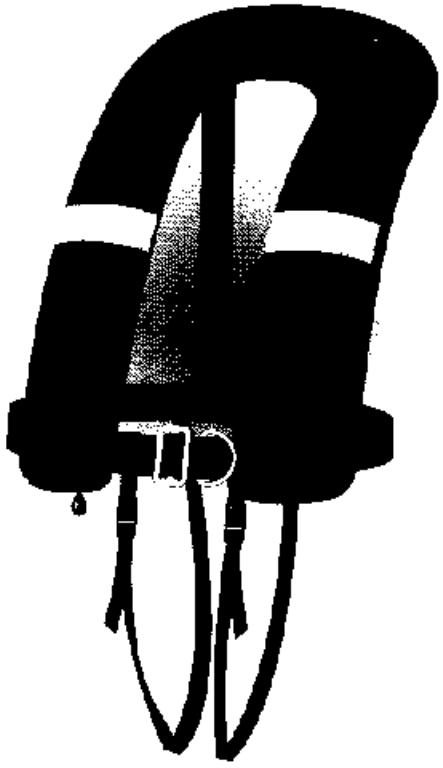
OFFSHORE RACING COUNCIL



1998-1999
SPECIAL REGULATIONS

governing offshore racing for Monohulls and Multihulls

– structural features
– yacht equipment
– personal equipment

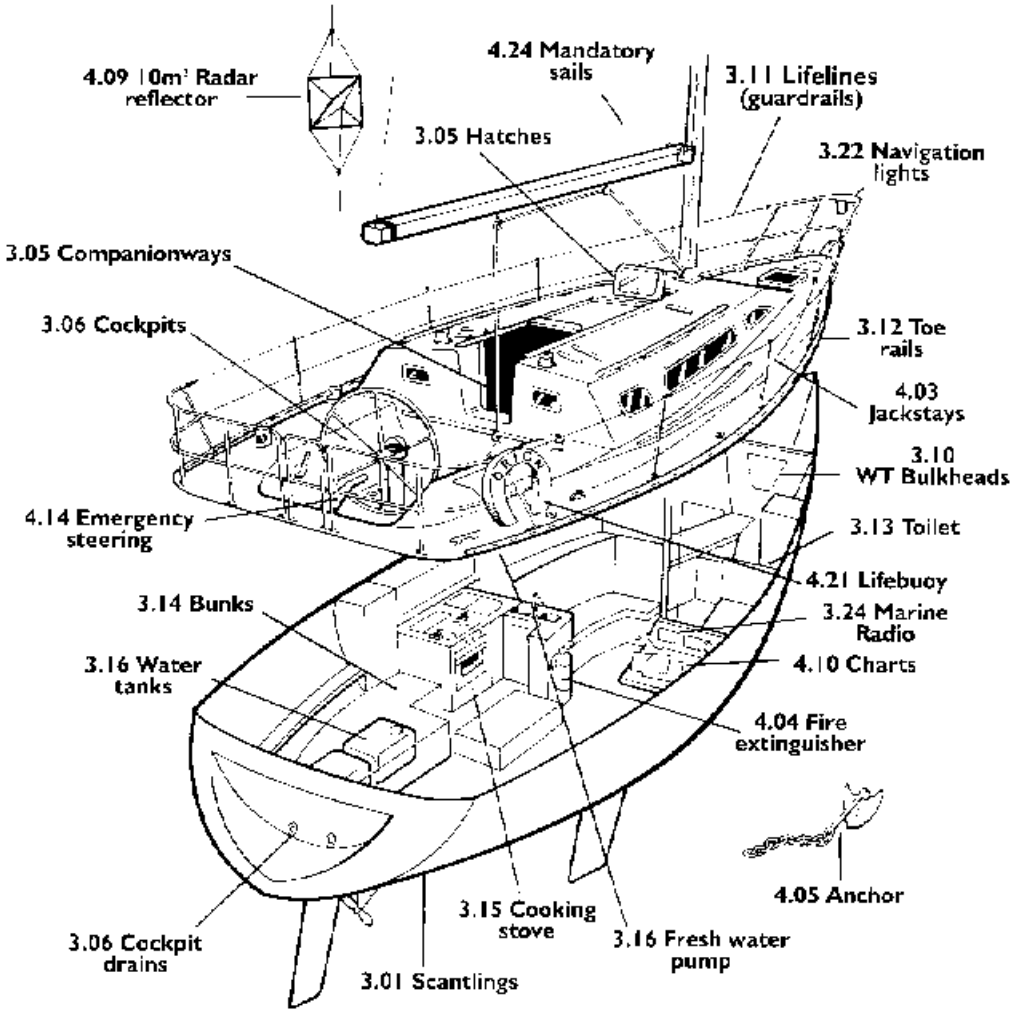
OFFSHORE RACING COUNCIL

NOTE TO THE 1998-99 EDITION
The regulations have been revised and now cater for multihulls as well as monohulls. Significant changes and additions are indicated by a sidebar.

CONTENTS

ORC SPECIAL REGULATIONS DIAGRAMMATIC GUIDE

(see also complete alphabetical index)



SECTION 1 - FUNDAMENTAL AND DEFINITIONS

Fundamental Regulations

1.01 PURPOSE AND USE

(a) It is the purpose of these Special Regulations to establish uniform minimum equipment and accommodation standards for monohull and multihull yachts racing offshore. A proa is excluded from these regulations.

(b) These Special Regulations do not replace, but rather supplement, the requirements of governmental authority, the Racing Rules and the rules of Class Associations and Rating Systems. The attention of owners is called to restrictions in the Rules on the location and movement of equipment.

(c) The Offshore Racing Council strongly recommends the use of these Special Regulations by all organisers of offshore races. Race Committees may select the category deemed most suitable for the type of race to be sailed.

1.02 OWNER'S RESPONSIBILITY

(a) The Safety of a yacht and her crew is the sole and inescapable responsibility of the owner, or owner's representative who must do his best to ensure that the yacht is fully found, thoroughly seaworthy and manned by an experienced crew who are physically fit to face bad weather. He must be satisfied as to the soundness of hull, spars, rigging, sails and all gear. He must ensure that all safety equipment is properly maintained and stowed and that the crew know where it is kept and how it is to be used.

(b) Neither the establishment of these Special Regulations, their use by race 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.

(c) Decision to race – A yacht is solely responsible for deciding whether or not to start or to continue racing - RRS Fundamental Rule 4.

1.03 DEFINITIONS, ABBREVIATIONS, WORD USAGE

Addresses of organisations shown here are on the Fyleaf or in Appendix B

Age Date	Month/year of first launch
CEN	Comité Européen de Normelisation
DSC	Digital Selective Calling
EN	European Norm
FA Station	The transverse station at which the upper corner of the transom meets the sheerline.
FICO	Fédération Internationale de la Course Océanique.
GMDSS	Global Maritime Distress & Safety System
Hatch	The term hatch includes the entire hatch assembly and also the lid or cover as part of that assembly (the part itself may be described as a hatch)
IMO	International Maritime Organisation
ISAF	International Sailing Federation
ISO	International Standard or International Organization for Standardization.
LOA	Length overall not including pulpits, bowsprits, boomkins etc
LWL	(Length of) loaded waterline
Monohull	Yacht in which the hull depth in any section does not decrease towards the centre-line.
Permanently installed	Means the item is built in and may not be removed from its permanently installed position for or during racing.
Proa	Assymetric catamaran
Series Date	Month/year of first launch of the first yacht of the production series
SOLAS	Safety of Life at Sea Convention
Yacht	The word "yacht" shall be taken as fully interchangeable with the word "boat"

The words "shall" and "must" are mandatory, and "should" and "may" are permissive.

SECTION 2 - APPLICATION & GENERAL REQUIREMENTS

2.01 Categories of Offshore Events

In many types of race, ranging from long-distance ocean races sailed under adverse conditions to short-course day races

sailed in protected waters, five categories of races are established, as follows, to provide for the differences in the standards of safety and accommodation required for such varying circumstances.

(a) **Category 0:** Trans-Ocean races, including races which pass through areas in which air or sea temperatures are likely to be less than 5° Celsius other than temporarily where yachts must be completely self-sufficient for very extended periods of time, capable of withstanding heavy storms and prepared to meet serious emergencies without the expectation of outside assistance.

(b) **Category 1:** Races of long distance and well offshore, where yachts must be completely self-sufficient for extended periods of time, capable of withstanding heavy storms and prepared to meet serious emergencies without the expectation of outside assistance.

(c) **Category 2:** Races of extended duration along or not far removed from shorelines or in large unprotected bays or lakes where a high degree of self-sufficiency is required of the yachts.

(d) **Category 3:** Races across open water, most of which is relatively protected or close to shorelines, including races for small yachts.

(e) **Category 4:** Short races, close to shore in relatively warm or protected waters normally held in daylight.

2.02 INSPECTION

A yacht may be inspected at any time. If she does not comply with these Special Regulations her entry may be rejected or she will be liable to disqualification or such other penalty as may be prescribed by the national authority or the race organisers.

2.03 GENERAL REQUIREMENTS

CATEGORY

(a) All required equipment shall: — **All**

- **Function properly**
- **Be readily accessible**
- **Be of a type, size and capacity suitable and adequate for the intended use and size of the yacht.**

(b) **Secure Fastening** All heavy items including inside ballast and internal fittings (such as batteries, stoves, gas bottles, tanks, engines, outboard motors etc.) and anchors and chains (see 4.05) shall be securely fastened so as to remain in position should the yacht be capsized 180 degrees. — **All**

(c) **Yacht equipment and fittings** shall be securely fastened — **All**

(d) **When to show Navigation Lights** — **All**

Navigation lights (see 3.22) shall be shown as required by the International Regulations for Preventing Collision at Sea, 1972, Part C and Technical Annex I). All yachts shall exhibit sidelights and a sternlight at the required times.

SECTION 3 - STRUCTURAL FEATURES, STABILITY, FIXED EQUIPMENT

3.01.1 General — **All**

Yachts shall be strongly built, watertight and, particularly with regard to hulls, decks and cabin trunks capable of withstanding solid water and knockdowns. They must be properly rigged and ballasted, be fully seaworthy and must meet the standards set forth herein. "Properly rigged" means inter alia that shrouds shall never be disconnected.

