

## PREPARATIONS

Thoroughly preparing the boat and crew are the most important parts of long distance sailing, whether with a rally or independently.

The most effective preparations start years before the planned departure date, but even with just months to go, any time (and money) spent on ensuring that the boat and crew are in good shape, fit and ready for anything will be a good investment in your safety and happiness.

Whether you are the boat owner or a crew member, please take time to read through this section of the handbook. Take onboard the advice of the experienced sailors and marine specialist companies and make positive changes to your skills, equipment, and how you sail the boat.

### Preparations Section Contents

To help you navigate, each chapter has a detailed table of contents on the first page.

#### **A Safety Onboard ..... page 3**

The Safety Onboard chapter covers the required safety equipment for the rally, features to look for when choosing safety equipment, and how to use it. It also includes medical equipment and First Aid kits.

#### **B Boat Preparations .....page 31**

The Boat Preparations chapter looks at the equipment and features suitable for long distance sailing. It includes how to take a critical look at your boat, power recommendations and generation and a useful lists of spares and tools.

#### **C People Preparations ..... page 59**

This chapter covers all aspects of crew and personal preparations, including the skipper's responsibilities, immigration concerns, health and well being, choosing and training crew, sailing with children and sailing with pets.



Have you considered all your **safety requirements?**

Scan for your safety equipment checklist



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# **A SAFETY ONBOARD**

The Safety Onboard chapter is designed to help you to select safety equipment that meets both your needs and the rally mandatory Safety Equipment Requirements.

Use the handy checklist on the first few pages to help you work through the equipment you should have onboard. The rest of the chapter considers the equipment in more detail - what to look for, and how to use it.

Equipment is only one part of the safety equation. The skipper’s responsibilities and crew training are covered in Section C - People Preparations.

## **A. Safety Onboard Contents**

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## Safety Equipment Requirements for ARC Baltic

Unlike other World Cruising Club rallies, boats are not required to pass a safety equipment inspection before participating in the Rally. However, participants are still required to carry certain items of personal safety gear. That said, we do strongly advise that all recommended items are also carried which will help ensure the safety of your crew throughout the Rally.

### Section 1: Mandatory Safety Equipment Requirements

This equipment must be carried and all items will be sighted prior to the start. Failure to comply with these requirements may lead to disqualification from the Rally.

### Section 2: Recommended Safety Equipment

The equipment in this section is not mandatory for ARC Baltic, but it is mandatory for other World Cruising Club rallies. The organisers strongly recommend that all the items in this section are complied with. Before and during the Rally, the World Cruising Club team will be willing to answer any specific questions about safety equipment.

### Section 3: Additional Recommended Safety Equipment

The equipment listed in this section is not mandatory when participating in ARC Baltic, however it is recommended in all World Cruising Club events. We advise you to consider carrying these items onboard.

## 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.

We strongly advise all safety equipment that requires regular servicing is in date, at the start of the Rally, and remains in date for the duration of the Rally. Please remember that all safety equipment carried should:

- 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 should be fully conversant with the stowage location and operation of all safety equipment on board.

## Section 1: Mandatory Safety Equipment

- There shall be a lifejacket with a 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 a:
  - Whistle
  - Light
  - Yacht name (or lifejacket owner's name)
  - Retro-reflective tape
  - Crotch strap
  - Spray hood
  - 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 and harness (preferably USCG Type II approved) should also be carried.



Rally participants receiving safety advice from a member of the World Cruising Club team

## Section 2: Recommended Safety Equipment

### Liferaft

- a. One or more purpose made, self-inflating, liferafts of sufficient capacity for at least all the crew on board. We recommend 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. SOLAS LSA Code 1997 Chapter IV or later containing a SOLAS A pack
- b. Each raft is 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.
- c. 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.
- d. The end of each liferaft painter line shall be permanently made fast to a strong point on board the yacht.
- e. 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.
  - b. The servicing certificate, or a copy, should be carried on the yacht.
- Further information about liferaft servicing can be found on page 18.

### 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

- A satellite communications system (or an SSB radio with pactor modem) capable of sending and receiving e-mail messages whilst at sea.

## VHF Radio

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

*Also 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 with a documented minimum RCS (radar cross-section) of not less than 10m<sup>2</sup>. 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

- We recommend 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.

Recommended minimum:

  - 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.

## 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 the cockpit.
- At least one lifebuoy or recovery sling shall depend entirely on permanent (eg. foam) buoyancy.
- We recommend each inflatable or automatic device is tested and serviced at intervals in accordance with the manufacturer's instructions.
- Every lifebuoy/recovery sling shall have the yacht's name on it and should be fitted with marine grade retro-reflective material and a self-igniting light.

Further details about crew recovery can be found on page 23.

## 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.
- We recommend multihulls have provision to pump out each hull, and all watertight compartments (except those filled with impermeable buoyancy).
- Permanently installed bilge pumps operable with all cockpit seats, companionways and hatches shut.
- All removable bilge pump handles are retained by a lanyard, to prevent accidental loss.

## Navigation Lights

- Navigation lights 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.

## High Powered Search Light(s)

- A watertight high-intensity heavy duty searchlight powered by the ship's batteries, instantly available in the cockpit for use on deck.
- We recommend the search light is capable of continuous use.
  - If rechargeable, the search light should be capable of operating whilst being charged, **or**
  - A combination of two rechargeable searchlights could be used

## 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

- We recommend all heavy equipment (i.e. anchor, batteries, gas bottles and stoves) is firmly secured to prevent damage from possible knockdown or capsize.



*Final inspection of lifejackets before the start of a Rally*

## Additional Safety Equipment

- 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, page 12).
- 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.

## Section 3: Additional Recommended Safety Items

- One complete spare lifejacket.
- Dinghy and oars.
- Second anchor, plus a suitable combination of chain and rope.
- Storm jib.
- Storm trysail or 3rd reef in mainsail (to reduce luff by at least 50%).
- A 1m<sup>2</sup> 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.
- 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.**



*Packing a Grab Bag*

## Appendix 1: Recommended Grab Bag Contents

It is recommended that yachts should have a grab bag for each liferaft with the following recommended contents. 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 should have a grab bag for this equipment too.

## Liferafts

A liferaft is designed to be used as the last resort; when you need to escape from your boat because of fire or sinking. The liferaft is designed to help shipwrecked sailors to survive while waiting for rescue. Using a liferaft won't be an enjoyable experience, but it may save your life.

Even with EPIRBs, AIS beacons, SARTs and modern voice communications, it may take some time before your distress call results in a rescue. The contents of your liferaft will help to keep you alive, and to attract the attention of your rescuers. **We require all liferafts to be packed with enough food, water and equipment for more than 24 hours.** You may need to supplement the standard pack of your raft with extra equipment and water.

### Features of an ISO 9650 Liferaft

ISO 9650 Type 1 Group A is a minimum design standard and the quality and contents of rafts will vary.

Look for the following features when buying a raft:

#### Canopy opening:

large enough to allow access wearing lifejackets, but easy to close with cold hands.



**Self-inflating canopy:** brightly coloured, with internal and external lights and retro-reflective tape.

**Look-out port:** for ventilation and watch keeping.



**Tubes:** brightly coloured for better visibility.

**Grab lines:** around the inside and outside of the raft.

**Insulated floor:** for comfort.

**Clear**



**instructions:** printed on the raft, rather than on paper.

**Step:** rigid or inflatable to make boarding easier.

**Inside ladder:** across the raft floor to pull-in the crew.

**Ladder under raft:** to help righting in case of capsize.



**Drogue:** good size and securely fixed.

**CO2 bottle:** secured out of the way.

**Ballast pockets:** Multiple, oversized and strongly secured ballast pockets for better stability.

#### Emergency pack:

The pack and contents should be easy to use with cold, wet hands.



## Types of Liferaft

There are a range of liferafts available for cruising and racing, but whatever raft you choose, we recommend it should comply with one of these standards:

1. ISO Standard 9650 Type 1 Group A with service pack 1 (>24 hours) or equivalent contents; or
2. SOLAS LSA Code 1997 Chapter IV or later containing a SOLAS A pack.

Of these options, the most readily available for a recreational sailor is the **ISO 9650 Type 1 Group A**.

**ISO 9650 Type 1** is an offshore liferaft.

**ISO 9650 Type 2** is an inshore liferaft. Type 2 is not acceptable in World Cruising Club Safety Equipment Requirements.

Group A means the raft will inflate in air temperatures between -15 and +65°C.

If you can only buy or rent a raft with a less than 24 hour pack, you can use a grab bag for the extra equipment and rations to make up to over 24 hour pack equivalent.

SOLAS rafts are mainly used by commercial boats and charter yachts.

ISAF rafts were superseded by the ISO 9650 design, and are now coming to the end of their design life.

If you have an out-of-date raft or an inshore raft, you will need to buy a suitable replacement - this will generally be cheaper and easier in your home port. If you are purchasing a liferaft and need advice, please contact us.

### Extra Features

Standards like **ISO 9650 Type 1 Group A** are a design minimum, and some manufacturers will provide additional features or equipment.

These might be simple features like stowage pockets inside the raft, or something more fundamental, such as being self-righting.

A self-righting liferaft uses an inflatable canopy arch to create righting moment when the raft is capsized, which is useful for a weaker crew.

## Valise or Canister?

Liferafts are available in either a hard case (known as a canister) or a soft bag (known as a valise).

Valise rafts are usually slightly smaller and lighter than canister rafts, but they need more protection. A valise should be protected from water, chafe and weight, so is best stowed in a dedicated locker or somewhere accessible and protected. Never use a valise raft as a step or a seat.

Canister rafts are packed into a two-part white hard case. Canisters need to be stowed in a cradle on deck or on the rails. Never use a canister raft as a step or seat as this will break the seal, allowing water ingress.

## Get to Know Your Liferaft

Before buying, compare different brands of raft by feature and price, and try to view rafts inflated at a boat show or demonstration.

Understanding how big (or small) it is for the number of crew and the quality and range of equipment packed in the raft can be instructive.

If possible, take part in a demonstration so you can see how long it takes the raft to inflate (the World Sailing standard is 3 minutes at 20°C) and what it is like to board a liferaft wearing a lifejacket.

An informal swimming pool session is good, but a formal course that includes sea safety and survival theory with a pool session is better. See page 66.



Liferaft demonstration in a swimming pool

## Liferaft Pack Contents

The equipment and supplies packed in with a liferaft will vary by raft type and manufacturer.

We recommend all liferafts have the equivalent to an ISO 9650 >24 hour pack as a minimum (or SOLAS A pack for SOLAS liferafts).

The table below shows the minimum equipment for an ISO 9650 >24 hour pack, and the additional equipment to bring a <24 hour pack up to the same standard.

Always check your pack contents with the manufacturer so you know what is inside your raft. You can always add extra safety and comfort items to a grab bag - you can take more than the minimum requirement.

## Thermal Protective Aids (TPAs)

A TPA is a simple bag or suit made from a waterproof material like aluminized polythene, designed to keep the casualty warm and to prevent wind chill. We recommend you have two TPAs in the raft or grab bag, but having one per crew member is also a good idea. You can carry immersion suits instead of simple TPAs.

## ISO 9650 Packs - Over and Under 24 Hours

Item	ISO 9650 Pack >24 hours	ISO 9650 Pack <24 hours
Bailer	1	1
Sponge	2	2
Pair of paddles	1	1
First aid kit	1	0 - add 1 to grab bag
Whistle	1	1
Waterproof torch (flashlight) with spare batteries and bulb	2	1 - add 1 extra to grab bag
Signalling mirror	1	1
Anti-seasickness pills, per person	6	6
Seasick bag, per person	1	1
Red hand flares	6	3 - add 3 extra to grab bag
Red parachute flares	2	2
Thermal protective aids	2	0 - add 2 (min) to grab bag
Leak repair kit	1	1
Air pump	1	1
Drinking water, per person	1.5 litres	0 - add 1.5 litres pp to grab bag
Food rations, per person	10,000 kJ	0 - add 10,000 kJ pp to grab bag

Note: SOLAS liferafts should have a SOLAS A pack, or a SOLAS B pack with extra items in a grab bag to make up to an A pack equivalent. Owners of ISAF rafts should have extra equipment in a grab bag to make up to an ISO 9650 Type 1 Group A over 24 hour pack. Please refer to the manufacturer's list of contents to understand what you need to add.

## Water Rations

The more water you have in the raft, the more comfortable you will be. A hand-operated watermaker is a good addition to the grab bag. Raft water usually comes in small bags.

A graduated drinking cup will help you ration water, and a child's sip-cup will stop water spilling - both items can be packed with the raft or in a grab bag.

The recommendation is for no water for the first 24 hours, then 0.5 litres per person, per day split into three drinks at sunrise, noon and sunset. Children and the injured and sick will need water during the first day.

## Food Rations

Liferaft food is usually a block of hard biscuits that provides 10,000kJ. You can add to this supply with easy to eat non-thirst making foods from the boat.

## Liferaft Stowage

- Preferably, rafts should be mounted externally.
- If mounted elsewhere, the raft should be ready to launch within 15 seconds.
- If stowed in a locker, it should be dedicated to the liferaft.
- Multihulls: the raft should be deployable if the boat is inverted.
- The end of the liferaft painter should be attached to a strong point on the boat.

If you have to abandon ship because of sinking or fire, it may not be a controlled situation. You want the raft to be available quickly, and to be able to board it safely with the grab bags and any other personal gear you need. You may only have a few minutes.

Where and how you stow the raft is a critical decision.

The best place to stow a canister raft is in a cradle mounted on the deck or on the aft rails.

Some multihulls have dedicated stowage in the transom so the raft can be launched even if the boat capsizes. If this feature isn't available, externally mounted on the aft rails is an option.

Valise rafts can't be stowed outside, and should be kept in a dedicated locker or in a dry location. In this case, it should be possible to get the raft to the rails and ready to launch in 15 seconds.

### Hydrostatic Release Unit

Boats with externally-mounted canister rafts can fit a hydrostatic release unit (HRU) to the cradle lashing, so that in the event of a sudden catastrophic sinking the liferaft is launched automatically.

The release mechanism works on water pressure. When the mechanism is submerged to 1.5-4m depth, an integral knife cuts the lashing and the liferaft floats free of the cradle, still attached to the boat. As the boat sinks, the painter line stretches and the liferaft will inflate. A weak point in the line breaks to ensure the liferaft isn't pulled down with the boat.

Most recreational hydrostatic release units are disposable and should be replaced every two years.



*Canister liferaft with a hydrostatic release unit*



*Dedicated liferaft stowage on a catamaran*



*Safety knife stored with the liferaft to cut the painter*

## Grab Bags

We recommend every yacht has at least one grab bag (or abandon ship bag) for each liferaft onboard. The grab bag contains items to aid rescue, to make your time in the liferaft more comfortable, and to help once you are rescued.

If your liferaft doesn't have an over 24 hour pack, we recommend you should have an additional grab bag with these extra items. See the list on page 15.

A grab bag should be:

- Brightly coloured, waterproof and buoyant
- Marked with the boat's name
- Fitted with a lanyard to attach to the raft

Stow the grab bag where it is easily accessible in case of a sudden abandon ship, and ensure all crew know the location and contents.

Keep another empty bag nearby for last minute grabs like food, clothes or mobile phones.

It is a good idea to keep laminated copies of the ship's papers, insurance documents and crew passports permanently in the grab bag.

## Grab Bag Contents

Prioritise grab bag contents based on:

1. Location
2. Protection
3. Food and water
4. Medical

### 1. Location

These items will help improve your rescue, and include: EPIRB, SART, waterproof handheld VHF, handheld GPS, strobe light, cyalume sticks, electronic flares, fog horn.

