Yachting New Zealand

Safety Regulations of Sailing

2021-2024

Yachting New Zealand

Yachting New Zealand

Helping New Zealanders access, enjoy and succeed on the water for life

Training and education
Yachting New Zealand provide free training for race officials and volunteers (race officers, judges and umpires). It means affiliated clubs and organisations can teach and run any of the national training programmes Yachting New Zealand develop and maintain (keelboat and dinghy).

National programmes
Management and support of national sailing programmes including Volvo Sailing...Have a Go!, learn to sail, learn to race, class-specific training clinics and school programmes for dinghies and keelboats.

Building club capability
The Club Manual resource provides guidance and resources around how members administer their club, including risk management, inclusion, regatta/event management, coaching resources and more. Regional support officers provide support around club structure and activity, funding, promotion and wider community connection.

Advocacy and representation
Providing a strong and informed voice to protect the freedom and interests of boating; advocating on behalf of all boaties to maintain access to the water and foreshore.

Promotion
Yachting New Zealand promote the sport to the wider public and promote programmes and opportunities to get involved through e-newsletters, social media and mainstream media. Members are invited to submit content to reach a wide audience of yachties and boaties in New Zealand.

Technical and safety support for boat owners
Maintain and update the safety regulations and carry out yacht inspections for racing on behalf of Maritime New Zealand. Members of Yachting New Zealand-affiliated clubs also receive a discounted price on category 1 inspections for offshore voyages. Yachting New Zealand also run the PHRF handicapping system.

An information hub
Acting as an information point for members' enquiries via phone, email, e-newsletters, social media and a comprehensive website. Maintain an up-to-date boat register and record of New Zealand's sailing history, including national champions, Olympians and other record holders.

Enabling funding
Providing a point of reference for clubs and classes seeking funding from charitable trusts and sponsorship. Many of the charitable trusts in New Zealand now require affiliation to a national body. Yachting New Zealand will provide support letters for clubs applying for funding.

Supporting pathways to high performance
Creating end to end pathways for sailors. Managing support and development of high performance sailors in preparation for international competition, including the Olympics.

Connection to World Sailing
World Sailing govern the rules we race under. Only affiliated clubs are allowed to act as an organising authority to run races under these rules.

FOR MORE INFORMATION CONTACT YACHTING NEW ZEALAND

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Digital member card and mobile app

The Yachting New Zealand digital membership card is free to all affiliated clubs and their members, with easy access anytime, anywhere and which unlock a range of exclusive discounts and benefits through the member zone.

Full details and offers can be found at www.yachtingnz.org.nz

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Safety Regulations 2021 - 2024

Effective in New Zealand from January 1, 2021

Note: Yachting New Zealand has provided for the possibility of changing the Safety Regulations if it is found from experience that changes are necessary. Details of those changes will be available from Yachting New Zealand's website www.yachtingnz.org.nz

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INTRODUCTION

The Yachting New Zealand Safety Regulations are authored and administered by Yachting New Zealand. The regulations are designed to provide a safe but achievable standard of design and equipment appropriate for the conditions boats can expect to encounter.

Use of this book

The Yachting New Zealand Safety Regulations have been published in a separate book for the convenience of sailors. Part 1 of the regulations (centerboard and open yachts) is, however, retained in the Yachting New Zealand Racing Rules of Sailing and on the Yachting New Zealand website www.yachtingnz.org.nz.

The regulations are subject to alteration from time to time. Amendments to the Safety Regulations may be found on the Yachting New Zealand website www.yachtingnz.org.nz. At all times, the amendments published on the website take precedence over those regulations printed in this book.

Who is covered by the regulations?

As per Yachting New Zealand prescriptions to Rule 85 (Governing Rules) and Appendix J2.1 (Sailing Instruction Contents) of the World Sailing Racing Rules of Sailing, all racing sailors are obliged to meet specified safety criteria before racing their boats in regattas and events under the World Sailing Racing Rules of Sailing.

Unballasted Centreboard, Open Yachts & Sailboards (and other ballasted yachts not covered by Part II – VI of the regulations) are not covered by the regulations published in this book. Regulations applying to these yachts (Part 1) are published in the Yachting New Zealand Racing Rules of Sailing.

Part II concerns **offshore and coastal racing and cruising**, applicable to keelboats and multihulls (where appropriate).

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Part III refers to **pleasure yachts departing for overseas travel**. This section is particularly relevant to New Zealand-flagged vessels which are required to fulfil the necessary New Zealand Customs and Maritime New Zealand documentation.

Part IV contains recommendations for **motor yachts embarking on offshore passages** and should be read in conjunction with Part III (above).

Part V concerns all **trailer yachts and sports trailer boats** whether racing or cruising. Established in conjunction with the New Zealand Trailer Yacht Association, these recommendations are considered to be the minimum standards to be observed by all trailer yacht crews at all times.

Part VI concerns all **sports boats**. These are high performance boats and are distinct from sports trailer boats.

Part VII **Sport Multihull Yacht** - Lightweight high performance multihull.

Reading the regulations

An 'X' in the columns to the right of some of the following regulations indicates the item is mandatory for the race category to which the item applies.

An 'R' in the columns indicates an item recommended for that race category.

"K" or "M" indicates that the item applies to keelboats or multihulls (respectively) only. Unless indicated otherwise, all items apply to both keelboats and multihulls.

Yacht Inspections

Safety inspections are carried out by Yachting New Zealand-appointed Yacht Inspectors, who act under delegated authority from Maritime New Zealand (s 444 Maritime Transport Act 1994).

Current inspection certificates are required for all boats participating in Category 3, 2 and 1 races. Inspection certificates are valid for two years, with the exception of Category 1 and 0 races where a certificate must be issued immediately prior to each race or passage (see Part II, Reg 3.02).

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Upon completion of the Category 1 race or passage, the inspection certificate reverts to Category 2 and is then valid for two years from the date of issue.

