

Safety Onboard

Safety Equipment Checklist



Section One: Mandatory Safety Equipment

It is important to use this checklist alongside the Safety Equipment Requirements document and the Conditions of Entry for the Rally.

Liferaft

- a. One or more purpose made, self-inflating, liferafts of sufficient capacity for at least all the crew on board. Shall be either:
 - i. ISO Standard 9650 Type 1 Group A with service Pack 1 (>24 hours), or equivalent made up of service Pack 2 (<24 hours) and a grab bag, or
 - ii. ISAF liferafts manufactured before 2016 until replacement is due at end of service life plus food and water equivalent to (i) above, or
 - iii. SOLAS LSA Code 1997 Chapter IV or later containing a SOLAS A pack
- d. Each raft shall be mounted externally or capable of being at the lifelines ready to launch within 15 seconds. Additionally for multihulls the raft should be deployable whether inverted or not.
- e. If a liferaft is stowed in a locker that locker will be dedicated to the stowage of the liferaft and will not have stowed in it anything else that is likely to hinder access to the liferaft or cause damage to it.
- f. The end of each liferaft painter line shall be permanently made fast to a strong point on board the yacht.
- g. Each liferaft shall have a valid inspection certificate from the manufacturer or approved servicing agent, valid for the period of the rally.

Liferaft Servicing

- a. Liferafts based on type are to be serviced at a service station approved by the manufacturer at the following maximum intervals:
 - i. SOLAS liferafts annually.
 - ii. ISO 9650 canister packed liferafts no less frequently than every 3 years.
 - iii. ISO 9650 valise packed liferafts no less frequently than 3 years except that hired valise liferafts shall be serviced annually.
 - iv. ISAF liferafts annually
- b. The servicing certificate, or a copy, shall be carried on the yacht.

EPIRB

- A floating, water and manually activated EPIRB transmitting on 406MHz, and 121.5MHz or AIS, fitted with an internal GPS.
- Correctly registered with the appropriate home authority.

Important: Personal locator beacons (PLBs) carried do not replace the requirement for a yacht's EPIRB.

Long Range Communications Equipment

- ARC, ARC+, ARC Europe, World ARC:** A satellite communications system (or an SSB radio with pactor modem) capable of sending and receiving e-mail messages whilst at sea.
- World ARC only:** Yachts must be fitted with a DSC capable marine SSB HF radio transceiver covering the 2–22 MHz bands, with an independent aerial for DSC operation, OR a suitable alternative satcoms-based system capable of transmitting and continual monitoring an instant messaging app.

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VHF Radio

- A VHF DSC capable radio transceiver having a rated output power of 25W and capable of working on all standard international channels must be fitted. With:
 - An external cockpit extension speaker.
 - A masthead antenna.
 - An emergency antenna shall also be carried.
- Handheld VHF Transceiver with minimum 5W output power. Watertight or with waterproof covers.

Recommended: the handheld receiver should have Digital Selective Calling (DSC) and be equipped with GPS.

Passive Radar Reflector

- Permanently mounted in, or capable of being hoisted to, a position at least 5m (15') above deck. Type:
 - Octahedral circular sector plates of minimum diameter 300mm (12"), or octahedral rectangular plates of minimum diagonal dimension 400mm (16"), or
 - Non octahedral radar reflectors must have a documented minimum RCS (radar cross-section) of not less than 10m². Smaller cylindrical reflectors do not meet this RCS requirement.
- Important:** Where fitted a radar target enhancer does not replace the requirement for a passive radar reflector.

AIS (Automatic Identification System)

- AIS transponder with the following antenna:
 - Share the masthead VHF antenna via a low loss AIS antenna splitter, or
 - A dedicated AIS antenna that is a minimum of 38cm long, mounted with its base at least 3 meters above the water, and fed with coax cable that has a maximum 40% power loss.
- An AIS locator beacon for each crew member appropriately fitted to lifejackets for activation method of each device.

Distress Flares

- Shall be pyrotechnic LSA Chapter III SOLAS compliant, and not older than the stamped expiry date, or four years from date of manufacture, for the end date of the event.
- Pyrotechnic flares to be stowed in a watertight container, with protective gloves and goggles.

Minimum required:

 - 4 red hand held flares - 2 of which may be eVDS (electronic flares)
 - 2 buoyant orange smoke

These flare requirements are in addition to any flares carried in liferafts and their supplementary service packs or grab bags.

