

# Sailing Safety

SELECTED TOPICS ON SAFE SAILING  
TASS EDUCATION CLASS

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5 MAY 2019

# Topics Covered

- Personal data
- Think about Safety
- National Boating Week
- Boating Fatalities
- Boating Injuries
- PFDs
- Skipper, Crew Responsibilities
- Before we leave the doc
- Pre-Underway Brief
- Safety Underway
- Situational Awareness
- ICE
- Unexpected Event
- USCG/USCGA
- Communicating with the USCG
- Types of radio messages
- Communication Protocol
- COB
- Suddenly in Command
- Distress Signals
- Seamanship

# Why Me?

- Avid Sailor ASA 101 – 106, 114, 118
- Owned numerous sailboats
- Cape Area VFD – Marine SAR Skipper
- Retired US Coast Guard Auxiliary
  - Boat Crew
  - Coxswain
  - PWO
  - Vessel Examiner
  - AUXOP
- State of Texas Boating Safety Instructor



# Sailing and safety?

- Sailing environment is dynamic
- Events happen
- Acknowledge the Risks
- Put Safety first and do your utmost to ensure it
- Prepare for and train for the unexpected
- USCG and their attitude toward safety:

“Overshadowing the individual safety rules is forehandedness. All hands must anticipate potential problems and take action to avoid them. Safety-consciousness, imparted in some measure by shipboard evolutions, will grow as an attitude in every member of the crew.”

This is a good blueprint – think ahead, train and think safety!



# National Safe Boating Week 18 – 24 May

- Promoting boating and life jacket safety to boaters everywhere
- A program of the National Safe Boating Council
- “Saved by the jacket” - video



# Typical Boating Fatalities - 2017

- 4,291 accidents, 658 deaths, 2,629 injuries
- \$46 million of damage to property
- 76% of accident victims drowned, of those 84% were not wearing PFD's
- Alcohol was a factor in 19% of deaths
- Top 5 primary factors contributing to boating accidents
  - Operator Inattention
  - Improper lookout
  - Operator inexperience
  - Machinery failure
  - Alcohol
- <http://www.uscgboating.org/library/accident-statistics/Recreational-Boating-Statistics-2017.pdf>





# Location, Location, Location

- Statistically, most injuries on a keel boat occur in the cockpit because it is where people spend most of their time. On racing yachts, the most common place for an injury was the foredeck. **Andrew Nathanson, MD**
- <https://www.ybw.com/expert-advice/common-sailing-injuries-and-how-to-avoid-them-42321>



# Causes of Common Sailing Injuries



# No. 1 Cause – Tripping or Falling

- Tripping and falling are the most common injuries while sailing
- Accounting for 30% of injuries
- Results are Fractures, head injuries, severe bruises
  - Falls down companion ways
  - Falls on deck
  - Falls overboard
    - At Dock
    - While underway



# Prevention - Tripping or Falling

- “One hand for you, one hand for the ship”
- The ergonomics of boats can also be improved
- Reducing “trip hazards” on board
- Improved footwear
- Better anti-skid deck surfaces
- Less clutter and more ergonomic deck layouts



# No. 2 Cause – Line Handling

- Be careful when handling sheets
- Finger and hand injuries are some of the most common sailing injuries which result in sailors seeking emergency treatment
- Accounted for 28% of injuries
- Can all be caused by incorrectly releasing line under tension
- When trimming, make sure fingers are clear
- Always pull straight up and make sure the sheet is not wrapped around anything or anyone
- Always wear gloves



# No. 3 Cause – Hit by Equipment

- Being hit by an object is responsible for around 21% of all injuries
- Most often occur during tacks and jibes, especially in high winds
- Sailors, who are in the “wrong place at the wrong time”
- Heavy weather, fatigue and equipment failure are also contributing factors
- Be careful when crossing from the low to high side under the boom
- Make sure there is good communication and awareness before any maneuver