In the case of Category 4 & 5 races, yachts may obtain an inspection certificate every two years or sail with a skipper's declaration of compliance.

New Zealand-flagged vessels departing New Zealand require a Maritime New Zealand Safety Certificate (MNZ 12409) and a Yachting New Zealand Category 1 safety certificate to complete New Zealand Customs documentation requirements prior to departure.

All vessels, New Zealand-flagged and international-flagged, are to also notify Maritime New Zealand of their intention to depart via the Maritime New Zealand website www.maritimenz.govt.nz

For more information, please see Part III of these regulations.

OWNER / SKIPPER or their representative is required to notify Yachting New Zealand whenever a boat undergoes a modification that affects an important safety regulation.

A new inspection is also required and certificate issued when:

- A vessel has changed ownership
- A vessel is intending to race in a category upwards of the category in which it is currently certified to race
- A vessel has sustained structural damage.

In the event of damage, the skipper/owner(s) or their representative must advise Yachting New Zealand or a Yacht Inspector of the incident or accident so the inspection certificate can be revalidated or the vessel re-inspected. Owners and their representative are also reminded of their legal obligations to report maritime mishaps, incidents and accidents to Maritime New Zealand. Accident report forms are available from Maritime New Zealand website www.maritimenz.govt.nz

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Getting a safety inspection for your boat

Make contact with a Yachting New Zealand Yacht Inspector and arrange a time with them to visit your vessel. Refer to the Yachting New Zealand website, www.yachtingnz.org.nz, or contact Yachting New Zealand head office for an up-to-date list of Yachting New Zealand Yacht Inspectors.

The final part of the inspection should be completed at least two weeks prior to your departure or three weeks prior to when the inspection certificate is required. This is particularly important for Category 2 and 1 inspections. Please allow plenty of time for an appointment.

The Yacht Inspector will visit your vessel and carry out a thorough check of the boat and its equipment as per the requirements set out in these regulations. An inspection certificate will be issued once the Yacht Inspector is satisfied the boat has met the required standard.

Note: Falsification of any safety inspection documentation or deliberate attempt to falsely represent the standard of safety equipment carried on a vessel is an offence under section 67 of the Maritime Transport Act and will be treated seriously. Maximum penalties under the act are fines up to $10,000 and up to 12 months imprisonment.

Changes

Any variations to what is published herein will be posted on the Yachting New Zealand website www.yachtingnz.org.nz

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1.0 PURPOSE & USE

1.01 These regulations apply to yachts taking part in races organised by yacht clubs affiliated to Yachting New Zealand and to New Zealand pleasure vessels departing for a foreign place.

1.02 These regulations do not replace, but rather supplement the requirements of Maritime New Zealand and the World Sailing and ORC safety requirements for racing yachts.

1.03 These regulations specify minimum requirements. Compliance with these safety regulations is the responsibility of the owner and skipper. Organising authorities and race committees conducting offshore races may select the category deemed most suitable for the type of race to be sailed as per the boundaries stipulated in these regulations. Organising authorities shall not depart from the regulations or modify or make exceptions thereto unless in prior consultation with Yachting New Zealand.

1.04 Yachting New Zealand is not an approving authority and cannot be responsible for manufacturers' statements of compliance with these standards.

2.0 SKIPPER'S (MASTER'S) RESPONSIBILITY, CREW RESPONSIBILITY

2.01 The safety of a vessel and her crew is the sole and inescapable responsibility of the skipper who must do their best to ensure that the vessel is fully found, thoroughly seaworthy and manned by an experienced crew who are physically fit to face bad weather.

The skipper must be satisfied as to the soundness of hull, spars, rigging, sails and all equipment. The skipper must ensure that all safety equipment is properly maintained and stowed and that the crew know where it is kept and be trained in its use.

2.02 The Maritime Transport Act 1994 states that the master of the vessel or skipper is at all times responsible for the safety of the vessel, the safety of those on board, discipline on board and for complying with all maritime rules, regulations and bylaws.

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2.03 Neither the establishment of these safety regulations and their use by organising authorities, nor the inspection of a yacht under these regulations in any way limits or reduces the complete and unlimited responsibility of the skipper.

2.04 It is the sole and exclusive responsibility of the skipper of each yacht to decide whether or not to start or continue the race or voyage.

2.05 Skippers and crews - the Maritime Transport Act 1994 states that it is an offence to operate, maintain or carry out any other act involving any vessel or maritime product that creates an unnecessary risk or danger to persons or property.

3.0 SAFETY INSPECTORS

Inspections undertaken by Yachting New Zealand Yacht Inspectors are not surveys of the general condition of the vessel. Inspections are made visually and are for the purpose of verifying whether a vessel, its equipment and crew are suitable to undertake the voyages intended.

The inspection certificate may not be used for any other purpose by any person.

NOTE: Inspectors may use their discretion as to the acceptability of items not listed.

3.01 A vessel in any safety category (1-5) may be inspected at any time. Non-compliance with these safety regulations may cause an entry to be rejected or be liable to disqualification or such other penalty as may be prescribed by the national authority or the organising authority in the notice of race or sailing instructions.

3.02 All vessels competing in races covered by these regulations shall hold either a current certificate of inspection (Categories 1, 2 and 3) or, in the case of Category 4 and 5, a voluntary declaration by the skipper is acceptable.

3.03 Inspections are to be carried out by a Yachting New Zealand-appointed Yacht Inspector. See the Yachting New Zealand website (www.yachtingnz.org.nz) or contact Yachting New Zealand to contact an inspector in your area.

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3.04 Yachts competing in offshore races (or series of races) must have been inspected in such time for inspection certificates of the required category to be issued 14 days before the race (or first race of the series). It is recommended that the owners of new vessels being built for offshore races apply for inspection while vessels are still under construction.

Category 1 and Category 2 hull inspections shall be carried out while the vessel is **out of the water** and before new antifouling paint is applied.