3.01.2 Watertight integrity of a hull. A hull, including, deck, coach roof, windows, hatches and all other parts, shall form an integral, essentially watertight unit and any openings in it shall be capable of being immediately secured to maintain this integrity. **Centerboard and daggerboard** trunks shall not open into the interior of a hull. — **All**

3.01.3 Scantlings — **See table below**

The yachts defined in the following table shall have been designed and built in accordance with

either

(i) the EC Recreational Craft Directive (having obtained the CE mark).

or

(ii) the ABS Guide for Building and Classing Offshore Yachts (available from ORC) when a written statement or statements to this effect signed by the designer and builder respectively shall be on board or a certificate of plan approval issued by ABS shall be on board.

INDEX TO ORC SPECIAL REGULATIONS

This Index is intended to be a quick guide to the Regulations. It is not exhaustive.
See also the diagrammatic guide and list of contents.

RANGES OF HYPOTHERMIA SYMPTOMS

Note: Most physical symptoms vary with each individual and may be unreliable indicators of core body temperature. Only a low temperature rectal thermometer gives reliable core temperature (the mouth cools too rapidly). In general, as body temperature falls, symptoms will increase.

MILD CONDITIONS
(97-93°F, 36-34°C)

- Shivering, cold hands and feet
- Still alert, and able to help self
- Numbness in limbs, loss of dexterity, clumsiness
- Pain from cold

MODERATE CONDITIONS
(93-90°F, 34-32°C)

- Same as above
- Confusion, loss of time estimation and reasoning power

SEVERE CONDITIONS
(90-82°F, 32-28°C)

- Shivering decreases or stops
- Further loss of reasoning and recall, confusion, abnormal behaviour
- Victim appears drunk, very clumsy, slurs speech, denies problem and may resist help
- Unable to help themselves
- Victim semiconscious to unconscious
- Muscular rigidity increasing

CRITICAL CONDITIONS
(82°F, 28°C and below)

- Unconscious, may look dead
- Little or no apparent breathing
- Pulse slow and weak, or no pulse found
- Skin cold, may be bluish-grey colour
- Very rigid

HYPOTHERMIA FIRST AID

ALL CASES

- Keep victim horizontal
- Move victim to dry, shelter and warmth
- Allow to urinate from horizontal position
- Handle gently
- Remove wet clothes - cut off if necessary
- Apply mild heat (comfortable to your skin) to head, neck, chest and groin - use hot water bottles, warm moist towels
- Cover with blankets or sleeping bag, insulate from cold - including head and neck
- Report to Doctor by radio

MILD CASES

- Primary task is to prevent further heat loss and allow body to rewarm itself
- Give warm, sweet drinks - *no alcohol - no caffeine*
- Apply mild heat source to stabilise temperature and/or
- Re-heat to point of perspiring
- Keep victim warm and horizontal for several hours

MODERATE CASES

- Same as above
- Offer sips of warm liquid only if victim is fully conscious and able to swallow without difficulty - *no alcohol - no caffeine*
- Have victim checked by doctor

SEVERE CASES

- Obtain medical advice as soon as possible using your radio
- Assist victim, but avoid alarming him - rough handling may cause cardiac arrest or ventricular fibrillation of heart
- No food or drink
- Observe for vomiting and be prepared to clear airway
- *Ignore pleas of "Leave me alone, I'm OK" victim is in serious trouble* - keep continuous watch over victim
- Lay victim down in bunk, wedge in place, elevate feet, keep immobile; no exercise
- Apply external mild heat to head, neck, chest and groin - keep temperature from dropping, but avoid too rapid a temperature rise

CRITICAL CASES

- *Always assume the patient is revivable - hypothermic victims may look dead* - don't give up - pulse very difficult to feel, breathing may have stopped
- Handle with extreme care
- Tilt the head back to open the airway - look, listen and feel for breathing and pulse for *one to two full minutes*
- If there is any breathing or pulse, no matter how faint or slow, do not give CPR, but keep a close watch on vital signs changes
- Stabilise temperature with available heat sources, such as naked chest to back warming by other crew member (leave legs alone)
- If no breathing or pulse for one or two minutes, *begin CPR immediately. Do not give up until victim is thoroughly warm - alive or dead.*
- *Medical help imperative - hospitalisation needed*

WARNING

- First aid for severe and critical hypothermia is to add heat to stabilise temperature only. Rapid rewarming, such as hot shower or bath, may be fatal. It will, at least, cause complications. Allow body to rewarm itself slowly.
- Body core temperature lags behind skin temperature during rewarming. Keep victim protected for extended period after apparent full recovery or medical help arrives. *Many hours are required for full return to normal temperature even though victim says he has recovered.*
- Always assume hypothermia is present in all man overboard situations in which victim has been exposed for more than 10-15 minutes
- Victims may also be suffering from near drowning, thus needing oxygen. Observe for vomiting.
- In a helicopter rescue, protect victim - including the head - from rotor blast wind chill

Prepared with the assistance of United States Sailing, Box 209, Newport, RI 02840 and Richard Clifford

CATEGORY

or

(iii) (when so stated in the Notice of Race) other criteria similar to that in (i) or (ii) above and acceptable to the race organisers, compliance with which shall be confirmed by written statement(s) on board -

LOA	Earliest of Age or Series date	Race Category
all	1/86 and after	3 1
12m (39.4 feet) and over	1/87 and after	2
under 12m (39.4 feet)	1/88 and after	2

3.02.1 Stability – Monohulls

Either with, or without, reasonable intervention from the crew a yacht shall be capable of self-righting from an inverted position. Self-righting shall be achievable whether or not the rig is intact. — Mono 0

A yacht shall be designed and built to resist capsize. A National Authority or race organiser may require compliance with a minimum stability or stability/buoyancy index. Attention is drawn to the stability index in IMS Regulations 201 and screening notices published by various national authorities. ISO 12217-2 when published as an international standard (not a draft) is expected to be capable of being used as a guide to general suitability for competition in Special Regulations Race Categories as follows: — Mono 0 - 4

ISO Category	A	B	C
SR Category	1	2-3	4

— Mono 1 - 4

Use of the ISO or any other index does not guarantee total safety or total freedom of risk from capsize or sinking. — All

3.02.2 Stability and Flotation – Multihulls. *Attention is drawn to ISO 12217-2.*

A multihull shall be effectively unsinkable and capable of floating in a stable position after being holed in one hull up to half the length of the hull, resulting from for example: damage from dismasting, flooding through a companionway, collision with underwater objects, daggerboard box rupture, or rudderbox rupture. To achieve this flotation, ***adequate watertight bulkheads*** and compartments (which may include permanently fitted flotation material) in each hull shall be provided to maintain buoyancy and stability. See also 3.10. — Multi 0 - 4

Multihulls built on or after 1/99 shall in every hull without accommodation be divided at intervals of not more than 12m (39.37') by one or more transverse watertight bulkheads

3.04.1 EMERGENCY EXITS – monohulls — Mono 0 - 4

LOA	Earliest of Age or Series date	Detail
8.5 m (28 ft) and over	1/95 and after	Yachts shall have two escape exits. One exit shall be located forward of the foremost mast except where structural features prevent its installation.

3.04.2 EMERGENCY EXITS – multihulls — Multi 0 - 4

(a) Each hull which contains accommodation shall have at least two means of exit. — Multi 0 - 3

(b) **Escape hatch(es)** Each hull which contains accommodation shall have a hatch for access to and from the hull in the event of a capsize (where structural features permit, a minimum diameter of 450mm or a dimension that allows all crew members to pass fully clothed is recommended). When the yacht is inverted the hatch shall be above the waterline. Each escape hatch must have been opened both from inside and outside within 6 months prior to an intended race. In Category 3 prior to 1/99 3.04.2(b) may be replaced by (c) below.

(c) **Emergency Access Marking** – (this provision is an alternative to (b) above). A full size marking on the outside of the hull indicating a place where an emergency access hole could be cut to avoid interior structures. When the yacht is inverted the emergency access hole marking shall be above the waterline. Tools for cutting the hole shall be securely stowed both inside and outside the vessel, ready for immediate use after capsize — Multi 3 (until 12/98)

CATEGORY

3.05 HATCHES & COMPANIONWAYS

(a) **Hatches.** No hatches forward of the maximum beam station shall open inwards excepting ports having an area of less than 0.071m² (110 sq in). Hatches shall be so arranged as to be above the water when the hull is heeled 90 degrees. All hatches shall be permanently fitted so that they can be closed immediately and will remain firmly shut in a 180 degree capsize. — All

(b) **Hatches and Companionways.** Companionways, if extended below the sheerline, shall be capable of being blocked off up to the level of the local sheerline when the companionway shall continue to give access to the interior of the hull. The main companionway hatch shall be fitted with a strong securing arrangement which shall be operable from above and below including when the yacht is inverted. **All blocking arrangements** (eg washboards) shall be capable of being secured in position with the hatch open or shut and shall be secured to the yacht (eg by a yacht) to prevent their being lost overboard. — All

(c) **A Companionway Hatch** must allow exit from the hull in the event of a capsize. — Multi 0 - 4

3.06 COCKPITS *Attention is drawn to ISO 11812.*

(a) **Cockpits General.** Cockpits shall be structurally strong, self-draining quickly by gravity at all angles of heel and permanently incorporated as an integral part of the hull. They must be essentially watertight, that is all openings to the hull must be capable of being strongly and rigidly secured. Every cockpit sole must be at least 2% LOA above LWL (2% LOA above LWL). Every bow, lateral, central or stern well will be considered as a cockpit for the purposes of 3.06(b) and 3.06(c) — All

(b) **Cockpits opening aft to the sea.** The lower edge of the companionway shall not be below main deck level at the local sheerline. Openings aft shall be not less in area than 50% maximum cockpit depth x maximum cockpit width. — All

(c) **Cockpit Volume.** — All
In a cockpit opening aft to the sea the following limitations on volume do not apply except to any volume of the cockpit which may be below the lowest coaming.