### 2. Protection

These items will help improve your time in the raft, and include: sun cream, heat or cooling packs, inflatable cushion, fold-down bucket, moist hygiene wipes, diving mask, gaffer tape.

### 3. Food and Water

Extra water (bottles filled to 80% only), extra food rations (non thirst-provoking), graduated water cups for rationing water, no-spill sip cup, fishing kit, collapsible container for collecting water.

### 4. Medical

Prescription medicine, anti-emetics, extra anti seasickness pills and sick bags, inflatable splint, sunburn cream, enema kit.

## Last Minute Grabs

These are items that you will probably need onboard the boat, so aren't convenient to permanently store in a grab bag. They can be 'last minute' items that you collect as you abandon the boat. Keep a spare waterproof grab bag empty for this purpose.

Crew passports, ship's papers, credit cards and money, sat phone, mobile phones, solar charger or power bank, sunglasses, spare lifejackets, spare clothes (including wet weather gear), immersion suits, danbuoy or MOB module, navigation charts, compass, sextant and tables, multi purpose tool, lighter, towels, waterproof notebook and pencils, playing cards.



Grab bag with a list of contents



Reminder list for last minute grabs

## Liferaft Servicing

All liferafts and other inflatable lifesaving equipment need to be serviced by a manufacturer-approved service agent or service centre.

- The liferaft should be within service period for the duration of the Rally.
  - ISO 9650 rafts - every 3 years
  - ISO valise rented rafts - every year
  - ARC Racing Division valise - every year
  - SOLAS rafts - every year
  - ISAF rafts - every year
- Upload a copy of the service certificate to the Members' Area of the website.

If you are planning long distance cruising before or after the Rally, you will need to take this into account when planning your servicing. This may mean getting the raft serviced earlier so it is in date for the whole of your cruise, or finding a service agent on the route.

Check the manufacturer's service network is convenient for your travel plans, and factor-in time for servicing to your cruising plans.

During a service, the raft will be inflated and the fabric and construction checked for corrosion and damage. The gas bottle will be refilled or replaced, and the contents checked and replaced if they are out-of-date. Liferafts that no longer meet the standard will be condemned and will need to be replaced.

If possible, be present when your raft is inspected so you can see what it looks like inflated. You may be able to ask to have some small items added to the pack, such as spectacles, copies of the boat's papers, medication, an EPIRB or electronic flares.



*Ocean Safety liferaft being serviced*

## My Notes

## Man Overboard

A crew member overboard is a serious emergency. You can try to prevent it happening by having clear rules around when and how to clip on.

### Preventing a Man Overboard

The most important way to keep crew safe is to keep them onboard the boat.

This means having agreed procedures as to when crew members must wear a lifejacket/harness and when and how to clip on.

But what if someone forgets to clip on and they go over the side? What if it is the skipper who is in the water? What if you are sailing at maximum speed with the spinnaker up, or at night?

What will you do?

#### 1. Process

The order in which you take the standard steps for a man overboard will depend on the layout of your boat, the composition of the crew and your sail plan:

- Raise the alarm with the whole crew.
- Deploy the danbuoy or lifebuoys to be a visual aid for the casualty and yacht.
- Mark the position - man overboard button on the chartplotter/GPS.
- Deploy crew members to be 'spotters' to maintain visual contact with the casualty.
- Issue a MAYDAY alert.
- Get the boat under control and return to the casualty.
- Prepare and deploy the recovery equipment.

Think about what would work on your boat, and what you could improve. For example, can you mark the position of a man overboard from the helm station?

#### 2. Plan

Talk through the process for man overboard recovery (and other emergencies) with the crew.

Discuss different scenarios.

Record your decisions and agree the process.

#### 3. Practise

Test your plan by practising in harbour and again in open water.

Learn from the practise. Update your plan and your boat rules. Make any changes to the type of equipment you have, how it is stowed or even your choice of sail plan. Record your decisions.

Having the right safety equipment, training and procedures will help to keep your crew safe at sea.

Create a safe sailing environment with the procedures, equipment and training that suit your boat and crew.

**Before starting the Rally, every skipper must sign a safety declaration confirming they have given the crew a comprehensive safety briefing and conducted training drills for man overboard, abandon ship, dismasting, fire, flood, loss of rudder/steering and use of storm sails.**

### My Notes

## Lifejackets

For each crew member

- A lifejacket combined harness with:
  - Whistle
  - Light
  - Yacht name (or owner's name)
  - Retro-reflective tape
  - Crotch strap
  - Spray hood
  - Personal AIS beacon
  - 3-point safety line/tether
  - Spare re-arming kit and gas bottle

The rule when buying a lifejacket is to 'choose one you could sleep in' - if it isn't comfortable, it won't be worn.

There are many different designs and styles of lifejackets, so try lots on until you find one you like. It is preferable if each crew member chooses the design that suits their physique, rather than having matching lifejackets.

The international standard is ISO 12402 and adult lifejackets should be 150N or 275N. Child lifejackets are 100N.

Lifejackets are inflated with CO<sub>2</sub>, either manually or automatically. Automatic inflation is more common, and this will work if the casualty is unconscious.



Comfortable lifejackets get worn. Credit: Ronald Kuijper

## Children

All children need a personal flotation device. Young children weighing up to 20-30kg should have a permanent buoyancy 100N lifejacket which will turn them over so they float face-up. These usually already have retro-reflective tape and a lifting handle, and can be fitted with a water-activated light and a safety line/tether.

Junior inflatable lifejackets for children weighing 20-50kg are available in a wide range of styles, and either come equipped with the same required accessories as an adult lifejacket, or these can be easily retrofitted.

Children with an inflatable lifejacket should have a personal AIS beacon, just like other members of the crew.



Permanent buoyancy lifejacket for a child

## Lifejacket Inflation

### 1. Auto Inflate - water activated

- Uses a water-soluble tablet
- Operates within 5 seconds of immersion
- Modern designs are less commonly activated by accident or in damp environments
- Has a manual pull back-up

### 2. Auto Inflate - water pressure activated

- Operates when submerged in 10cm of water
- Has a manual pull back-up if 10cm depth isn't reached
- Ideal for extremely wet environments

### 3. Manual Pull Inflate

- Operates by pulling a cord
- Full buoyancy in around 5 seconds
- Only works if the casualty can pull the cord

## Lifejacket Accessories

All lifejackets, including children's inflatable lifejackets, must be fitted with the accessories listed on page 20.

Most quality modern lifejackets come with a crotch strap, whistle and retro-reflective tape. Some are available fully equipped with all the accessories, but these are easily bought and fitted as extras.

### Crotch straps

The crotch straps pass between the wearer's legs, attaching to the lifejacket harness at the front and back. When adjusted correctly, the straps improve lifejacket performance and stop the inflated lifejacket from sliding over the casualty's face.

### Spray hood

A man overboard's legs act as a drogue, orientating the casualty face into wind and waves. The spray hood (or face shield) is designed to protect the casualty from inhaling spray and water.

## Personal AIS beacon

A personal AIS beacon allows near-by vessels to locate a casualty using the AIS.

The beacon is fitted inside the lifejacket so that it automatically activates when the lifejacket is inflated; either water activated or by a lanyard connecting the beacon and lifejacket.

There are personal locator beacons that combine AIS and EPIRB technology, making the casualty locatable via AIS by nearby vessels, and to international search and rescue services using the Cospas-Sarsat 406MHz distress frequency and 121.5MHz homing signals.

If you want the additional features of a satellite link to search and rescue services but can't fit a combined AIS-EPIRB to your lifejacket, we suggest that an additional compact 406MHz personal locator beacon be carried.

Video explaining beacons: <https://bit.ly/422p0xg>



Ocean Signal MOB1 AIS beacon fitted inside a lifejacket

## Safety Line and Clipping-On

The safety line or tether will keep the wearer attached to the boat, reducing the chances of going overboard.

A three-point tether has a self-closing hook at each end and one in the middle, or a loop in the middle if the lifejacket has a 'harness release system' or HRS.

The maximum length of the line should not exceed 2m to reduce the potential distance to fall.

With the centre hook (or loop) attached to the lifejacket, the wearer has two self-closing hooks to attach themselves to the boat, making it easier to move around the deck while always being connected to the boat.

Think about how crew can move safely in rough weather from the cabin to the steering positions, winches or sail handling positions on deck.

Crew should be able to clip on before leaving the cabin, then have accessible jackstays or clipping points to get them around the boat while remaining attached at all times.



Clipped on aboard Sisi. Credit: Michael Kremtz

## Lifejacket Maintenance

Look after your lifejacket - your life may depend on it. After use, hang up the lifejacket in a dry locker and tidy the harness, crotch strap and safety line so it is ready to wear again.

Wash off salt with fresh water as this can corrode and degrade fabric and metal parts.

Lifejackets should be serviced annually. Before every passage follow the manufacturer's instructions for a visual check:

- Check outer cover and stitching for damage.
- Check the harness and crotch strap webbing for damage.
- Check buckles and fasteners for damage.
- Clean off salt.
- Clean zippers and lubricate.
- Manually inflate and leave overnight to check for leaks. If you find an air leak, discard the lifejacket as they can't be repaired.
- Check the bladder for abrasion, especially around the bottle, in folds and at the join to the outer cover.
- Check the firing mechanism expiry date and that retainer clips are in place.
- Check the gas bottle and replace if rusty or used. Weigh the bottle and replace if it is lighter than the stamped weight. Ensure the bottle is the right size for the lifejacket and is screwed-in fully.
- Test the light and check the expiry date.
- Check the spray hood for wear. Ensure it is attached to the lifejacket.
- Check the AIS beacon is connected to the lifejacket and run a test according to the manufacturer's instructions.
- Deflate and carefully pack the bladder and accessories back into the outer cover.
- Don't forget to check your safety lines for wear and that the clips are operating correctly.

## Lifejacket Spares

Buy several re-arming kits (gas bottle and firing mechanism) for each design of inflatable lifejacket you have onboard.

These can be difficult to obtain in some cruising destinations, leaving an accidentally activated lifejacket useless.



*Lifejacket inspection*

## Crew Overboard Recovery Equipment

We recommend each yacht has two independent systems of lifebuoys, with a danbuoy and a method of recovering a casualty from the water. Plus a 15-25m floating throwing line accessible in the cockpit.

We also recommend at least one lifebuoy or recovery sling has permanent buoyancy. The others, including the danbuoy, can be inflatable.

Using the images below, you may choose one option from System 1 and one option from System 2.

Please read the Safety Equipment Requirements and the checklist on page 5 for full details. If you are unsure, contact us for advice.

### System 1 - Choose Option A or Option B

#### Option A

A lifebuoy (inflatable or permanent buoyancy) with a whistle, light, retro-reflective tape, drogue and boat name, with a danbuoy (pole or inflatable) attached.



Lifebuoy & danbuoy - L: inflatable, R: permanent buoyancy



#### Option B

An inflatable MOB recovery module (mini liferaft) incorporating the elements in Option A.



A Jon Buoy MOB module mounted on the aft rail

### System 2 - Choose Option C or Option D

#### Option C

A lifebuoy (inflatable or permanent buoyancy) with a whistle, light, retro-reflective tape, drogue and boat name. Plus a method to recover someone from the water - ladder, block and tackle, parbuckle etc.



Permanent buoyancy lifebuoy

#### Option D

A recovery sling for hoisting a casualty onboard, with min 90N buoyancy, floating line, light and retro-reflective tape.



A recovery sling mounted on the aft rail

# Safety Onboard Rally Handbook



## Indicating a Casualty

It is important to know where the casualty is, and to provide them with equipment to help them float. Brightly coloured equipment, flashing lights, retro-reflective tape and a tall danbuoy will help the crew to return to the casualty's location.



Rescue module. Credit: Yachting Monthly/Richard Langdon

## Danbuoy

The danbuoy is a pole and flag marker. A light that is activated as the unit is thrown should be installed or retro-fitted. The danbuoy can be inflatable or a traditional pole, but it should be attached to a lifebuoy.

An inflatable danbuoy with an integrated lifering or straps should still be attached to a separate lifebuoy.

## Lifebuoy

The lifebuoy is a personal floatation device thrown to the casualty. It can be a horseshoe or ring, and either inflatable or permanent buoyancy.

It should be marked with the boat name, and fitted with retro-reflective tape, whistle, drogue and a self-igniting light.

At least one of the lifebuoys (or recovery sling) should have permanent buoyancy - eg foam.

## MOB Module

An inflatable MOB module is like a 'mini liferaft' for one person, with a built-in danbuoy, light, ballast pockets, straps and handholds plus a lifting point to hoist the module onboard.

These are usually mounted in a hard case on the stern or aft rail, and activated by pulling a lever. The module inflates and floats free of the boat, and the casualty swims to it and climbs aboard.

MOB modules should be professionally serviced in accordance with the manufacturer's instructions, and in-date for the duration of the rally.

## Recovering a Casualty

Many crews practise returning to a casualty in the water, but far fewer consider the practicalities of getting the casualty back onboard.

Once you are back in contact with your casualty, it is important to securely attach them to the yacht while you prepare the recovery.

Practise getting a casualty back onboard, even if you do it at the dock. What if your heaviest crew member is the casualty?

The method and equipment used will depend on many factors, including:

- The mobility of the casualty and ability to help themselves.
- The height of the deck above water.
- The size and strength of the crew onboard.
- Weather conditions and sea state.

Physically dragging an adult from the water and up onto deck is hard work, and probably almost impossible on a boat with high topsides or with a weak crew.

You will need to use equipment to get them back onboard.

## Throwing line

The 15-25m floating throwing line can be used to make contact with the casualty, to secure them to the yacht and to pull them closer.

## Block and tackle

Simply attaching a casualty to a halyard and winching them up is hard work. A block and tackle system (also called a handy billy) will provide the mechanical advantage to make the task easier.

Attach the top block to a halyard or to the end of the boom (if using the boom, raise it up and brace it to stop it swinging) and the other end to the casualty, either connecting to a lifting strop or by making loops.

The rope tail (or fall) can be pulled by hand as you would the mainsheet, or led to a winch for additional power.

## MOB module

As well as being a 'mini liferaft' for a conscious casualty, the module has a lifting strop so the entire unit can be hoisted onboard, providing additional protection to the casualty.

## Recovery sling

A rescue or recovery sling is basically an inflatable or buoyant loop attached to a long floating line that is attached to the boat.

The boat circles the casualty trailing the sling until it comes within reach. Once the casualty is in the sling, they can be pulled close to the boat and a halyard or block and tackle system attached to the lifting strop.



*Lifting a casualty on a recovery sling*

## Rescue ladder

Be aware using the swim ladder on the transom in anything but a flat calm conditions is difficult. Rescue ladders can be stored on the side rails and deployed by the casualty in the water, or from on deck. A ladder with rigid rungs is easier to use than a rope ladder.

## Parbuckle

A parbuckle is a triangular sheet or grid designed to roll a casualty up the side of the boat. The two ends of the short side are attached to the side deck and the third end to a halyard plus block and tackle.

The casualty lies in the loop of fabric, and as the halyard is raised, they are rolled up.

Commercially available parbuckles are strengthened and have grab handles and mesh sections so the product sinks below the casualty, making boarding easier. In an emergency it might be possible to use a storm jib.



*Parbuckle. Credit: Yachting Monthly/Richard Langdon*

## Dinghy

An unconscious casualty will not be able to help themselves, and you may need to consider launching the dinghy or even the liferaft with a rescuer onboard to reach and recover the casualty.

## My Notes

## Safety Equipment

The full list of mandatory and recommended safety equipment is listed on the checklist on pages 5-11. These are the minimum levels of equipment expected of a well-prepared boat and crew.