3.05 For Category 1 races, a certificate must have been issued immediately prior to each voyage/race following a special inspection. A Category 1 certificate reverts to Category 2 on completion of the race or passage and is then valid for two years from date of issue.

3.06 For Category 2 & 3 races, yachts must be inspected every two years.

3.07 Safety certificates become invalid once structural damage has been sustained. Owners or their representative should contact Yachting New Zealand so the certificate can be revalidated or the vessel re-inspected.

3.08 A new inspection is needed for any upwards alteration of category and after a change of ownership. SR Appendix 7 will apply if alteration is significant.

3.09 For Category 4 or 5 races, yachts may either obtain a certificate every two years or sail individual races with a skipper's declaration of compliance.

3.10 Skippers of vessels that require a Category 1 certificate that:

(a) have been in MOSS (Maritime Operator Safety System) and/or

(b) are complex, and/or is of a size where certain International convention requirements may apply (generally >24m or >400GT) i.e. SOLAS, MARPOL, COLREG, MLC, etc.

are to consult with a Yacht Inspector prior to inspection there may be a requirement for Maritime NZ assistance with vessel inspection.

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3.11 Skippers are reminded of their legal obligations to report incidents or accidents to Maritime New Zealand. Forms may be obtained from the Maritime New Zealand website www.maritimenz.govt.nz or Yachting New Zealand.

3.12 Indemnity - the agent, owner and/or skipper accepts full and total responsibility for the vessel and her gear and equipment, and must indemnify Yachting New Zealand Yacht Inspectors against any claims that may accrue from undertaking any voyage offshore from, or along, the New Zealand coast.

4.0 CATEGORIES OF EVENTS: RACING AND OCEAN CRUISING

For more information for vessels departing on an international voyage, whether racing or cruising, please refer to Part III of these safety regulations, and/or from the Yachting New Zealand website www.yachtingnz.org.nz , or from any Yachting New Zealand Yacht Inspector.

Category 0 is a classification for major trans-ocean races with more advanced safety and equipment requirements. Skippers requiring a Category 0 rating should contact Yachting New Zealand or the Offshore Racing Congress for more information.

Category 3, 2 or 1 classifications refer to coastal, offshore and ocean races with different categories specified depending on the distance, duration and location of the race.

Skippers entering Category 3, 2, or 1 races must be able to present a current safety certificate at least 14 days prior to the start of a race. In many cases, entries will not be accepted without evidence of a current safety certificate.

4.01 Category 0

Yachts in major trans-ocean races 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. They will pass through areas in which air or sea temperatures are likely to be less than 5 degrees Celsius other than temporarily.

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4.02 **Category 1**

Passage or races of long distances and well offshore, where yachts must be completely self-sufficient for extended periods of time, capable of withstanding storms and prepared to meet serious emergencies without the expectation of outside assistance.

Refer: Ocean Voyages.

4.03 **Category 2**

Race 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 but with the reasonable probability that outside assistance could be called upon for aid in the event of serious emergencies.

4.04 **Category 3**

Races across open water, most of which is relatively protected or close to shorelines.

4.05 **Category 4**

Short races, close to shore in relatively warm or protected waters.

4.06 **Category 5**

Short races, inside harbour limits or within fully protected waters to Category 4 or 5 **are**, in general, round-the-buoys-type racing or short course, **harbour and inshore** racing.

5.0 INSPECTIONS: BASIC STANDARDS, HULL DESIGN, CONSTRUCTION

5.01 Yachts competing in coastal and offshore races are required to meet the standards as laid down in the following sections.

5.02 The inspection lists are provided as a guide to owners and Inspectors. In the light of new methods of construction and the use of new

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construction materials, the lists will require the use of discretion in their application.

5.03 For new or unusual construction methods or materials, an independent designer's or engineer's report may be required. Such a report shall confirm, to its author's satisfaction, that the subject methods or materials are equal to or in excess of the relevant requirements of certain internationally-recognised bodies.

All new yachts built to race after January 1, 2010 will have to satisfy safety regulations Appendix 7.

5.04 Yachting New Zealand will endeavour to provide a consulting service to resolve any serious disagreements on technical matters.

5.05 Owners of yachts intending to enter their vessels in events conducted under the **World Sailing Offshore Special Regulations, International Racing Certificate (IRC), Offshore Racing Congress (ORC)** or a national authority other than Yachting New Zealand are strongly advised to obtain and study such regulations prior to entering.

All yachts intending to enter offshore races will have to comply with SR Appendix 7.

However, a boat built to, for example a 1980 design that has proven safe over time, will still be eligible to race if no substantial modifications have been made.

Newly-built yachts after January 1, 2010 that are cruising only must comply with Category 1 for going overseas. They will still have to comply with the Yachting New Zealand Safety Regulations of Sailing 2021-24, especially regarding welded keels. This keel requirement also applies to existing cruising vessels with welded keels. Conventional designs, e.g. Herreshoff, will have to be subject to Inspector discretion and guidelines from Maritime New Zealand.

These guidelines are part of the delegated responsibility from the Maritime New Zealand director authorising the safety inspection by Yachting New Zealand of departing pleasure craft under the Maritime Transport Act.

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5.06 All equipment must function properly, be readily accessible and be of a type, size and capacity suitable and adequate for the intended use and the size of the yacht. All crew aboard must be aware of, and able to operate, all equipment aboard, including the engine.

5.07 Keelboats shall be self-righting, properly rigged, strongly built and water-tight, particularly with regards to hulls, decks and cabin.

5.08 Sufficient scantlings, planking or skins etc. to be adequate and sound as per recognised boatbuilding practices for the type of boat.

5.09 Items to be inspected (vessels built in GRP-ferro-steel/alloy) must have equivalent structures to that required for wooden vessels.

5.10 In the following lists:

(a) The "X" indicates the item which is compulsory for the category in that column.