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Crew Overboard Recovery

Within reach of the steering position for instant use:

- 1. A lifebuoy equipped with a whistle, drogue, a self-igniting light. AND attached to it:
- 2. A danbuoy (pole and flag) OR an inflatable danbuoy
- OR a MOB recovery module incorporating items 1 and 2
AND, in addition to 1 and 2 above
- 3. One lifebuoy with a drogue, a self-igniting light and whistle attached, and a method to recover the person from the water
- OR a recovery sling capable of hoisting a crew member onboard, which includes a buoyant line, buoyancy section (horseshoe) with no less than 90N (20lb) buoyancy, with a self-igniting light and marine grade retro-reflective material.
- 4. AND a throwing/Heaving line (floating) 15–25m (50–75ft) length, readily accessible to cockpit.
- At least one lifebuoy or recovery sling shall depend entirely on permanent (eg. foam) buoyancy.
- Each inflatable or automatic device shall be tested and serviced at intervals in accordance with manufacturer's instructions.
- Every lifebuoy/recovery sling shall have the yacht's name on it and must be fitted with marine grade retro-reflective material and a self-igniting light.

Pumps

- Securely fitted manual bilge pump operable from on deck, and
- Securely fitted or portable manual bilge pump operable below deck (electrical/mechanical pumps may be considered a suitable alternative for second pump), and
- Emergency pump: High capacity electric or engine driven pump, or combination of pumps, (with a total minimum capacity of 200l/min) with sufficient hose(s) to discharge from any compartment directly overboard or into the cockpit.
- Multihulls shall have provision to pump out each hull, and all watertight compartments (except those filled with impermeable buoyancy).
- All required permanently installed bilge pumps shall be operable with all cockpit seats, companionways and hatches shut.
- All removable bilge pump handles shall be retained by a lanyard, to prevent accidental loss.

Navigation Lights

- Navigation lights must be fitted so that the yacht shall, at all times, comply with the International Regulations for Preventing Collision at Sea.
 - Two independently wired sets of navigation lights are required. For example,
 - The **primary set** (bow and stern lights), and
 - The **secondary set** (masthead tricolour – for vessels up to 20m).
- Important: Battery operated navigation lights are not acceptable as the secondary set.**
- Spare lamps of correct wattage shall also be carried for non-LED navigation lights.

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High Powered Search Light(s)

- A watertight high-intensity heavy duty searchlight powered by the ships' batteries, instantly available in the cockpit for use on deck.
- The search light shall be capable of continuous use.
 - If rechargeable, the search light shall be capable of operating whilst being charged, or
 - A combination of two rechargeable searchlights will be acceptable, if prolonged use can be demonstrated.

Lifejacket/Combined Harness

- There shall be a lifejacket/combined harness provided for each member of the crew, or a permanent buoyancy jacket for children weighing under 40kg (88lbs). The lifejacket with harness shall have:
 - Whistle
 - Light
 - Yacht name (or lifejacket owner's name)
 - Retro-reflective tape
 - Crotch strap
 - Spray hood
 - AIS locator beacon appropriately fitted
 - Safety line not to exceed 2m (6'6") length overall with self-closing hooks at each end, and an intermediate self-closing hook. *The intermediate self-closing hook may be a loop if the lifejacket is fitted with a harness release system (HRS)*
- Spare re-arming kits and gas bottles appropriate for each make of lifejacket onboard shall also be carried.

Important: For USA flagged yachts where Type 1 inherently buoyant PFDs are carried, an offshore inflatable lifejacket/harness (preferably USCG Type II approved) shall also be carried.

Jackstays and Clipping Points

- Jackstays/jacklines:** Independent along port and starboard side decks and elsewhere as necessary to enable a crew member to move readily between the working areas on deck and the cockpit(s) with the minimum of clipping and unclipping operations.
- Clipping Points:** Attached to through bolted or welded deck plates, or similar, in positions close to the helm, and to enable crew to clip on before coming on deck, and unclip after going below. Consideration should be given to entering/leaving a saloon on a multihull and reaching the helm.

Heavy Equipment

- All heavy equipment (i.e. anchor, batteries, gas bottles and stoves) shall be firmly secured to prevent damage from possible knockdown or capsize.

