

SPICE ISLANDS DARWIN AMBON



yacht race

Hosted by:



SAFETY RECOMENDATIONS

This document is based on the *Fremantle Sailing Club Green Book*.

These are requirements & recommendations for all yachts participating in the Spice Islands Darwin to Ambon Yacht Race through Dinah Beach Cruising Yacht Association.

The document is colour coded for ease of reading.

Minimum requirements in BLACK.

Minimum requirements for entry into the Spice Islands Darwin to Ambon Yacht Race. They are listed in the Quick Reference Guide at the start of the document, although you must ensure you read all details.

Recommendations in BLUE.

These are highly recommended and most boats will have these as standard items. Remember this is an international yacht race, should something go wrong you may not be in Australian Waters at the time which will change the resources available to rescue you.

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QUICK REFERENCE GUIDE

Training & Experience

Item	Description
2.1 Experience	Min - 1 crew member 1 equivalent passage

Structure, Stability and Fixed Equipment

Item	Description
3.1 Strength of Build Ballast & Rig	Seaworthy in all respects & suitable for the event
3.2 Watertight Integrity of the Hull	Boat is watertight
3.5 Hatches & Companionways	Min – 2 escape hatches
3.7 Seacocks & Plugs	Seacocks & wood/rubber plugs
3.8 Spars & Rigging	Min – 2 halyards on main mast
3.9 Pulpits, Stanchions & Lifelines	Lifelines installed
3.11 Jackstays & Tether Clipping Points	Length of the deck on both sides
3.15 Galley	Stove & Gas
3.16 Water Tanks & Drinking Water	5L pp/day or 2.5L if water maker + portable
3.17 Bilge Pumps	2 pumps – min 1 manual
3.18 Compass	1 installed plus 1 spare
3.19 Navigation Lights	As per IRPCS
3.20 Engine & Fuel	Fuel for 200nm
3.21 Batteries	See details

Portable Equipment & Supplies

Item	Description
4.1 Tools & Spare Parts	Sufficient spares
4.2 Fire Extinguishers	2 x 2BE & 1 X blanket
4.3 Anchors	2
4.4 Drogue	1
4.5 Buckets	2
4.6 Flashlights	2
4.7 Foghorn	1 (HH is OK)
4.8 Radar Reflector & AIS	Both required
4.9 Navigation Equipment	Charts, IRPCS, GPS, barometer & tide information
4.10 Communications	VHF installed + HF or Satphone
4.11 Emergency Steering	1 tiller
4.12 Emergency Guides	1
4.13 Retro-reflective Tape	On lifesaving equipment
4.14 Emergency Position Indicating Radio Beacon	1 x 406Mhz EPIRB
4.15 Life Raft, Tender & Grab Bag	Life Raft or Inflatable Tender with listed equipment
4.16 Flares	4 x red, 4 x orange smoke & 4 x red parachute
4.17 Lifebuoys	1
4.18 Heaving Line	15m (floating)

Personal Equipment

Item	Description
5.1 Personal Floatation Device	1 x per crew
5.3 Safety Harnesses, Lines & Tethers	1 x per crew

Medical

Item	Description
6.1 General Requirements	Person in Charge is responsible
6.2 Medical Kits	St Johns Leisure 1 st Aid Kit & Medical Guide

INTRODUCTION

This document represents our baseline for safety standards. It is assumed that yachts meeting the recommendations will be fully crewed and, in all other respects, be suitably equipped to sail offshore within the limitations of the prevailing weather and sea conditions and the safety category with which the yacht, its equipment and its crew comply.

1. SCOPE, RESPONSIBILITY AND DEFINITIONS

1.1. SCOPE

1.1.1. This document defines the minimum standards for yachts in the following areas:

- training;
- structural features, stability, and fixed equipment;
- portable equipment and supplies;
- personal equipment; and
- medical kits.

1.1.2. **Legislation and the requirements of government authorities have precedence over the contents of this document.**

1.1.3. All equipment described in this document that has an expiry date, renewable date, service date or survey date must have at least 30 days from the commencement of the passage before the equipment is due to be replaced, renewed, serviced or surveyed.

1.2. APPLICABILITY

The bulk of the text is applicable to both monohulls and multihulls; special requirements for multihulls are given in Appendix B.

1.3. OWNER'S RESPONSIBILITY

1.3.1. The safety of a yacht and her crew is the sole and inescapable responsibility of the owner, or Person in Charge acting as the owners representative, who should ensure that the yacht is fully found, thoroughly seaworthy and crewed by suitably experienced people who have undergone appropriate training and are physically fit enough to sail in bad weather and deal with emergencies. He or she must be satisfied as to the soundness of hull, spars, rigging, sails and all gear. He or she should ensure that all safety equipment is properly maintained and stowed and that crew members know where it is kept and how it is to be used.

1.3.2. Neither the establishment of the *Darwin to Ambon Safety Regulations*, their use by event organisers, nor the inspection of a yacht under these regulations in any way limits or reduces the complete and unlimited responsibility of the owner or owner's representative.

