

2027 Safety Equipment Requirements

The following safety equipment requirements have been drawn up to ensure the minimum acceptable level of safety equipment for yachts participating in World Cruising Club Events. The World Sailing Offshore Special Regulations have been used as a guideline to compile these regulations.

Division II (ARC Racing Division) is run under World Sailing Offshore Special Regulations for Category 1 and these Safety Equipment Requirements.

These safety equipment requirements do not override any greater safety requirement demanded by the yacht's national or flag country, maritime authorities or appropriate regulatory bodies.

Yacht owners considering taking fare paying guests or crew should consider the implication in relation to their national or flag regulations as required by the appropriate authorities.

The regulations are in two sections:

Section One: Mandatory Safety Equipment Requirements

This equipment must be carried and all items will be sighted during the safety equipment inspection prior to the start. Failure to comply may lead to disqualification from the Rally.

Section Two: Recommended Safety Equipment

Whilst equipment in this section is not mandatory the organisers strongly suggest that all the recommendations in this section are complied with. The Safety Equipment Inspector will be available to discuss points made in this section during the inspection.

(See the World Sailing website [<https://www.sailing.org/offshore-special-regulations/>] for the full text of the World Sailing Offshore Special Regulations).

General Requirements

Whilst everyone on board plays a part in the safe operation of the yacht, it is the sole and inescapable responsibility of each skipper to ensure that all necessary safety precautions are taken in respect of themselves, the crew and the yacht.

All safety equipment that requires regular servicing, must be in date, at the start of the Rally, and remain in date for the duration of the Rally. (The Test Certificate for the liferaft must be submitted in advance and will be inspected during the Safety Equipment Inspection).

All safety equipment carried must:

- a. Be of type, size and capacity commensurate with the size of yacht and crew
- b. Function correctly
- c. Be easily accessible

Each crew member must be fully conversant with the stowage location and operation of all safety equipment on board.

Section One: Mandatory Safety Equipment Requirements

SAF-1 Liferaft

- i. One or more purpose made, self-inflating, liferafts of sufficient capacity for at least all the crew on board must be either:
 - a. "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
 - b. SOLAS LSA Code 1997 Chapter IV or later containing a SOLAS A pack
- ii. Each raft must 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.
- iii. 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.
- iv. The end of each liferaft painter line must be permanently made fast to a strong point on board the yacht.
- v. Each liferaft must have a valid inspection certificate from the manufacturer or approved servicing agent, valid for the period of the Event.

SAF-2 Liferaft Servicing

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

SAF-3 EPIRB

- i. Emergency Position Indicating Radio Beacon. 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. An EPIRB registered after 1 October, 2027 must have the ability to transmit on AIS.
- ii. Personal locator beacons (PLBs) carried do not replace the requirement for a yacht's EPIRB.

SAF-4 Long Range Communications Equipment

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

SAF-5 VHF

- i. 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.
- ii. An external cockpit speaker should also be fitted to the set.
- iii. The radio must have a masthead antenna
- iv. An emergency antenna must also be carried.

SAF-6 Handheld VHF Transceiver

- i. With min 5W output power, watertight or with waterproof covers.
- ii. It is recommended the handheld receiver should have Digital Selective Calling (DSC) and be equipped with GPS.

SAF-7 Passive Radar Reflector

- i. Permanently mounted in, or capable of being hoisted to, a position at least 5m (15') above deck.
 - a. Octahedral circular sector plates of minimum diameter 300 mm (12"), or
 - b. Octahedral rectangular plates of minimum diagonal dimension 400 mm (16").
 - c. Non-octahedral reflector with a documented root mean square minimum Radar Cross Section (RCS) area of 2 m² (22 ft²) from 0–360° of azimuth and ±20° of heel. Smaller cylindrical reflectors do not meet this RCS requirement.
- ii. Where fitted a Radar Target Enhancer does not replace the requirement for a passive radar reflector.

SAF-8 Automatic Identification System (AIS)

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

SAF-9 Flares

- i. Must 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.
- ii. Pyrotechnic flares to be stowed in a watertight container, with protective gloves and goggles
- iii. As a minimum
 - a. 4 red hand held flares (2 of which may be eVDS) and
 - b. 2 buoyant orange smoke (Cannot be eVDS)
- iv. **These flare requirements are in addition to any flares carried in liferafts and their supplementary service packs or grab bags.**

SAF-10 Crew Overboard Recovery

- i. Must have within reach of the steering position for instant use:
 - a. **Either:**
A lifebuoy equipped with a whistle, drogue, a self-igniting light, with marine grade retro-reflective material, and attached to it either: a Danbuoy (pole and flag) or an inflatable danbuoy.
Or:
A MOB recovery module incorporating above
 - b. **Either:**
A lifebuoy equipped with a whistle, drogue, a self-igniting light, with marine grade retro-reflective material, and a method to recover the person from the water
Or:
A recovery sling capable of hoisting a crew member aboard, which includes a buoyant line, buoyancy section (horseshoe) with no less than 90 N (20lb) buoyancy, with a self-igniting light and marine grade retro-reflective material.

- c. **Throwing/Heaving line** (floating) 15–25m (50–75ft) length
- ii. At least one lifebuoy or recovery sling must depend entirely on permanent (e.g. foam) buoyancy. Each inflatable or automatic device must be tested and serviced at intervals in accordance with its manufacturer's instructions.
- iii. Every lifebuoy/recovery sling must have the yacht's name on it

SAF-11 Bilge Pumps

- i. Yacht must have:
 - a. A securely fitted manual bilge pump operable from on deck, and
 - b. A securely fitted or portable manual bilge pump operable below deck (Electrical / mechanical pumps may be considered a suitable alternative for second pump)
- ii. Multihulls shall have provision to pump out each hull, and all watertight compartments (except those filled with impermeable buoyancy).
- iii. All required permanently installed bilge pumps shall be operable with all cockpit seats, companionways and hatches shut.
- iv. All removable bilge pump handles shall be retained by a lanyard, to prevent accidental loss.