Earliest of Age or Series date	Detail	
before 4/92	The total volume of all cockpits below lowest coamings shall not exceed 6% L x B x FA (5% LWL x maximum beam x freeboard abreast the cockpit).	All 0 - 1
before 4/92	The total volume of all cockpits below lowest coamings shall not exceed 9% L x B x FA (8% LWL x maximum beam x freeboard abreast the cockpit).	All 2 - 4
4/92 and after	As above for the appropriate Category except that the determination of lowest coamings shall not include any aft of the FA station and any external cockpit aft of the working deck shall not be included in the calculation of cockpit volume.	All 0 - 4

(d) **Cockpit Drains** shall not be connected to bilge pump outlet pipes — All

LOA	earliest of Age or Series date	minimum drain size after allowance for screens	Race Category
under 8.5 m	any	2 x 25 mm diameter or equivalent	0 1 2 3 4
8.5 m and over	before 1/72	2 x 25 mm diameter or equivalent	0 1 2 3 4
8.5 m and over	1/72 to 1/77	2 x 25 mm diameter or equivalent	3 4
8.5 m and over	1/72 to 1/77	4 x 20 mm diameter or equivalent	0 1 2
8.5 m and over	after 1/77	4 x 20 mm diameter or equivalent	0 1 2 3 4

See table

Conversions: 8.5 m = 28 ft, 25 mm = 1 in, 20 mm = 3/4 in.

3.07 Sea cocks or valves on all through-hull openings below LWL except integral deck scuppers, shaft log, speed indicators, depth finders and the like, however a means of closing such openings, shall be provided. — All

3.08 Sheet winches shall be mounted in such a way that an operator is not required to be substantially below deck. — All

APPENDIX E

HYPOTHERMIA

WHAT IS IT?

A condition in which exposure to cold air and/or water lowers body core temperature. Death can result from too low a brain and heart temperature.

WHY BE CONCERNED?

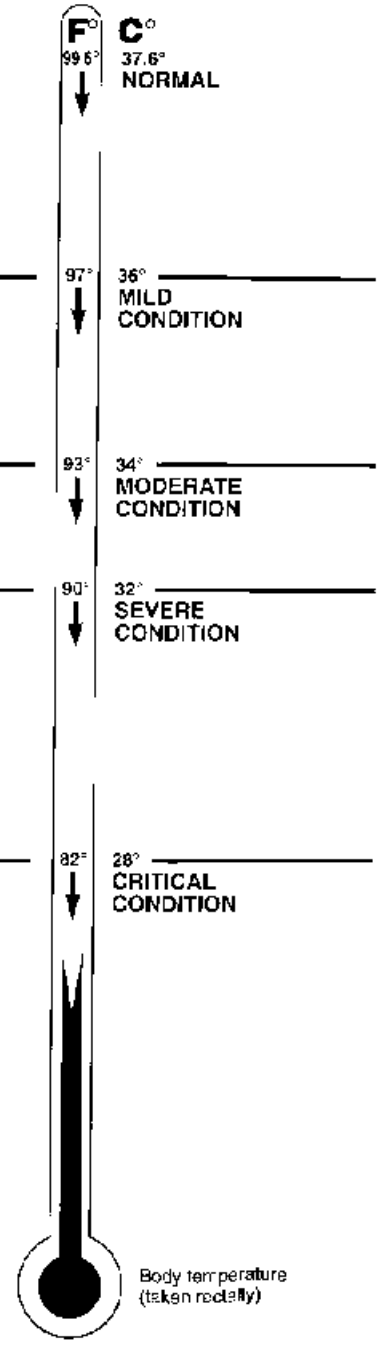
Hypothermia, even mild cases, decreases crew efficiency and increases risk of costly accidents. Proper planning against hypothermia can give a winning competitive edge.

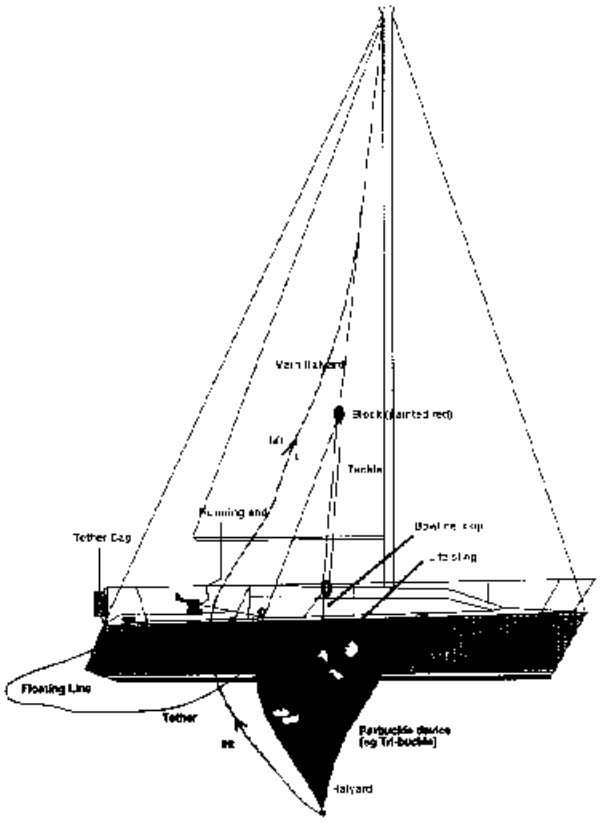
PREVENTION

- Wear warm clothing and a lifejacket/harness. Have proper foul-weather kit for all crew. Dry suits are excellent. Insulate all areas of the body, especially the high heat-loss areas: head, neck, armpits, sides of chest and groin. Keep warm and dry, but avoid sweating; wear layered clothes.
- Rotate watch frequently.
- Get plenty of rest, prevent fatigue.
- Eat and drink normally, no alcohol.
- Prevent dehydration; watch urine colour (drink more if colour becomes more intense).
- Avoid seasickness.
- Take into account special medical problems of crew members.
- Regularly train crew in Man Overboard recovery.
- Have two or more crew trained in CPR (Cardio-pulmonary Resuscitation).
- Have low-temperature rectal thermometer in first aid kit.

SURVIVAL IN COLD WATER (under 75°F, 25°C) (all UK waters)

- **If boat is in trouble,** put on dry or survival suits if carried. Radio for help; give position, number of crew, injuries, boat description. Make visual distress signals. Stay below if possible. Remain aboard until sinking is inevitable.
- **If going overboard,** launch life raft and EPIRB (Emergency Position Indicating Radio Beacon). Take grab bag and visual distress signals. Get into raft, stay out of water as water conducts heat out of the body 20 times faster than air. Remain near boat if practicable.
- **If in the water,** crew should stay together near the boat. This makes everyone easier to find, helps morale. Enter life raft, keep dry suit or survival suit on if worn.
- **If not wearing dry suit or survival suit,** make sure you wear a lifejacket, keep clothes and shoes on for some insulation and flotation. Keep hat on to protect head. Get all or as much of body out of water as soon as possible - into raft, swamped boat, flotsam. Avoid swimming and treading water, which increases heat loss. Minimise exposed body surface. A splashguard accessory on the lifejacket greatly improves resistance to swallowing seawater and also accommodates involuntary "gasping" when plunged into cold water.



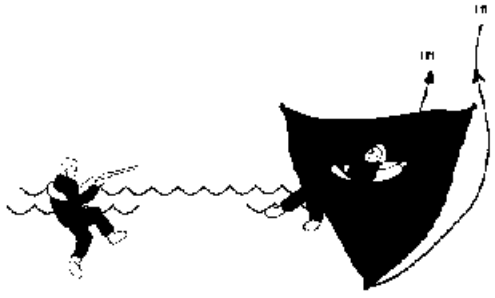


PARBUCKLE DEVICE

This is an alternative to the hoisting rig especially valuable for a casualty who may be hypothermic. A patent version is known as the Tri-buckle.

A triangle of strong porous material is clipped to the toe rail, the triangle top clipped to a halyard extension. The casualty is manoeuvred or dragged alongside into the triangle then rolled onto the deck by hoisting the halyard.

Hypothermic aftershock may be minimised by this method which keeps the casualty essentially horizontal



		CATEGORY
3.09	**Mast step.** The heel of a keel stepped mast shall be securely fastened to the mast step or adjoining structure.	All
3.10	**WATERTIGHT BULKHEADS** *See also 3.03.3 for Multihulls*	
(a)	A hull shall have a watertight **"crash" bulkhead** within 15% of LOA from the bow and abaft the forward end of LWL.	Multi 0 - 4 Mono 0
(b)	As an alternative to 3.10 (a) above, a hull may have permanently installed **closed-cell foam buoyancy** effectively filling the forward 30% (linear measurement) of the hull	Multi 0 - 4
(c)	**A yacht shall have at least two watertight transverse main bulkheads** (in addition to "crash" bulkheads at bow or stern).	Mono 0
(d)	**Watertight bulkheads shall be strongly built** to take a full head of water pressure without allowing any leakage into the adjacent compartment.	All
(e)	**Outside deck access** for inspection, pumping and (unless the compartment is too small for crew to enter) for crew, shall be provided to every watertight compartment terminated by a hull section bulkhead except that deck access to extreme end "crash" compartments is not required.	All
(f)	**After flooding** of any one compartment, the yacht should be capable of providing shelter and sustenance for the full crew for 1 week in a dry compartment having direct access to the deck.	Mono 0
(g)	**An access hatch** shall be provided in every watertight bulkhead (except a "crash" bulkhead) and should have closures permanently attached. An access hatch should be capable of being securely shut within 5 seconds.	Mono 0
(h)	**Each watertight compartment should be provided with a means of manually pumping out** from a position outside the compartment	All
(i)	**All yachts are encouraged to have an extreme end "crash" bulkhead** at the stern in addition to the bulkheads described above.	Mono 0
3.11	**LIFELINES, STANCHIONS AND PULPITS** *Attention is drawn to ISO 15085.*	All
	*Notes 1. In the context of this section the word "**guardrail**" may be taken as a substitute for the word "**lifeline**". 2. When due to the particular design of a **multihull** it is impractical to precisely follow Special Regulations regarding lifelines, stanchions and pulpits, the regulations shall be followed as closely as possible (including eg lifeline height, vertical spacing, support intervals, toughness, materials, profile, fixing) with the aim of minimising the risk of people falling overboard.*	
(a)	**Fixed bow pulpit** (forward of headstay)* **and stern pulpit** (unless lifelines are arranged as to adequately substitute for a stern pulpit).	Mono 0 - 4
	* For yachts under 8.5 m (28 ft) it is permitted that the bow pulpit may be aft of the headstay provided the upper forward closure is within 405 mm (16 in) of the headstay.	
(b)	A **trimaran** shall be equipped with a bow pulpit on the main hull. This pulpit shall be joined on each side with upper and lower lifelines around the main hull supported on stanchions. The lifelines may be interrupted where there are nets or crossbeam wings outboard of the main hull.	Trimaran 0 - 4
(c)	**Upper rails of pulpits** shall be at no less height above the working deck than upper lifelines (see 3.11(h)) which height shall be essentially the same above the waterline as is that of the upper lifeline abreast the forward part of the cockpit. Upper rails in bow pulpits shall be securely shut while racing. **A catamaran** may be equipped with a bow and/or stern pulpit to terminate the lifelines. See also 3.11(f).	All Catamaran 0 - 4
(d)	**Lifelines shall be effectively continuous** around the working deck but may be substituted by appropriate horizontal rails in pulpits. Lifelines need not be fixed to the bow pulpit if they terminate at, or pass through, adequately braced stanchions set inside and overlapping the bow pulpit, provided that the gap between the upper lifeline and the bow pulpit does not exceed 150 mm (6 in).	Mono 0 - 4