1.3.3. The Person in Charge of the yacht (the skipper) owes a duty of care to the rest of the crew and other participants, where there is a reasonably foreseeable risk of harm or injury to them as a result of their actions. Similarly, crew members owe a duty of care to each other.

1.3.4. The Person in Charge is solely responsible for deciding whether or not the yacht under his or her command should participate, or continue to participate, in an event.

2. TRAINING AND EXPERIENCE

2.1 EXPERIENCE

At least one crew member should have completed at least one equivalent passage.

2.2 FIRST AID

At least one member of the crew should hold a current Senior First Aid Certificate, or equivalent, or be a practising medical practitioner.

2.3 RADIO OPERATION

2.3.1 At least one member of the crew should hold a Marine Radio Operator's VHF Certificate of Proficiency (MROVCP), or an equivalent overseas qualification.

2.3.2 If an HF transceiver is fitted, at least one of the crew should hold a Marine Radio Operator's Certificate of Proficiency (MROCP), or an equivalent overseas qualification.

2.4 SAFETY TRAINING

At least 30% of the crew including the Person in Charge should hold a valid YA Safety and Sea Survival Course (SSSC) Certificate of Competence, or a course of no less a standard.

2.5 SAFETY CHECKLIST

It is the responsibility of the Person in Charge to ensure that the crew are aware of the safety checklist, location of safety equipment and all emergency procedures.

2.6 CREW OVERBOARD

All Crew should be able to demonstrate equipment and a method by which crew may be assisted back on board.

2.7 EMERGENCY STEERING

Crew must be aware of alternative methods of steering the yacht in any sea condition in the event of rudder loss.

2.8 REGULAR PRACTICE

Crews should practice on-board safety exercises at regular intervals.

3 STRUCTURE, STABILITY, AND FIXED EQUIPMENT

3.1 STRENGTH OF BUILD, BALLAST AND RIG

3.1.1 Most of this section has been marked as recommended. Production boats will likely already meet all of these standards.

3.1.2 All yachts must be in a seaworthy condition for the intended voyage, time of year and should be:

- soundly constructed;
- properly rigged and ballasted;
- well maintained;
- fully seaworthy in all respects; and
- suitable for the event in which it intends to participate.

3.1.3 Hulls should be watertight and, particularly with regard to hulls, decks and cabin trunks, be capable of withstanding solid water and knockdowns.

3.2 WATERTIGHT INTEGRITY OF HULL

3.2.1 A hull, including, deck, coach roof, windows, hatches and all other parts, should form an integral, essentially watertight unit and any openings in it should be capable of being immediately secured to maintain this integrity.

3.2.2 Centreboard and daggerboard trunks and the like should not open into the interior of a hull except via a watertight inspection or maintenance hatch of which the opening should be entirely above the waterline of the yacht floating level in normal trim.

3.2.3 Yachts with movable keels or centreboards should have a positive non-friction device which will prevent the keel or centreboard from moving in the event of a knockdown or capsize.

3.3 HULL CONSTRUCTION STANDARDS

3.3.1 Yachts should be designed and built in accordance with good yacht building practices and appropriate design and construction standards recognised by the marine industry, including those promulgated by the International Organization for Standardisation (ISO), and Standards Australia (AS).

3.3.2 ISO 12215 Category A is considered an appropriate minimum standard.

3.3.3 Any significant repairs or modifications to the hull, deck, coach roof, keel or appendages, should be assessed by an appropriately qualified professional naval architect or yacht designer as not reducing:

- stability below appropriate standards or
- the structural integrity or
- otherwise causing the yacht to be unfit for purpose.

3.4 STABILITY

3.4.1. A yacht should be designed and built to resist capsize.

3.4.2 Where a yacht has the keel or centreboard at a specific position to comply with the resistant to capsize conditions of these recommendations then it should not be moved to a higher position during an event.

3.4.3 Additional requirements for multihulls in Appendix B1.

3.5 HATCHES & COMPANIONWAYS

- 3.5.1 Yachts should have two escape exits. One exit should be located forward of the foremost mast. In very unusual circumstances, e.g. cat-rigged yachts, where structural features prevent its installation forward of the mast, an alternative location may be acceptable.
- 3.5.2 The recommended minimum clearance diameter for an exit hatch is 450mm, or minimum dimension 380mm and minimum area 0.18m².
- 3.5.3 No hatch forward of the maximum beam station should open in such a way that the lid or cover moves into the open position towards the inside of the hull excepting ports having an area of less than 0.07m².
- 3.5.4 An access hatch should be:
- located such that it is above the waterline when the hull is heeled at 90 degrees to the horizontal;
 - permanently attached to the hull; and
 - capable of being immediately shut and clipped and remaining shut in the event of a 180 degree capsize.
- 3.5.5 A companionway hatch extending below the local sheerline, should be capable of being blocked off up to the level of the local sheerline, provided the companionway hatch should continue to give access to the interior with blocking devices (e.g. washboards) in place.
- 3.5.6 A companionway hatch should be fitted with a strong securing arrangement, which should be operable from above and below with the hatchway blocked and the yacht inverted.
- 3.5.7 Washboards (or blocking devices) should be capable of being retained in position in the hatchway with the companionway hatch in both the open and shut positions.
- 3.5.8 Washboards (or blocking devices), whether or not in position in the hatchway should be secured to the yacht (e.g. by lanyard) for the duration of the event to prevent them being lost overboard.
- 3.5.9 Washboards (or blocking devices), should be readily removable to permit exit in the event of an inversion.
- 3.5.10 Additional requirements for multihulls in Appendix B2.

