	0°	Under 15 Minutes	Under 15 Minutes to 45 Minutes
32.5° - 40°	0° - 4.5°	15 - 30 Minutes	30 - 90 Minutes
40° - 50°	4.5° - 10°	30 - 60 Minutes	1 - 3 Hours
50° - 60°	10° - 15.5°	1 - 2 Hours	1 - 6 Hours
60° - 70°	15.5° - 21°	2 - 7 Hours	2 - 40 Hours
70° - 80°	21° - 26.5°	2 / 3 - 12 Hours	3 Hours - Indefinite
Over 80°	Over 26.5°	Indefinite	Indefinite



U.S. Coast Guard “Rule of Thumb”: 50% of all people can not swim 50 yards in 50° F water.”

PREVENTION

- ❑ Stay dry - wear warm clothing in layers.
- ❑ Beware of wind (wind multiplies the problems of staying dry).
- ❑ Understand cold and hypothermia (symptoms, treatment, etc.).
- ❑ Be willing to abandon a goal (reach the island, keep sailing, etc.).
- ❑ Get out of the wind and rain.

Body Temperature	Symptoms
98.6°	Normal body temperature.
97°	Neck & shoulder muscles tighten as web of capillaries on body's surface tightens. Hands & feet start to ache from the cold and lack of circulation.
95°	Threshold of mild hypothermia has been reached. Pronounced shivering begins.
All below 95°	Cerebral metabolic rate falls by 3 - 5 percent.
93°	Amnesia begins. Victims forget where they are.
91°	Apathy takes over. Victims just don't care.
90°	Many victims fall into a stupor.
88°	The victim's body generally stops shivering. Blood becomes slow and thick, and the kidneys produce an overwhelming urge to urinate.
87°	Victims cannot recognize a familiar face.
86°	Heart arrhythmia begins. Pumping rate has fallen a full 1/3.
85°	Many victims feel overwhelmed by heat, perhaps because just before they lose consciousness the blood flows back to the chilled capillaries in a sudden rush. Some try to tear off their clothes: "paradoxical undressing". If they do not receive help and warmth, they become unconscious and die.

SURVIVAL TECHNIQUES**ALONE:**

- If possible, put on maximum number of clothes before going into the water. Don PFD / Lifejacket
- Put body into or assume fetal position to increase survival time by 50%:
 - draw knees up to your chest with legs together
 - wrap arms tightly around legs, clasping your hands together
 - or place arms over chest or at side with arm-pits closed tightly.
 - most body heat is lost through the arm-pits, groin area, head and feet
- Keep still. Remain calm. Wait patiently. Do not move or swim.
- Do not swim or tread water as these actions consume and waste body heat, accelerates rate of heat loss and reduces survival time by 35%. Allow rescuers to come to you / don't go to the rescuers.
- Do not use 'drown proofing' or place face in water to rest temporarily. Head in the water increases cooling rate by 85%.
- Do attempt to get as much of your body out of the water since water conducts heat away 25 times faster than air at the same temperature.
- It is critically important to maintain a positive mental attitude.

GROUP: Huddle together with arms around each other's shoulders.

**HYPOTHERMIA TREATMENT:
EVERYTHING YOU LEARNED IN THE MOVIES IS WRONG**

DON'T USE 'MOVIE METHOD':	INSTEAD, DO THE FOLLOWING:
Don't wrap a blanket around a person in wet clothes. Now all you have is wet clothes and a wet blanket.	Get the victim out of the water, wind and rain. Strip the victim of their wet clothes and wrap dry blanket.
Don't leave the person wrapped in the dry blanket by them self. The problem is the victim has no body heat; so trying to have them warm themselves isn't helping much.	Place the victim and a volunteer naked in a sleeping bag, or wrap both in a blanket (it's fun AND medically indicated). Direct body-to-body contact is the best way to transfer heat safely and at the correct temperature.
Don't give 'medicinal' brandy or alcohol. Alcohol is a depressant, which dilates or opens blood vessels. Opening of blood vessels allows what precious little warm blood which is keeping alive the body's core heart, brain and inner organs to flow outward to the less important arms, legs and extremities.	Don't give any alcohol, and keep them awake.
Don't give any fluids unless the victim is completely alert, rational and conscious. The cold will have partially paralyzed the victim's muscles, including the throat; thus, you may recover a cold but alive victim and then drown them by giving them fluids they can't swallow.	If the victim is fully alert, rational (assuming they were before the accident) and conscious, the victim can be given warm water or sweet drinks. NOTE: Avoid anything with caffeine or stimulants, as they may adversely affect the heart; test liquids first on your own wrist (like a baby bottle) to ensure the water is not too hot.
Don't massage the limbs to 'bring back circulation'. This action can pump cool, skin surface blood back to the heart potentially causing cardiac shock and arrest. Also, you may be hurting the victim without them knowing it, since the pain receptors in the skin may be inoperative.	Don't massage the limbs, but keep the victim warm and awake (see above).
Don't have people sit up to talk or drink; this reduces blood flow to the brain.	Have the victim lie down and elevate their feet in order to treat for shock.

HYPOTHERMIA - Page 4**POSSIBLE FIELD REWARMING TECHNIQUES****LEVEL OF HYPOTHERMIA**

	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>	<u>Comments</u>
Partial Body Immersion	S	S	M	Warm Water
Whole Body Immersion	S	M	U	Warm, Not Hot Water
Inhalation (warm Oxygen or vapors)	S	S	S	
Hydraulic 'Syringe'	S	S	S	
Heated Blankets	S	M	U	Care Needed Due to Lack
Exercise	S	M	U	Of Skin Sensitivity
Warm 'Objects'	S	S	S	
Direct Body to Body Contact	S	S	S	Skin to Skin Contact in a Sleeping Bag (it's healthy <u>and</u> fun!)
Warm Drinks	S	M	U	Choking Threat
Alcohol	U	U	U	

CODE: S= Safe M = Marginally Safe U = Unsafe