We do not require you to use any specific manufacturer or brand of equipment. Choose what will best protect you, your boat and crew.

Don't treat rally preparation as a 'tick box exercise', but take the opportunity to learn about the safety equipment, how to use it, store it and maintain it.

### EPIRB



*EPIRB on an ARC yacht*

We recommend at least one ship's EPIRB operating on 406MHz and 121.5MHz or 406MHz and AIS is carried. You may also choose to have a second EPIRB in the grab bag.

We advise that personal locator beacons carried by the crew do not replace the need for a boat EPIRB.

The EPIRB should be correctly registered with your home authority - contact your local coastguard or the EPIRB manufacturer for advice. More details: [bit.ly/4gWrKRD](http://bit.ly/4gWrKRD)

Upload the EPIRB details and unique hex ID (a 15 digital alphanumeric code) to the Members Area of the website.

When activated, either automatically or manually the 406MHz signal is picked up by the Cospas-Sarsat satellite system and forwarded to the search and rescue authorities.

The 121.5MHz signal is used by the rescue authorities to pinpoint the distress location. The AIS displays an alert to all nearby vessels with AIS.

## Pumps

We recommend boats have three pump systems. In addition, we advise multihulls are able to pump water from each hull. See page 8 for details.



*Pump fitted to a spare washboard on a Hallberg-Rassy*

### Pump 1: Manual pump on deck

If a pump isn't permanently installed, then an option is to install on a spare washboard. The pump can discharge into the cockpit or over the side.

Removable handles can be secured with a lanyard.

### Pump 2: Below deck

Manual or electrical pump operable from below.

### Pump 3: Emergency pump

High capacity electric or engine-driven pump (or combination of pumps) with a minimum capacity of 200 litres per minute with sufficient hose to discharge from any compartment over the side or into the cockpit.



*Emergency electrical pump with 233 litre/minute capacity*

## High Powered Search Light

Used for search and rescue and collision warning, powered by the ship's batteries.

A combination of two rechargeable searchlights will be considered if they can operate through a 12 hour tropical night.

## Distress Flares

In addition to flares packed in the liferaft or in >24 hour packs, we recommend:

- 4 red hand flares (2 can be eVDs)
- 2 buoyant orange smoke flares

Most yachts will choose to carry a range of flares including parachute flares. Modern electronic flares (eVDs) can be a safer alternative to pyrotechnics.

Flares should be in date for the duration of the Rally, and not older than four years from the date of manufacture.

Flares should be stored in a waterproof container with goggles and gloves. DIY goggles and tough leather gardening gloves are ideal.

## Passive Radar Reflector

All boats should be visible to shipping, even if there is a power failure onboard. A passive radar reflector requires no power and can be permanently mounted on the mast, or hoisted 5m into the rigging when needed.

Fold-flat octahedral reflectors are cheap and easy to stow. If circular, the minimum diameter should be 300mm, and if square, the minimum diagonal dimension should be 400mm.

Inflatable reflectors are also easy to stow, and should have a documented minimum radar cross section of 10m<sup>2</sup>.



Radar reflectors - L: inflatable & R: octahedral

## Emergency Tiller



Emergency tiller on a Beneteau Oceanis 46

If the wheel steering system breaks and can't be fixed, then the boat will need an emergency tiller that fits to the rudder stock.

It is important to test the emergency tiller system on your boat. Some will fit at deck level, others in the aft cabin or in a locker. The emergency tiller will usually require lines to be taken to the winches for greater purchase.

If a boat has twin rudders and twin wheels and the two steering systems can be disconnected, then one could provide steerage if the other rudder or wheel was disabled.

## Emergency Steering

Steering problems caused by worn steering systems combined with large waves are not uncommon. Often these are easily fixed, but there should be a proven method of emergency steering if the rudder is disabled.

A windvane steering system that has an independent rudder (like a Hydrovane) is ideal.

An alternative is to tow a drogue on a bridle with control lines taken to the two primary winches. By winding the winches to move the drogue, the boat can be steered in a basic way.

Trying to rig a rudder using floorboards and the spinnaker pole will be difficult, but not impossible with the right fixings.

Whatever system you choose, this should be tested so you can deploy it in an emergency.

## Medical

The skipper has a legal duty of care for the crew, and is ultimately accountable for their health and welfare.

Even if you have a trained doctor or nurse onboard, it is important that all crew members have at least basic at-sea first aid training and are familiar with the location and contents of the first aid equipment and medicine onboard. Details of training courses are covered in section 3 - People Preparations.

A good book, such as:

- Ship Captain's Medical Guide  
ISBN 9780115541490
- Skipper's Medical Emergency Handbook  
ISBN 9781399413091

These books will help to support training with step-by-step diagnostics and treatment with clear photographs and diagrams.

## Medical Support at Sea

All sailors can access free advice from a doctor via the global maritime telemedical advice service (TMAS), provided by each country's MRCC coastguard service. The first call is made to the MRCC, who will ask for more details before connecting you to a TMAS doctor.

Contact the MRCC by SSB or VHF Ch 16 or DSC, or by telephone using a sat phone. Some MRCCs also have WhatsApp.

There are private companies who provide at-sea support services for superyachts and recreational sailors. You will pay a subscription fee for this service. As part of the service, some companies provide a comprehensive medical kit and training as well as advice by phone or video.



First aid kit bag on Seren Wen.



Colour-coded medical supplies on Blue Pearl. Credit: PBO

## Medical Kits

You can buy modular medical kits for cruising, containing enough equipment and medicine to be self-sufficient. These kits are available from companies like [msos.org.uk](https://msos.org.uk) and [sailpartner.de](https://sailpartner.de) and others. Alternatively, you can start with a standard medical kit, and add the equipment and medicine you need.

Buying or creating a modular kit, grouping medicines by function in clearly marked colour-coded containers will help a crew member to locate the right items in an emergency.

In addition to the main medical kit, there should be a small 'day bag' for use on deck and taking ashore. That way the main kit always has the full contents available for an emergency.

If you are planning remote cruising, it is worth compiling a shore-based emergency kit for local medics to use in case you are unsure of local hygiene. This should include a sterile syringes, intravenous cannula and suture set.

## Buying Medicines

The skipper has authority to purchase drugs for the boat. You will need to have the boat registration certificate and your passport. You may be able to do this at your local pharmacy or via your personal doctor, but is also possible via an online supplier like [anppharma.co.uk](https://anppharma.co.uk).

Along the ARC Baltic route, most locations will have a pharmacy. Consult the local information section of the handbook for more details.

## Suggested Medical Kit Contents

### First Aid (day bag suggestion)

- Simple wound treatment - plasters etc
- Trauma dressings
- Analgesics
- Anti-seasickness
- Burns treatment
- Emergency splints

### Analgesics

- Strong analgesics
- Ant-seasickness injections
- Local anaesthetic gel

### Skin Repair

- Sutures
- Staples
- Wound adhesive
- Cleaning fluid
- Forceps etc

### Eyes/Mouth/Skin

- Eye and ear meds
- Dental kit
- Skin creams
- Anti-fungals
- Allergy/Emergency
- Adrenaline
- Steroids
- Antihistamines
- Sedatives

### Antibiotics

- Broad spectrum penicillin antibiotics
- Broad spectrum non-penicillin antibiotics
- Injectable and oral versions

### Gut/Seasickness

- Anti-seasickness
- Anti-diarrhoeal
- Anti-constipation
- Oral rehydration meds
- Indigestion meds

### Dressings/Splints

- Compression dressings
- Wound dressings
- Casting tape
- Splints
- Neck splints
- Adhesive strapping
- Ant-septic dressings

### Equipment

- Alcohol-free moist wipes
- Sterile swabs
- Resuscitation face shield
- Oral airway adjuncts
- Eye wash 0.9% sterile saline solution
- Non latex gloves
- Scissors, tweezers, safety pins, forceps
- Surgical tape
- Cooling/warming packs
- Blood pressure monitor
- Thermometer
- Urine testing kit
- Blood glucose testing kit
- Catheters
- Medical handbook

# Safety Onboard Rally Handbook



## Resources

Useful books, manufacturers and online resources.

### Books

#### Ship Captain's Medical Guide

by Maritime Coastguard Agency

ISBN 9780115541490

#### Skipper's Medical Emergency Handbook

by Dr Spike Briggs

ISBN 9781399413091

#### Doctor On Board

by Jurgen Hauert

ISBN 9781408112724

#### RYA Sea Survival Handbook G43

ISBN 9781906435967

#### The Liferaft Survival Guide

by Frances & Michael Howorth

ISBN 9781399401500

### Video

#### World Cruising Club Videos

Safety Collection: <https://bit.ly/3PpLEZ6>

Includes medical, liferaft and safety inspection videos

#### Ocean Safety Videos

PLBs explained: <https://bit.ly/422p0xg>

How to register an EPIRB: <https://bit.ly/4gWrKRD>

Lifejackets explained: <https://bit.ly/3DDq54o>

Ocean ISO liferaft: <https://bit.ly/3BXHswj>

#### Ikaros Pyrotechnic Videos

Buoyant smoke: <https://bit.ly/3W5yCDH>

Red Handheld: <https://bit.ly/3W73zaA>

### Articles

#### Yachting Monthly: man overboard lifting

<https://www.yachtingmonthly.com/gear/best-man-overboard-lifting-device-84397>

### Manufacturers

#### Liferafts & Safety Equipment

**Ocean Safety** [oceansafety.com](https://oceansafety.com)

**Plastimo** [plastimo-pro.com](https://plastimo-pro.com)

**Seago** [seagogroup.com](https://seagogroup.com)

**Crewsaver** [crewsaver.com](https://crewsaver.com)

**Lalizas** [lalizas.com](https://lalizas.com)

**Viking** [viking-life.com](https://viking-life.com)

**Revere** [reversurvival.com](https://reversurvival.com)

**Winslow** [winslowliferaft.com](https://winslowliferaft.com)

#### EPIRBs, PLBs & Pyrotechnics

**Ocean Signal** [oceansignal.com](https://oceansignal.com)

**ACR** [acrartex.com](https://acrartex.com)

**McMurdo & Kannad** [seasofsolutions.com](https://seasofsolutions.com)

**Ikaros** [ikarossignals.com](https://ikarossignals.com)

## My Notes



## **B** BOAT PREPARATIONS

This chapter covers the improvements and changes that you might want to make to your boat in advance of the Rally. Ensuring your boat is well prepared is crucial for safety reasons, but it will also add to your overall enjoyment of the Rally.

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## Key Benefits of Admiral Marine's Yacht Insurance

- Cover for piracy, acts of terrorism & associated risks
- No excess for third party claims
- No excess if you are struck by another vessel underway when moored
- Free cover for YB tracking devices
- World Cruising Club discount
- A contribution towards accommodation costs if the yacht is rendered uninhabitable
- One free aloft rig inspection in Las Palmas for ARC & ARC Plus participants\*

### **Additional World ARC benefits:**

- 15 month policy if required
- Search and rescue cover
- Automatic increase in third party liability limit to AUD\$10,000,000 whilst in Australian waters
- One free aloft rig inspection in Las Palmas, Rodney Bay or South Africa\*

## Get in Touch

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[www.admiralyacht.com](http://www.admiralyacht.com)

\*Free aloft rig inspection available to clients insured directly with Admiral Marine only.

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## Planning for Cruising

ARC Baltic is not an ocean Rally, however checking over your boat is a crucial element of your Rally preparations. Sailing for longer distances may place extra strain on certain areas of your boat so it is important to address any issues before the start of the Rally.

**Rigging:** Your insurance company may require replacement of spars or standing rigging older than 10 years. Whatever the age of the rig, get it checked professionally.

**Sails:** Are they up to a long passage, or are they well-worn and need replacement?

Do you have downwind sails for tradewind sailing?

Strong wind or storm sails and a good reefing system?

**Steering system:** Check the rudder bearings and steering cables/chain for wear.

Hand steering, autopilot and/or windvane?

Test the emergency tiller and plan an emergency steering system.

**Propeller:** Check the stern gland or saildrive gaiter.

Consider fitting a rope cutter.

**Power:** Do a power audit - is your battery capacity adequate?

How will you generate power on passage and at anchor?

**Water:** Is your tank capacity adequate?

Do you want a water maker?

Consider manual pumps in the galley and head to save electricity and water.

Consider a salt water pump in the galley.

**Communications:** Set-up and test Starlink, satcoms, VHF and SSB systems.

**Back-ups:** Consider the worst-case scenario.

Manual overrides for electronic/hydraulic systems in case of power failure.

Duplicate filters and pumps.

Comprehensive spare parts and tools.

**Safety:** Do you need extra safety equipment to meet rally requirements?

Create an equipment stowing plan.

**Seacocks:**

Check seacocks and through hull fittings for corrosion.

Fit a bung to each.



**Anchor:** Do you have suitable anchors, chain length and warp for your planning cruising?

Is your windlass serviced?

## Boat Checks



*Don't forget to check aloft*

Based on the experience of many hundreds of yacht deliveries worldwide, professional skippers adhere to a simple, systematic checking system that can easily be applied by cruising sailors.

Use this list from PYD to 'sense check' your boat and equipment.

### On Deck

Start at the bow and work aft, checking the following items thoroughly:

#### Anchoring System

- **Bow rollers** rotate freely, rubber not damaged or split. Stem plate is fitted securely to bow, with no cracks or signs of movement. Anchor lock pin is not bent and locks correctly in place, preventing forward motion of anchor on bow roller. Pin must be secured to the stem plate by a captive chain or lanyard.
- **Anchor** is of correct size for the boat and serviceable – not bent or cracked. Anti-kink rotating shackle at head fitted securely to chain and properly seized with wire. Anchor rode (chain/nylon) is depth marked and properly secured to hard fitting in the chain locker – pull it out and check! Ensure that the drains in chain locker are free of rubbish, so you're not carrying an extra ton of water at the bow in a seaway (it happens all too often). Check the chain locker bulkhead is watertight and not cracked at hull joints.
- Check function of **anchor windlass** in both directions – does the chain actually fit the windlass? Are the deck switches or hand-held control box serviceable and water tight? Remember to turn the circuit breaker off when not in use – the windlass can remove fingers in a moment if carelessly left active.

#### Hardware

- **Pulpit rails** are securely fitted to the bow and not bent or weakened.
- All **deck cleats** and **fairleads** in good order.
- Check that the bases of all **stanchions** are securely pinned and stanchions themselves are not bent and weakened. Ensure that all **guardrails/safety lines** are properly secured at both ends, bearing in mind that the aft end usually terminates in a lashing. Any access points should be closed with the correct folding clips at all levels.
- All **deck hatches** and **port lights** must close tightly against their seals and be lockable from within. Carry out a water integrity test with a direct hose – are you prepared to put up with wet upholstery and bedding on a long passage? If not, sort out that faulty seal now!
- Check that deck **dorade vents** are screwed onto their mounts properly and you have blanking caps available onboard to seal them, if necessary.
- Check all **water** and **fuel tank filler caps** are fitted with a captive chain and achieve a tight seal when screwed down.
- Clear out unnecessary items from the deck **lockers** to make more space – do you really need 3 deck brushes?