(b) The "R" indicates the item recommended for the category in that column.

(c) "K" indicates this item applies to keelboats only.

(d) "M" indicates this item applies to multihulls only.

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6.1 STABILITY REQUIREMENTS:	Race Category 1	2	3	4	5
For non-racing yachts, the inspectors may use their discretion regarding stability, providing they are satisfied the vessel is self-righting from a knockdown that submerges the masthead.	X				
Stability – Monohulls					
6.01 (K) On inspection, a certificate is required and/ or designer's declaration to show that 6.01(K) and 6.02 (K) have been met.	X	X	X		
A yacht shall be capable of self-righting from an inverted position. Self-righting shall be achievable whether or not the rig is intact.	X	X	X		
A yacht shall be designed and built to resist capsize.				X	X
By providing appropriate calculations, all movable and/or variable ballast yachts shall show compliance with the WORLD SAILING OFFSHORE SPECIAL REGULATIONS Appendix K and Yachting New Zealand Safety Regulations Part II 6.02 (K).					
(a) Yachts nominated with water ballast shall comply with the following:	X	X	X	X	X
Yachts are permitted to be fitted with rigid tanks permanently secured, with provision for the transfer of liquid ballast through permanently secured pipe or tubing.					
Such transferable ballast must be liquid with a density not greater than seawater.					
Competitors must demonstrate an efficient and safe manual method of discharging and transferring liquid ballast with the yacht at any reasonable angle of heel.					
(b) Yachts nominated with a canting keel shall comply with the following:	X	X	X	X	X

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	Race Category 1	2	3	4	5
Yachts shall demonstrate an efficient and safe method of moving the keel from maximum to port to maximum to starboard. All moving parts shall be enclosed but access will be provided for inspection, regular maintenance and repair of the canting control mechanism. A failsafe system must be in place to arrest the keel from going past its maximum angle of cant should a failure occur in the system for canting the keel. There should be a demonstrable method of locking the keel on centreline.					
(c) No other form of solid or granular transferable ballast may be used.	X	X	X	X	X
6.02 (K) Keelboats shall be self-righting i.e. a yacht must have a positive righting arm proven by any one of the following means: (a) to (g).	X	X	X	X	X

(a) By measurement and calculation, it shall be shown that the subject yacht has a minimum IMS Stability Index as shown in the table below.

Offshore Race Category	Minimum Stability Index
0	120
1	115
2	110

For yachts utilising moveable ballast, it shall be shown by measurement and calculation that the vessel meets the minimum requirements of the Appendix A of the World Sailing Offshore Special Regulations "Moveable and Variable Ballast".

Measurements and calculations shall be accompanied either by an official rating

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	Race Category 1	2	3	4	5
certificate or a declaration from a naval architect / yacht designer.					
OR					
(b) By calculation it can be shown that the subject yacht complies with the ISO 12217-2 (small craft – stability and buoyancy assessment and categorisation. Part 2: Sailing boats of hull length greater than or equal to 6m) and minimum stability index. The calculated STIX value shall achieve the minimum values shown in the table over.					

Offshore Racing Category	ISO Design Category	Minimum Acceptable STIX Value
1	A	32
2	A	32
3	B	23
4	C	14
5	D	5

It is recommended that, where possible, this calculation be carried out by the yacht's original designer. The calculations must be accompanied by a declaration from a naval architect/yacht designer.

OR

(c) The owner shall provide a designer's data and / or GZ curve accompanied by a designer's declaration that illustrates that the subject yacht achieves a minimum limit of positive stability as shown in the table below.

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Offshore Racing Category	Minimum Limit of Positive Stability
1	115°
2	110°
3	100°
4	95°
5	95°

OR

(d) For yachts complying with Category 4 and 5, it may be demonstrated that compliance is achieved by demonstrating a physical pull-down test in which the masthead shall be pulled down until it touches the surface of the water. The yacht will maintain a positive righting moment at all times during the test.

During the pull-down test, all gear shall be stowed normally, outboard motors shall be in the required position, the keel locked down and no sails shall be hoisted.

The pull-down test shall be at the owner's risk and cost and no liability will be accepted by the club, Yachting New Zealand or any of its members, officers or servants.

OR

(e) An incline test conducted by an approved measurer or naval architect.

OR

(f) Can be calculated from a like design, similarly equipped and rigged.

OR

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		Race Category 1	2	3	4	5
	(g) An ORC club handicap can provide the information for Category 2 and 3. The above are at a cost to the owner.					
7.0	**MULTIHULLS**					
7.01 (M)	Hulls and superstructure of offshore multihull yachts shall be strongly built, water-tight and capable of withstanding solid water and the stress imposed upon them if the vessel is capsized. They must be properly rigged, be fully seaworthy and must meet the standards set forth herein.	X	X	X	X	X
7.02 (M)	Quick release cleats that can be released under full working load shall be provided for all sheets and guys. (Top cleating winches and self-tailing winches are acceptable but not recommended.) Conventional cleats shall not be adjacent to sheet or guy winches or fairleads.	X	X	X	X	X
7.03 (M)	Because multihull yachts are initially stiffer than monohulls and must therefore accept high dynamic loads, multihull masts, rigging and associated fittings should be stronger than that which would be appropriate to a monohull yacht of equivalent length or mast height.	X	X	X	X	X
7.04 (M)	A multihull yacht shall possess sufficient windward ability and assurance of coming about in bad conditions to enable her to tack away from a lee shore or other extensive obstruction. Each owner should assure his/her yacht's weatherliness by means of appropriate equipment, arrangements and handling procedures.	X	X	X	X	X
7.05 (M)	A multihull yacht shall be provided with sufficient positive buoyancy to support herself with crew and stores when in a capsized and/or waterlogged condition.	X	X	X	X	X