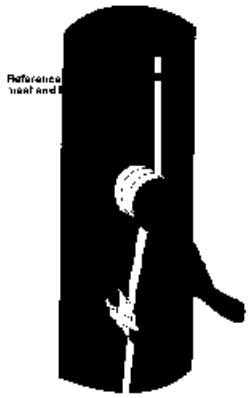
		CATEGORY
(e)	**Lifelines shall be permanently supported at intervals of not more than 2.13 m (7 ft)** and shall not pass outboard of supporting stanchions.	All
(f)	**Support struts and terminals aft** - Provided the complete **lifeline** enclosure is supported by stanchions and pulpit bases within the working deck, lifeline terminals and support struts may be fixed to the hull aft of the working deck.	Mono D - 4
(g)	**Lifelines shall be taut.** *As a guide, when a deflecting force of 50 N (5.1 kgf, 11.2 lbf) is applied to a lifeline midway between supports, the lifeline should not deflect more than 50 mm.*	All
(h)	**Lifelines and vertical openings.**	

LOA	Earliest of Age/Series Date	Minimum requirements	
(i)	under 8.5 m (28 ft)	before 1/92	Taut single lifeline, at a height of no less than 450 mm (18 in) above the working deck. No vertical opening shall exceed 550 mm (22 in)	All
(ii)	under 8.5 m (28 ft)	1/92 and after	As (i) above except that when an intermediate life line is fitted, no vertical opening shall exceed 380 mm (15 in).	
(iii)	8.5 m (28 ft) and over	before 1/93	Taut double lifeline with upper lifeline at a height of no less than 600 mm (24 in) above the working deck. No vertical opening shall exceed 560 mm (22 in)	
(iv)	8.5 m (28 ft) and over	1/93 and after	As (iii) above except that no vertical opening shall exceed 380 mm (15 in).	
(v)	all	all	On yachts with intermediate lifelines, the intermediate line shall be not less than 230 mm (9 in) above the working deck.	

(i)	**Lifeline materials.** Lifelines shall be stranded stainless steel wire of minimum diameter as given below. Grade 316 stainless wire is recommended. Lifelines installed from 1/99 shall be uncoated and used without close-fitting sleeving	All

LOA	Minimum Wire Diameter	
under 8.5 m (28ft)	5 mm (1/8 in)	All
8.5m - 13 m	4 mm (5/32 in)	
over 13 m (43 ft)	5 mm (3/16 in)	

(j)	**A taut lanyard of synthetic rope** may be used to secure lifelines provided the gap it closes does not exceed 100 mm (4 in). All wire, fittings, anchor point fixtures and lanyards shall comprise a life-line enclosure system which has at all points at least the breaking strength of the required lifeline wire.	All
(k)	**Stanchions profile and materials.** Within the first 50 mm (2 in) from the deck, stanchions shall not be displaced horizontally from the point at which they emerge from the deck or base by more than 10 mm (3/8 in). Stanchions shall not be angled at more than 10° from vertical at any point above 50 mm (2 in) from the deck.	All



THE HOISTING RIG

Note: Since the hoisting rig was developed, more evidence has emphasised the value in keeping a victim horizontal particularly after long or hypothermic immersion. A parbuckle or horizontal lift is highly desirable (see next page).

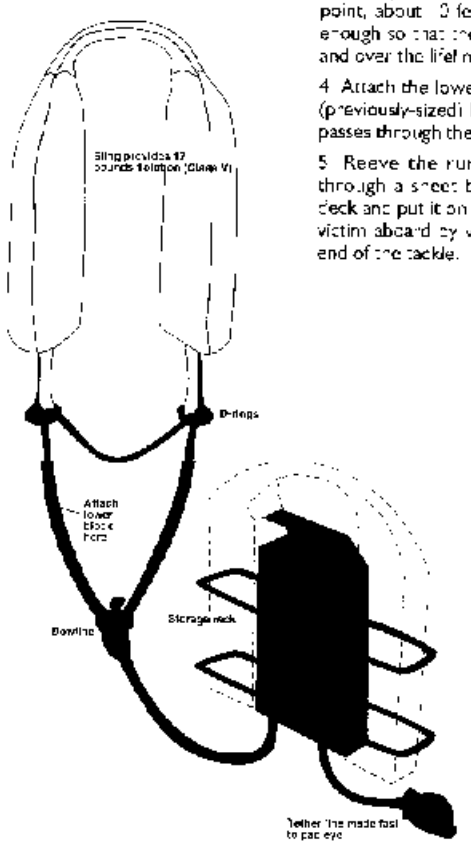
1. With the floating tether line, haul the victim alongside, preferably on the windward side, from amidships to the quarter, wherever there are available cleats and winches.

2. Pull up on the tether line (with winch assistance, if necessary) to get the victim's head and shoulders out of the water and cleat it. The victim is now safe.

3. Attach a three-or four-part tackle to the main halyard, haul it up to a predetermined point, about 3 feet above the deck or high enough so that the victim can be hoisted up and over the lifelines. Cleat off the halyard.

4. Attach the lower end of the tackle to the (previously-sized) loop in the tether line that passes through the D-rings of the lifesling.

5. Reeve the running end of the tackle through a sheet block or snatch block on deck and put it on a cockpit winch. Hoist the victim aboard by winching it on the running end of the tackle.



The Lifesling

the mizzen as soon as it is convenient to do so during the early phases of Quick-Stop.

QUICKSTOP USING ENGINE
Use of the engine is not essential, although it's advisable to have it running in neutral, during the Quick-Stop phase, unless it is needed in the final approach.

SHORTHANDED CREWS

When there are only two people sailing together and a man-overboard accident occurs, the remaining crew member may have difficulty in handling the recovery alone. If the victim has sustained injuries, getting him back aboard may be a most impossible. The Quick-Stop method is simple to effect by a singlehander, with only one alteration to the procedure: the addition of a specialised piece of equipment called the "Seattle Sling", a floating horseco lar device that doubles as a hoisting sling. The Seattle Sling (illustrated on the following page) is attached to the boat by a length of floating line three or four times the boat's length. When a crew member falls overboard the scenario should proceed as follows:

1. A cush on or other flotation is thrown while the boat is brought IMMEDIATELY head-to-wind, slowed and stopped.

2. The Seattle Sling is deployed by opening the bag that is hung on the stern pulpit and dropping the sling into the water. It will trail out astern and draw out the remaining line.

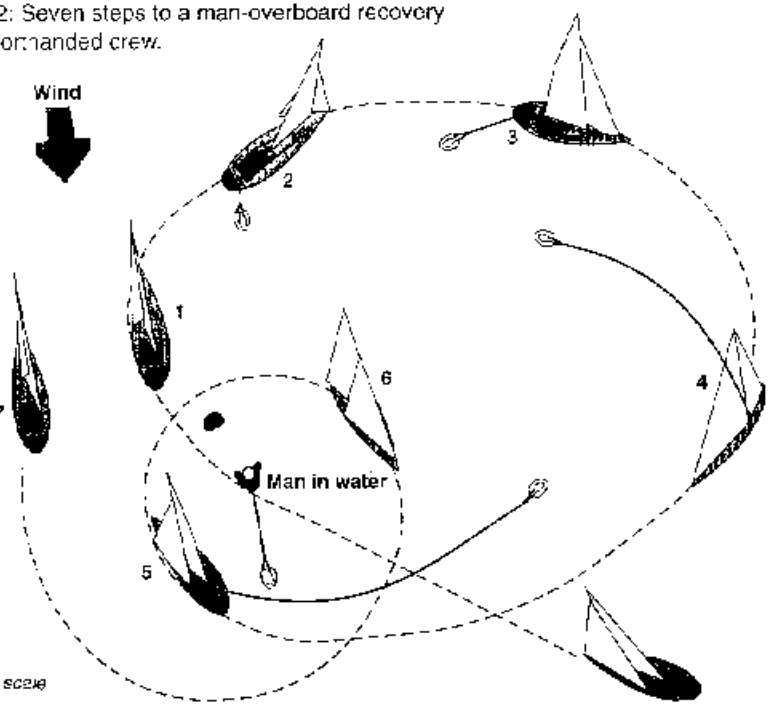
3. Once deployed, the boat is sailed in a wide circle around the victim with the line and sling trailing astern. The jib is not tended but allowed to back from the head-to-wind position, which increases the rate of turn.

4. Contact is established with the victim by the line and sling being drawn inward by the boat's tight circling motion (5, 6). The victim then places the sling over his head and under his arms.