3.6 COCKPITS

- 3.6.2 Cockpits should be essentially weathertight, that is, all openings to the hull from the cockpit and cockpit lockers must be capable of being sealed and secured.
- 3.6.3 Cockpits should be structurally strong and either:
- self-draining quickly by gravity at all angles of heel and permanently incorporated as an integral part of the hull or
 - of volume less than (LWL/11)³ m³.
- 3.6.4 A bow, lateral, central or stern well is considered a cockpit for these purposes. Anchor and other lockers fitted with a hatch are not considered "wells".
- 3.6.5 Anchor lockers should be self-draining, capable of emptying 90% of its volume within 3 minutes.
- 3.6.6 For cockpits less than 2m³ volume at least two drains should be present.
- 3.6.7 Cockpits with volume greater than 2m³ should have minimum drain size after allowance for screens, of 20cm² per m³ of cockpit.

3.7 SEACOCKS AND PLUGS

- 3.7.1 Seacocks should be permanently installed on all through-hull openings below either the 10° heeled or upright waterline, except for shaft, logs, speed sensors, depth sensors and the like. However a means of shutting off or blocking such openings should be provided.
- 3.7.2 Soft wood or rubber plugs, tapered and of a suitable size, should be attached by a lanyard to the hull fitting for every through-hull opening fitted with a sea cock or valve.

3.8 SPARS and RIGGING

- 3.8.1 The main mast should have a minimum of two halyards that are capable of hoisting a sail.
- 3.8.2 The heel of a keel-stepped mast should be securely fastened to the mast step or adjoining structure.

3.9 PULPITS, STANCHIONS, LIFELINES

- 3.9.1 Lifelines must be installed.
- 3.9.2 Lifeline arrangements should be taught and of a strength equivalent to 4mm stranded 316 grade stainless steel.
- 3.9.3 Solid bulwarks offering comparable security are an acceptable alternative to the other clauses in this section provided they are fitted with freeing ports that are effective in clearing water off the decks.
- 3.9.3 All lines, fittings, anchorage points, fixtures and lanyards should comprise a lifeline enclosure system which has at all points at least the breaking strength of the lifeline.
- 3.9.4 There should be at least two lifelines with the upper lifeline not less than 600mm above the working deck.
- 3.9.5 Intermediate lifeline(s) should be fitted so that no vertical opening exceeds 380mm.
- 3.9.6 The following should be provided:
- a. A bow pulpit forward of the headstay with vertical height and openings essentially conforming to 3.9.1
 - b. Bow pulpits may be open but the opening between the pulpit and any part of the yacht, including the forestay, should not exceed 360mm.
 - c. A stern pulpit with vertical openings conforming to 3.9.1 Lifelines may be fitted in place of a stern pulpit.
 - d. Any opening upper rails in bow or stern pulpits should be secured shut whilst underway unless conforming with 3.9.1(a).
 - e. Stanchions and pulpits should form a continuous barrier around a working deck. Stanchions should be spaced at intervals of not more than 2.2m.
 - f. Pulpits and stanchions should be permanently installed. When there are associated sockets or studs, these should be through-bolted, bonded or welded. The pulpit(s) and/or stanchions fitted to these should be mechanically retained without the use of the lifelines. Pulpits and/or stanchions without sockets or studs should be through-bolted, bonded or welded.
- 3.9.7 Additional requirements for multihulls in Appendix B3.

3.10 TOE RAIL AND NON-SKID

- 3.10.1 A toe rail near the deck edge of minimum height 25mm should be permanently installed around the foredeck from abreast the main mast, except in way of fittings.
- 3.10.2 All surfaces on deck and around the companionways should be non-skid.
- 3.10.3 Separate requirements for multihulls in Appendix B5.