#### Foresails

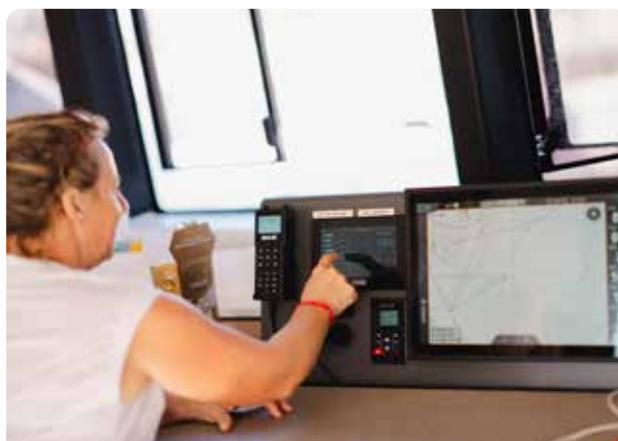
- Examine the **roller furling drum** for salt corrosion and check it operates correctly in unfurling and furling the foresail. Check the furling line is attached securely to the drum and not chafed at any point in its run.
- Check the **foresail** tack is fitted securely to the furler drum and any webbing straps are sound and not worn or likely to fail. Unfurl the sail and check condition of luff, leach and foot, followed by tack, head and clew, then the leach tension line and clamp. Are the tell-tales all there and visible from the cockpit? Is the UV sacrificial strip in good order – be honest, does it need to be replaced?
- Are the **foresail sheets** properly attached, free of chafe and long enough for downwind work? If stiffened by age and salt, do they need to be washed, or should they be replaced?

## Mast and Winches

- At the **mast**, check function and security of all fittings, winches, boom gooseneck and reefing controls. All rollers within the boom should spin freely and all reefing lines must run correctly. Check the mast gaiter is watertight and not damaged and all electrical cables have watertight grommets where they go through the deck.
- Check all **halyards** and the topping lift are correctly routed to minimise friction and chafe. Are the lines in good condition and attached securely to their sails or the boom, as appropriate? Where led aft to the cockpit, are the lines arranged logically on their brakes and labelled clearly?
- Examine the **boom vang/kicker** tackle for function and security. If the vang is hydraulic, check there is no fluid leakage from the seal – does it need to be replaced? Check the boom condition over its whole length and security of the topping lift. Check all lazy jacks and mainsail stack pack are correctly set up and all lines are free of chafe.
- Hoist or unfurl the **mainsail** – check condition of luff, leach and foot, followed by tack, head and clew, then the leach tension line and clamp. Check all battens are fitted, not cracked or broken and correctly secured in their pockets. Are there any spare battens aboard? Check reefing system functions as it should, without undue effort in operation. If it's stiff in operation, track down the source of friction and try to adjust the lead by moving the turning blocks, if possible. Remember: friction = chafe = gear failure!
- Check the **backstay** adjustment system.
- Check the function of all **winches** and ensure their caps are secure. Check power winches work under power and manually. Consider the wisdom of turning the winch power supply off at night, to avoid inadvertent winding on the wrong winch and ripping a sail to shreds as a result. Again, it happens all too often, so please be warned.
- Bring all other **sails** on deck, take out of their bags and check them for condition, cleanliness, correct fittings (blocks, sheets etc) then restow ready for use. This applies to all sails from cruising chutes and spinnakers down to the smallest trysail.

## Instruments & Equipment

- Switch on all **cockpit instruments** and confirm they function correctly in all modes, particularly the log, depth and wind speed/direction readouts. Do all the instrument lights work and dim as they should?
- Check the main **steering compass** carefully for working condition: is the glass clear and free of scratches and no air bubbles within? Does the light work? Check for any gross error with a hand bearing compass. Has the compass been swung, and is there such a thing as a deviation card?
- Run the **engine** up to working temperature – it should start easily and not belch black smoke, other than a blue wisp on start up. Is coolant water egressing steadily from the exhaust (unless a dry exhaust system is fitted)? Does the gearbox engage smoothly into forward and reverse without a jarring clunk? Does the temperature gauge and rev counter both function correctly? Does the decompression toggle (or other engine kill switch) stop the engine without over-run?
- Is the **steering wheel** secure on its spindle, without excessive play? Do you know the number of turns lock-to-lock and is the central position marked by a lashing on the wheel? Does the wheel lock or clamp work when required and does the autopilot engage and disengage instantly?
- Check all GPS sensors, **antennas** and other communication equipment are secure.
- Check that bow and stern **navigation lights** function correctly and are secure and not obscured by a dinghy or other equipment. Check the masthead light and steaming lights and replace any bulbs while still moored up. Check there are no obviously corroded wires or terminals – worth a quick spray with WD40. Lenses should be clear and free of cracks.



Checking electronics

## Safety Equipment

- Use the safety equipment checklist on pages 5-11 to ensure the boat has the right equipment.
- Check the **liferaft** is secure in the cradle or mount and that the painter is secure to a strong point on deck. If fitted, check the expiry date of hydrostatic release units (HRU).
- Check all **man overboard recovery systems** are correctly fitted and serviceable.
- Ensure for safety of the crew that port and starboard **jackstays/jacklines** are fitted that run to the extremities of the yacht, fore and aft. Replace any jackstay that looks perished or UV degraded and replace their terminal fittings if in any doubt at all – it's your life and others that rely on them.

## Below Decks

Again, start at the bow and work aft, checking the following items thoroughly:

- No obvious **leaks** from the chain locker bulkhead or deck hatches/port lights.
- All **seacocks** are identified and operate freely. A tapered softwood bung/plug should be attached close to each seacock for use in sealing the hole in an emergency
- Lift the **speed log** and check the impeller is clean, and ensure it spins freely. Re-fit the log and check that the blank is secured nearby.
- Check the **depth gauge** transponder is fitted securely and all cables are secure and free from corrosion.
- Lift the **floorboards** and check condition of all bilges – are the limber holes clear, preferably with a through chain fitted for clearing debris (the inevitable match sticks and sweet wrappers)?
- Does the **toilet** pump operate correctly and flush the bowl without back flow? Do the crew know how to use it?
- Check that all **fire extinguishers** are in-date and of the correct type for their application. A fire blanket should also be mounted close to the cooker in the galley area.
- Check the integrity of the **gas** supply piping from cylinder to cooker and that all solenoids and cut-offs function correctly. Ensure the crew know the correct sequence for switching the stove on and off, so gas is burnt off and not left in the pipes to leak into the bilges to possibly explode.

- Check all **navigation instruments** at the chart table are operating correctly and the main chart plotter has the correct cartridge and the passage waypoints are entered in advance and checked. While alongside, check that the chart plotter shows the exact position on the berth as a confidence measure. Do you have all the necessary electronic charts, paper charts and pilot books for the whole passage? If radar is fitted, does it display correctly on the plotter and overlay as necessary? Check the AIS settings are appropriate.
- Do one **VHF radio** check and then accept that it works. Check that the MOB function works on the radio. Is your VHF callsign clearly displayed on a label for all users to see? Is there a script for the MAYDAY message readily available, if required?
- Check the **engine** and its systems thoroughly. Are all oil and fluid levels correct and clean? Is there sufficient spare oil, hydraulic fluid, grease etc? Are the spare water pump impellers, belts, fuses, fuel and oil filters correct for the engine type?
- Check the engine and domestic **batteries** are stowed securely and terminals are greased and not corroded. If required, ensure you have a supply of distilled water for topping up the batteries. Do they hold a healthy charge or are they tired and need replacing (see page 51).

No check list can be exhaustive - all boats are different but the above should provide a good basis to build upon.

A professional delivery skipper will take a full day to work through this sequence of checks, so it will probably take a full weekend for a private owner and helpers.

*Prepared with assistance from Professional Yacht Deliveries*  
[pydww.co.uk](http://pydww.co.uk)



Pre-Rally engine check

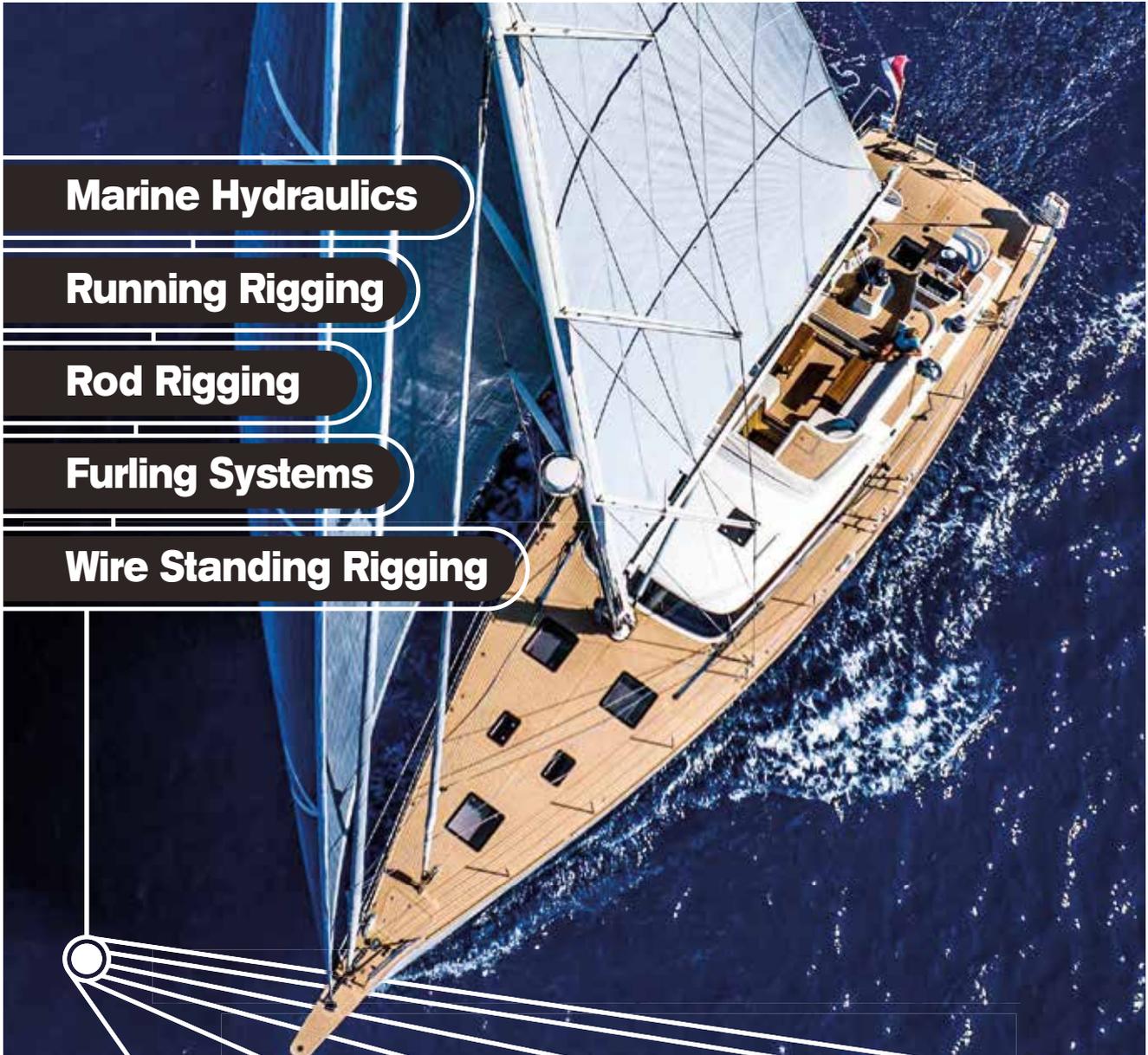
## Rigging Record

Survey your rig and record all elements. Repair or replace in collaboration with your insurer.

		Comments - diameter, length, type, make/brand, age etc	
1	Mast Section	Mast Make:	
2	Head Box		
3	Heel		
4	Mainsail Track		
5	Mainsail Gate		
6	Winches/Pads	Number of:-	On Deck:                      On Mast:
7	Cleats/Clutches		
8	Halyard Exits		
9	Spreader Brackets		
10	Spreader Tips		
11	Kicker/Vang Brackets		
12	Gooseneck		
13	Backing Plates		
14	Terminals		
15	Sheaves		
16	Spinnaker Blocks		
17	Spinnaker Pole	Make:	
18	Masthead and Anchor Light		
19	Steaming Light		
20	Deck Light		
21	Antennas - VHF, AIS, GPS, satcoms etc		
22	Radar		
23	Radar Reflector		
24	Anemometer		
25	Foresail Furling System	Rope Size:	
26	Main Reefing/Furling System	Rope Size:	Make:
27	Main Boom	Make:	
28	Stemhead Fitting		
29	Forestay		
30	Inner Forestay/Baby Stay		
31	Cap Shrouds		
32	Intermediate Shrouds		
33	Forward Lower		
34	Aft Lower		
35	Backstay System		
36	Main Halyard		
37	Foresail Halyard(s)		
38	Topping Lift		
39	Spinnaker Halyard(s)		
40	Pole Uphaul		
41	Pole Downhaul		
42	Vang/Kicker System		
43	Reefing Lines	Number:	
44	Main Outhaul		
45	Guard Wire/Lifelines		
46	Mainsheet System		
47	Foresail Sheets		
48	Spinnaker Sheets/Guys		



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## Small Improvements

The extra equipment and improvements needed to make long distance cruising comfortable, safe and practical need not be expensive. Before you consider the big ticket items, think about the small changes you could make.

These are some suggestions from ARC sailors:

- Add more handholds in open areas for safety.
- Fit red night vision lights in the main cabins.
- Store a torch, white flare and a knife just inside the companionway for emergencies.
- Fit locking latches on all cupboard doors.
- Strong, deep lee cloths on all bunks.
- Non-slip matting for tables and in cupboards.

## In the Galley

- Make a chopping board that fits the sink.
- Hanging nets are good for keeping hard fruits.
- Fit a crash bar across the front of the stove.
- Fit pot holders to the gas hob burners.
- Gadgets like a pressure cooker, bread maker, coffee machine, air fryer or Remoska make life easier for the cook!
- Portable induction hobs are an option for gas-free galleys.
- A washer-drier is a popular option for larger boats, but small manual washers are available.

## On Deck

- Radar is useful for picking up squalls at night.
- Pole for poling-out the foresail.
- Bottle holders in the cockpit.



Galley gadgets on Sturdee. Credit Drafn Ragnarsdottir

## Cruising Essentials

- For warm days ventilation is vital - windscoops, 12V fans or air conditioning.
- 100m + anchor chain will give you more options.
- A deck shower is perfect after swimming.
- The dinghy needs to be tough with a decent sized outboard. Hard-bottomed or inflatable keel dinghies are best.
- Bimini or sun awnings that provide shade under sail or at anchor.
- Selection of hose connectors and a long hose.
- Selection of shore power adapters.
- Bean bag seats for the cockpit or deck.
- Walkie-talkie radios or headsets for ship-to-shore comms or less shouting when anchoring.

## Exploring

- Paddleboards and kayaks for fun exploring.
- Folding bicycles or scooters.
- Small folding cart for shopping trips.

## Security

- Padlock the outboard to the dinghy.
- Padlock on a long chain or wire for securing the dinghy to the dock when ashore.
- Motion detectors connected to noisy alarm monitored via a mobile app is a good deterrent.
- Hide money in secure locations onboard.
- Use a decoy wallet with expired cards and a small amount of cash.



Fruit stowage in nets

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## Spare Parts

Most boat systems have components with a 'life' or that are designed to wear down, corrode or break. Smaller parts may self-sacrifice in the name of saving the whole. These are generally the 'serviceable' parts.

### There are three main categories of spare parts:

1. Safety: items that allow the boat to float and go in the direction you require - parts for the maintenance and repair of sails, engines and bilge pumps.
2. Comfort: spares for the maintenance of cooking equipment, fresh water pumps and toilets.
3. Luxury: parts of non-essential items that make for a more pleasant cruise, such as fishing tackle spares.

## What Spares to Carry

The choice and quantity of spares carried can make the difference between a good trip and a bad one.

Many spares will fall into more than one of the three categories above. You will need to decide necessity over cost - a spare autopilot or just a spare drive unit?