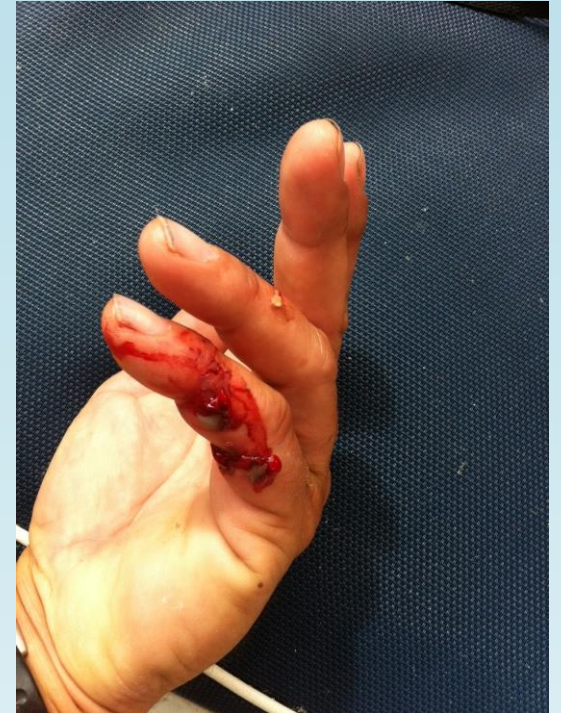






# No. 4 Cause – The Winch

- Winch use was the fourth most common mechanism of injury on a keel boat
- Responsible for around 8% of injuries
- Ergonomics of Winch handling
- Tough on your back and on your knees and thighs
- Strength training and improved technique are two ways to minimize this



# Protect yourself from the sun

- Sailors should consider skin cancer risks
- Think about sunburn prevention
- 16% of sailors reported having suffered from sunburn while sailing in the preceding 12 months
- The use of sunscreen is low, especially among sailors aged 30 or under.



**Sailing conditions are dynamic. Your safety, and that of your crewmates, depends on your good physical health, mental awareness and planning.**



# PFD – Personal Flotation Device

- **One of the top reasons for fatal injuries is being swept overboard**
- Wearing a life jacket nearly doubles your chances of survival
- Wear a life jacket and/or harness when out on the water
- Especially when reefing a main or jibing
- Always at night and while sailing in heavy weather





# PFD's

- Type 1 Currently, there aren't any Coast Guard approved Type I inflatable PFD's available to the general public.
- Type 2 Inland day cruising, fishing and sailing. Good for boating in light craft.
- Type 3 Supervised activities, such as sailing regattas, dinghy races, water skiing, etc.
- Type 4 Throwable
- Type 5 Restricted to the special, auto-inflation use for which each is designed



**Saved**

by the

**JACKET**

**Boating victims  
almost never  
intended to get wet**



# Let's go Sailing



# Skipper Responsibilities

- The skipper is responsible for the safety of his crew and vessel
- Proper management of all Vessel Operations
- Knows and follows regulations and maritime laws
- Trip Planning
- Thorough pre-trip boat checkout
- Crew Communication – keep crew informed
- Pre-Underway Brief
- Shipboard Harmony



# Crew Responsibilities

- To listen to and act on the skippers commands
- To act in a safe manner while aboard
- Knowing where all safety equipment is and how to use it
- Telling the skipper of any health or mobility issues
- Telling the skipper if you can swim
- Asking questions if unclear
- Sharing the work
- Controlling and keeping their space tidy and safe



# Before We Leave the Doc

- Conduct a Pre-underway Brief with checkoff-list
- Have crew sign Release of Liability Document
- Confirm the boat is seaworthy
- Confirm crew is competent to successfully perform their tasks
- Discuss safety issues, common injuries, wearing of jewelry
- Discuss Crew coordination and communication
- Perform Risk assessment
- Perform Weather assessment



# Pre-Underway Brief 1

- Engage the crew – give them key information in the first 3 minutes
- Announce Skipper and Second in Command
- Give Crew assignments
- Discuss and display the location of:
  - PFDs
  - Fire extinguishers
  - VHF Radio and frequencies to use
  - First Aid and Trauma kit
  - Life ring