3.11 JACKSTAYS AND TETHER CLIPPING POINTS

- 3.11.1 Jackstays should extend the full length of the deck on both sides allowing crew to clip onto the jackstay without leaving the cockpit.
- 3.11.2 Jackstays and clipping points should be located and fitted in such a way as to allow crew members to:
 - clip on safely before coming on deck and to unclip after going below
 - move between the working areas on deck and the cockpit(s) with minimal tether clipping and unclipping.
- 3.11.3 Jackstays should be attached to through-bolted or welded deck plates or other suitable and strong anchorage points fitted on deck.
- 3.11.4 Jackstays should be made from a material with breaking strength of at least 20kN. Webbing 25mm wide is preferred; alternatively stainless steel 1x19 wire of at least 5mm diameter, or high strength rope may be used, although not recommended.
- 3.11.5 All fastenings and lashings for jackstays should have an equivalent strength to that of the jackstay.
- 3.11.6 Stanchion bases should not be used as strong points for the attachment of jackstays.
- 3.11.7 Plain, single action, snap hooks should not be used in any tether or jackstay system.
- 3.11.8 Additional clipping points should be located and fitted in such a way as to allow at least two-thirds of the crew to be simultaneously clipped on to clipping points without use of jackstays.
- 3.11.9 Pad eyes, eye plates and other fixtures used as clipping points for tethers should be attached to through-bolted or welded deck plates or other suitable and strong anchorage points adjacent to frequently occupied locations such as the helm, sheet winches and masts.
- 3.11.10 Additional requirements for multihulls in Appendix B8.

3.12 HAND HOLDS

Hand holds should be fitted above and below decks so that crew members may move about safely at sea and should be positioned so as not cause a hazard.

3.13 TOILET

- 3.13.1 A toilet, which may be a fixed installation or a portable toilet, should be securely installed inside the yacht.
- 3.13.2 The on-board systems for the storage and discharge of both black and grey waste should comply with the environmental regulations and legislation applicable to the area.

3.14 BUNKS

Bunks, securely fastened and sufficient for all of the crew should be fitted. Fixed bunks for at least half the crew should be capable of restraining a bunk occupant at heel angles up to at least 60 degrees.

3.15 GALLEY

- 3.15.1 A cooking stove capable of being safely operated in a seaway should be installed.
- 3.15.2 Gas is only recommended for cooking. The use of petrol (or any fuel with a flashpoint below 60°C) for lighting, cooking or heating is prohibited.
- 3.15.3 Gas bottles should be kept in a separate ventilated and self-draining compartment where vapour can only escape overboard, and securely fastened.
- 3.15.4 A cooking stove, where installed, should be securely fastened to withstand capsize, and fitted with a safe and readily accessible fuel or power shutoff valve.
- 3.15.5 Gas stoves should be fitted and maintained in accordance with the relevant Australian Gas Standard.
- 3.15.6 A sign reading "**TURN OFF GAS AT BOTTLE**" should be displayed near any gas appliance.
- 3.15.7 Where a yacht has gas appliances fitted within the accommodation a gas leak alarm fitted near gas cooking/heating appliance is required.

3.16 WATER TANKS AND DRINKING WATER

- 3.16.1 The total volume of drinking water carried for the maximum likely duration of the passage should not be less than that required to supply 5 litres per day per crew. This may be reduced to 2.5 litres if a water maker is installed and operational.
- 3.16.2 In addition, at least 2 litres of drinking water per person per day should be carried in dedicated containers for emergency use.
- 3.16.3 If the water pump is dependent on the electrical supply for operation then an alternative means of pumping drinking water should be provided.
- 3.16.4 A leak in any one component of the drinking water system should not result in the loss of more than two thirds of the total water volume carried (including that is in portable containers).

3.17 BILGE PUMPS

- 3.17.1 At a minimum 2 bilge pumps must be carried, 1 must be manually operated.
- 3.17.2 Two manual bilge pumps should be securely fitted to the yacht's structure, one operable above, the other below deck. Each pump should be provided with permanently fitted discharge pipe(s) of sufficient capacity to accommodate the simultaneous discharge from both pumps.
- 3.17.3 Additional requirements for multihulls in Appendix B6

3.18 COMPASS

- 3.18.1 A marine magnetic compass independent of any power supply should be permanently installed and correctly adjusted, with a light and a deviation card.
- 3.18.2 A spare magnetic compass independent of any power supply for its operation and capable of being used as an emergency steering compass should be carried. A handheld is acceptable.

3.19 NAVIGATION LIGHTS

- 3.19.1 Navigation lights should be fitted that conform to the International Regulations for Preventing Collision at Sea.
- 3.19.2 Full steaming lights must be carried, which may serve as reserve navigation lights under 3.19.1 if capable of being powered separately from the yacht's main electrical supply.
- 3.19.3 Navigation lights should be mounted above the sheerline so that they will not be masked by sails or the heeling of the yacht.
- 3.19.4 Reserve navigation lights, capable of being quickly mounted with a power supply independent of the yacht's main supply, should be carried.
- 3.19.5 Spare lamps for other than the reserve navigation lights should be carried, except for lamps with LED arrays.