5. Upon contact, the boat is put head-to-wind again, the headsail is dropped to the deck and the main is doused.

6. As the boat drifts slowly backward, the crew begins pulling the sling and the victim to the boat. If necessary, a cockpit winch can be used to assist in this phase, which should continue until the victim is alongside and pulled up tightly until he can be safely recovered.

Figure 2: Seven steps to a man-overboard recovery for a shorthanded crew.



CATEGORY

LOA	Earliest of Age/Series date	Detail
any	before 1/87	Carbon fibre is not recommended in stanchions pulpits and lifelines.
any	1/87 to 12/87	Stanchions, pulpits and lifelines shall not be made of carbon fibre.
any	1/88 and after	Stanchions, pulpits and lifelines shall not be made of carbon fibre. Stanchions shall be straight, except that one bend is permitted in the first 30 mm (2 in) above deck.

A1

(l) **Stanchions and pulpits - fixing. Pulpits and stanchions shall be securely attached.** When there are sockets or studs, these shall be through-bolted, bonded or welded. The pulpit(s)and/or stanchions fitted to these shall be mechanically retained without the help of the life lines. Without sockets or studs, pulpits and/or stanchions shall be through-bolted, bonded or welded. — All

The bases of pulpits and stanchions shall not be further inboard from the edge of the working deck than 5% of maximum beam or 50 mm (6 in), whichever is greater. Stanchion bases shall not be situated outboard of the working deck. For the purpose of this rule a stanchion or pulpit base shall be taken to include a sleeve or socket into which a stanchion or pulpit tube is fitted but shall exclude a baseplate which may carry fixings into the deck or hull — Mono 0 - 4

3.11.1 NETS (TRAMPOLINES), LIFELINES, STANCHIONS AND PULPITS. — Multi 0 - 4

The word "net" is interchangeable with the word "*trampoline*". The nets described here are essentially horizontal.

(a) **Nets** shall be durable, solidly fixed woven webbing, water permeable fabric, or netting with a mesh opening not larger than 5.08cm (2 inches). Attachment points on the structure of the yacht shall be planned to avoid chafe. The junction between the trampolines or nets and the yacht shall present no risk of foot trapping.

A net shall be solidly fixed at regular intervals on transverse and longitudinal support lines and shall be laced-stitched to the bolt rope. The lines used to tie the nets should be individually tied or not continuously connect to more than four attachment points per connecting line.

A net shall be able to resist the full weight of the crew either in normal working conditions at sea or in case of capsize when the yacht is inverted.

(b) A **trimaran with two crossbeams** between the main hull and each outrigger shall have a net surface to cover at least:

(i) the space between the beams plus

(ii) on each side of the yacht forward a triangle joining:
(a) the aft end of the pulpit on the main hull
(b) the mid-point on each forward crossbeam between main hull and outrigger
(c) the intersection of each forward crossbeam and the main hull

(iii) on each side of the yacht aft a triangle joining:
(a) the intersection of each aft crossbeam and the main hull
(b) the intersection of each aft crossbeam and the outrigger
(c) the after-most part of the cockpit or steering position (whichever is furthest aft)

Where the net reaches the base of the pulpit there shall be an **additional lifeline** from the top of the pulpit to the forward crossbeam at or outboard of the mid-point.

(c) In a **trimaran with a single crossbeam** between the main hull and each outrigger the net surface shall be at least that between two straight lines from the intersection of the crossbeam and the outrigger and ending one at the aft end of the pulpit on the main hull and the other at the aftermost point of the cockpit or steering position (whichever is furthest aft).

(d) In a **trimaran with a steering position on an outrigger** even occasionally (eg emergency steering) irrespective of whether or not there is a cockpit:

CATEGORY

such outriggers shall be equipped with lifelines as in 3.11(h) which shall extend adjacent to the steering position protecting an area of 3 meters diameter, centred on the steering position.

When measured between lifelines they shall be taut, undeflected positions shall be taken for this purpose.

(e) In a **catamaran the total net surface shall be limited:**

(i) laterally by the hulls

(ii) longitudinally by a station through the forestay base and also a station through the aftermost point of the boom or balestron when the boom is lying fore and aft.

A catamaran with a central nacelle (non-immersed) may satisfy the regulation for trimarans.

(f) **Catamaran Lifelines**

Each hull shall be equipped with lifelines as in 3.11 (h) which shall extend from bow to transom. — Multi 0 - 4

A catamaran that does not possess a forward or aft crossbeam shall be equipped with transverse lifelines as in 3.11 (h) at the extremity of the net forward and aft. These lifelines shall be attached to bow and stern pulpits or superstructures. A webbing, strop or rope (minimum diameter 6mm) shall be rove in a zig-zag fashion to connect the two lifelines and the net.

3.12 A **Toe Rail** of minimum height 25 mm (1 in) shall be permanently fitted around the foredeck from abreast the mast, except in way of fittings and not further inboard from the edge of the working deck than one third of the local beam. — Mono 0 - 3

The following variations shall apply

LOA	Earliest date of age or series date	Minimum requirements	
Any	before 1/93	an additional lifeline of minimum height 25 mm (1 in) and maximum height 50 mm (2 in) is acceptable in lieu of a toe rail (but shall not count as an intermediate lifeline required in 3.11 (j)).	Mono 0 - 3
Any	before 1/81	a toe rail minimum height of 20 mm (3/4 in) is acceptable	
Any	1/94 and after	the toe rail shall be fitted as close as practicable to the vertical axis of stanchion bases but not further inboard than 1/3 the local half beam.	

3.13 (a) **Toilet**, securely installed. — All 0 - 2

(b) **Toilet**, securely installed or fitted bucket. — All 3 - 4

3.14 (a) **Bunks**, securely installed — All 1 - 4

(b) **Bunks**, securely installed, one for each member of the declared crew. — All 0

3.15 (a) **Cooking stove**, securely installed against a capsize with safe accessible fuel shutoff control capable of being safely operated in a seaway. — All 0 - 3

(b) **Galley facilities**. — All 4

3.16 WATER TANKS & WATER

(a) **Water tank(s)**, securely installed and capable of dividing the water supply into at least three compartments and discharging through a pump. — All 0

(b) **Water tank(s)**, securely installed and capable of dividing the water supply into at least two compartments and discharging through a pump. — All 1

(c) At least one securely installed **water tank** discharging through a pump. — All 2 - 3

(d) The **quantity of water** to be taken aboard is left to the discretion of the organising authority. In the absence of a watermaker 9 litres (2 UK gallons 2.4 US gallons) per person per 1000 miles may be taken as the minimum. — All 0

(e) At least 9 litres (2 UK gallons, 2.4 US gallons) of **water for emergency** use in a dedicated container or containers). — All 0 - 3

3.17 **Hand holds** Adequate hand holds shall be fitted below deck so that crew members may move about safely at sea. — All

APPENDIX D

For information only

Quickstop and Lifesling

MAN OVERBOARD – QUICK STOP AND THE LIFE SLING (OR SEATTLE SLING)

When a crew member goes over the side recovery time is of the essence. In an effort to come up with a recovery system that is simple and lightning quick, the US Yacht Racing Union Safety at Sea Committee, the US Naval Academy Sailing Squadron, the Cruising Club of America Technical Committee and the Sailing Foundation of Seattle, Washington, joined forces to conduct extensive research and sea trials. The result of their collaboration is the "Quick-Stop" method of man-overboard recovery. The hallmark of this method is the immediate reduction of boat speed by turning in a direction to windward and thereafter manoeuvring at modest speed, remaining near the victim. In most instances, this is superior to the conventional procedure of reaching off, then either jibing or tacking and returning on a reciprocal course.

QUICK-STOP

1. **Shout "man overboard"** on the wind and designate a crew member to spot and point to **the victim's position** in the water. The spotter should not take his eyes off the victim (see Figure 1 below).

2. **Provide immediate flotation.** Deeply buoyed objects such as cockpit cushions, rolled-up PFDs kept handy to the helmsman, life rings and so on. These objects may not only come to the aid of the victim, but will "litter the water" where he went overboard and help your spotter to keep him in view. Deployment of the pole and flag (dan buoy) requires too much time. The pole is saved to "put on top" of the victim in case the initial manoeuvre is unsuccessful.

3. **Bring boat head-to-wind** and beyond (see Figure 1).

4. **Allow headsail to back** and further slow the boat.

5. **Keep turning with headsail backed** until wind is abaft the beam.

6. **Head on beam-to-broad reach course** for two or three lengths then go to nearly dead downwind.

7. **Drop the headsail** while keeping the mainsail centred (or nearly so). The jib sheets are not slacked, even during the dousing manoeuvre, to keep them inside the lifelines.

8. **Hold the downwind course** until victim is abaft the beam.

9. **Gybe.**

10. **Approach the victim** on a course of **approximately** 45 degrees to 60 degrees off the wind.

11. **Establish contact** with the victim with heaving line or other device. The Naval Academy uses a "throwing sock" containing 75 feet of light floating line and a kapok bag that can be thrown into the wind because the line is kept inside the bag and trails out as it sails to the victim.

12. **Effect recovery** over the windward side.

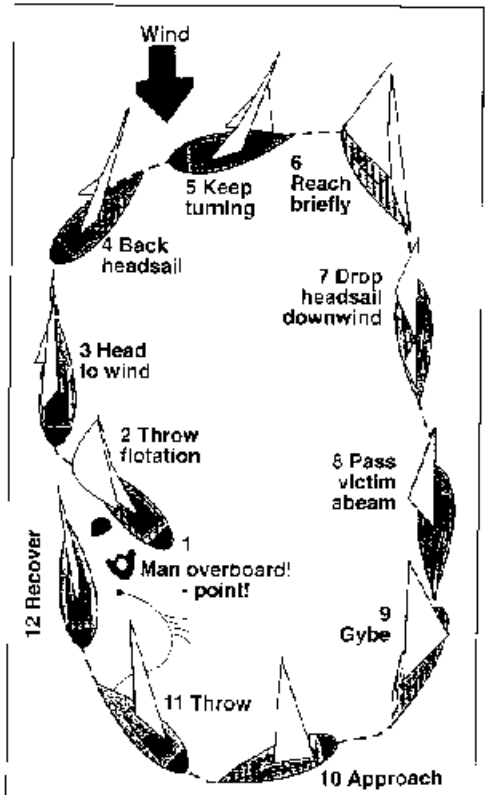


Figure 1: Twelve steps to a quick man-overboard recovery.