At sea, it is easier (and more pleasant) to replace an entire toilet pump for example than to try to strip the system down and make repairs. Put the broken unit in a sealed bag and wait until you are ashore to tackle the unpleasant and fiddly task.

Some boats will carry thousands of dollars of spares. If you have the budget and space for this investment, then you will be more or less self-sufficient. It's worth remembering that in more remote areas an engineer may not have the spares or services kits in stock, and you'll need to draw on your supplies to get work done. For details about what boat services are available at each ARC Baltic destination, view the Local Information section of this handbook.

## Essential Spares

### Personal Safety Equipment

- Spare gas cylinders and rearming kits for inflatable lifejackets and inflatable lifebuoys/danbuoys.
- One complete spare lifejacket.

### Pumps

- Bilge: diaphragms, complete pump.
- Fresh water: complete pump, plus service kit.
- Toilet: complete pump, plus service kit.

## Sails and Rig

- Sail battens and batten ends.
- Two large snatch blocks and two large snap shackles. Spare shackles for the mainsheet and vang tackle. Assorted soft shackles.
- Spare ropes of various length and type for use as sheets, halyards, mooring lines.
- Sail repair: sticky polyester sheet, three rolls spinnaker and sail tape, needles with waxed thread, whipping twine and a sailmaker's palm.
- Sta-lok emergency rigging kit.
- Bulldog (cable) grips.
- Lengths of rigging wire for rig and steering cables.
- Split pins, cotter pins.

## Engine

- Consumables: impellers, fan belts, anodes, filters (air, oil and fuel). Service kits.
- Oil enough for two full oil changes for all engines and generators.
- Gearbox oil.
- Hydraulic fluid.
- Diesel biocide.

## Deck Equipment

- Winch servicing kits for sheet/halyard winches and anchor windlass with extra pawls and springs.
- Winch grease, WD40, dry lubricants (PTFE).
- Spare handles for winches and windlass.
- Spare handles for fuels and water tank caps.

## Electrical and Electronic Equipment

- Watermaker: service kit, chemicals and oil.
- Autopilot: drive, motors.
- Bulbs/lamps for incandescent and LED lights.
- Fuses.
- Lengths of electrical wire, plus connectors.
- Batteries for handheld equipment.
- Charging leads.

## General

- Gas: spare regulator and 1m gas hose.
- Hose clips, nuts/bolts, washers, screws, contact and epoxy glue, gasket glue, tubes of sealants, gaffer tape, PTFE tape, self amalgamating tape, zip ties.
- Fibreglass repair kit with fibre matting, resin, hardener and mixing pots.

## Tools

A comprehensive tool kit is an essential component of your safety equipment.

### Recommended Tools

- Spanners - ring and open. Various sizes in metric and imperial sets.
- Spanners - adjustable. Preferably large and small.
- Socket set.
- Screwdrivers - flat, cross and star heads in various sizes.
- Mole grips.
- Pliers - short and long nose.
- Allen keys (hex wrenches) - various sizes.
- Hammer.
- Pop rivet gun with rivets.
- Drill and a selection of wood and metal bits.
- Insulated electrical screwdriver.
- Electrical multimeter or continuity tester.
- Electrical connector crimp tool.
- Cable snips (side cutter).
- Soldering iron.
- Battery powered angle grinder.
- Hacksaw and blades.
- Scissors.
- Craft knife with spare blades.
- Knife for cutting dyneema ropes.
- Impeller puller tool or angled pliers.
- Hot knife for cutting rope.
- Sail repair needles and sailmaker's palm.
- Splicing tools - needles, fids, whipping twine, sheath or heat shrink.

Battery operated electrical tools are more useful - buy extra batteries and charging docks.



*Winch Servicing*

## Steering Systems

Sustained periods of sailing can put huge strain on the steering system. Day after day of strong winds, squalls and waves can be more than a production boat is designed for.

On long passages like the ARC, damage to steering systems is relatively common, whether a problem with the rudder bearings, steering cable snapping or an autopilot malfunction. This might lead to the boat being unable to manoeuvre properly, having to hand steer or even flooding if the rudder drops or damages the aperture.

It is very important to carefully check the entire steering system - the rudder itself, the bearings, steering quadrant, cables/chains (or hydraulics) and helm, plus the autopilot (if fitted). Use a marine surveyor if necessary.

Most boats will use some form of self-steering system at least some of the time when sailing.

## Electronic Autopilots



*Autopilot at work onboard Edenj*

Autopilot technology has improved a lot in the last ten years, so it might be worth considering upgrading to a newer model which will operate more efficiently.

Most boats will have a hydraulic or linear drive attached to the rudder quadrant. Drive units are the most common cause of problems while sailing long distances, often because the loads are too high. Some skippers choose to install a larger drive or pump, or even duplicate the drives, (one as a push, the other as a pull).

Talk to an autopilot specialist for advice, ensure you read the manuals and understand how to adjust and maintain the pilot and take time to set-up both the system and the sails.

## Windvane Steering



*Hydrovane on Oyster 37 Sestina. Credit Tim Wright*

Requiring no electrical input, windvane systems are an attractive option for long-term cruisers.

The mechanical vane acts on a rudder (either the boat's rudder, or an independent rudder) to steer the boat to the wind, rather than to a compass course.

A system like Hydrovane with an independent rudder provides an alternative if the boat's rudder is damaged. A Hydrovane can be connected to a tiller pilot in light winds or when motoring to provide autopilot self steering with less power consumption.

### Self-Steering Tips

- Trim the sails to help the boat sail efficiently.
- Reduce sail at night.
- Hand steer through squalls.
- Service autopilots before departure.
- Carry spare units, manuals and suitable tools.
- Hand steering is a great skill to have, and can be great fun!

## What Goes Wrong

Every year, on the ARC boats experience problems ranging from the frustrating to the life-endangering. Many of these problems can be prevented with careful preparation, use of the right equipment, crew training and vigilance at sea.

Even with the best preparations, sometimes equipment breaks. That's when you need access to a comprehensive selection of spares and tools (see pages 41-42) and a can-do attitude.

### Rigging

Total loss of the mast is very rare, but chainplate and rigging terminal failure is more common and can result in dismasting if not managed promptly.

Boom and gooseneck breakages can happen in accidental gybes, with poorly-placed preventers or if the boom dips in the water when rolling.

Chafe damage to running rigging like halyards and sheets is very common.

ARC Baltic is not an ocean Rally, so in instances of rig failure, we recommend you try to simply stabilise the rig and motor to a nearby port if possible.



*Jib furler lashed to ensure stability at sea*

### Sails

If your sails are several seasons old, get a sailmaker to check the stitching and cloth. In summer months, sailcloth is weakened by UV light. Combined with increased use, sailcloth can easily tear.

### Steering

Damage to the steering cables or failure of the autopilot are relatively common. This is often caused by poor boat handling, under-specified equipment or general wear on older parts.

Less common is the loss of the rudder due to weakened bearings or collision. Consider what would happen if the rudder was broken or dropped out - this would leave a large hole in the bottom of the boat!

### Electricity

Another common problem is failure in the charging system causing loss of power.

Have an electrician check the wiring cables and connections - damaged wire can cause a fire - and test the battery capacity and charging systems.

Ensure your engine is available to generate electricity by checking fuel filters and impellers and having a spare alternator available.

## Troubleshooting

When systems fail offshore, look for the simplest fix first.

### Don't forget to take with you:

- Manuals and wiring diagrams - electronic versions downloaded from the internet.
- A good set of tools
- Spare parts (see page 41)
- Extra oil and engine fluids
- A good sail repair kit

## Sails and Rigging

### Pre-Departure

- Perform a rig inspection or have it inspected by a professional rigger
- Replace old standing rigging if necessary
- Service mast sheaves
- Check for areas where running rigging and sails will chafe
- Set up and test staysail stay and running back stays (if fitted)
- Set up and try whisker/spinnaker pole
- Tape cotter pins; wire-tie shackles
- Service all blocks and winches
- Replace sheets and halyards as necessary
- Set-up and try all reef lines

### At Sea

- Look for chafe every day
- Do a daily rig check
- Worry about anything that ends up on deck, like bits of screw or broken pins
- Watch out for winch over-rides

## Steering System

### Pre-Departure

- Inspect the steering system
- Test the rudder bearings and check the seals
- Check and lubricate cables and pulley system
- Check autopilot electrical and mechanical connections
- Order spare parts
- Test the emergency steering system

### At Sea

- Listen to your autopilot. If it is straining, balance the boat to relieve the stress on the system.

## Refrigeration System

### Pre-Departure

- Check raw water system and pumps
- If you can't keep the freezer frozen at the dock, it will never stay frozen at sea
- Check refrigerant level or have a refrigeration specialist check it for you.
- Learn how to bleed the water lines

### At Sea

- If the raw water pump is not running, substitute another pump
- Bleed the system if you suspect an air lock
- Check the site gauge for loss of refrigerant
- If you can't fix it, keep the fridge closed as much as possible to retain the cold. Then have a huge feast!

## Engine/Generator/Fuel Systems

### Pre-Departure

- Learn how to bleed the system and change the impeller
- Clean the fuel tanks and heat exchanger
- Check and replace O rings on filler caps

### At Sea

- In rough weather run the engine twice a day.
- If no fuel is getting to the engine, change the fuel filters and bleed the engine.
- If the engine is overheating, check the raw water pump and change the impeller.
- Check fuel filter and filter bowl - if the filter is dirty, change it. If there is water in the filter bowl, drain it. Refill filter assembly with clean fuel
- Check for cracks in the fuel line



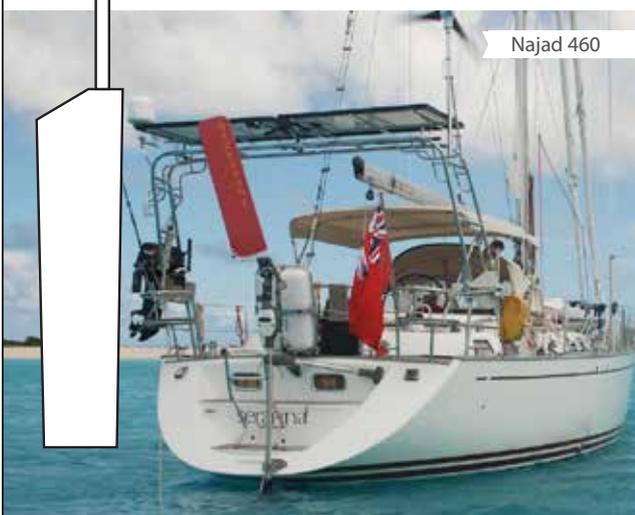
*Pre-departure rig check*

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HYDROVANE



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STEERING THE DREAM

## At-Sea Communications

Many of the ARC Baltic destinations have public WiFi available, but you may wish to have internet onboard and at sea.

On World Cruising Club rallies, important fleet messages are sent by an auto email system.

In addition, there will be messaging (WhatsApp) groups and there may be SSB nets.

You choose the products and models to achieve this capability.

## Satcom Systems

In a survey of 500 ARC, ARC+ and World ARC boats from 2023-2025, it is easy to see the growth in popularity of Starlink, from around 50% of the ARC and ARC+ fleet in 2023 to 80% in 2024. 99% of the World ARC 2025 fleet have Starlink.

Common rally satcom systems:

• Starlink	80-99%
• Iridium GO! and GO!exec	28%
• Iridium Certus 200	12%
• Iridium Handheld	10%
• Inmarsat Fleet Broadband	8%
• Lars Thrane LT-3100	3%
• Inmarsat IsatPhone	2%
• Skylink	1%

Many boats have more than one satcom system onboard. For example, a fixed device like Starlink and a traditional handheld satphone for voice in emergency and when ashore.



## Starlink

Working-from-boat or streaming movies are all possible with Starlink, many cruisers commenting that speeds are better than at home.

Starlink isn't a satphone, it is a wireless access device. Voice calls are only possible using WiFi calling, a VoIP system or a call on WhatsApp or FaceTime.

Airtime costs are starting to creep up, but this is still the most cost-effective at-sea internet option.



Starlink, radar, AIS and satcoms antennas

## Fixed Data Systems

Starlink

Iridium Certus 200 and 700

Inmarsat Fleet Broadband

## Mobile Data Systems

Iridium Certus 100

Iridium GO! and GO!exec

Skylink

## Mobile Satphone Systems

Iridium Extreme, 9555

Inmarsat IsatPhone 2, IsatPhone Pro

## Fixed Satphone Systems

Lars Thrane LT-3100

Iridium 9522-P

## Making Voice Calls via Data

The ability to make a voice call is important, especially in an emergency. A basic satphone is a useful addition to the grab bag or for exploring ashore in remote areas.

If you have a data-only satcoms system, we recommend keeping an unlocked (no passcode) mobile fully charged and available to all crew for any emergency.

Any apps (for example Iridium GO!) should be downloaded to the mobile and tested before the rally starts.

Ensure all crew know how to make a voice call.

### Voice Calls with Iridium GO!

To make a voice call on Iridium GO!, you will need to download the Iridium GO! app from the app store. The app allows you to make phone calls, send text messages and has SOS functions.

In case of an emergency, ensure that more than one crew member has the app on their phone and knows how to make a call.

### Voice Calls with Iridium GO! exec

The GO! exec has a keyboard and speaker/microphone so you can make calls direct from the unit.

In addition, if you download the Iridium GO! exec app from the app store, you can make calls via your mobile phone or tablet.

### Voice Calls with Starlink

You can use the WiFi calling function on your mobile phone to make or receive calls as usual. Alternatively, you can use a VoIP system.

Starlink is great for WhatsApp and Facetime video or voice calls, but remember that not all organisations, including coastguard MRCC, will have a WhatsApp number.

## YB Connect via a YB3 Tracker

All boats in the Rally are provided with a YB tracker. This is an Iridium satellite tracking device that provides the position, speed and heading of the boat - information that is displayed on the YB Races app and on the Rally fleet viewer online.

The YB trackers are given out before the start of the Rally and collected at the finish, but you can also buy your own tracker from YB Tracking - ideal if you are continuing on a longer adventure.

As well as tracking the boat's position, the YB enables anyone onboard to send and receive text messages on their mobile or tablet.

Download the YB Connect app from the app store, create an account, then connect to the onboard tracker using Bluetooth.



*Fitting a YB3 tracker on Norah*

A single YB tracker can support multiple users with separate accounts, allowing crew and guests to pay their own communication costs and stay in touch via text with friends and family when they wish.

YB Connect doesn't provide the ability to send and receive emails at sea, and so doesn't meet the requirements for ARC, ARC+, ARC Europe or World ARC, but it is a useful low-cost addition to the onboard communication options.

## SSB Marine HF Radio

Although less common on cruising boats now than ten years ago, SSB (or single side band) radio is still a useful tool for cruisers.

SSB is a 'one-to-many' voice system (like VHF radio), unlike the 'one-to-one' voice call on a mobile phone or satphone. It is part of the GMDSS distress and safety system.

SSB operates on short wave frequencies, meaning the signal travels further - potentially thousands of miles, as compared to around 20NM for VHF radio. Short wave is also known as HF or high frequency.

Unlike satcoms there are no airtime costs, and the daily cruisers 'radio nets' are a popular way to stay in touch. The radio nets allow cruisers to chat as a group, as well as being a valuable safety feature.

It is possible to send and receive email (slowly) using SSB via a pactor modem and subscription to a service like [sailmail.com](http://sailmail.com). You can also receive weatherfax information by fitting a sound card.

Marine SSB and amateur radio SSB (or ham radio) are not the same thing, although they operate on the same principal. Only marine SSB has DSC (digital selective calling).