# Pre-Underway Brief 2

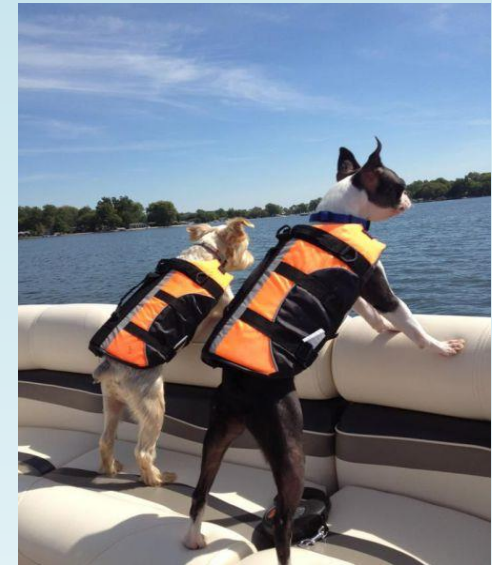
- Any medical expertise on board?
- Float Plan - Incident Contact information
- Any known safety issues and mitigation
- General Emergency Procedures
  - COB, Boat Collision, Fire
- Secure loose gear
- Discuss plan for departure
- Safety is everyone's responsibility





# Safety Underway

- No one unties a line without direction of the skipper
- When leaving dock, all lines to be doubled, everyone on board when departing
- No one pushes a boat away from the dock or jumps onto a moving boat
- Arms, legs, fingers and toes are not to be used to prevent damage to boat
- Keep all hands and fingers away from winches
- Keep vigilant regarding the swinging of the boom – inadvertent jibe
- Everyone is a lookout!
- Everyone has a say in the overall safety of the voyage
- Mention any issue you feel may adversely affect crew or boat safety
  - Smell of fuel or exhaust fumes



# Situational Awareness

- Know your location
- Know what's going on around you
- Know and monitor the weather
- Anticipate emergencies
- Be aware of medical problems
- Know the location of emergency equipment
- Be able to use a marine radio on board and give your location
- Be able to describe your boat!



# Unexpected Event

- Accidents follow a pattern
- Something triggers an unexpected event
- The event causes distraction
- Distraction contributes to lose of control or lose of Situational Awareness
- Distraction causes escalation of original event or introduces new, unanticipated events
- Stay focused on your primary tasks, but be aware of other potential problems around you



# ICE – In Case of Emergency



# What is an Emergency

- Life is in imminent danger
- Ship is in danger of sinking
- Ship is a Hazard to other vessels
- The USCG is always ready to render aid to boaters facing extreme and imminent danger and their help depends upon:
  - Current deployment of SAR resources
  - Nature of your emergency
  - Location
  - Current and future weather conditions
  - Your ability to help yourself
  - The ability and proximity of other boaters



# U. S. Department of Homeland Security United States Coast Guard

<https://www.uscg.mil/home/>

The Coast Guard protects America's economic, national and border security and has Six Operational Mission Programs

- Maritime Law Enforcement
- Maritime Response
- Maritime Prevention
- Marine Transportation System Management
- Maritime Security Operations
- Defense Operations





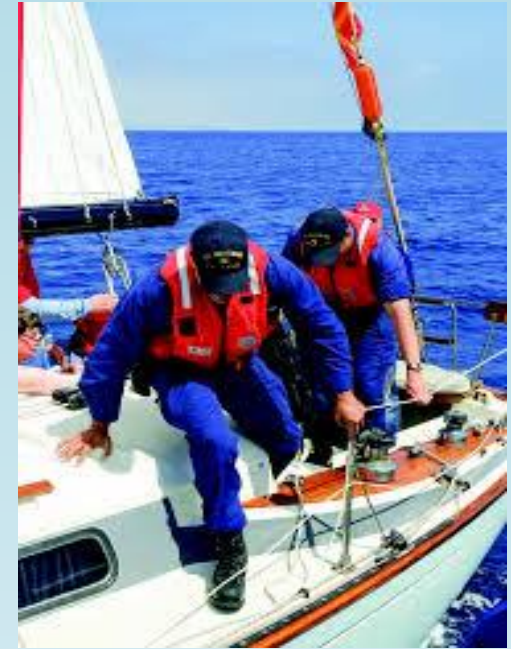
# On an average day, the Coast Guard:

- **Conducts 45 search and rescue cases**
- **saves 10 lives**
- **saves over \$1.2M in property**
- seizes 874 pounds of cocaine and 214 pounds of marijuana
- conducts 57 waterborne patrols of critical maritime infrastructure
- interdicts 17 illegal migrants
- escorts 5 high-capacity passenger vessels
- conducts 24 security boarding's in and around U.S. ports
- screens 360 merchant vessels for potential security threats prior to arrival in U.S. ports



# USCG - continued

- conducts 14 fisheries conservation boarding's
- services 82 buoys and fixed aids to navigation
- investigates 35 pollution incidents
- completes 26 safety examinations on foreign vessels
- conducts 105 marine inspections
- investigates 14 marine casualties involving commercial vessels
- **facilitates movement of \$8.7B worth of goods and commodities through the Nation's Maritime Transportation System.**



# United States Coast Guard Auxiliary -DHS

<http://www.cgaux.org/>

- Semper Paratus – “Always Ready” since 1939
- Uniformed force contributing to the safety and security of our coasts and waterways
- 26,000 members serving in 825 local units in 16 Districts (We are District 8cr)
- 3.8 million hours in support of United States Coast Guard
- In the Classroom at the Ramp and Pier
- Operating 1,800 vessels



# United States Coast Guard Auxiliary -DHS

- 160 Aircraft
- 1,400 Radio Facilities
- **Provide Boating Safety Education**
- **Vessel Safety Checks**
- Recreational Boating Safety Information
- *No Law Enforcement Authority*
- Incident Command Protocol



# Types of Communications with the Coast Guard


- Via Phone or Radio
- **Mayday (Distress)** - internationally recognized distress call that is used as preface in VHF radio transmissions only in situations in which there is an immediate danger of loss of life or the vessel itself
- **Pan (Urgency)** - is the international urgency signal that is used as a preface to a VHF transmission when the safety of a person or the boat is in serious jeopardy but no immediate danger exists
- **Sécurité (Safety)** - safety signal used as a preface to announce a navigation safety message.





# Protocol for Emergency Assistance

- VHF-FM Channel 16 (156.8 MHz) or 2182 kHz MF/SSB
- **Mayday, Mayday, Mayday.**
- **WHO:** *This is...Your Boat Name*
- **WHERE:** *We are located at...Accurate location – GPS location, distance/bearing from observable landmark*
- **WHAT:** *We are experiencing...Nature of Emergency*
- **KIND;** *We Require...What kind of help do you need*
- **NUMBER:** *Aboard are...State number of POB's and the condition of any injured.*
- **SEAWORTHYNESS:** *Condition of boat is as follows...*
- **DESCRIPTION:** *Our boat is...boat type, length, hull and trim color, Bimini color if you have one*
- **SCHEDULE:** *I will be monitoring channel 16 every ...minutes...*
- *This is Your boat name*
- “Over:

An aerial photograph showing a vast, green, grassy field. In the lower-left quadrant, a small, dark figure of a person is visible, walking across the field. The sky is filled with soft, white clouds. On the right side of the frame, a portion of a red and white striped object, possibly a flag or a piece of equipment, is visible. The overall scene is peaceful and expansive.

Holy ---- those are people!



# Emergency Assistance contd.

- Be prepared to give other information as requested. You will usually be asked if you have a cell phone available in case they lose radio communication with you.
- Speak slowly, clearly, and enunciate your words. Language can become garbled over the radio making it very hard to understand. Keep your body between any noise source (engine, wind, etc) and the microphone. Telling them the nature of the emergency helps to alert the proper agency.
- All lines, anchors out of water, clear boat for boarding, prepare sliding bridal on distressed boat.
- You can help improve response time by upgrading to a Marine-Band VHF-FM radio equipped with digital selective calling (DSC).