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		Race Category 1	2	3	4	5
7.06 (M)	Any hull in which there is no living accommodation shall have at least two water-tight transverse bulkheads and the distance between the two transverse water- tight bulkheads shall not exceed 4m.	X	X			
7.07 (M)	All multihulls shall have a water-tight bulkhead between 5-15 percent of the vessel's waterline length from the bow.	X	X			
7.08 (M)	All hulls of multihulls shall have sufficient inbuilt buoyancy or sufficient water-tight transverse bulkheads to ensure adequate freeboard and stability in the event of any one compartment being flooded. Transverse water-tight bulkheads other than collision bulkheads may be fitted with water-tight doors.	X	X			
7.09 (M)	A water-tight opening for inspection shall be fitted in every compartment where there is no living accommodation.	X	X			

8.0 RUDDERS, STEERING SYSTEMS

Items to be inspected:

8.01	Rudder pintles, gudgeons and bearings.	X	X	X		
8.02	Rudder construction to be checked for strength.	X	X	X		
8.03	Rudder stock and head to be checked for wringing.	X	X	X		
8.04	Spade rudder stocks					
(i)	Rudders of the spade type with a solid shaft should follow an engineer's calculation that shows the shaft to be safe at a minimum speed of 10 knots with the blade set at 90 degrees to the direction of travel.					
(ii)	Alternative shaft design must be of equivalent yield strength.					
(iii)	Where depth of rudder shaft through the hull is shallow, special attention is required in the provision of adequate bearings and their supporting structures.					
(iv)	If exotic materials are used, a designer's certificate may be required. Designers and builders are directed to ISO 12215-8 for technical information and compliance standards.					

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Chart: Rudder Stocks: suggested generic stock sizes.

Prepared by Bakewell-White Yacht Design. Please read the attached notes on use. Minimum stock diameter in mm at lower bearing.

Blade area x arm	Stainless (ultimate ten strength 470MPa)	Avesta 2205 (ultimate ten strength 685MPa)	Aluminium alloy (ultimate ten strength 260MPa)
0.112	39.5	34.8	48.1
0.168	44.7	39.4	54.5
0.224	49.1	43.3	59.8
0.28	53.5	47.2	65.2
0.336	57.5	50.7	70.0
0.392	61.7	54.4	75.2
0.448	65.6	57.9	79.9
0.504	69.5	61.3	84.7
0.56	73.2	64.6	89.2
0.616	76.6	67.6	93.3
0.672	79.8	70.4	97.2
0.728	83	73.2	101.1
0.784	86.1	75.9	104.9
0.84	89.3	78.8	108.8
0.896	92.3	81.4	112.4
0.952	95.3	84.1	116.1
1.008	98	86.4	119.4
1.064	100	88.2	121.8

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		Race Category 1	2	3	4	5
	Note: We [Bakewell-White Yacht Design] have considered a range of yachts of various displacements and sizes based on the ABS offshore racing yacht scantling requirements. While these rules are no longer in force, they are still accepted as the method of engineering a yacht and its associated rudder requirements. We have then plotted alongside the displacement to length ratios to establish a 'generic' line fit, excluding the high and low requirements from ABS. As such, as a generic line, it will be over stringent for some yachts but lower than we would use for others. Typically, the lightweight racers will be under specified using this graph and, as such, there are a couple of important factors to take into consideration with this data: We design all our rudder stocks on a case-by-case basis dependent on the yacht's size, displacement and rudder particulars in accordance with the ABS scantling code. As such, we do not endorse a generic approach to stock sizing and **the information presented here is to be used as a guide only** and no liability can be accepted connected with its use. The suggested sizes have been developed based on an assumption of a yacht having a displacement-to-length ratio of no less than 120. The displacement-to-length ratio is defined as the yacht's displacement in long tons divided by the cube of the product of the waterline length in feet and 0.01. Lighter boats are capable of substantially higher speeds than the norm and must be justified individually by engineering calculations. **All composite and hollow metal stocks must be justified by engineering calculation.**					

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		Race Category 1	2	3	4	5
	EMERGENCY STEERING					
8.05	Any yacht steered other than by a tiller fitted directly to the rudder stock must carry an appliance or tiller that can be readily fitted to the rudder stock to enable a yacht to be steered effectively.	X	X	X		
8.06	Crews must be aware of alternative methods of steering the yacht in any sea conditions in the event of rudder failure. An inspector may require this method to be demonstrated.	X	X	X		
9.0	**KEELS, KEELBOLTS**					
9.01	(K) Floors must be through-fastened and (preferably) carry a percentage of keel bolts.	X	X	X	X	X
	(K) All keel bolts to be inspected and tightened regularly.					
	For any vessel over 10 years old, inspectors may request the withdrawal of any bolt.	X	X	X	X	X
9.02	Keels where the method of attachment to the hull is by a welded join:	X	X	X	R	R
	(a) The design must meet a recognised standard such as ISO (recommended) or another recognised body and the drawings must specify material and welding details.					
	(b) Welding must be carried out by a certificated welder.					
	(c) Welding must be adequately tested by non-destructive means (i.e. x-ray, crack testing, ultra-sound) and a certificate issued.					
	All documents, designs, calculations, certificates etc. related to the above must be made available to yacht inspectors when required.					