The disadvantage of SSB is that it is expensive, it requires professional installation, and it takes time to learn how to use. If you buy a boat with SSB, or want to install SSB for long-distance cruising, we recommend speaking to a professional installer or radio trainer and getting support from fellow cruisers.



SSB onboard Oyster 56 Asante

## VHF Radio

### We recommend boats have:

A VHF DSC-capable radio transceiver having a rated output power of 25W and capable of working on all standard international channels. With:

- An external cockpit extension speaker.
- A masthead antenna.
- An emergency antenna shall also be carried.

and

A handheld VHF transceiver with minimum 5W output power. Watertight or with waterproof covers.

The VHF radio is for boat-to-boat or boat-to-shore voice communication, with a range of up to 20NM, depending on the height of the antenna. A masthead antenna will deliver the best range.

An emergency antenna can be plugged into the back of the control unit then set-up on deck or hoist into the rigging if the main antenna fails or if the boat is dismasted.



Emergency antenna on Arietta

An external speaker will allow the on-deck crew to follow instructions from the marina, or to be alerted to distress calls.

A waterproof handheld VHF which is preferably also DSC-capable and equipped with GPS is an important addition to marine communications, and can be taken into the liferaft to help with rescue.

## Power Audit

By having a clear idea of your boat's energy needs, you can ensure that you have an adequate size battery bank onboard and sufficient power generation sources.

Start with a power audit - calculating your output (consumption) and input (production).

## Calculating Power Consumption

Listing out all the items (the consumers) on your boat with their power consumption and the time for which they are likely to be used in each 24-hour window will give you your daily demand.

Power for a consumer is often published in an items user manual specification table or printed on the back of the device. This will be given in Watts or Amps. List your audit in Watts.

Watts can simply be calculated by multiplying the current (Amps) by the relevant operating voltage equalling the power.

$W = A \times V$  For example, a 12V light operating at 1Amp is 12 Watts.

### Consumer Amp hours:

- Battery capacity is measured in Amp hours (Ah)
- Calculate what each DC consumer uses when operating (this is Amps.  $A = W \div V$ )
- Multiply this by the number of hours it operates in a typical 24 hour period (this is Amp hours, Ah)
- Add up the Amp hours
- This tells you how many Amp hours you will take out of your energy store (the batteries) during a fixed period of time.

### Example consumption for 24 hours for a 12V system:

Fridge & freezer.....	60Ah
Watermaker .....	39Ah
Autopilot .....	5Ah
Chartplotter & GPS .....	12Ah
Charging phones & tablets .....	7Ah
Lights - nav & interior .....	22Ah
Starlink RV/standard active & standby .....	62Ah
Pumps .....	5Ah
Radar standby/active.....	32Ah
VHF .....	2Ah

**Total depletion in 24 hours: ..... 246Ah**

## Calculating Power Generation

Next you should look at your sources for recharging the batteries (the producers). The producers should be divided into continuous - hydro, solar, wind - which produce power all the time, and top-up - generator, engine alternator - which can be turned on at intervals to top up the batteries.

Be aware that sources have varying efficiencies - alternators and solar often only give about 60% of their stated capabilities and only the continuous rated outputs of generators should be considered. Battery chargers can also give lower outputs in warmer environments.

Be aware that the continuous producers may only work for some of the time, for example while the boat is moving, the sun is shining, or the wind is blowing.

### Continuous producer Amp hours:

- Calculate what each continuous DC producer (hydro, solar, wind) produces when operating (Watts)
- Multiply this by the number of hours it produces in a typical 24-hour period (this is Watt-hours, Wh) and calculate the Amp hours (divide Wh by charging voltage, e.g. 13.8V)
- Add up the Amp hours

### Example production for 24 hours:

Solar panels.....50Ah

**Consumer Ah minus continuous producer Ah = top-up producer requirement: 246-50=196Ah**

With your daily consumption and charging capabilities calculated, you will now be able to work out how long your batteries will last and take to recharge using the engine or generator.

For example, a 200Ah depletion would take a generator with an 80Amp battery charger 2.5hours to fully recharge the battery bank.

Ideally, you would not want to be charging the battery bank more than twice daily.

So to achieve the example 200Ah, you could either increase the size of your battery bank or improve the continuous production with a hydrogenerator or adding more solar.

Prepared with assistance from Advance Yacht Systems [advanceyacht.co.uk](http://advanceyacht.co.uk)

## Batteries

Boats have multiple battery banks, but your domestic house bank will be the largest and the one in constant drain.

Battery sizes are given in Amp hours. This means that a 100Ah battery with a 1Amp load would last 100 hours from 100% state of charge (SOC) to 0% (flat), although discharging by that much will destroy a battery. In practice we never discharge lead acid or AGM batteries below around 50%. Lithium batteries can be discharged down to 20%

### Battery Bank Capacity

**A rough guide to calculate the required battery bank capacity for AGM/lead acid batteries is:**

Battery capacity = daily consumption x 3

Example: 200Ah x 3 = 600Ah capacity required

This is because they should not be depleted below 50% and charging above 85% is inefficient and slow, hence only one third of the capacity is usable.

For lithium batteries the equivalent is:

Battery capacity = daily consumption x 2

Example: 200Ah x 2 = 400Ah capacity required.

### Battery Life

Batteries have a lifetime, which is defined as the number of full cycles they can be used for. This varies between types of battery technology.

A full cycle of a battery is theoretically from 100% SOC to flat, so discharging to 50% of the capacity will mean that the battery can be used for twice the number of cycles.

Different battery technologies have different discharge capacities: a rule of thumb for Lead Acid/AGM is a minimum 50% SOC, and it is only practical to charge to 85% using an engine alternator or generator, so assume you only have 35% of your battery capacity as daily usable power

For LiFePO4 batteries, the discharge minimum is 20% SOC, so 65% is available.

A good battery monitor will give you an accurate battery SOC so can be used as your 'fuel gauge' for your battery bank.

### Battery Charger

Install a charger that can charge your battery bank from 50% to 80% (for AGM/ lead acid) or from 20% to 90% (for lithium) in a short time period, so that you only need to run your generator or be plugged in ashore for as short a time as possible.

### Lithium Batteries

A rule of thumb for lithium batteries is to have a charger whose current output is one third of the capacity of the battery bank.

If you have a 200Ah bank, you should install a charger with capacity of over 66A (eg  $200 \div 3 = 66$ ).

### AGM/Lead Acid Batteries

For AGM/lead acid batteries, the rule of thumb is one fifth of the capacity.

So a 40A charger would be right for the 200Ah bank (eg  $200 \div 5 = 40$ ).

As a minimum, the battery charger fitted should be one that can accept multiple voltages (110/120 or 220/240) and 50Hz or 60Hz; this will at least allow the batteries to be charged, and for DC (12/24v) appliances to be run while connected to shore power.



Onboard Batteries

### Charging With the Main Engine

The engine should have a 14V 115Amp alternator, which means the alternator will deliver 115A max at 6,000 rpm. However, the engine is usually regulated to generate electricity around 1,000-1,500rpm. The charging current will then be 40-80% of the rated value, so 45-90A.

Lead acid batteries only draw the full current when depleted 50-60%. Lithium batteries will draw more current from 20-85%. You will need to limit the current draw to prevent overheating the alternator.

For 200Ah top-up requirement, that would be around four hours per day of running the engine. Not an attractive prospect!

## Battery Monitoring

**Install a battery monitor. This will give you valuable data such as:**

- State of Charge (% of capacity)
- Discharge rate (Amps)
- Remaining time before charge required (when discharging)
- Remaining time to max charge (when charging)
- Voltage
- Alarms (below safe charge level etc)
- History

A good battery monitor will be able to monitor multiple battery banks and multiple power sources (such as the engine alternator, solar power or hydro generator).

## Battery and Charging Tips

Always start your voyage with a full (100% SOC) battery.

If sailing overnight. charge using the engine in the evening to support night time requirement.

Charge laptops and mobile devices, make and heat water when the engine is running.

Balance the boat to reduce strain on the autopilot, or hand steer.

Fill the fridge or freezer to its maximum, even if that means packing with bottles of water.

*Prepared with assistance from Advance Yacht Systems [advanceyacht.co.uk](http://advanceyacht.co.uk)*

## My Notes

### Electricity Generation

There is no need to rely on the engine alternator to charge batteries. Modern solar, hydro and wind generators are efficient and unobtrusive. A combination of generation methods can deliver greater independence and freedom.

#### Diesel Generators

For larger yachts, a diesel generator is the most efficient way to generate electricity and to charge batteries through a charger. They use less fuel to generate the same power than the main engine, can be set to automatically start when needed and, installed in a sound-proof case, are very quiet.

Generators also give you the ability to use AC-powered equipment for example water heaters, air conditioning, microwaves, kettles.

While reliable, generators require regular servicing and spares. If possible, combine a diesel generator with another generation source.

Petrol and gas generators are not suitable for installation on boats. Although cheap and portable, these units are noisy and the fuels combustible if not stored correctly.

#### Wind Generators

Wind generators are most useful at anchor, when they can produce 40-80Ah in 24 hours. These are usually permanently mounted on a pole on the transom clear of the sails, or mobile units can be hoist into the rigging at anchor.

Lower apparent wind speed when sailing downwind reduces the power output, making wind generators less useful during classic tradewind sailing.

#### Solar Panels

Improvements in cell technology makes solar power useful in most cruising areas, although they are most efficient in stronger sunlight. Panels are best mounted on a flat surface, such as on the cabin top, on a bimini or over the dinghy to face the sun.

They will operate under way or at anchor, and have the advantage over wind generators of being silent and unobtrusive. Recent ARC sailors with solar all say they would install more, given the opportunity.



Solar Panels

#### Hydrogenerators

A transom-hung hydrogenerator will generate electricity at hull speeds of 3-12 knots, and will operate most efficiently at speeds of over 5 knots, well within the range of the 'average' cruising yacht. Sportier multihulls cruising at speeds over 10 knots will need to consider race models. At a steady 6 knots, up to 300Ah per day isn't unrealistic.

It is possible to use the main propeller to generate electricity when it isn't propelling the boat by connecting it to a small electric motor. The systems that are available for diesel engines require a new propeller, but can deliver up to 200W at 5 knots boat speed.

Towed hydrogenerators are less popular due to the problems handling the long tow line and drag from the generator.



Remoran hydrogenerator

Prepared with assistance from Advance Yacht Systems [advanceyacht.co.uk](http://advanceyacht.co.uk)

## Shore Power

Remember, high voltage can kill! Being able to live independently with a generator, solar, wind or hydro power will give you more flexibility, but sometimes you just need to connect to shore power.

Where shore power is available, you can expect voltage to vary and a multitude of connector types to be required.

### International supply:

- **USA, Canada, Caribbean:** 110/120 V at 60Hz or twin-phase: 220-240 V 60Hz
- **Japan:** 110/120 V at 50Hz or 60Hz
- **Rest of the world:** 220/240 V at 50 Hz or 3-phase: 380-400 V 50Hz

The ampage supplied to yacht docks is usually 16A, 32A or 63A.

### Shore Power Frequency (Hz)

The operating frequency of appliances is important, as some (like microwaves, washing machines, dive compressors and some air conditioning) will not operate at the wrong frequency. If possible, select those that will operate on both 50Hz and 60Hz.

## Battery Charger

The battery charger should be capable of accepting multiple voltages (V) and frequencies (Hz) to suit worldwide supplies so the batteries to be charged when attached to shore power.

## Step-up/Step-down Transformer

A step-up transformer will step-up the shore power to your normal voltage; similarly, a step-down transformer will step-down the shore power. This may allow you to run some appliances (kettles, water heaters) that don't require the correct frequency to operate.

## Isolation Transformer

An isolation transformer separates the boat's electrical system from the shore power system to prevent galvanic corrosion. It won't step up or step down the voltage.

## Frequency Converter

A frequency converter converts from one frequency to another, allowing 220-240V inputs at 50Hz to be converted to 60Hz and vice versa.

## Inverter

An inverter converts DC to AC, enabling appliances like microwaves or washing machines to be run from the boat's batteries. It can be set at whatever voltage and frequency your appliances use.

If your battery charger, battery bank and inverter are powerful enough, and wired up appropriately, they will allow you to run your appliances at a different voltage and frequency from the shore power, avoiding the need for step up/down transformers and frequency converters.

## Connectors

There is no single global standard for shore power connection plugs and sockets.

The best way to manage this is to buy every type of connector you come across in chandleries so you are prepared.

You could make a short 1m connector lead with a female socket at one end to fit your shore power cable, and the required shore power sockets for the marina infrastructure at the other. A number of these short leads would be ideal for an Atlantic circuit, although a wider selection would be required for more distant cruising.

### Shore Power Tips

- European 220/240V AC is not the same as US 220/240V AC. The frequency (Hz) is different.
- European is 50Hz, US is 60Hz
- Never attempt to plug a US-wired boat directly into a European-style dock outlet or vice versa. Always check the supply first.
- Some US boats experience problems with electrolysis because the neutral and ground wired are bonded together. Check your system.
- The shore power cable should be at least as long as the boat plus 5m.
- Carry a 15m+ extension lead with waterproof connectors.
- Useful adapters:
- European boats: 16A to 32A, or 32A to 16A and 32A to 63A.
- North American boats: standard female socket to European 32A and 63A, plus US sockets

*Prepared with assistance from Advance Yacht Systems [advanceyacht.co.uk](http://advanceyacht.co.uk)*

## Water Onboard

The minimum recommended amount of drinking water is 2 litres per person per day, increasing to 3.5 litres per person per day in warm climates.

The drinking water requirement is comprised of fresh water, tea/coffee and soft drinks.

Water for washing, cooking and cleaning is in addition to drinking water requirements.

In a survey of round the World yachts, the average consumption was 14 litres per person per day. On boats without a watermaker, this dropped to 7 litres per person per day.

### Water Tanks

Large capacity water tanks will increase your cruising range and independence, whether you're topping-up ashore or producing your own water with a watermaker.

Adding a filter between the tank and the tap can improve the taste and purity of tank water.

Most boats carry additional bottled water for emergencies.

### Pressurised Fresh Water

Most boats have a pressurised fresh water system - turn on the tap and the water flows. This can lead to wastage, for example running the tap while cleaning teeth or having a high-power shower.

For boats undertaking long-distance cruising, fitting a foot pump for fresh water in the galley and toilet compartments may be a simple way to help manage consumption.

A manual foot pump is a useful back-up in case of electrical failure.

Installing a salt water foot pump in the galley is another good way to reduce fresh water consumption. Salt water is good for pre-washing crockery, cutlery and pans before a soap and rinse in fresh water.

### Washing Machines

Small domestic washing machines are now common on larger cruising boats. While the power and water consumption might be high, they do free the crew from constantly seeking laundries ashore.

It is possible to buy 12V and mechanical 'washing machines' that can be stored in a locker and brought out when needed.



Washing machine onboard Oyster 56 Asante



Watermakers installed in various positions on the boat

# Fresh water. Wherever, whenever.

**Whatever your vessel,  
fitting a watermaker  
from Mactra makes  
life onboard  
a pleasure...**

Schenker watermakers are possibly the most energy efficient on the market today. There is a Schenker Watermaker to suit your needs from 30-500 litres in an hour.

Our most popular models.



**THE NEW  
SCHENKER ZEN RANGE**  
30, 50, 100, 150, 200 & 300 litres  
an hour. Compact, low-cost market  
leaders.



**Schenker Modular Range**  
From 35 litres to 500 litres  
an hour.



**Smart 60**  
Makes 60 litres an hour  
using 20amps @  
12V 10 amps 24V).



**Smart 30**  
Makes 30 litres  
an hour using  
just 9 amps @ 12V  
(4.5 amps 24V).

**Yacht watermakers and equipment for serious  
blue water sailors & livaboards**



**Mactra Marine Equipment** Unit 13, Worle Industrial Centre, Weston-super-Mare BS22 6BX  
Tel: 00 44 (0) 1934 517288 Email: [info@mactrashop.co.uk](mailto:info@mactrashop.co.uk) Web: [www.mactramarine.co.uk](http://www.mactramarine.co.uk)

## Watermakers

Watermakers turn salt water into fresh water by pushing salt water through a membrane at high pressure. Technically, a watermaker is a desalination unit.

