



Safety at Sea

Care & Maintenance of Safety Equipment

Safety at Sea Seminar
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Air Mail Down the Bay Race



It's required by U.S. Sailing Special Equipment Requirements (SERs) ... *and makes good sense*

• 1.4 Equipment and Knowledge:

- All equipment required shall function properly,
- be regularly checked, cleaned and serviced, and
- be of a type, size and capacity suitable for the intended use and size of the boat and the size of the crew.
- This equipment shall be readily accessible while underway and,
- when not in use, stored in such a way that deterioration is minimized.

1.5 Secure Storage

A boat's heavy items such as batteries, stoves, toolboxes, anchors, chain and internal ballast shall be secured.



2025 SERs Significant Changes/Impacts

2.12 & 2.13-Keel and Rudder Inspection

2.5.4 Emergency dewatering pump

3.15-Crew Overboard Button

3.16-EPIRBS

3.33.4.1 Storm Jib

3.39 Life Rafts



3. SAFETY EQUIPMENT (Life Jackets)

3.1.1 Lifejackets Each crewmember shall have a life jacket that provides at least 33.7lbs (150N) of buoyancy, intended to be worn over the shoulders (no belt pack), meeting either U.S. Coast Guard or ISO specifications. Alternatively, each crewmember shall have an inherently buoyant off-shore life jacket that provides at least 22lbs (100N) of buoyancy meeting either U.S. Coast Guard or ISO specifications.

<https://www.ussailing.org/wp-content/uploads/2024/12/SER-2025.0-Monohull-Ocean.pdf>



3. SAFETY EQUIPMENT

3.1.2 Lifejacket Features- Life jackets shall be equipped with crotch or leg straps, a whistle, a waterproof light, be fitted with marine-grade retro-reflective material, and be clearly marked with the boat's or wearer's name, and be compatible with the wearer's safety harness. If the life jacket is inflatable, it shall be regularly checked for air retention.

<https://www.ussailing.org/wp-content/uploads/2024/12/SER-2025.0-Monohull-Ocean.pdf>



New Life Jacket Classifications

CHOOSE THE DEVICE YOU WILL WANT TO WEAR

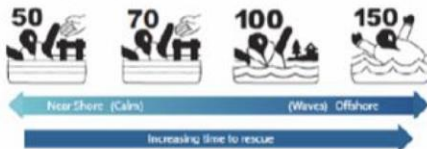
SIZE & FIT

- Check label for user weight and chest size.
- Different body types float differently.
- Try your device on in the water to ensure your airway is clear.
- A good fit is secure, comfortable, and adjustable.

TRY IT ON

PERFORMANCE

- Lower level number generally offers greater mobility, comfort, and style with good flotation for most people.
- Higher level number generally offers greater flotation, turning, and stability in the water.



CONSIDER YOUR ACTIVITY & ENVIRONMENT

WATER SAFETY INFO

- In over 80% of boating fatalities the person was not wearing flotation.
- Most of these are sudden falls overboard or capsizing of a small boat.
- The first moments in the water are critical, even for experienced swimmers.
- Cold water shock causes involuntary gasping, loss of muscle control and swim failure.
- Long term immersion in cold water causes hypothermia and requires thermal protection and flotation in the HELP position to conserve energy.

FLOTATION DEVICES SAVE LIVES

DESIGN TYPES

- **INHERENT** – built-in flotation (always buoyant).
- **INFLATABLE** – activated gas canister inflates chamber(s) (no buoyancy until time of inflation, requires canister replacement, may be manual, may require secondary action to don).
- **HYBRID** – combination of flotation and inflation (some immediate buoyancy and supplemental when inflated, may require canister replacement).
- **SPECIAL PURPOSE** – your activity may require special features (safety color, harness, straps, etc.) and accessories (whistle, lights, reflectors, etc.) for certain conditions.

YOUR DEVICE ONLY WORKS WHEN WORN

MAINTENANCE

- Over time, exposure to sun, salt, fuel, and mildew can damage device.
- Allow to air dry. Inspect and test regularly.
- Inflatables require replacement rearming, repacking and regular servicing.

READ, SAVE AND FOLLOW INSTRUCTIONS

WARNINGS

- Children should have adult supervision when on or near the water.
- Devices must be fastened correctly and securely.
- Some devices were not designed for certain activities or conditions such as water skiing, towed sports, personal watercraft (PWC), or whitewater paddling.



CHECK LABEL FOR LIMITATIONS OF USE

APPROVAL

- Some devices are approved only when worn.
- Check federal, state/provincial and local requirements for carriage, use and wear.



US Coast Guard



Transport Canada

WEAR IT

For more info on the right choices for yourself, your family and friends.

Visit www.wearitlifejacket.org

3. SAFETY EQUIPMENT

3.1.4 Harness Each crewmember shall have a safety harness and compatible safety tether not more than 6'7" (2m) long with a minimum tensile strength of 4500 lb. (20kN). The tether shall have a snap hook at its far end and a means to quickly disconnect the tether at the chest end.

<https://www.ussailing.org/wp-content/uploads/2024/12/SER-2025.0-Monohull-Ocean.pdf>



Jacklines and Clipping Points

3.2.1 Jacklines

A boat shall carry jacklines with a breaking strength of at least 4500 lb. (20kN) which allow the crew to reach all points on deck, connected to similarly strong attachment points, in place while racing.

3.2.2 Clipping Points

A boat shall have adequate clipping points or jacklines that allow the crew to clip on before coming on deck and unclip after going below.