QUICKSTOP UNDER SPINNAKER

The same procedure is used to accommodate a spinnaker. Follow the preceding instructions. As the boat comes head-to-wind and the pole is eased to the head stay, the spinnaker halyard is lowered and the sail is gathered on the fore deck. The turn is continued through the tack and the approach phase commences.

QUICKSTOP IN YAWLS & KETCHES

Experiment with your mizzensail. During sea trials, it was determined that the best procedure was to drop

Red parachute flares (Cat. 2, 3 - four; Cat. 1 - twelve)

SOLAS	EXPIRY DATE?	CONDITION (G/F/P)
1	....	☐
2	....	☐
3	....	☐
4	....	☐
5	....	☐
6	....	☐
7	....	☐
8	....	☐
9	....	☐
10	....	☐
11	....	☐
12	....	☐

Red hand flares (Cat. 1, 4 - four)

SOLAS	EXPIRY DATE?	CONDITION (G/F/P)
1	....	☐
2	....	☐
3	....	☐
4	....	☐

White hand flares (Cat. 1, 4 - four)
(SOLAS does not specify but should accord with Reg. 36)

SOLAS Reg. 36?	EXPIRY DATE?	CONDITION (G/F/P)
1	....	☐
2	....	☐
3	....	☐
4	....	☐

Orange Smoke (Cat. 1, 4 - two)

SOLAS	EXPIRY DATE?	CONDITION (G/F/P)
1	....	☐
2	....	☐

Inspector's Report to Race Committee

I have inspected the above yacht as indicated.

Comments ....

....

Signed .... Date ....

		CATEGORY
3.18	**BILGE PUMPS AND BUCKETS**	
(a)	No **bilge pump** may discharge into a cockpit unless that cockpit opens aft to the sea. Bilge pumps shall not be connected to cockpit drains.	All 0 - 4
(b)	**Two manual bilge pumps**, securely fitted to the yacht's structure, one operable above, the other below deck. Each pump shall be operable with all cockpit seats, hatches and companionways shut and shall be provided with permanently fitted discharge pipe(s) of sufficient capacity to accommodate simultaneously both pumps.	All 0 - 2
(c)	**Multihulls** shall have provision to pump out all watertight compartments (except those filled with impermeable buoyancy).	Multi 0 - 4
(d)	**One manual bilge pump** operable with all cockpit seats, hatches and companionways shut.	Mono 3
(e)	**One manual bilge pump.**	Mono 4
(f)	**Unless permanently fitted, each bilge pump handle** shall be provided with a lanyard or catch or similar device to prevent accidental loss.	All
(g)	**Two buckets** of stout construction each with at least 9 litres (2 UK gallons, 2.4 US gallons) capacity. Each bucket to have a lanyard.	All
3.19	(a) **Compass**, marine type, properly installed and adjusted.	All
	(b) **Spare compass.**	All 0 - 3
3.20	**Halyards.** No mast shall have less than two **halyards**, each capable of hoisting a sail	All
3.21	**Bow fairlead**, closed or closable and a cleat or securing arrangement, suitable for towing.	Mono 0
3.22	**NAVIGATION LIGHTS** (see also 2.03 (d))	All
(a)	**Navigation lights shall be mounted so that they will not be masked** by sails or the heeling of the yacht.	
(b)	**Navigation lights shall not be mounted below deck level** and should be at no less height than immediately under the upper lifeline.	All

LOA	Guide to Minimum bulb power
under 12 m (39.4 ft)	10 W
12 m (39.4 ft) and above	25 W

(c)	**Reserve navigation lights and power source.** Reserve navigation lights shall have the same minimum specifications as the navigation lights in (b) above with a separable power source and separate wiring from that used for the normal navigation lights	All 0 - 3
(d)	**Spare bulbs** for navigation lights shall be carried.	All
3.23	**ENGINE AND FUEL**	
(a)	**Permanently Installed Propulsion Engine** to provide a minimum speed in knots of (1.8 x square root of LWL in metres) or (square root of LWL in feet)	All 0 - 2
(b)	**Propulsion Engine**	All 3
(c)	**Inboard engine installations** shall be such that the engine when running can be securely covered and that the exhaust and fuel supply systems are securely installed and adequately protected from the effects of heavy weather.	All 0 - 4
(d)	When an electric starter is the only provision for starting the engine, a **separate battery** shall be carried the primary purpose of which is to start the engine	All 0 - 4
(e)	**Engine fuel and tankage.** Each yacht fitted with a permanently installed propulsion engine shall carry a **minimum amount of fuel in a permanently installed fuel tank.** This minimum amount of fuel may be specified in the Notice of Race but if not, shall be sufficient to be able to meet charging requirements for the duration of the race and to motor at a minimum speed in knots of (1.8 x square root of LWL in metres) or (square root of LWL in feet) for at least 8 hours.	All 0 - 4

		CATEGORY
(f)	**Fuel Tanks.** Except for permanently installed liners, flexible tank(s) shall not be fitted.	All 0
(g)	Organising authorities are recommended to apply their own **minimum fuel requirements.**	All 0
(h)	**Shutoff valves on all fuel tanks.**	All 0 - 4

3.24 MARINE RADIO

Note: GMDSS - Although provision of GMDSS and DSC will not be mandatory for small craft during the term of the present ORC Special Regulations, owners may wish to consider including these facilities when installing new equipment.

(a)	A marine radio transceiver	All 0 - 3
	• When this is VHF it shall have a **minimum power of 25W**, shall be provided **with a masthead antenna** and co-axial feeder with not more than 40% power loss.	
	• When the Notice of Race so states a Satcom transceiver terminal may take the place of a marine radio transceiver.	
(b)	A VHF transceiver should include **Channel 72** (an international ship-ship channel which, by 'common use', could become an accepted yacht-yacht channel for ocean racing yachts anywhere in the world).	All 0 - 4
(c)	An **emergency antenna** shall be provided when the regular antenna depends upon the mast.	All 0 - 4
(d)	**In addit on to (a) a waterproof hand-held VHF transceiver.**	(Mono 0 - 1 (Multi 0 - 3
(e)	**Radio receiver** capable of receiving weather bulletins (in categories 0, 1, 2 and 3 this shall be in addition to the radio in (a).	All 0 - 4
(f)	**An automatic position fixing device** (eg GPS) or a radio direction finder. See 4.18 (b).	All 0 - 3

SECTION 4 - PORTABLE EQUIPMENT & SUPPLIES for the YACHT

for water & fuel see 3.16 (d) and 3.23 (e)

4.01 SAIL NUMBERS

National letters and sail numbers shall be carried in accordance with RRS 77 and Appendix H except that:- — All

(a)	Sail numbers may be allocted by a national or state authority	
(b)	Sail numbers and letters of the size carried on the mainsail must be displayed by alternative means when none of the numbered sails is set.	

4.02 Soft wood plugs tapered and of the appropriate size, to be attached or adjacent to the appropriate fitting for every through-hull opening. — All

4.03 JACKSTAYS & ANCHORAGE POINTS

(a)	**Jackstays shall be fitted on deck** port and starboard of the yacht's centre line to provide secure attachments for safety harnesses. Jackstays shall comprise stainless steel 1 x 19 wire of minimum diameter 5 mm (3/16 in), or webbing of equivalent strength. (20kN ((2 040 kgf, 4 500 lbf)) breaking strain webbing is recommended). Stainless steel wire jackstays installed from 1/99 shall be uncoated and used without any sleeving.	All 0 - 2
(b)	**Jackstays shall be attached to through-bolted or welded deck plates**, or other suitable and strong anchorages. The jackstays shall, if possible, be fitted in such a way that a crew member, when clipped on, can move readily between the working areas on deck and the cockpit(s) without unclipping the harness. If the deck layout renders this impossible, additional lines shall be fitted so that a crew member can move as described with a minimum of clipping operations.	All 0 - 2
(c)	**A crew member shall be able to clip on before coming on deck** unclip after going below and remain clipped on while moving laterally across the yacht on a foredeck, afterdeck, and amidships. If necessary, additional jackstays and/or through-bolted or welded anchorage points shall be provided for this purpose.	All 0 - 2
(d)	**Through-bolted or welded anchorage points**, or other suitable and strong anchorage, for safety harnesses shall be provided adjacent to stations such as the helm, sheet winches and masts, where crew members work for long periods. Jackstays should be sited in such a way that the safety line can be kept as short as possible. Through-bolted or welded anchorage points, or other suitable and strong anchorage, for safety harnesses shall be provided adjacent to stations such as the helm, sheet winches and masts, where crew may need to work.	All 0 - 2

APPENDIX C

-for information only

ORC STANDARD INSPECTION CARD

(Please note that this appendix is not comprehensive but only a guide for use by Race Organisers. Add items as appropriate. A copy of the card should be given to the yacht in advance.)

INSPECTORS mark each item with either a tick (OK) or a cross (NOT OK) in the check boxes.

YACHT..... Sail No.....

No. of crew on board for this race..... Total liferaft capacity.....

IMPORTANT Inspection is carried out only as a guide to owners. An inspector cannot limit or reduce the complete and unlimited responsibility of the owner or owner's representative.

"I, owner or representative, have read and understood Special Regulations, in particular 1.02 (a) (3) and (c) (Owner's Responsibility)".

Signed..... /Printed .....(Owner/Representative)

Please prepare your yacht as requested. This will save everyone's time! Have somebody ready on the boat who is thoroughly familiar with her and her gear (as all crew members must be). Failure to comply may result in penalty or exclusion from the race or the race results. The inspector may check items not listed here. Thank you for your help.