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		Race Category 1	2	3	4	5
10.0	**DECKS**					
10.01	Deck beams to be of adequate size and properly housed.	X	X	X	X	X
10.02	Hanging knees or equivalent structures must be fitted, particularly around mast area.	X	X	X	X	X
10.03	Lodging knees or stiffening must be fitted and properly fastened.	X	X	X	X	X
10.04	Beam shelf is recommended in larger wooden yachts.	X	X	X	X	X
10.05	Gunwale deck beams and carline to be properly tied together with tie rods (not applicable if deck is of plywood).	X	X	X	X	X
10.06	Coamings to be of sufficient thickness to enable them to be through-bolted through carline main beams and coach-house tops. (Not applicable if coamings are of plywood).	X	X	X	X	X
10.07	Where deckhead or coach-house tends to be of light construction a strongback (fastened in place) carried through and supported from keel or floors to deckhead must be carried.	X	X	X	X	X
10.08	Decks and working areas must be coated or fitted with non-skid material.	X	X	X	X	X
11.0	**COCKPITS and COMPANIONWAYS**					
11.01	**Companionways.** All blocking arrangements (washboards, hatch-boards etc.) shall be capable of being secured in position with the hatch open or shut and shall be secured to the yacht by lanyard or other mechanical means to prevent their being lost overboard. The main companionway hatch shall be fitted with a strong positive securing arrangement, which shall be operable from above or below.	X	X	X	R	R

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		Race Category 1	2	3	4	5
11.02	**Cockpit companionways**. If extended below main deck level, must be capable of being blocked off to the level of the main deck at the sheer line abreast the opening. This is often achieved by locking in a lower washboard of appropriate height. When such blocking arrangements are in place this companionway (or hatch) shall continue to give access to the interior of the hull.	X	X	X	X	X
11.03	**Cockpits** shall be structurally strong, self-draining and permanently incorporated as an integral part of the hull. Cockpit floors must have adequate bracing. They must be essentially water-tight, that is, all openings to the hull below the main deck level must be capable of being strongly and rigidly secured.	X	X	X	X	X
11.04 (K)	**Cockpits opening aft to the sea**. The lower edge of the companionway shall not be below main deck level as measured above (11.02). The openings aft shall not be less in area than 50 percent of maximum cockpit depth multiplied by maximum cockpit width. Cockpits must drain at all angles of heel.	X	X	X	R	R
	COCKPIT VOLUME					
11.05 (K)	The maximum volume of all cockpits below lowest coamings shall not exceed six percent loaded water line times maximum beam times freeboard abreast the cockpit (six percent L x B x FA). The cockpit sole must be at least two percent length overall above loaded water line (two percent L above LWL).	X	X			
	The maximum volume of all cockpits below lowest coamings shall not exceed nine percent loaded water line times maximum beam times freeboard abreast of the cockpit (nine percent L x B x FA). The cockpit sole must be at least two percent length overall above loaded water line (two percent L above LWL).			X	X	X

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		Race Category 1	2	3	4	5
	COCKPIT DRAINS					
11.06 (K)	**For yachts 8.53m length overall and over**. Cockpit drains adequate to drain cockpits quickly but with a combined area (after allowance for screens if attached) of not less than the equivalent of four 20mm diameter drains. Yachts built before 1 January 1972 must have drains with a combined area (after allowance for screens if attached) of not less than the equivalent to two 25mm drains. Cockpits must drain at all angles of heel.	X	X	X	X	X
11.07 (K)	**For yachts under 8.53m length overall**. Cockpit drains adequate to drain cockpits quickly but not less in combined area (after allowance for screens if attached) of the equivalent to two 25mm diameter drains. Cockpits must drain at all angles of heel.	X	X	X	X	X
11.08 (M)	Cockpit drains adequate to drain cockpit quickly. That is with a combined area (after allowance for screens, if attached), of not less than the equivalent of four 20mm diameter drains. Cockpits must drain at all angles of heel.	X	X			
12.0	**HULL STRUCTURE: BULKHEADS, FLOORS**					
12.01	**Composite construction (foam core):** All boats built after January 1, 2000 shall have a declaration by an accredited engineer, or the yacht designer, confirming suitable engineering specifications and construction which must be provided on inspection from January 1, 2005.	X	X	X	X	X
12.02	**Ferrocement hulls:** Details of plastering and reinforcing or a certificate from either the Ferrocement Association or a certified engineer must be provided if requested by the inspector.	X	X	X		

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		Race Category 1	2	3	4	5
12.03	In the event of the vessel having no bulkhead or knees in the way of mast partners, adequate lodging knees must be fitted to the deck and/or cabin top.	X	X	X	X	X
12.04	Brass fastenings shall not be used underwater.	X	X	X	X	X
12.05	Plywood partitions/bulkheads must have solid doublers fitted from the deck to the hull. All knees must be through bolted in place.	X	X	X	X	X
13.0	**FLOODING PREVENTION, HATCHES, WINDOWS, BILGE PUMPS, STORM COVERINGS**					
13.01	The hulls, floats, including decks, coach-roof and all other parts of the yacht shall form an integral and essentially water-tight unit; and any openings shall be capable of being immediately secured to maintain this integrity. For example, running rigging or controls shall not compromise this water- tight unit. Centreboard or dagger and outboard trunks shall not be open into the interior of the hull.	X	X	X	X	X
13.02 (K)	Hatches. No hatch forward of the maximum beam (BMAX) station shall open inwards excepting ports having an area of less than 710cm² if hatches fitted forward of the maximum beam station located on the side of the coach roof, opening into the interior of the boat and are of area greater than this, they shall comply with ISO 12216 design category A and be clearly labelled and used in accordance with the following instructions: NOT TO BE OPENED AT SEA.	X	X	X	X	X

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		Race Category 1	2	3	4	5
13.03	Hatches to be of adequate strength comparable to deck.	X	X	X	X	X
13.04	All hatches shall be permanently fitted so that they can be closed immediately and will remain firmly shut in a 180° capsize.	X	X	X	X	X
13.05	Hatches and skylights in accommodation areas must be fastened from below to allow for emergency exit.	X	X	X	X	X
13.06	All external storage hatches must be able to be fastened from the deck.	X	X	X	X	X
13.07	All deck openings must be able to be blocked off in an emergency.	X	X	X	X	X
13.08	Hatches must be clear of the water at 90° capsize.	X	X	X	X	X
13.09	Companionway doors, hatches and locker doors must be able to be made strong and water tight. Rebates for slides must be particularly strong.	X	X	X	X	X
13.10	(M) On all multihulls a readily usable safe method of entering and exiting from the inverted vessel must be provided to allow a fully clothed person to pass through this entry/exit which must be clear of the water at all times, upright or inverted. It is required that skylights and hatches must be fastened from below to allow exit in case of emergency. If this is not possible a cutting line shall be clearly marked - Escape Cut Here - and appropriate hull cutting tools kept secured nearby for instant use adjacent to the intended cutting site. If hatches are used for this purpose, a storm board must be carried that can be used to rapidly cover the hatch should it fail.	X	X	R		
13.11 (K)	Storm coverings shall be fitted for all windows more than 1852cm² in area.	X	X	R		