3.20 ENGINE AND FUEL

- 3.20.1 An engine capable of producing a minimum yacht speed of 4 knots against a 12 knot headwind should be installed.
- 3.20.2 Where an outboard engine is fitted it should be securely mounted at all times.
- 3.20.3 The minimum volume of fuel carried should be sufficient to meet battery charging and propulsion requirements for the anticipated duration of the event.
- 3.20.4 Notwithstanding the above it is recommended that the minimum volume of fuel to be carried at the start of an event should enable the yacht to motor 200nm.
- 3.20.5 Inboard engine based propulsion systems should be installed so that the engine, or generator when running, can be securely and effectively covered. The yacht should be fitted with at least one permanently installed fuel tank. The associated exhaust and fuel supply sub-systems should be securely installed and adequately protected from the effects of heavy weather.
- 3.20.6 Fixed fuel tanks should have a shut-off valve or cock fitted directly to tank outlets except when it is not possible for fuel to escape should the fuel supply line fracture.
- 3.20.7 Fixed petrol fuel tanks should be metal, vented to the open air, electrically grounded and have the filler positioned so that spillage and fumes cannot enter the yacht.
- 3.20.8 Diesel fuel tanks should be metal or other material certified as suitable by the tank manufacturer, and electrically earthed to the sea. The deck filler should be electrically bonded to the tank.
- 3.20.9 For inboard engine systems, fuel lines should be metal, clipped rigidly in place and with a flexible connection between the fixed line and the engine. A flexible line may be used throughout provided that the material and terminals are designed for that purpose.
- 3.20.10 In the case of petrol engines the flexible fuel line should be fire resistant and coded by the manufacturer as such (eg. with a red stripe).

- 3.20.11 For an outboard engine-based propulsion system any remote fuel tanks and fuel lines should be as supplied by the manufacturer or built to a recognised National Standard and branded as complying with the standard.
- 3.20.12 Remote fuel tanks should be secured on the upper deck or in a separately ventilated compartment draining directly to sea (e.g. anchor well or gas locker).
- 3.20.13 Petrol should not be carried below decks in portable containers.

3.21 BATTERIES

- 3.21.1 Batteries should be of a sealed type from which electrolyte cannot escape.
- 3.21.2 When the primary propulsion engine can only be started with an electric starter, a battery dedicated for that purpose should be fitted. The dedicated battery should be able to be isolated from other uses to preserve power for starting.

3.22 HULL IDENTIFICATION

- 3.22.1 Yachts should have on both sides or on the transom in legible characters a minimum of 50mm high:
 - The yacht's name.
 - Name of the club, or home port which may be abbreviated.

4 PORTABLE EQUIPMENT and SUPPLIES

The yacht's name or registration should be marked on or otherwise fixed to miscellaneous buoyant equipment such as PFDs, cockpit cushions, lifebuoys, and life slings.

4.1 TOOLS AND SPARE PARTS

- 4.1.1 Tools and spare parts, including an effective means to disconnect or separate the rigging from the mast or hull should be carried.
- 4.1.2 A bosuns chair or equivalent should be carried.
- 4.1.3 A sharp knife capable of cutting high modulus fibre lines, sheathed and restrained, should be located in or near each cockpit and at the main mast.
- 4.1.4 Yachts should carry sufficient spares and the necessary tools to enable routine and emergency engine and electrical maintenance and repair.

4.2 FIRE EXTINGUISHERS

- 4.2.1 At least two fire extinguishers of minimum 10BE rating should be readily accessible in suitable and different parts of the yacht.
- 4.2.2 All yachts should carry a fire blanket near the galley.
- 4.2.3 A small hole in the engine casing, suitable for discharging a fire extinguisher through without introducing air is suggested. The fire extinguisher should then be equipped with a nozzle to enable its contents to be delivered into the engine compartment.

4.3 ANCHORS

- 4.3.1 Two anchors should be carried, together with at a minimum 50 metres of chain and rope suitable for the size of the vessel.
- 4.3.2 The bitter (inboard) end of the warp or chain cable should be secured to a structurally strong point in the yacht prior to deploying the anchor and capable of rapid detachment under load.

4.4 DROGUE

A drogue of suitable size for the vessel should be carried. The vessel mooring lines (if suitable size and length) or anchor line may be used as a hawser.

4.5 BUCKETS

Two buckets of stout construction each with at least 8 litres capacity should be carried. Each bucket should be fitted with a lanyard and a solid handle.

4.6 FLASHLIGHTS

- 4.6.1 At least two flashlights of a water resistant and floating type, with spare batteries, should be carried.
- 4.6.2 In addition, a watertight high-intensity heavy duty searchlight powered by the yacht's batteries should be carried. It should be:
- instantly available in the cockpit for use on deck;
 - equipped with spare bulbs (unless LED); and
 - capable of continuous use.

4.7 FOGHORN

A foghorn should be carried. Fixed or handheld with containerised gas supply.

4.8 RADAR REFLECTOR AND AIS

- 4.8.1 An AIS transponder must be carried. This is also required by Indonesian Law.
- 4.8.2 A Radar Reflector must be carried. It should be fitted at or near the masthead, or at least 5m above sea level, whichever is the lesser.