Below Deck

Lay out on one or more clear berths the following:

- all safety harnesses and lines (5.02)..... How many? ☐
- storm jib/heavy weather jib (4.24(c)(2))
- foghorn (4.08)
- flashlights and spare batteries (4.06)
- rigging cutters (4.15)
- First aid kit and manual (4.07)
- 2 buckets (3.18(g))
- all lifejackets (5.01)..... How many? ☐
- 2 x fire extinguishers (4.04)
- pyrotechnics (removed from their box) (see next page) (4.22)
- mast/keel restrained? (3.09)

On the Chart Table

Liferaft certificate (4.19)..... for how many persons? ☐

- Rating Certificate(s) (Notice of Race)
- Radar Reflector data (not required if 18" octahedral)
- charts for this race/event (4.10)
- Stantings certificate or letters (3.01)

Main Companionway

Have the retaining device for the washboards in place (3.05)

On Deck

- bilge pump handles - have retaining method fixed (3.18(f))
- rig the trysail with sheets (4.24(b))
- lay out the equipment for steering without the rudder (4.14)
- rig the radar reflector (4.09)
- have main and emergency navigation lights rigged ready to switch on (3.22)
- fix the cockpit lockers shut as for heavy weather (3.06(a))
- lifelines taut (3.11(g))

Man Overboard

On what date did you last complete a MOB drill? (Appendix D)

Place

Did you use sail only?..... ☐ or sail and motor?

Are you satisfied you can recover a man overboard quickly?

Over which side did you recover? WINDWARD/LEEWARD

Have the actual hoisting-in gear rigged ready to show the inspector how it works

e) two paddles;

f) one repair outfit capable of repairing punctures in buoyancy compartments;

g) one topping-up pump or bellows;

h) one waterproof electric torch;

i) three hand-held distress flare signals in accordance with SOLAS regulation 36, capable of giving a bright red light;

j) six anti-seasickness tablets for each person which the liferaft is deemed fit to accommodate;

k) instructions on a plastic sheet on how to survive in the liferaft;

l) the liferaft shall be inflated by a gas which is not injurious to the occupants and the inflation shall take place automatically either on the pulling of a line or by some other equally simple and efficient method. Means shall be provided whereby a topping-up pump or bellows may be used to maintain pressure.

3.0 MARKING OF LIFERAFTS

Each liferaft shall be clearly marked with the yacht's name or sail number or an identification code on:

the canopy

the bottom

the valise or container

the certificate

Numbers and letters on the liferaft should be as large as possible and in a strongly contrasting colour. Marine grade retro reflective material shall be appropriately fitted to every raft.

4.0 GRAB BAGS:

The ORC recommends that a "grab bag" accompanies each liferaft. The following contents are recommended and should be appropriately packed and waterproofed (packing should be openable by wet fingers without tools):

second sea anchor and line

two safety knife openers

waterproof hand-held VHF transceiver

EPIRB

a first aid kit

one plastic drinking vessel graduated in 10, 20 and 50 cubic cm

two "cyalume" sticks or two watertight floating lamps

one daylight signalling mirror and one signalling whistle

two red parachute flares and three red hand flares

non-thirst provoking rations and barley sugar or equivalent

watertight receptacles containing fresh water (at least half a litre per person)

one copy of the illustrated table of life-saving signals

nylon string, polythene bags, seasickness tablets

Note: Equipment in the grab bag may be included in that required under O.R.C. Special Regulations.

Race Category	Red parachute flares SOLAS Regulation 35	Red hand flares SOLAS Regulation 36	White hand flares*	Orange smoke SOLAS Regulation 37
0 1	12	4	4	2
2 3	4	4	4	2
4	-	4	4	2

* Specifications (except colour and candela rating) should comply with SOLAS regulation 36

CATEGORY

4.23 All 0 - 4

(a) **Heaving Line** 15 m – 25 m (50 ft – 75 ft) length readily accessible to cockpit. **(The "throwing sack" type is recommended by ORC - see Appendix D).** Multi 0 - 3

(b) A strong sharp knife, sheathed, attached by a lanyard and readily accessible in each cockpit.

4.24 STORM & HEAVY WEATHER SAILS

The following specifications for **mandatory sails** give maximum areas; smaller areas may well suit some yachts. Sheeting positions on deck shall be provided for these sails.

(a) **Any storm or heavy-weather jib** if designed for a sealstay or luff-groove device shall have an alternative method of attachment to the stay. All

(b) One **storm trysail** capable of being sheeted independently of the boom and of area not greater than 17.5% mainsail luff length x mainsail foot length. It shall have neither headboard nor battens. The yacht's sail number and letter(s) shall be placed on both sides of the trysail in as large a size as is practicable. Aromatic polyamides, carbon fibres and other high modulus fibres shall not be used in the trysail. All 0 - 2

(c) One **storm jib** of area not greater than 5% height of the foretriangle squared, and luff maximum length 65% height of the foretriangle. Aromatic polyamides, carbon fibres and other high modulus fibres shall not be used in the storm jib. All 0 - 2

(d) One **heavy-weather jib** (or heavy weather sail in a yacht with no forestay) of area not greater than 13.5% height of the foretriangle squared and without reef points. *The ORC recommends that the heavy-weather jib does not contain aromatic polyamides, carbon fibres and other high modulus fibres.* All

(e) either a **storm trysail** as in (b) above; or All 3 - 4

mainsail reefing to reduce the luff by at least 40%.

4.25 SEA ANCHOR OR DROGUE

A sea anchor or parachute anchor and/or a drogue or tandem drogue are recommended. Mono 0 Multi 0 - 1

SECTION 5 - PERSONAL EQUIPMENT

5.01 **Lifejackets**, one for each crew member. ***Attention is drawn to EN396.*** Each lifejacket shall have a whistle and shall be fitted with marine grade retro-reflective material (see 4.17). In the absence of specification by a National Authority or Notice of Race, the ORC recommends that a lifejacket should provide not less than 150N of buoyancy, arranged so that an unconscious man will be securely suspended face upwards at approximately 45° to the water surface. The ORC recommends a white light of min. intensity 0.75 candelas and min. duration 8 hours in accordance with SOLAS Regulation 32.3. A crotch strap should be fitted on each lifejacket. Inflatable lifejackets should be checked annually for air retention. A splashguard (face shield) is recommended. All 3 - 4

5.02 **Safety harness,** one for each crew member. ***Attention is drawn to ISO 12401.*** Each yacht may be required to demonstrate that two thirds of the crew can be adequately attached to strong points on the yacht. Harnesses made after 1994 shall have a snaphook at the harness end of every safety line. Otherwise crew members are reminded that a personal knife may free them from a safety line in emergency. The ORC recommends that a crotch strap should be fitted on each safety harness. All 0 - 3

5.03 **Personal location lights** Two packs of miniflares or two high-intensity strobe lights for each crew member; one should be attached to, or carried on, the person when on deck at night. All 0

5.04 **Full foul weather clothing with hood**, one set for each crew member. All 0

5.05 **A knife**, one for each crew member. All 0

5.06 **A watertight flashlight,** one for each crew member. All 0

5.07 **Survival Equipment,** one set for each crew member to include:

CATEGORY
All 0

(a) an immersion suit (attention is drawn to pr EN 9 3-1-3).
(b) a personal EPIRB for use with the on-board DF equipment

ORC Special Regulations Committee
January 1998

These Regulations are reviewed annually in November following Council consideration of submissions for changes from National Authorities. Interested parties who wish to comment may do so through their National Authority or the office of the Offshore Racing Council.

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APPENDIX A
ORC MINIMUM SPECIFICATIONS FOR YACHTSMENS LIFERAFTS
Note - ORC Appendix A may at a future date be withdrawn in favour of ISO 9650

1.0 GENERAL DESIGN:

Liferaft(s) capable of carrying the entire crew shall meet the following requirements:

a) Stowage see Special Regulations 4.19

b) Must be designed and used solely for saving life at sea.

c) The liferaft shall be so constructed that, when fully inflated and floating with the cover uppermost, it shall be stable in a seaway.

d) The construction of the liferaft shall include a canopy or cover which shall when specified by the National Authority or Notice of Race automatically be set in place when the liferaft is inflated. This cover shall be capable of protecting the occupants against injury from exposure, and means shall be provided for collecting rain. The cover of the liferaft shall be of a highly visible colour.

e) The liferaft shall be fitted with a painter and shall have a lifeline becketed round the outside. A lifeline shall also be fitted round the inside of the liferaft.

f) The liferaft shall be capable of being readily righted by one person if it inflates in an inverted position.

g) The liferaft shall be fitted at each opening with efficient means to enable persons in the water to climb on board.

h) The liferaft shall be contained in a valise or other container so constructed as to be capable of withstanding hard wear under conditions met with at sea. The liferaft in its valise or other container shall be inherently buoyant.

i) The buoyancy of the liferaft shall be so arranged as to achieve a division into an even number of separate compartments, half of which shall be capable of supporting out of the water the number of persons which the liferaft is fit to accommodate, without reducing the total supporting area.

j) The number of persons which an inflatable liferaft shall be permitted to accommodate shall be equal to:

i) the greatest whole number obtained by dividing by 96 the volume, measured in cubic decimetres of the main buoyancy tubes (which for this purpose shall include neither the arches nor the thwart or thwarts if fitted) when inflated; or

ii) the greatest whole number obtained by dividing by 3720 the area measured in square centimetres of the floor (which for this purpose may include the thwart or thwarts if fitted) of the liferaft when inflated whichever number shall be the less.

k) The floor of the liferaft shall be waterproof and which when specified by the National Authority or Notice of Race shall be capable of being sufficiently insulated against the cold either

i) by means of one or more compartments which the occupants can inflate if they so desire, or which inflate automatically and can be deflated and re-inflated by the occupants; or

ii) by other equally efficient means not dependent on inflation.

2.0 EQUIPMENT: All the following equipment must be secured to the raft.

a) one buoyant rescue quoit, attached to at least 30 metres of buoyant line;

b) one safety knife and one bailer;

c) two sponges;

d) one sea anchor or drogue permanently attached to the liferaft (the NM -pattern with anti-tangle lines is recommended).

ABS

ABS Guide for Building and Classing Offshore Yachts - This Guide to Scantlings was originally published by ABS (American Bureau of Shipping) in co-operation with the Offshore Racing Council. A plan approvals service formerly offered by ABS has been discontinued. However, copies of the Guide are available from the office of the ORC. Attention is drawn to the introduction of the EC Recreational Craft Directive under which 'nominating bodies' (usually classification societies) operate schemes to approve construction standards of yachts which may then be entitled to display a CE mark. See ORC SR 3.01.1

SOLAS

SOLAS Regulations are published by the International Maritime Organisation.