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The following equipment shall also be fitted/carried:

- A safety equipment location chart in durable waterproof material displayed in the main accommodation where it can best be seen, clearly marked with the location of principal items of safety equipment.
- Emergency grab bag (see Appendix 1)
- Navigational charts (not solely electronic), and pilots for the route of the event.
- A recognised secondary or alternative method of navigation. *For example: a handheld GPS with spare batteries*
- Securely fitted taut double lifelines/guardrails around the entire deck of stainless steel or high modulus polyethylene (Spectra®/Dyneema® or equivalent) rope (braid on braid is recommended). When HMPE (Dyneema®/Spectra®) is used, it shall be protected from chafe and shall be spliced in accordance with the manufacturer's recommended procedures.
- Safety knife in the cockpit/on deck.
- Anchor of sufficient weight plus a suitable combination of chain and rope.
- Fire extinguishers (minimum 2). *Important: A fire stick is a useful fire fighting device but does not replace this requirement.*
- Fire blanket (secured near the galley).
- Companionway hatches/washboards to be capable of being secured shut independently and with lanyards or similar device to prevent accidental loss. Saloon door on a multihull shall be capable of being secured in the open and closed position.
- Bungs or softwood plugs – securely attached/stowed adjacent to each fitting to enable any through hull fitting (below and above waterline) to be closed off.
- A watertight torch/flashlight of minimum 400 lumen with spare batteries and bulbs.
- Emergency tiller capable of being fitted to the rudder stock except when there are two methods (for example tiller or wheel) of controlling a rudder, neither of which shares components with the other except for the rudder stock.
- A proven method of emergency steering with the rudder disabled. *For example, a Hydrovane system, drogue or similar bespoke system*
- Hacksaw and spare blades, bolt croppers, or suitable method for cutting away rigging fitted. Soft rigging may only require a serrated ceramic knife.
- Medical kit and instruction handbook suitable for undertaking an ocean passage with the number of people onboard.
- Foghorn.
- Buckets (at least two) of stout construction and fitted with lanyards; capacity to be at least 9 litres (2 gallons).
- Echo sounder and boat speed/distance log.

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Section Two: Recommended Safety Equipment

It is important to use this checklist alongside the Safety Equipment Requirements document and the Conditions of Entry for the rally.

- It is recommended that the following equipment be carried:
- One complete spare lifejacket.
- Dinghy and oars.
- Second anchor, plus a suitable combination of chain and rope.
- Sextant and nautical almanac or tables for astro navigation.
- Storm jib.
- Storm trysail or 3rd reef in mainsail (to reduce luff by at least 50%).
- A 1m² area of highly-visible pink, orange or yellow capable of being displayed on the coach roof and/or deck.
- Mast-step. The heel of a keel-stepped mast should be securely fastened to the mast-step or adjoining structure.
- Drogue or sea anchor. A drogue (for deployment over the stern), or alternatively a sea anchor, or parachute anchor (for deployment over the bow), is strongly recommended as a means to reduce the risk of capsize in heavy breaking seas.
- Personal 406MHz Locator Beacon (PLB) for individual adult crew members.
- GPS capable of recording a crew overboard position, within 10 seconds, and monitoring that position without having to go below deck.

It is highly recommended that each person onboard carries a knife at all times whilst at sea.

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Appendix 1: Recommended Grab Bag Contents

A yacht is to have a grab bag for each liferaft with the following recommended contents, which need not be additional to the items required by the Safety Equipment Requirements. The grab bag offers a suitable place to stow items where they will be quickly found and readily carried to the liferaft. A grab bag should have inherent flotation, be marked with the name of the yacht, and have a lanyard and clip.

- Waterproof hand-held VHF transceiver.
- Watertight flashlight with spare batteries (and bulb if not LED).
- Second EPIRB.
- First aid kit, including sunscreen and medical supplies for pre-existing medical conditions.
- Portable satellite phone with preprogrammed numbers or aide memoire.
- Handheld GPS unit.
- Power bank for charging electronics.
- Two 'Cyalume' sticks or two watertight floating lamps.
- One daylight signalling mirror and one signalling whistle.
- Two red eVDS (electronic flares).
- Additional high energy food.
- Additional drinking water in a dedicated and sealed container, or a hand operated desalinator, plus containers for water.
- Graduated plastic drinking cup for rationing water.
- String, polythene bags, seasickness tablets.

Appendix 2: Recommended Crew Training

The skipper and at least one crew member should have undertaken training within the five years before the start of the Rally in both theoretical and practical sessions in the following training topics. World Sailing recommends that all crew members do likewise.

- Giving assistance to other craft.
- Personal safety gear, theory and practice.
- Care and maintenance of safety gear.
- Fire precautions and fire fighting, theory and practical.
- Crew overboard identification and recovery.
- Hypothermia, cold shock and drowning.
- Crew health.
- Marine weather.
- Heavy weather - crew routines, boat handling, drogues.
- Storm sails.
- Damage control.
- Search and rescue organization.
- Pyrotechnics and signalling gear, theory and practical.
- Emergency communications, theory and practical.
- Liferafts and abandon ship, theory and practical.

Important

If the liferaft contents require upgrading with extra rations or equipment to meet the ISO 9650 service pack 1 (>24 hours) or SOLAS A content lists, then you will need a grab bag for this equipment too.