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		Race Category 1	2	3	4	5
13.12 (M)	Storm coverings for exposed windows more than 1858cm² in area shall be fitted.	X	X	R		
13.13	All bilge pumps shall be of a size and capacity commensurate with the displacement and type of yacht and be fitted with strum boxes or strainers.	X	X	X	X	X
13.14 (K)	At least two manually operated bilge pumps shall be 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. Alternatively, one bilge pump may be of a portable nature provided that it can be adequately secured to the yacht's structure.	X	X			
	(a) One manual bilge pump operable with all cockpit seats, hatches and companionways closed.			X		
	(b) One manual bilge pump				X	X
	(M) Two manual bilge pumps either fixed or portable.	X	X	X	X	X
13.15	If using same outlet, each bilge pump shall be provided with permanently fitted discharge pipe(s) of sufficient capacity to accommodate both pumps simultaneously.	X	X			
13.16	No bilge pumps may discharge into a cockpit unless that cockpit opens aft to the sea. Bilge pumps shall not be connected to cockpit drains.	X	X	X	X	X
13.17	Unless permanently fitted, each bilge pump handle shall be provided with a lanyard or catch or similar device to prevent accidental loss.	X	X	X	X	X
13.18	Four buckets of stout construction each at least nine litres capacity. Each bucket to have a lanyard.	X	X	X		
13.19	Two buckets of stout construction each at least nine litres capacity. Each bucket to have a lanyard.				X	X

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		Race Category 1	2	3	4	5
14.0	**MAST STEP, CHAINPLATES**					
14.01	The mast(s) must be adequately stepped. All boats must have a mast step preferably spanning several floors, or to be fitted in such a way as to spread the load. The heel of the mast shall be securely fastened to the mast step or adjoining structure sufficiently to retain the mast in place while sailing.	X	X	X	X	X
14.02	All chainplates and similar fittings shall be through-bolted where applicable.	X	X	X	X	X
14.03	Stemhead fitting and deck fittings must be adequate in relation to yacht's displacement and the anchor fair lead must be low chafe.	X	X	X	X	X
14.04	Mast collars shall be water tight.	X	X	X	X	X
14.05	Mast wedges shall be secured. Rubber cushioning band instead of wooden wedges are recommended for alloy masts.	X	X	X	X	X
15.0	**MASTS, SPARS, RIGGING AND SAILS**					
15.01	Rigging shall be of an appropriate specification in relation to the yacht's type, displacement, performance and intended usage. Mast to be adequately supported from inversion when the deep reefed mainsail or trysail is used in heavy weather.	X	X	X	X	X
15.02	Rigging screws, shackles etc. to be made fast by lock nuts, split pins or seizing.	X	X	X	X	X
15.03	All clevis pins shall have lock nuts or split pins through them.	X	X	X	X	X
15.04	Clevis pins, shackles, rigging screws etc. must be of equal strength to rigging.	X	X	X	X	X
15.05	Mast tangs must have through-fastening as well as screws or rivets and must have adequate bearing for	X	X	X	X	X

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		Race Category 1	2	3	4	5
	clevis pins or shackles.					
15.06	Mast sheaves shall be properly fastened and of sufficient diameter to avoid fatigue and crimping of halyards.	X	X	X	X	X
15.07	Roller furler and all mast fittings shall be of suitable size for the vessel.	X	X	X	X	X
15.08	Yachts with spars allowing furling of sails shall have a separate means to allow the setting of the trysail and storm jib.	X	X			
15.09	Masts shall have no less than two halyards, each capable of hoisting a sail.	X	X	X	X	X
15.10	Bulldog grips of suitable size for emergency rig repairs **OR** suitable non stretch rope should be carried.	R	R			
15.11	Tools and spare parts including **adequate** means to disconnect or sever the standing rigging from the hull in the case of need. Tools shall include a hacksaw with 10 blades, an adequate hammer and drift.	X	X	X	X	
15.12	Suitable bosun's chair.	X	X	X	R	R
15.13	Sheet winches shall be mounted in such a way that no operator is required to be substantially below deck.	X	X	X	X	X
	SAILS					
15.14	All storm sails are recommended to be air/ sea rescue orange in colour.	R	R	R	R	R
	All new storm sails built after January 1, 2005 shall be air/sea rescue orange in colour.	X	X	X	X	X
15.15	The following sails must be carried and rigged and hoisted at the time of inspection. These specifications give maximum areas; smaller areas					

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	may well suit some yachts. It is imperative that all vessels have sufficient storm sails to work off a lee shore in severe conditions.					
	STORM SAILS					
	Skippers should consult their sailmaker and designer to arrive at the best sizes. The sizes given below are maximum suggested sizes only and should be followed only after due consultation.					
(a)	One **storm trysail** not larger than 12% of the mainsail luff length x mainsail foot length. It shall be sheeted independently of the boom and shall have neither a headboard nor battens and be of cloth weight of suitable strength for the purpose. The yacht's sail number and letter(s) shall be placed on both sides of the trysail OR rotating wing mast in as large a size as is practicable. Rotating wing masts may be used in lieu of a trysail. Aromatic polyamides, carbon fibres and other high modulus fibres shall not be used in the storm trysail. All slides must be of strong metal construction and compatible with track being used.	X	R			
	OR if it is not practical to fit a trysail then the deep reefed mainsail shall have the luff reduced to 35 percent or less. The mainsail and reefing equipment must be in excellent condition and be specifically designed and constructed to withstand storm conditions.					
	If a separate trysail track is fitted, a stop is to be fitted to the top of the trysail track.	X	X			
	A spare main halyard is recommended.	X	R			
(b)	One **storm jib** of not larger than 5 percent of the square of the luff of the largest headsail (0.05 IG²) in area, the luff of which does not exceed	X	X	R		