SOLAS Regulation	Subject	ORC SR
Chapter II 35, 36 37	flares (pyrotechnics)	4.22
Chapter II 32.3	lifejacket lights	5.01
Chapter III 38, 39	liferafts	4.3

SOLAS Liferafts are intended for use by sea-going ships in a wide range of operating conditions. SOLAS Liferafts are build to more stringent standards than most "leisure" liferafts and are usually heavier and more expensive. SOLAS Liferafts are mandatory from 1998 in Category 0 races. Liferafts for Categories 1 and 2 shall as a minimum comply with ORC Special Regulations Appendix A (Minimum Specifications for Yachtsmens Liferafts) and are expected in future to have to comply to ISO 9650 (in draft as at 1998). Organisers are recommended to consider carefully the range of conditions likely to be experienced in a planned offshore event and if necessary to upgrade the type of liferaft accordingly.

SOLAS Regulations are printed in 'SOLAS 97' which is available from IMO at a price of £55 Sterling.

ADDRESSES:

CEN Central Secretariat
rue de Stassart 36
B-1050 Brussels
Belgium

ISO Central Secretariat
389 Chiswick High Road
London W4 4AL UK
Tel: +44 (0) 81 996 9000 Fax: +44 (0)181 996 7400

IMO (International Maritime Organisation)
4 Albert Embankment
London EC1 7SR, UK
Tel: +44 (0)171 735 7611

OFFSHORE RACING COUNCIL

		CATEGORY
	In the case of a **trimaran with a rudder on the outrigger**, adequate harness clipping points shall be provided that are not part of the deck gear or the steering mechanism, in order that the steering mechanism can be reached by a crew member who is securely harnessed.	Trimaran 0 - 2
(e)	At least two jackstays should be fitted on the underside of a yacht to be used in case of capsize.	Multi 0 - 3
4.04	**Fire extinguishers** at least two readily accessible in suitable and different parts of the yacht.	All
4.05	**Anchors** shall be carried as follows -	All

LOA	Detail	
8.5 m (28 ft) and over	2 anchors with cables	All
under 8.5 m (28 ft)	1 anchor with cable	0 - 3
any	1 anchor	All 4

4.06	**(a)** **Flashlights**, watertight, with spare batteries and bulbs	All 0 - 3
	(b) **Flashlight**, watertight, with spare batteries and bulb.	All 4
4.07	**FIRST AID KIT AND MANUAL.** In the absence of a national authority's recommendation, the ORC recommends the latest edition of:	
(a)	International Medical Guide for Ships *World Health Organisation, Geneva*	All 0 - 1
(b)	First Aid at Sea Douglas Justins and Colin Berry *Adlard Coles Nautical, London*	All 2 - 4
(c)	The ORC recommends that yachts be equipped with a medical kit whose contents and storage reflects the guidelines of the recommended manual, the likely conditions and duration of the passage and the number of people aboard the yacht.	All
(d)	The ORC recommends that at least one member of the crew should be familiar with the management of medical emergencies that may occur at sea and radio communications operations for obtaining medical advice by radio and (if carried) by Satcom.	All
4.08	**Foghorn**	All
4.09	**Radar reflector. *Attention is drawn to ISO8729.*** If a radar reflector is octahedral it must have a minimum diagonal measurement of 455 mm (18 in) or if not octahedral must have a documented RCS (radar cross-section) of not less than 10 m². *The minimum effective height above water is 4.0 m (13 ft)*	All
4.10	**Charts** (not solely electronic) light list and piloting equipment.	All
4.11	**Sextant,** tables and accurate time piece.	All 0 - 1
4.12	**Echo sounder** or lead line.	All
4.13	**Speedometer** or distance measuring instrument (log).	All 0 - 3
4.14	**EMERGENCY STEERING**	
(a)	An **emergency** tiller capable of being fitted to the rudder stock.	All 0 - 3
(b)	Crews must be aware of **alternative methods of steering** the yacht in any sea condition in the event of rudder loss. At least one method must have been proven to work on board the yacht. An inspector may require that this method be demonstrated.	
4.15	**Tools and spare parts**, including adequate means to disconnect or sever the standing rigging from the hull in the case of need.	All
4.16	**Yacht's name** on miscellaneous buoyant equipment, such as lifejackets, oars, cushions, lifebuoys and lifelines etc.	All
4.17	**Marine grade retro-reflective Material** shall be fitted to lifebuoys, lifesings, liferafts and lifejackets.	All

		CATEGORY
4.18	(a) **EPIRB.** Emergency Position Indicating Radio Beacon transmitting on 121.5, 243 or 406 MHz or INMARSAT type "E". Any 406 MHz or type "E" beacon shall be properly registered with the appropriate authority.	All 0 - 1
	(b) **Direction Finding Equipment** capable of locating a person in the water carrying a personal EPIRB.	All 0
	Notes 1. Satellite processing of 121.5 MHz is expected to be phased out over a period beginning 1998 (although 121.5 may continue to be used in on-board D/F systems). The ORC recommends that owners buying new EPIRB equipment intended for satellite alerts should specify 406 MHz or INMARSAT "E". 2. The ORC recommends that EPIRBs should be tested in accordance with manufacturer's instructions when first commissioned and then at least annually.	
4.19	**LIFERAFT(S)** in strong container(s) in accordance with SOLAS regulations capable of carrying the whole crew. See SOLAS Chapter III Section V Regulations 38 & 39.	All 0
	LIFERAFT(S) in accordance with Appendix A. (note - ORC Appendix A may at a future date be withdrawn in favour of **ISO 9650**) capable of carrying the whole crew, as follows:-	All 1 - 2
(a)	**Stowage** shall be either:	All
	ii) on the working deck; or	
	iii) in compartment(s) opening immediately to the working deck containing liferaft(s) only provided that:	
	• each compartment is watertight or self-draining (self-draining compartments will be counted as part of the cockpit volume except when entirely above working deck level) and	
	• the cover of each compartment is capable of being easily opened under water pressure; **or**	
	iv) packed in valise(s) each not exceeding 40 kg securely stowed below deck adjacent to the companionway (this option not available with a SOLAS raft).	
(b)	**Recovery Time.** Each raft shall be capable of being got to the lifelines within 5 seconds.	All
(c)	**Certificate.** Each raft shall have a valid annual certificate from the manufacturer or an approved servicing agent certifying that it has been inspected, that it complies with the above requirements and stating the official capacity of the raft which shall not be exceeded. The certificate, or a copy shall be carried on the yacht. Where a manufacturer so specifies, a raft may be externally inspected (ie not unpacked) and certificated annually by a manufacturer's agent (does not apply to SOLAS raft)	All
(d)	**Liferaft canopy.** The National Authority or Notice of Race should specify whether or not a canopy or cover (Appendix A (d)) is required. (Canopy mandatory in SOLAS raft.)	All
(e)	**Insulated Floor.** The National Authority or Notice of Race should specify whether or not an insulated floor (Appendix A (k)) is required. (Insulated floor mandatory in SOLAS raft.)	All
4.20	**GRAB BAG** The ORC recommends a grab bag to accompany each liferaft. (See Appendix A, 4.0).	All 0 -2
4.21	**LIFEBUOYS**	
(a)	**Lifebuoy with a drogue OR Lifesling (without a drogue)** equipped with a self-igniting light within reach of the helmsman and ready for instant use. (See Appendix).	All 0 - 4
(b)	**In addition to (a) above one lifebuoy** within reach of the helmsman and ready for instant use, equipped **with a whistle, drogue, a self-igniting light, and a pole and flag.** The pole shall be either permanently extended or be capable of being fully automatically extended in less than 20 seconds. It shall be attached to the lifebuoy with 3 m (10 ft) of floating line and is to be of a length and so ballasted that the flag will fly at least 1.8 m (6 ft) off the water.	All 0 - 2
(c)	In equipment made on or after 1/96 when two lifebuoys are carried in accordance with (a) and (b) above, at least one of them shall either be a lifesling or have permanent (eg foam) buoyancy.	All 0 - 2
(d)	Every inflatable lifebuoy shall be tested at intervals in accordance with its manufacturer's instructions.	All
(e)	Every lifebuoy or lifesling shall be fitted with marine grade retro-reflective material (see 4.17).	All
4.22	**PYROTECHNIC SIGNALS** conforming to SOLAS Regulations Chapter III Visual Signals and not more than 3 years old stowed in waterproof container(s) except that National Authorities may prescribe a longer pyrotechnic life for yachts under their jurisdiction. *See also 5.03 below.*	All 0 - 4

OFFSHORE RACING COUNCIL

APPENDIX B
A GUIDE TO ISO AND OTHER STANDARDS

Development Policy

When an ISO Standard, CEN Norm or SOLAS regulation is adopted it will be considered by ORC and may replace part of ORC Special Regulations. Significant changes will when possible affect new yachts only.

ISO

ORC Special Regulations refer to Standards established by ISO (the International Organization for Standardization) and other authorities. ISO is a world-wide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO Technical Committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations governmental and non-governmental in liaison with ISO, also take part in the work.

Copies of International Standards may be obtained from a national standards body.

The following International Standards (or Draft Standards) are mentioned in ORC Special Regulations:-

ISO Standard	Subject	ORC SR
12217-2	assessment of stability & buoyancy	3.02.1
12217-3	as above, multihulls	3.02.2
11812	watertight & quick draining cockpits	3.06
15085	guardlines (lifelines) trampolines, nets, stanchions, hooking points	3.11
8729	marine radar reflectors	4.09
9650	liferafts	4.19
12401	deck safety harness	5.02

CEN

Standards (Norms) are developed in Europe by CEN (European Committee for Standardization - Committée Européen de Normalisation) which publishes ENs (European Norms) and which works closely with ISO. In ORC Special Regulations the following are mentioned:

EN Standard	Subject	ORC SR
395	lifejackets	5.01
1913-1-3	immersion suits	5.07