The water produced is safe to drink, being free of salt and most bacteria and viruses (assuming the manufacturer's cleaning and maintenance regime is followed). It is sensible to fit a filter between the tank fed by the watermaker and the tap.

Larger boat watermakers operate on 240/120V AC. A CAT-pump can run continuously, producing over 200 litres of water per hour, but uses a lot of power.

A good solution for smaller cruisers is a 12V DC watermaker utilising an energy recovery device (ERD). The ERD uses a fast-running pump operating at a lower pressure, which requires less energy.

ERD watermakers can be used as DC installations up to 150 litres an hour. Above this, AC powered from a generator is more effective.

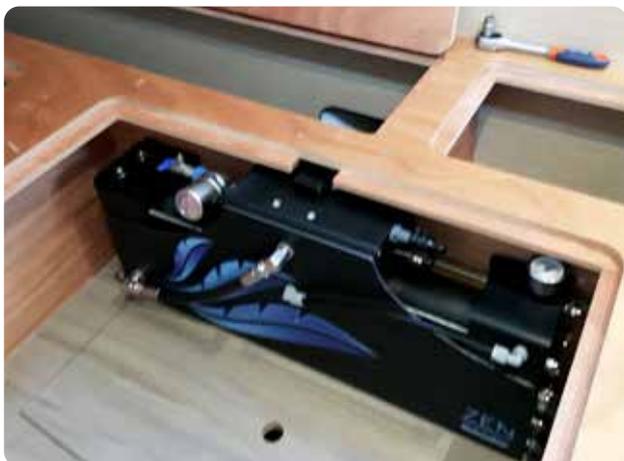
### Typical power consumption figures for ERD watermakers using DC or AC:

30 litres an hour	110W (9A 12V)
50 litres an hour	240W (20A 12V or 10A 24V)
100 litres an hour	400W (34A 12V 17A 24V)
150 litres an hour	600W (25A 24V or AC power)

Avoid using watermakers in marinas or anchorages where there may be sewage in the water. Although the membrane will filter out the bacteria, the filter itself will become contaminated.

Watermakers are an investment, and should be installed by a professional. Regular maintenance is important, and spares and service kits should always be carried.

Using the watermaker every day is better for the unit than sporadic use. Follow the manufacturer's instructions.



*Schenker Zen 30 installed under a bunk*

## Waste Water

Holding tanks for sewage (or black water) are fitted as standard to modern yachts, and should be seriously considered as a retrofit for older boats. Grey water tanks for sink and shower water are also available.

The boat's toilets empty into the tanks, which are then either discharged overboard more than 5NM offshore (or 12NM in some countries) or pumped out at a facility ashore. This avoids polluting beautiful anchorages and damaging the environment.

Good-sized holding tanks will increase your cruising range. Use facilities ashore for toilets and showers where possible.

Put used toilet paper in a bag and dispose with the garbage instead of flushing to avoid compaction in the toilet pump or tank.

Never discharge black or grey water into the sea in sheltered waters, non-tidal areas or within protected or restricted zones. For details on country regulations, see [noonsite.com](http://noonsite.com).

## Cooking Gas

Propane or butane are the most common options for cooking onboard boats, although electric induction plates and devices like air fryers are gaining in popularity, especially with multihull owners.

Propane (usually red bottles) is more common for most North American appliances, and butane (usually blue bottles) is more common in Europe.

Butane and propane have different burn characteristics and not all cookers can burn both gasses. Check with the manufacturer - a conversion kit may be available. Being able to burn both fuels will give you more options.

### Refills

If you can burn both propane and butane, leave home with new bottles of both types, as refills are more common than exchanges.

Refilling overseas can be confusing and difficult. Carry a good selection of regulators and fittings - multi adapter kits are available from [whayward.com](http://whayward.com) or [svb24.com](http://svb24.com) or speak to your local gas engineer or marine supply store.

A scale to weigh full and empty bottles is useful. Generally, bottles older than 10 years or in poor condition will not be accepted for refill.

## Resources

### Books

#### The Boat Data Book

by Ian Nicholson  
ISBN 9781399412933

#### The Boatyard Book

by Simon Jollands  
ISBN 9781472977106

#### Boat Owner's Mechanical & Electrical Manual

by Nigel Calder  
ISBN 9781472946676

#### Marine Electrical and Electronics Bible

by John C Payne  
ISBN 9781399414180

#### Diesels Afloat

by Callum Smedley, Pat Manley  
ISBN 9780470061763

#### Diesel Troubleshooting

by Don Sneddon  
ISBN 9781898660811

#### GMDSS - A Users Handbook

by Denise Brehaut  
ISBN 9781472945686

#### Electronic Navigation Systems

by Jane Russell  
ISBN 9781838236007

### Online Resources

**Cooking onboard** <https://bit.ly/3WVqzd6>

Practical Boat Owner interviews with ARC sailors.

**How sails are made** <https://bit.ly/4gzQEW2>

Practical Boat Owner interview with sailcloth maker Bainbridge.

### Companies

**Advance Yacht Systems** [advanceyacht.co.uk](http://advanceyacht.co.uk)

Generators, hydrogenerators, air conditioning, chargers and inverters.

**Hydrovane** [hydrovane.com](http://hydrovane.com)

Windvane self steering systems

**Macotra Marine** [mactramarine.co.uk](http://mactramarine.co.uk)

Watermakers and other useful equipment

**Parasailor** [parasailor.com](http://parasailor.com)

Downwind sails

**White Dot Sailing** [whitedotsailing.com](http://whitedotsailing.com)

Project management, boat and crew preparation

## My Notes



## **C** PEOPLE PREPARATIONS

This section covers personal preparations that all crew should consider, as well as the skipper's responsibility to their crew.

### People Preparations Contents

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## Skipper's Responsibility

The skipper is ultimately responsible for the well being and safety of the crew, and the safe management and operation of the boat.

Before the start, every skipper will be asked to sign a declaration that he or she has conducted a briefing with all crew members.

### Pre-departure briefing must include:

- Training drills for man overboard, abandon ship, dismasting, fire, flood, loss of rudder/steering and storm sails.
- The use of safety equipment - lifejackets, flares, EPIRB, fire extinguishers, liferaft, danbuoy, first aid kit, grab bag.
- The procedure for making a Mayday call and giving the yacht's position.
- The passage and pilotage plan.

### In addition, it is recommended that the skipper should:

- Talk through the World Cruising Club Safety Equipment Requirements with the crew.
- Review the medical status of crew members taking medications, including seasickness and remedies.
- Assign a ship's medic.
- Review the procedures for using lifejackets and safety lines, including when and where to clip on, and issue each crew member with their own lifejacket and safety line, ensuring it is fitted correctly and the individual knows how it operates.
- Review cooking stove and other fire and explosion hazards.
- Review flooding control procedures.
- Review man aloft procedures.
- Urge each crew member to constantly think about safety and the consequences of every action.

It is important that crew joining the boat have a thorough understanding of the boat's sail handling and propulsion systems, communications, navigation and safety equipment. Not only will this help crew to take a more active role in a successful passage, but also to play their part in an emergency, especially if the skipper is incapacitated.



*Storm sails briefing on Hummingbird.*

## Emergency Contacts

All crew must nominate a person ashore to be their contact in case of emergency.

If a crew member experiences a serious medical incident, or the boat is abandoned, or in other emergency circumstances, it must be possible for someone onboard the boat or the rally organisers to alert the casualty's friends and family at home.

The emergency person may be the crew member's legal next of kin, such as a parent or spouse, or they may be a friend.

The emergency contact must not be sailing on the boat with the crew member. If you are sailing with your spouse, choose another relative or friend to be your emergency contact.

Complete the emergency contact section of your profile in the Members Area of [worldcruising.com](http://worldcruising.com) and ensure that all crew emergency contact details are in a safe place onboard, accessible to any crew in an emergency.



## Choosing Crew

Inviting new crew onto your boat can lead to long-term friendships. But if things aren't managed carefully, there is also the possibility of misunderstandings and arguments.

Some boat owners choose not to invite their best friends to sail long distances because of the potential strain it can put on a friendship. Instead, they select people in their wider friendship circle, from recommendations or by advertising. It's your choice.

### Define Your Crew Needs

Some people are happy to sail long distances with just two onboard, while others prefer to have a larger crew.

Before you take on extra crew, check that your boat insurance covers the number of people onboard.

### How many people?

Find a balance between having extra people to spread the load of watch keeping with the need to fill the boat with extra provisions and water.

Boats can feel quite small at sea, especially in hot and sweaty weather conditions.

Each crew member must have their own bunk and place to stow their belongings. 'Hot bunking' is not allowed.

Does your liferaft have capacity for the new crew numbers? If not, you should have an additional raft.

### What skills?

Be honest about your own sailing skills - do you want an 'expert' to help you or are you able to train a willing novice?

Someone with a great personality, or who is happy to cook in a gale, or plays an instrument could be just as valuable an addition to your crew as someone who has all their sailing certificates.

### What don't you want?

Be honest if you don't want smokers or vegans or meat eaters onboard. State this clearly up-front to avoid later misunderstandings. The boat is your home, and you need to be happy about the people you invite into your home.

## Responsibilities

Will everyone be expected to cook, clean and stand watches? If you're sailing with children or pets, how will that affect responsibilities?

If you have invited more experienced crew, are they clear that you are the skipper? How will you seek or reject advice and input?

As skipper you need to define the 'boat rules' around things like when to wear a lifejacket and when to clip on, whether it will be a no-alcohol boat etc. These need to be applied fairly to all crew members.

## Flexibility

Long distance cruising rarely goes exactly to plan. If a crew member has a deadline for a flight, that will put a lot of strain on the entire crew during a light winds passage or delayed departure or arrival.

## Paperwork

As well as checking with your own insurance company, ensure that crew joining the boat have the correct visas and onward flight tickets (see Immigration Issues on page 64).

All crew should have travel insurance.

## Timings

Ensure that your crew has committed to the voyage at least 6-8 weeks before the planned departure.

If possible, have some back-up crew who could be available if someone gets ill or can't come.

Circulate an itinerary and keep the crew updated on any changes.

## Get Together

Getting along together is vital for a happy crew. The best way to sail together before the Rally starts, either as part of the journey to the start port or before you leave home waters.

If this isn't possible, meet up ashore or online and get to know each other - have lots of conversations and ask lots of questions.

## Money

Agree the financial arrangements in writing before setting sail.

Money is the single biggest cause of conflict and misunderstanding, even between friends.

Most crews agree to share living costs such as food, fuel and mooring fees, with individuals paying their own travel and onshore costs, and the owner paying for maintenance and repairs.

Sometimes the owner pays for everything, and sometimes the crew pay a passage or daily fee.

The financial agreement may affect how the crew works together - if the crew pays a passage fee or a daily rate, are they part of the crew or on holiday? If the owner pays for everything, are the crew effectively employees?

Owners charging a daily or passage fee rather than a share of the costs could legally be considered to be chartering. This can have implications for boat insurance, and in some flag countries it can also have serious implications for the qualifications expected of the skipper and the safety equipment to be carried. Check with your insurance company.

## Joining a boat as crew

If you are joining a boat as a crew member, be honest with yourself about the sort of experience you want, and the skills you bring. Ask previous skippers for a reference.

Don't hesitate to ask the skipper or owner about themselves, their experience, and how they like to run their boat.

Be prepared to be flexible and adaptable.

## Where to Find Crew

If you don't have anyone in your wider circle of friends who can join your crew, try asking in the local yacht club or use a crew matching website like [oceancrewlink.com](http://oceancrewlink.com).

OceanCrewLink allows you to filter registered crew by skills, and you can post your voyage, listing your requirements.

Be wary of picking up an 'ocean hitch-hiker' at short notice. Go through the usual due diligence - get references and go for a test sail.

As skipper you are responsible - see Immigration on page 67.

## My Notes

# Remoran Wave 3 hydrogenerator

Out at sea, every amp counts.  
Let the miles power your boat!

*“During the first days of our crossing we had almost no sun, so Remoran was our only energy source and saved us. On average in a 24-hour period with 5.6 knots average we charged 2400 Wh”*

~ **Celina and Henrik**  
(Cap Verde to Barbados)

*“Remoran Wave 3 was operating non stop 660 nm, five days and four nights without a single use of the vessels engine! During this time we didn't need to switch off the fridge, could fully run the autopilot and even were able to produce about 400 liters of water”*

~ **Mia and Christian** (Tula to Australia)

*“It keeps on doing its thing; day and night, mile after mile. It just works! And except from having to clean it from sargasso now and then, it doesn't require anything and you don't notice it's there.”*

~ **Emmy and Marcus**  
(Atlantic Circumnavigation)



## Remoran Wave 3 technical specs

- Output power: **max 300W** \*
- Output voltage: **12V/24V** (automatic)
- Output current: **max 25A**
- Compatible batteries: **Pb, AGM, Lithium**
- **Smart charging** with battery maintenance algorithm
- **Mobile App** with a charging status
- Designed and manufactured in **Finland**

*\* Power production varies according to the sailing speed*



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## Training

Proper training is good preparation for any sailing journey. No matter how much equipment you have onboard the boat, it is the experience of the skipper and crew that makes for a safe and happy voyage.

A skipper and crew who understand how the boat works, how to stay safe, and the actions to take in an emergency will be able to contribute more to life onboard and the success of the voyage.

The skipper and at least one crew member should have undertaken both theoretical and practical training on a range of sailing topics within the five years before the start of the rally.

World Sailing recommends that all crew members do likewise.

## Formal Training

Formal qualifications and specific training courses are not required to participate in our Rallies.

However, we recommend the skipper and at least one crew member, preferably all crew, to have undertaken theoretical and practical training in the five years before the rally in subjects including:

- Giving assistance to other craft.
- Personal safety gear.
- Care and maintenance of safety gear.
- Fire precautions and fire fighting.
- 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.
- Emergency communications.
- Liferafts and abandon ship.

## Sea Survival Training

Formal sea survival training is about considering the worst-case scenario, learning damage limitation skills and emergency management.

The World Sailing Offshore Personal Survival course is a one or two-day course that covers many of our required training topics.

The two-day course usually includes a practical session in a swimming pool, using lifejackets and a liferaft. Practical experience of a liferaft in a controlled environment like a swimming pool is strongly recommended, and an instructive experience for any sailor.

World Sailing approved courses are available worldwide - see [bit.ly/4j832im](https://bit.ly/4j832im)

If you can't find a Offshore Personal Survival course available at a suitable location, try to join a similar sea safety course, preferably one with a practical liferaft demonstration.

## First Aid and Medical Training

Basic first aid training is usually based on keeping a casualty safe until an ambulance arrives. At sea we need to be more self-sufficient - medical expertise may be available online or by sat phone, but hands-on help can be hours or days away.

Training will provide you with the confidence and skills to treat common ailments and life-threatening emergencies, know how to stabilise a crew member with traumatic injuries, to care for the patient, and to use the medicines and equipment in your medical kit. You will then be able to provide safe and effective treatment under instruction from a telemedical advice service, whether the free service via MRCC or a subscription service.

Basic one-day first aid for sailors courses are available in most countries. If possible, join a four or five-day course aimed at superyacht crew. These courses cover injuries and ailments and patient care in more detail.