SAF-12 Emergency (High Capacity) Pump

- i. Yachts shall have a high capacity electric or engine driven pump, or combination of fixed and portable pumps,
- ii. With a total minimum capacity of 200l/min (3200gph)
- iii. With sufficient hose(s) to discharge from any compartment directly overboard or into the cockpit.

SAF-13 Navigation Lights

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

SAF-14 High Powered Search Light(s)

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

SAF-15 Lifejacket/Combined Harness

- i. There must be a lifejacket/combined harness provided for each member of the crew, or a permanent buoyancy jacket for children weighing under 40Kg (88lbs), serviced in accordance with manufacturers instructions.. Adult life jackets must have:
 - a. Whistle
 - b. Light
 - c. Yacht name (or lifejacket owner's name)
 - d. Retro-reflective material
 - e. Crotch strap
 - f. Spray hood fitted
 - g. Personal AIS Beacon appropriately fitted.
 - h. A safety line / tether that complies with ISO 12401 or equivalent, 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).
- ii. At least one spare re-arming kit and gas bottle appropriate for each make of lifejacket onboard must also be carried.

SAF-16 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.

SAF-17 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.

SAF-18 Heavy Equipment

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

SAF-19 Additional Equipment Requirements

- i. 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.
- ii. Emergency grab bag (see Appendix 1).
- iii. Navigational charts (not solely electronic), and pilots for the route of the event.
- iv. A recognised secondary or alternative method of navigation.
- v. 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 must be protected from chafe and must be spliced in accordance with the manufacturer's recommended procedures.
- vi. Safety knife in the cockpit/on deck.
- vii. Anchor of sufficient weight plus a suitable combination of chain and rope.
- viii. Fire extinguishers (minimum 2). A fire stick is a useful fire fighting device but does not replace this requirement.
- ix. Fire blanket (secured near the galley).
- x. Companionway hatches/washboards to be capable of being secured shut independently and with lanyards or similar device to prevent accidental loss. Saloon doors on a multihull must be capable of being secured in the open and closed position.
- xi. 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.

- xii. A minimum IP67 rated watertight torch/flashlight of minimum 400 lumens with spare bulbs or being LED, and spare batteries or being rechargeable.
- xiii. 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.
- xiv. A proven method of emergency steering with the rudder disabled or missing.
- xv. An effective means to quickly disconnect or sever the standing rigging from the boat.
- xvi. Medical kit and instruction handbook suitable for undertaking an ocean passage with the number of crew onboard.
- xvii. Foghorn
- xviii. Buckets (at least two) of stout construction and fitted with lanyards; capacity to be at least 2 gallons (9 litres).
- xix. Echo sounder and boat speed/distance log

Section Two: Recommended Equipment

It is recommended that the following equipment be carried:

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| <ul style="list-style-type: none"> i. One complete spare lifejacket ii. Dinghy and oars iii. Second anchor, plus a suitable combination of chain and rope iv. A floating watertight torch/flashlight v. Storm jib vi. Storm trysail or 3rd reef in mainsail (to reduce luff by at least 50%) vii. 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 viii. Personal 406MHz Locator Beacon (PLB) for individual adult crew members. | <ul style="list-style-type: none"> ix. A GPS capable of recording a crew overboard position, within 10 seconds, and monitoring that position without having to go below deck. x. A hand-held satellite telephone for each grab bag, watertight or with waterproof cover and internal battery. xi. It is highly recommended that each person on board carries a knife at all times whilst at sea. xii. A 1 metre squared area of highly-visible pink, orange or yellow capable of being displayed on the coach roof and/or deck xiii. Sextant and nautical almanac or tables for astro navigation. |
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Appendix 1

Recommended Grab Bag Content

A yacht is to have a grab bag 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 must have inherent flotation, be marked with the name of the yacht, and have a lanyard and clip.

- i. Waterproof hand-held VHF transceiver
- ii. Watertight flashlight with spare batteries (and bulb if not LED)
- iii. Second EPIRB
- iv. First aid kit, including sunscreen and medical supplies for pre-existing medical conditions
- v. Portable satellite phone with preprogrammed numbers or aide memoire
- vi. Handheld GPS unit
- vii. Powerbank for charging electronics
- viii. Two "Cyalume" sticks or two watertight floating lamps
- ix. One daylight signaling mirror and one signaling whistle
- x. Two red eVDS
- xi. Additional high energy food
- xii. Additional 2 litres per person of drinking water in a dedicated and sealed container, or a hand operated desalinator, plus containers for water
- xiii. Graduated plastic drinking vessel for rationing water
- xiv. 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.

- i. Giving assistance to other craft
- ii. Personal safety gear, theory and practice
- iii. Care and maintenance of safety gear
- iv. Fire precautions and firefighting, theory and practical
- v. Crew overboard identification and recovery
- vi. Hypothermia, cold shock and drowning
- vii. Crew health
- viii. Marine weather
- ix. Heavy weather - crew routines, boat handling, drogues
- x. Storm sails
- xi. Damage control
- xii. Search and rescue organization
- xiii. Pyrotechnics and signaling gear, theory and practical
- xiv. Emergency communications, theory and practical
- xv. Liferafts and abandon ship, theory and practical

Version 1 Dated 1 May 2026