4.9 NAVIGATION EQUIPMENT

- 4.9.1 Navigational charts for all areas to be sailed and chart plotting equipment should be carried.
- 4.9.2 If fewer than 2 independent electronic charting systems are carried (i.e. separate power supplies), paper charts should be carried.
- 4.9.3 A permanently installed GPS receiver should be fitted.
- 4.9.4 Tide tables for the areas to be sailed should be carried. Photocopies will suffice. An instrument (other than GPS) for measuring distance travelled should be fitted.
- 4.9.5 A calibrated depth sounding instrument should be permanently installed. The display should be visible from the helm.
- 4.9.6 A barometer should be fitted.
- 4.9.7 A second GPS, which is hand held and water resistant, should be carried on-board.
- 4.9.8 A copy of the current *International Regulations for the Prevention of Collision at Sea* should be carried.

4.10 COMMUNICATIONS

- 4.10.1 A permanently installed VHF radio should be fitted and be capable of operation on channels 6, 16, 21, 22, 67, 72, 73, 77, 80, 81, 82.
- 4.10.2 A radio receiver capable of receiving weather bulletins should be carried.
- 4.10.3 One of the following must be fitted;
- A permanently installed HF transceiver should be fitted and have a dedicated HF emergency antenna and operate on all standard frequencies including 2182, 4125, 6215, 8291 kHz
 - A satellite based system with global coverage (e.g. sat-phone, Inmarsat).

- 4.10.4 The installed radio should have:
- A rated output power of at least 25 watts.
 - A dedicated emergency antenna.
 - A speaker audible from the cockpit.
 - DSC capability with an assigned MMSI number & connected to GPS.
- 4.10.5 A waterproof hand-held VHF radio (minimum 5W power) and associated battery charging equipment, or spare batteries, should be carried.
- 4.10.6 Email capability is recommended, with a distribution list of emergency contacts.

4.11 EMERGENCY STEERING

An emergency tiller, capable of being fitted quickly to the rudder stock where the normal method of steering is other than by a tiller fitted directly to the rudder stock, should be carried.

4.12 EMERGENCY GUIDES

- 4.12.1 A durable stowage chart should be displayed in a clearly visible position inside the yacht. It should be clearly marked with the location and name of principal items of safety equipment.
- 4.12.2 *An AMSA Survival at Sea Manual or equivalent overseas publication should be carried*
- 4.12.3 *A checklist of actions in emergencies should be displayed in a prominent place.*

4.13 RETRO-REFLECTIVE TAPE

Marine grade retro-reflective material should be fitted to lifebuoys, life slings, life rafts and PFDs.

4.14 EMERGENCY POSITION INDICATING RADIO BEACONS (EPIRB)

- 4.14.1 An EPIRB capable of transmitting on 406 MHz must be carried.
- 4.14.2 The number of EPIRBs carried on board should be not less than the number of life rafts carried.
- 4.14.3 EPIRBs should be
- stored in a dry, well-marked location near the companionway; and
 - properly registered in the yacht's name with the appropriate authority.

4.15 LIFERAFTS, TENDERS and GRAB BAG

- 4.15.1 Either a life raft or a seaworthy inflatable tender should be carried.
- 4.15.2 Where a tender is carried in place of a life raft, it must be stowed on deck.
- 4.15.3 Stowage should be such that the life raft (or tender) can be readily removed and easily deployed.
- 4.15.4 The yacht end of the painter should be tied to a strong point on board the yacht.
- 4.15.5 A Life raft (or tender) capable of carrying the entire crew should be carried. The official capacity should not be exceeded.
- 4.15.6 The life raft should be stowed in accordance with the manufacturer instructions.

4.15.7 If using a tender the following equipment should be readily available after launch:

- 1 x sea anchor or drogue & lines
- 2 x buoyant paddles with handles
- 1 x bellows or hand pump for hand inflation that is of one piece, ready for use
- 1 x repair outfit capable of repairing punctures in buoyancy compartments
- 1 x bailer (easily identifiable)
- 1 x water-proof torch
- 1 x signalling mirror
- 2 x red parachute flares, 2 x red hand-flares and 2 x orange smoke flares
- 1 x waterproof copy of the illustrated table of life-saving signals
- 0.5L of drinking water per person
- 10,000kj food per person
- 1st aid kit including seasickness tablets & sunscreen

4.15.8 The following contents should be considered for inclusion in the grab bag unless already in the life raft (or tender). They may be taken from the yacht's safety equipment:

- 1 x waterproof hand held GPS
- 1 x waterproof hand-held VHF radio
- 1 x 406 Mhz EPIRB

4.16 FLARES

4.16.1 The following should be carried:

- 4 x red parachute flares
- 4 x red hand flares)
- 4 x orange smoke flares

4.16.2 Irrespective of the minimum numbers shown above, the numbers and types of flares should conform to local legislative requirements for the area being sailed.

4.17 LIFEBUOYS

4.17.1 1 x lifebuoy should be carried, accessible by the helmsman and ready for immediate use. It should be equipped with a whistle, drogue, danbuoy (pole and flag) and a self-igniting light.

4.17.2 In addition a Lifesling, OSCAR, Seattle Sling or a man overboard module (without a drogue) should be carried. It should be equipped with retro-reflective tape, whistle and a self-igniting light. It should be accessible by the helmsman and ready for immediate use.