Liferafts 3.39

...The raft shall be certified by the manufacturer or manufacturer-authorized inspection certificate as compliant with ISO 9650-1, or SOLAS, or ISAF (if made before 2016), or ORC (if made before January 1, 2004). Each raft shall be stored in such a way that it is capable of being launched within 15 seconds. Boats built after 01/06/2001 shall stow each life raft a deck-mounted rigid container in watertight or self- draining purpose-built rigid compartment(s) opening adjacent to the cockpit or the working deck. Boats built prior to 01/06/2001 may alternatively stow each life raft in a valise not weighing over 88 lbs. securely below deck and adjacent to the companionway. Life raft(s) shall hold current manufacturer-authorized certificate(s) of inspection.



Storm Sail

3.33.4.1 Storm sails shall be designed to provide propulsion and steerage in 34-40 knots and on all points of sail. Heavy weather sails shall be designed to provide propulsion and steerage in 22- 27 knots and on all points of sail.



Life Rafts 3.39

Several prominent life raft manufacturers no longer manufacture rafts that are compliant with the current SERs which require ISO 9650-1 or SOLAS compliance

This is not a result of recent changes to the SERs, but rather a greater number of Organizing Authorities (OAs) are harmonizing their race specific equipment regulations with the SERs.

This does not impact their legacy products which were manufactured to SOLAS or ISO standards.



Key Equipment Goals:

Good crew, boat & equipment

Train the good crew on the
boat & equipment



Practice using all routine and emergency equipment
Preparation is key to safety and success



Activating Flares



Activating EPIRBS, PLBs & AIS MOB beacons



Using PFD & Entering Raft



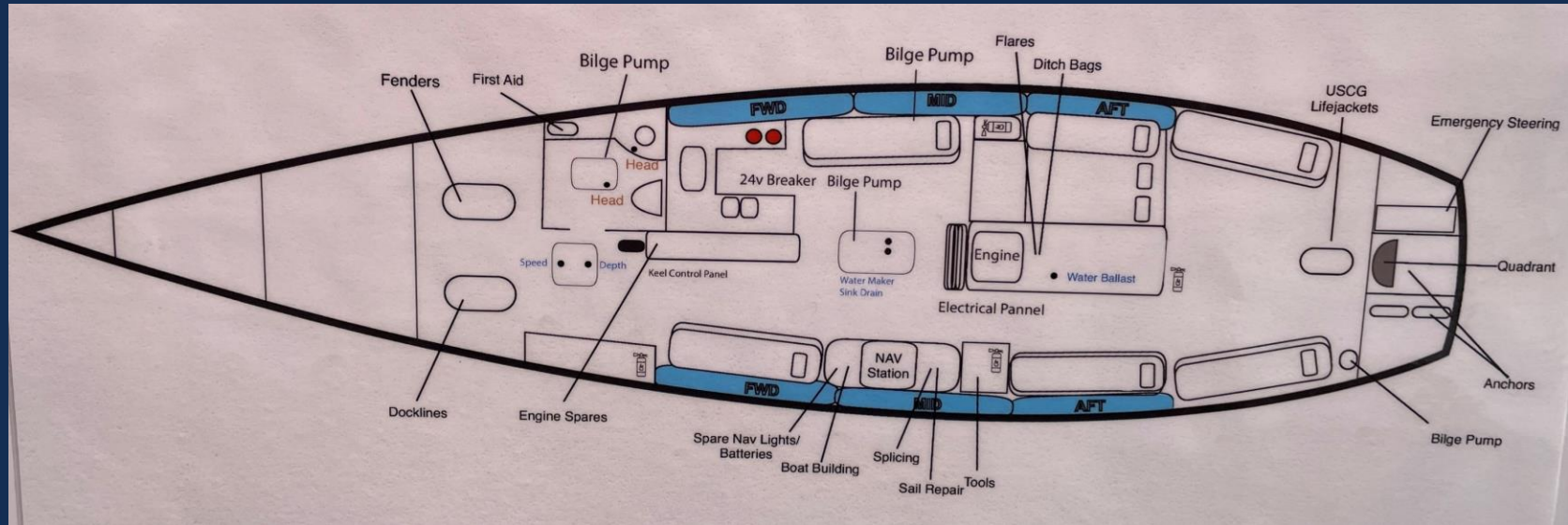
You carry all of this safety equipment



You need to know how to use it...

You need to know where it is

4.12 Safety Equipment Location Chart: A safety equipment location diagram in durable waterproof material, clearly displayed in the main accommodation, marked with the location of principal items of safety equipment.



California Maritime Academy Andrews 77' Transpac '23

Next time you are sailing along at a good speed in the middle of the night with no moon and salt spray on your glasses, consider:



Svendborg Maersk lost 500 containers off France
Maersk Shanghai lost 76 off North Carolina



Barge *Atlantic Trader* lost 22
off Jacksonville

Another barge, 25 more lost

221 containers lost at sea in 2023 out of ~250M moved = 0000892%, and 33% recovered but you need only 1 to sink you!

What is your collision & flooding plan?
What plugging/patching/pumping equipment do you carry?



Navy 44 Gear

Damage Control Tools

EPIRBs and PLBs

PFDs

Harnesses and
Tethers

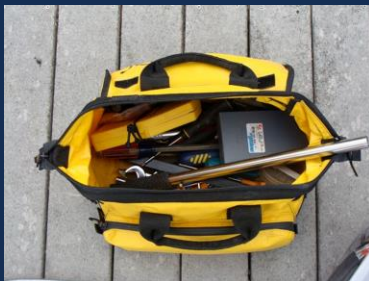
Lifesling

Throwables

Pumps

Life Rafts...

And more!



Proper Crew, Boat, Equipment, Training, Position & PFDs

greatly increase the chance of avoiding accidents, and a successful rescue if required



Sail & Race Safely & Well...See you on the water!