Medical and first aid training is important for all the crew - what if it is the only trained medic who is badly hurt or sick?

Always carry a good book, like the Ship Captain's Medical Guide (ISBN 9780115541490) or the Skipper's Medical Emergency Handbook (ISBN 9781399413091).

See pages 28-29 for details of medical kits and medical support at sea.

➤ [hamble.co.uk](http://hamble.co.uk)



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# People Preparations Rally Handbook



## Training Centres

There are hundreds of sea schools worldwide offering theory and practical training.



Personal survival technique training in a pool

### Training in the UK

Hamble School of Yachting is our UK-based training partner. They offer a wide range of formal RYA or MCA training and specialist courses.

Hamble School of Yachting [hamble.co.uk](http://hamble.co.uk)

Royal Yachting Association [rya.org.uk](http://rya.org.uk)

The RYA website has a complete list of approved and affiliated training centres in the UK, Europe, Australia, South Africa and North America.

### Training in North America

US Sailing [ussailing.org](http://ussailing.org)

Canadian Yachting [sailing.ca](http://sailing.ca)

### Training in Europe

Deutscher Segler Verband [dsv.org](http://dsv.org)

Fédération Française de Voile [ffvoile.org](http://ffvoile.org)

Federazione Italiana Vela [federvela.it](http://federvela.it)

Norges Seilforbund [seiling.no](http://seiling.no)

Real Federación Española de Vela [rfev.es](http://rfev.es)

Svenska Seglarförbundet [svensksegling.se](http://svensksegling.se)

Polski Związek Żeglarski [pya.org.pl](http://pya.org.pl)

Koninklijk Nederlands Watersport Verbond  
[watersportverbond.nl](http://watersportverbond.nl)

## World Cruising Club Events

World Cruising Club runs a range of seminars and activities throughout the year, in-person and online. These aren't formal training courses, but they are a good way to expand your knowledge.

See [worldcruising.com/shoreside-events](http://worldcruising.com/shoreside-events) for the calendar.

### Ocean Sailing Weekend

World Cruising Club's two-day seminars provide an in-depth look at the issues around planning and preparing for Rallies.

World Cruising Club team, experienced sailors and marine industry professionals deliver presentations and workshops on topics including weather, managing emergencies, preventing and recovering man overboard, liferafts and abandon ship, offshore communications, power management, sails and life onboard.

### Bluewater Days

One day events that combine informal seminars with an opportunity to visit onboard ARC-ready boats and talk to the owners, to network with marine industry specialists and meet fellow sailors.

If you can't get to a boat show, the Bluewater Days are a good way to see safety and cruising equipment and to get the feel for bluewater cruising boats.



World Cruising Club Ocean Sailing Weekend 2024

## Paperwork

### Immigration

The countries visited during ARC Baltic (Germany, Sweden, Finland, Estonia, Denmark) are part of the Schengen Area. This means

- Non-EU/EEA/Swiss crew may require a Schengen short-stay visa depending on nationality.
- Stays are typically limited to 90 days in any 180-day period.

UK citizens do not currently need a visa for ARC Baltic but must limit their visit outside the Rally dates to 90 days in any 180-day period within the Schengen Area.

Crews can travel between countries on the route without checking in and out of the area, although documents may be asked for when arriving internationally.

For crew joining or leaving the boat on a one-way ticket from or to an airport outside the Schengen area it is important the arrival and departure are correctly recorded and that the record is retained by the traveller (in a passport) and skipper (on a crew list).

New electronic procedures are expected to be introduced within the next 18 months and the rollout has begun in some countries. Therefore, this information is subject to change.

### Signing-Off Crew

If crew are leaving the boat, they should be 'signed-off' the crew list so they are no longer the skipper's responsibility.

You can do this by visiting the immigration authorities with the crew member and his papers, including passport and onwards ticket.



Passport checks for ARC sailors

### Crew Joining Letter

All crew who fly in to a country on a one-way ticket to join a yacht should have a signed letter from the skipper to help with the immigration authorities.

The joining letter should look smart and official, with the yacht's name or logo, registration number, port of registry and be signed and dated by the skipper.

#### Suggested wording:

I, the undersigned, skipper of the sailing yacht [insert yacht name], registered in [insert port of registry], certify that Mr/Mrs/Miss/Ms [delete as appropriate] [insert crew name] passport number [insert passport number], is a crew member on the above mentioned vessel and will be joining the vessel in [insert port where joining yacht]. The above mentioned person will be arriving with only a one way ticket as he/she will leave [insert name of country] on board the above mentioned yacht.

Copies of this letter in other languages are available from World Cruising Club.

### Passports

It is essential to have a valid passport. Some countries require that the passport is valid for a minimum of six months from the date of arrival - check in advance, or you may be denied entry.

If you are planning extended cruising, consider requesting a passport with extra pages for all the immigration stamps you'll collect.

Make a copy of the key pages of your passport - a laminated photocopy and/or scan. Invaluable if your passport is lost or stolen.

### Travel Insurance

We recommend that everyone onboard has travel insurance that provides at least a basic level of medical cover for emergency treatment.

Pay careful attention to the conditions to ensure that you are covered for long distance sailing in the countries on your route, and especially conditions for medical treatment and repatriation. Some travel insurance excludes sailing as a 'dangerous sport' or limits the time onboard.

Some specialist insurers:

UK: Hayes Parsons [hayesparsons.co.uk](http://hayesparsons.co.uk)

UK: Topsail Insurance [topsailinsurance.co.uk](http://topsailinsurance.co.uk)

EU: Yacht Pool [yacht-pool.com](http://yacht-pool.com)

USA/CAN: DAN Boater [danboater.org](http://danboater.org)

### EHIC and GHIC Cards

EHIC card (EU citizens) or GHIC card (UK citizens) allow reciprocal access to healthcare in some EU overseas territories.



# Yacht Transport

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## Health and Wellbeing

For some people, being at sea can be stressful, while for others it is a relaxing experience. Stress can affect general wellbeing, behaviours and underlying medical conditions.

It isn't always serious conditions that can cause distress. Even something as simple as a spare pair of spectacles can make the difference between an active, happy crew member and someone who is effectively incapacitated.

It should be possible to discuss health conditions, allergies and medications with the whole crew, but some people may feel more comfortable talking about their situation with the skipper alone.

Do not hide any medical condition or allergy from the skipper. They have a duty of care for the crew and may need to provide the care to save your life.

Record all pre-existing conditions, allergies and treatments on a form or register that can be easily accessed in an emergency, but is protected from general browsing.

## Pre-Existing Conditions

If you have a pre-existing medical condition, discuss your sailing and travel plans with your doctor first.

Knowing how to help a fellow crew member suffering a severe allergic reaction, angina attack, epileptic seizure, diabetic hypo/hyper or similar life threatening episode is vital. Share with the crew the potential symptoms or warning signs, where your medication is stored, how to administer the medication and next steps, such as after care, calling for telemedical support or issuing a Mayday emergency.

Being open with your fellow crew about your condition and how you need to be treated if you are experiencing an episode can dispel anxieties and embarrassment.

## Allergies

To avoid an emergency situation at sea, be honest about your allergies and their severity so the crew as a whole can ensure that these triggers, like eggs, fish, seeds or nuts, are either not onboard, or are suitably restricted.

## Prescribed Medication

Ensure you have enough supplies to be in-date for the duration of the voyage, plus a suitable contingency.

Any medication may affect the choice of drugs or treatment in an emergency. If you are carrying prescribed medication, bring a copy of the prescription or a letter from your doctor describing the medicine and dose.

Some medicines are restricted in some countries, and proving that you have legal right to the product may be necessary. Make a copy of the prescription or letter for the skipper.



*Onboard medical supplies*

## Example Crew Health Form

Name	Condition	Treatment/Medicine	Notes

## Staying Healthy

'Prevention is better than a cure' is a good maxim for onboard health.

Be careful to avoid injury on deck and below - use lee cloths and handholds and wear gloves and shoes when appropriate.

**Simple prevention steps include:**

### Diarrhoea and Vomiting

- Avoid stomach upsets by following good food hygiene - ensure the fridge is cool enough, don't mix cooked and raw, take care with food preparation
- Always wash your hands.
- Check whether water from the dock is potable before filling the tanks.
- Stick to bottled water if you are unsure of the quality from the water system ashore or onboard.
- Fit filters to your water tank taps.

### Burns

- Prevent burns from overspilling pans by wearing waterproof trousers and shoes when cooking in rough weather.
- Avoid sunburn by wearing a hat, sunglasses and technical clothing with sleeves. Use sun cream.
- Wear gloves when handling ropes under load - for example when easing a sheet on a winch or when trimming a sail.

### Cuts

- Take extra care when using sharp knives in the galley in rough weather.
- Stop cuts and bites from being infected by disinfecting then keeping the area dry.

### Mosquitoes

- Prevent mosquito bites by fitting screens over hatches, burn coils at night and use insect repellent sprays.
- Wear long trousers in the evening.
- Check current mosquito advice with local cruisers.

## Managing Sea Sickness

Sea sickness is no joke; some people suffer really badly, unable to stand a watch or rise from their bunks. These people are at risk of dehydration and should be helped with sips of water or rehydration fluids.

Seasickness can leave your crew depleted, so encourage everyone to take precautions - find out which remedies suit you before departing.

It takes most people around three days to acclimatise to life onboard, so take it easy for the first few days. You're on holiday!

- Avoid alcohol and fatty foods before departure.
- Start anti-seasick medicines 24 hours before departure, and continue as prescribed until you have acclimatised.
- Plan plain meals for the first few days at sea.
- Dehydration can be a real problem. Treat with plain water or rehydration fluids.
- Sugar and salt are important - boiled sweets, some salty crisps (potato chips), or add sugar to warm water.
- Fresh ginger in hot sugar water, or ginger cookies are also good for settling the stomach and cleansing the palate.

## Managing Life at Sea

There's no escape from life and personal admin when you're at sea! Some suggestions:

### Staying in Touch

- Laptop with USB and USB C ports.
- Memory sticks for sharing files without internet.
- Mini printer (with inks) for printing forms.
- Personal 'business cards' with your boat name, email, WhatsApp and social media.
- Cloud storage, Dropbox, iCloud, Google Docs.
- WiFi booster or boat hotspot.
- YB Connect for sending cheap text messages from your phone via the YB tracker.
- eSIM service - Airalo etc for data overseas.
- Local SIM for cheaper calls than your own mobile provider.
- Use WiFi to call and video home using WhatsApp, FaceTime, Teams etc.

### Money

- Move to internet banking.
- Have a direct number to call your bank in an emergency.
- Have more than one type of credit card.
- Local currency is often the only option in more remote locations or smaller shops and restaurants.
- Get small denomination notes for remote areas where change may not be available.
- A decoy wallet containing out of date cards and few dollars cash could be a good idea to foil theft.

## Sailing with Children

There are always children taking part in rallies, from babies through to teenagers.

With young children who need constant attention and watching, it might be worth considering taking more adult crew to help sail the boat on long passages.

It is natural to be apprehensive about the safety of children at sea, but as long as you set (and follow) firm rules around wearing lifejackets and clipping on, it should be an enriching experience for both children and parents.

As one parent said: "To be honest, once I was happy that the boat was secure and the kids understood the importance of safety, it was probably a safer environment than on land - at least I knew where they were the whole time!"

## Children are Adaptable

A concern in our always-on world is whether children will get bored with the limited space and opportunity onboard.

Many parents comment that the kids adapted to the small space quicker than the adults (don't forget the fun of making a den!) and often found them better behaved at sea than in port.

Cheaper at-sea internet access means parents can choose whether or not to disconnect, or to have daily FaceTime with friends, download movies or write a daily blog.

Involving children in the work of sailing will depend on their age and size, but it is always possible to talk about maps and distances, to create video blogs about the boat systems or to learn how to steer. There are many boats out there where the resident expert on the communications systems or navigation software is a young teenager!

## Tips from Parents

- Meet other rally parents in-person or on WhatsApp before the Rally starts.
- Make the kids feel part of the crew, even if they can't contribute much. Add their names to the watch system to keep a good daily structure.
- Make sure everyone eats together at least for the evening meal.
- Involve them in cooking and cleaning, steering and sail changes if possible.
- Don't overestimate the amount of schooling you can achieve at sea. Keep formal stuff for in port, and make at-sea learning more practical.
- Kids might not enjoy writing or drawing when the boat is rolling, but recording a reel or video could be more attractive.

- There are learning opportunities in the weather, the stars, sea birds and sea life, even the physics of how a sail works.
- If you don't fancy the cost of streaming video on Starlink, download films to a laptop or get a DVD player and plenty of DVDs.
- Old fashioned games and puzzles like lego are a good option, anything that can be played in the hands or can cope with the motion of a boat.

## Schools

You may need to get permission to remove the child from school, so involve the school or education authority at an early stage.



Children on ARC Baltic

There are many options for 'boat school' with reputable distance learning programmes for all ages, whether scheduled live-stream lessons or self-paced learning.

### Providers used by Rally sailors include:

Self Design	<a href="http://selfdesign.org">selfdesign.org</a>
Cned	<a href="http://cned.fr">cned.fr</a>
The Good & The Beautiful	<a href="http://goodandbeautiful.com">goodandbeautiful.com</a>
Shurley Instructional	<a href="http://shurley.com">shurley.com</a>
HMH	<a href="http://hmhco.com/classroom-solutions/homeschool">hmhco.com/classroom-solutions/homeschool</a>

If you are able, select a programme based on your child's age and learning style, and which have the flexibility to allow learning through real world experiences.

## Sailing with Pets

It is possible to cruise with cats and dogs, but it does require a degree of planning in advance of your trip.

All destinations on the ARC Baltic Rally require pets to be microchipped, hold an EU pet passport and be vaccinated against rabies.

You will usually need a health certificate and an import licence issued by the country's veterinary or biosecurity agency in advance of arrival in a foreign country. To obtain the health certificate, you will need to prove the animal has received certain vaccinations and is certified free of specific conditions.

This process requires visits to vets in the departure port for blood tests and treatments. You'll need to factor time to get the tests done and for the results to return. The costs can add up quite quickly.

Requirements may change without notice, and we strongly recommend that you contact all countries on your planned route. Visit [noonsite.com](http://noonsite.com) and [pettravel.com](http://pettravel.com) for details. Details for the rally route are included in the Local Information chapters.

Dogs and cats can adapt well to life onboard, and as part of the family it can be hard to leave them behind. Allow your pet to settle in onboard and ensure they have a safe space they can retreat to when the weather is rough.

Many sailors either always walk the pet on a harness and leash on deck, or fully net the guardrails, or both.

Some of the venues and tour providers used by ARC Baltic may not welcome pets. If you intend to have a pet onboard during the Rally, please confirm whether the activity is suitable for pets. Pets should not be left alone onboard.

## Resources

### Useful Books

#### Ship Captain's Medical Guide

by Maritime & Coastguard Agency  
ISBN 9780115541490

#### Skipper's Medical Emergency Handbook

by Dr Spike Briggs  
ISBN 9781399413091

#### Doctor On Board

by Dr Juergen Hauert  
ISBN 9781408112724

#### Lesson Plans Ahoy

by Nadine Slavinski  
ISBN 9781733667616

#### Where the Magic Happens

by Caspar Craven  
ISBN 9871472949912



*Dog's love being part of the crew*

## My Notes

# ARE YOUR PREPARATIONS ON TRACK?



Good preparation isn't just a safety checklist, it's about prioritising choices, balancing budget and deadlines, and feeling confident you haven't overlooked anything.

White Dot Sailing offer all ARC participants a complimentary Readiness Review.

Use it to:

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- Help decide where to prioritise your efforts and budget
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