4.18 HEAVING LINE

A floating line at least 15m long that is readily accessible to cockpit, with a buoyant object at one end should be carried. The "throwing sock" type is recommended.

4.19 SAILS AND SAIL NUMBERS

Sail numbers and any associated letters used to identify a particular yacht should be carried on mainsails, trysails, storm jibs and heavy weather sails so that the numbers are clearly visible. Other sails should be similarly marked.

4.20 STORM AND HEAVY WEATHER SAILS

- 4.20.1 The purpose of these sails is to provide safe propulsion for the yacht in gales and storms. The sail areas referred to below are maximums.
- 4.20.2 A yacht with only one propulsion engine should have as a minimum:
- Storm jib, and
 - Storm trysail or mainsail reef-able to 50% of its luff length
- 4.20.3 A yacht with twin propulsion engines capable of operating independently, including separate fuel supplies, should have as a minimum either:
- Storm jib or
 - Storm trysail or mainsail reef-able to 50% of its luff length.
- 4.20.4 Yachts with in-mast or in-boom furling and only one engine should have a trysail.
- 4.20.5 All trysails and storm jibs should be of highly visible coloured material or should have a highly visible coloured patch of at least 20% of the area of the sail added on each side to assist visibility in extreme conditions.

5 PERSONAL EQUIPMENT

Where a PFD is the personal equipment of a crew member it should be marked instead to identify the owner. Preferably this should be the name of the owner and a contact telephone number.

5.1 PERSONAL FLOTATION DEVICES (PFD)

5.1.1 A personal flotation device (PFD) must be carried for each crew member

5.1.2 All PFDs should be of the vest type.

5.1.3 Each PFD should:

- Comply with Australian Standard AS 4758 – 2008 (minimum level 150);
- or AS 1512-1996- Type 1; or
- an equivalent or more stringent overseas standard

5.1.4 Each PFD should have marine grade retro-reflective tape, a whistle and a suitably strong crotch strap or thigh straps.

5.2 PERSONAL LOCATOR BEACONS (PLBS)

5.2.1 A registered 406MHz Personal Locator Beacon should be carried by or attached to each member of the crew when on deck. GPS capable PLBs are strongly recommended.

5.2.2 A Personal AIS transponder may be considered as an alternative to a PLB.

5.2.3 PLBs and PAISs should be:

- Within battery life
- regularly tested and
- registered in the user's name.

5.2.4 Crew members should be trained in the use of this equipment.

5.3 SAFETY HARNESSSES, LINES and TETHERS

5.3.1 Each person on board should have a safety harness and tether.

5.3.2 The tether length should not exceed 2m and should have two snap hooks.

5.3.3 Each safety harness and line should comply with:

- Australian Standard AS 2227 or
- An equivalent overseas standard.

5.3.4 A crotch strap or thigh straps, capable of taking heavy loads, should be fitted to each safety harness.

5.3.5 Crew members should carry a personal knife capable of cutting a tether in an emergency.

5.4 PERSONAL LIGHTS

A personal location light (either a strobe or complying with SOLAS LSA 2.2.3), should be carried by, or attached to, each crew member when on deck at night. Note that many PFDs already have such a light attached.

6 MEDICAL

6.1 GENERAL REQUIREMENTS

6.1.1 The Person in Charge is responsible for on-board medical risk planning and management. The most likely medical emergencies and conditions to require treatment during the race include:

- Hypothermia
- Pain relief - mild moderate and severe
- Sunburn
- Dehydration
- Seasickness
- Diarrhoea / Constipation
- Flesh bruises, wounds,
- Damage to eyes, digits, limbs and ribs.
- Strained muscles
- Burns – minor and severe
- Antibiotics and other medication
- Cardiac emergencies

6.1.2 The location of all medical items should be shown on the yacht's stowage plan.

6.1.3 The skills and training of crew and the quantities and types of medical supplies to be carried will depend on a number of factors including the number of crew, individual state of health, the duration and location of cruise, the level of access to external assistance and the approach to risk management.

6.2 MEDICAL KITS

6.2.1 As a minimum, yachts should carry *Ship Captain's Medical Guide* or the *International Medical Guide for Ships*, or an equivalent publication. These may be in electronic format provided at least two independent sources are on board.

6.2.2 The medical kit should be stored in a waterproof container(s) with the contents listed so as to be visible without opening the container.

6.2.3 *St Johns Large Leisure 1st Aid Kit* is the minimum standard required.

6.2.4 Additional medical recommendations for tropical sailing in a region where medical items may be difficult to source include but are not limited to the list below:

- Aqua ear drops (or similar)
- Antibiotic cream (Bactroban)
- Broad spectrum prescription antibiotics
- Good quality pain killers
- Extra bandages, swabs & antiseptic
- Malarial prophylactics

APPENDIX B - SPECIAL RECOMMENDATIONS FOR MULTIHULLS

B1 STABILITY

- B1.1 Adequate watertight bulkheads and compartments (which may include permanently installed flotation material) in each hull should be provided to ensure that a multihull is effectively unsinkable and capable of floating in a stable position with at least half the length of one hull flooded.
- B1.2 Any watertight bulkhead should be strongly built to take a full head of water pressure without allowing any leakage into the adjacent compartment.