# COB Procedure (Crew Overboard)





# COB Procedure (Crew Overboard)

- Alert Skipper – Shout and Point
- Mark COB on NAV Equipment
- Throw the PIW a flotation device
- Keep the person in view - Pointer assigned
- Recovery/Pickup person assigned
- Reduce speed – check traffic around you
- Communicate with crew – assign tasks
- No sharp or unexpected turns

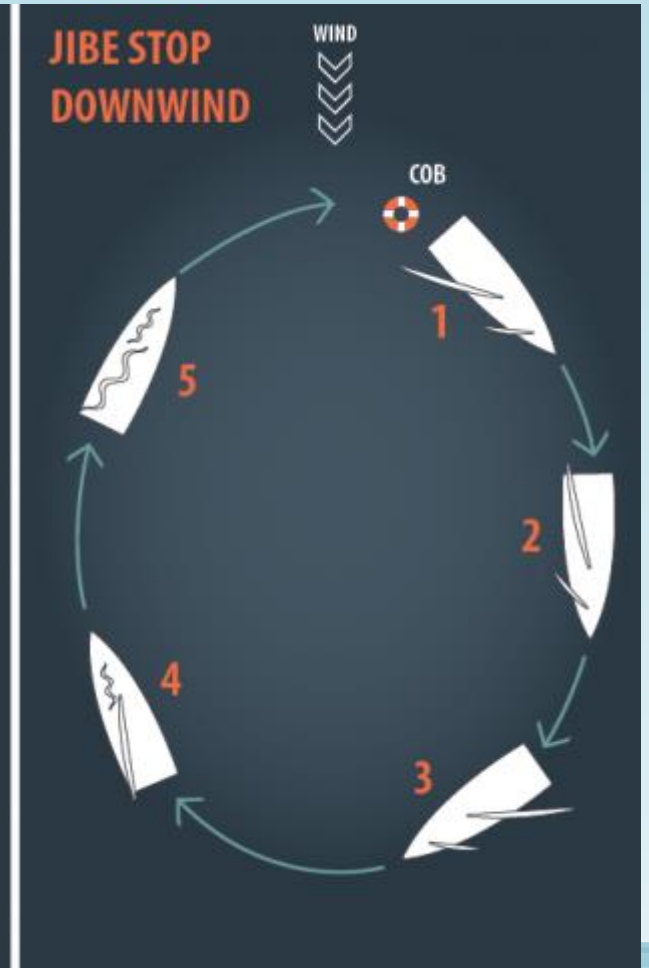
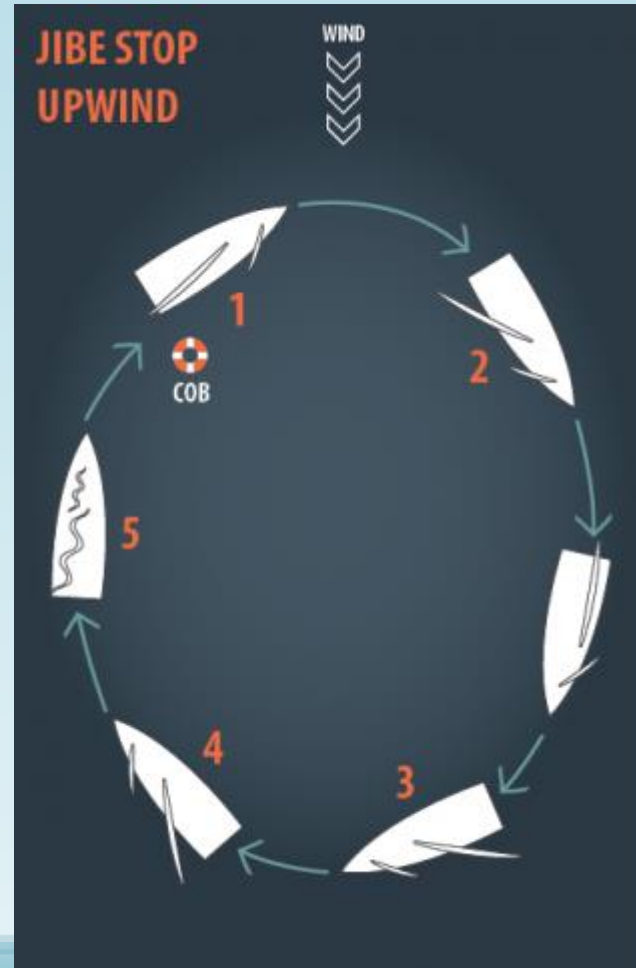
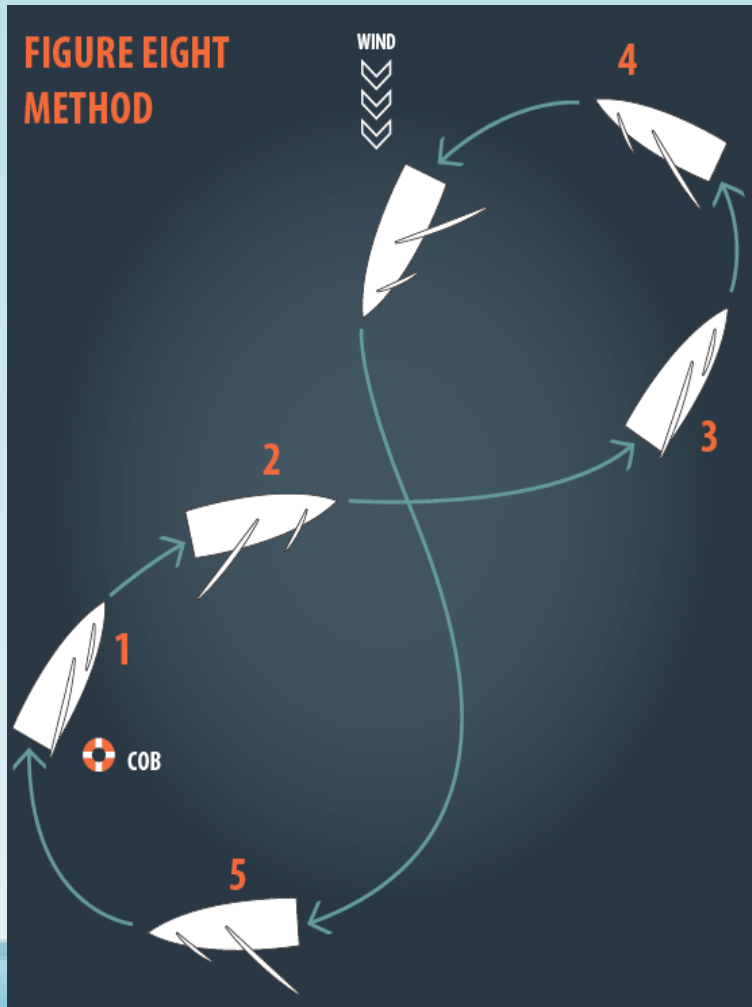