B2 EXITS AND ESCAPE HATCHES

- B2.1 Each hull which contains accommodation should have at least two exits. A deck hatch may be considered an exit. A companionway from the hull to the bridge deck may be considered an exit.
- B2.2 Each hull which contains accommodation should have at least one escape hatch for access to and from the hull in the event of an inversion. An exit may be considered an escape hatch if it complies with the requirements below.
- B2.3 The recommended minimum clearance through a multihull escape hatch or exit is 450mm diameter, or minimum dimension 380mm and minimum area 0.18m².
- B2.4 All exits and escape hatches should be capable of being opened from inside or outside the hull.
- B2.5 Each escape hatch should be:
- Above the waterline when the multihull is inverted.
 - At or near the mid-ships station.
 - On the side of a hull nearest the centreline of the yacht.
- B2.6 Multihulls unable to comply with B2.5 should comply with the following as a minimum:-
1. Each hull which contains accommodation should have, for the purpose of cutting an escape hatch, appropriate tools kept ready for instant use adjacent to the intended cutting site. Each tool should be secured to the vessel by a line and a clip, and
 2. In each hull at a station where an emergency hatch may be cut, the cutting line should be clearly marked both inside and outside with an outline and the words: **“ESCAPE - CUT HERE”**.

B3 PULPITS, STANCHIONS, LIFELINES

- B3.1 Trimarans - a bow pulpit on the main hull, with lifelines around the main hull supported on stanchions. The lifelines may be discontinuous where there are nets or crossbeam wings outboard of the main hull.
- B3.2 Trimarans – where a net joins the base of a bow pulpit on the main hull, an additional lifeline from the top of the pulpit to the forward crossbeam at or outboard of the crossbeam mid-point.
- B3.3 Trimarans - at a main or emergency steering position on an outrigger with or without a cockpit, lifelines protecting an arc of 3 metres diameter centred on the steering position.
- B3.4 A catamaran without a forward or aft crossbeam should have transverse lifelines at the extremity of the net forward and aft. The transverse lifelines should be attached to bow and stern pulpits or superstructure. A webbing, strop or rope (minimum diameter 6mm) should be rove zigzag between the transverse lifelines and the net.

B4 MULTIHULL NETS (TRAMPOLINES)

- B4.1 Nets should be:
- Essentially horizontal.
 - Made from durable woven webbing, water permeable fabric, or mesh with openings not larger than 50mm in any dimension. Attachment points should be designed to avoid chafe. The junction between a net and a yacht should present no risk of trapping the limbs of the crew.
 - Solidly connected at regular intervals on transverse and longitudinal support lines (i.e. a lattice work style) and should be fine-stitched to a bolt rope.
 - Able to carry the full weight of the entire crew when the yacht is upright or inverted.
- B4.2 Each tie point of the net should either:
- Be individually tied and not continuously connected to more than four attachment points per connecting line, or
 - If continuous it must be replaced annually.

B5 TOE RAIL AND NON-SKID

A toe rail is not required on multihulls.

B6 BILGE PUMPS

Multihulls should have provision to pump out all watertight compartments except those filled with impermeable buoyancy.

B8 JACKSTAYS AND TETHER CLIPPING POINTS

Trimaran - with a rudder on the outrigger, adequate clipping points that do not constitute any part of the deck gear or the steering mechanism should be fitted to enable the steering mechanism to be reached by a crew member whilst clipped on.

DEFINITIONS

Person in Charge - A person authorised by the owner of the yacht to exercise command of and otherwise take charge of the yacht and its crew.

Crew - All persons on board the yacht.

Event Organisers - The DBCYA Management Committee, or a properly constituted sub-committee tasked to organise an on-water event.

Safety Recommendations - The standards and recommendations defined in this document (*Darwin to Ambon Safety Regulations*)

Buoyancy

Should be achieved by the use of:

1. Semi-rigid or rigid non-absorbent material permanently fixed into the hull.
2. Dedicated empty sealed compartments which may be fitted with screw-in drain plugs or an inspection port but which should remain closed whilst participating in an event.
3. Inflated airbags, permanently sealed and fixed below decks.

Stability - The tendency of a vessel to return to an upright condition after it is inclined by external forces: wind, seas, weight shifts, and other factors.

Working Deck - Any surface on which the crew might stand in order to work the yacht and its sails in a seamanlike manner.

Sheerline - The line of curvature of the deck edge, fore and aft, as viewed in side elevation.

Heavy Weather - Rough conditions usually associated with mean wind speed more than 27 knots.

Permanently Installed - The item is effectively built-in by bolting, welding, glassing etc. and may not be removed while participating in an event.

Securely Fastened - Held firmly in place by a method (eg lashings, brackets, and other physical restraints) which will safely retain the fastened object in severe weather and sea conditions and which allows for the item to be removed and replaced whilst participating in an event.