# COB Procedure (Crew Overboard) Cont.

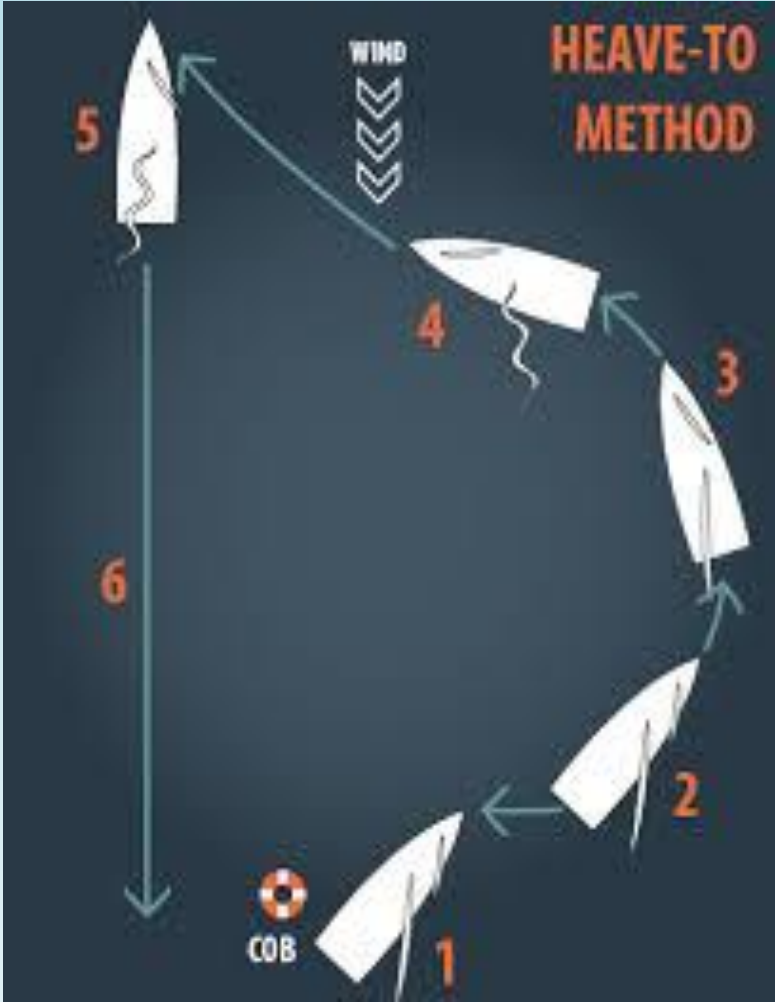
- No sudden acceleration or deceleration without warning
- Approach from downwind
- Plan haul out procedure
- Stop Engine
- No boat hook, use bowline and line or web strap - have on board and ready
- Etrier and/or loop made prior to emergency



# COB Procedure (Crew Overboard) Cont.



# Another COB method







# “Suddenly in Command” What could YOU do in a boating emergency?

- Skipper is incapacitated, YOU are in command!
- Assess what happened
  - Environmental Emergency ?
  - Mechanical problem?
  - Medical Emergency?
- How Urgent is the situation?
  - Potential loss of life or the boat?
  - Crew in danger or in panic?
  - Situation likely to deteriorate?
  - Am I alone or have onboard help?
  - What are my resources?
  - Stay focused



# SIC contd.

- Take charge
  - Everyone has a PFD on
  - Clearly communicate what needs to be done
  - Be patient and courteous of others
- Do I need assistance? Distress Radio Transmission?
  - Other boaters
  - Local Sheriff Department
  - Coast Guard
  - 911
- Stabilize the Situation
  - Know your location
  - Be aware of other boats or traffic
  - Post a lookout
  - Calmly work the incident





RED STAR SHELLS



FOG HORN CONTINUOUS SOUNDING



FLAMES ON A VESSEL



GUN FIRED AT INTERVALS OF 1 MIN.

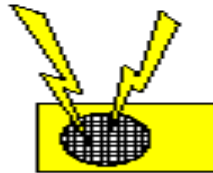


ORANGE BACKGROUND BLACK BALL AND SQUARE

SOS



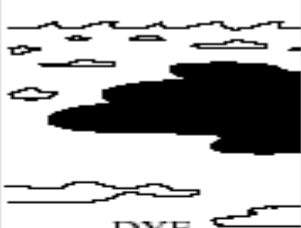
SOS



"MAYDAY" BY RADIO



PARACHUTE RED FLARE



DYE MARKER (ANY COLOR)



CODE FLAGS NOVEMBER CHARLIE



SQUARE FLAG AND BALL



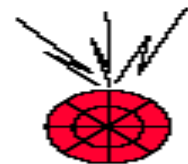
WAVE ARMS



RADIO-TELEGRAPH ALARM



RADIO-TELEPHONE ALARM



POSITION INDICATING RADIO BEACON



SMOKE



- The knowledge and skill pertaining to the operation, navigation, management, safety, and maintenance of a ship
- Safety is a key component in sailing evolutions
- It is equal parts experience and vigilance
- Experience is the best teacher, it improves your seamanship
- Good seamanship is characterized by a constant game of “what if...”
- Remember - Safety comes first!

# Handouts

- Radio Frequencies
- USCG radio procedures for 3 types of calls
- Ditch Bag list
- Online Resources List



- Thank you For your time and interest!