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		Race Category 1	2	3	4	5
	65 percent of the luff of the largest headsail (0.65 IG) and of suitable strength for the purpose. A means of attaching the luff to the stay/foil, independent of any luff groove device. Aromatic polyamides, carbon fibres and other high modulus fibres shall not be used in the storm jib.					
	For new **storm jibs** made after January 1, 2010: One storm jib not larger than 3.5 percent height of the foretriangle squared, with luff maximum length 50 percent height of the foretriangle.					
	Note: Sheets must be permanently attached.					
(c)	One heavy weather jib of 70 percent of the fore triangle area.	X	X	X	R	R
(d)	All mainsails should be capable of being reefed.	X	X	X	R	R
(e)	Mainsails shall have a set of reef points capable of reducing the effective luff by 50 percent.			X	R	R
15.16	All yachts equipped with an in-boom or in-mast furling systems shall be equipped with a trysail.	X	R	R	R	R
15.17	Storm sails designed for a luff-groove device shall have an alternative method of attachment to the stay. Trysail slides must be metal and compatible with the mast track.	X	X	X	R	R
15.18	A suitable sail repair kit.	X	X	X	X	
16.0	**ACCOMMODATION: galley, toilet, ventilation, bunks, stowage, food, water.**					
16.01	There shall be no area of the accommodation from which a galley or engine fire would prevent exit.	X	X	X	X	X
16.02	Toilet securely installed.	X	R			

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16.03	Toilet securely installed or fitted bucket. Note: The skipper is responsible for compliance with the sewage discharge requirements contained in the resource management (marine pollution) regulations.			R	R	R
16.04	Bunks suitable for use at sea including lee cloths where required.	X	X	R	R	R
16.05	Permanently installed bunks shall be provided for a minimum of the nearest whole number greater than 2/3 of the crew. Each bunk shall be a minimum of 45cm x 1.8m. In every case there shall be a minimum of two bunks.	X	X	X	R	R
16.06	Minimum useful headroom of 1.37m measured vertically over 1m of hull centreline length and a minimum of 0.18m² of cabin sole shall be provided. The purpose of this rule is to provide access to a bunk and shelter for an injured or sick crew.	X	X	R	R	R
16.07	Ventilation. Adequate cabin ventilation shall be provided as a means of combating seasickness and fatigue. Dorade type recommended.	X	X	X	X	X
16.08	Cooking stove, securely installed against capsize with safe and accessible fuel shut off control, capable of being safely operated in a seaway. Any liquid or inflammable fuels must be carried in approved containers. (a) If gas is fitted the gas bottles must be in a sealed locker that can only drain overboard (see 16.19). (b) If camping gear is used, spare canisters must be in a locker that can only drain overboard Individual canisters must not exceed 400gm capacity. If the camping stove is below deck the	X	X	R		

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		Race Category 1	2	3	4	5
	gas canister shall be unscrewed and stored in the described locker when stove not in use.					
16.09	Gas appliances. Installation shall comply with current regulations and be installed by a registered gas fitter. This notice of minimum size 75mm x 150mm shall be visible adjacent to the stove, where applicable.	X	X	X	X	X
	"TURN OFF GAS AT BOTTLE"	X	X	X	X	X
16.10	Galley facilities including sink.	X	X			
16.11	Galley facilities.			R	R	
16.12	Water tanks, securely installed and capable of dividing the water supply into at least two separate containers. Note: Flexible pillow tanks require securing tabs.	X	X			
16.13	At least one securely-installed water tank.			R	R	R
16.14	Emergency water in suitable containers equal to one litre per person (per day) for two days capable of being carried to the life raft OR a hand water maker.	X	X	X	R	R
16.15	Suitable containers for water.			X	X	X
16.16	Stored water in the ship's tanks or suitable container, over and above any water making apparatus. Should total a minimum of two litres per person (per day) per estimated days of the duration of the voyage.	X	X			
16.17	Ballast and heavy equipment. Inside ballast in a yacht shall be securely fastened in position. All other heavy internal fittings (such as batteries, stoves, gas bottles, tanks, engines, out-board motors, etc.) and anchors and chains shall be securely fastened so as to remain in position should the yacht capsize 180°. No heavy objects including ballast and chain should sit directly on the planking or hull skin.	X	X	X	X	X

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		Race Category 1	2	3	4	5
16.18	Yacht's name or personal identification on lifejackets, harnesses and lifebuoys.	X	X	X	X	X
16.19	LPG lockers shall be of sufficient size to securely hold the required number of cylinders. Access to the locker shall be fitted with a vapour proof barrier to the inside of the boat. Electrical equipment used in the LPG storage area shall be deemed suitable for such an area. The locker shall be fitted with a drain not less than 12.5mm diameter which is led outboard to a point lower that the locker bottom. Cylinders and any equipment in the lockers shall not obstruct this vent drain.	X	X	X	X	X
	LPG lockers shall be used only for the purpose of housing gas equipment and shall be marked accordingly.	X	X	X	X	X
16.20	Internal stowage. In the event of a 'knockdown' or inversion to 180 degrees, all fridge/freezer lids, locker tops, cabin soles, bunk tops, engine cabinetry etc. should have a secure fastening so that they remain in place.	X	X	R	R	R
17.0	**SAFETY SYSTEMS AND EQUIPMENT: firefighting, lifesaving, safety rails, anchors, drogues, grab bag, first aid**					
	FIRE FIGHTING					
17.01	Fire extinguishers, at least three, readily accessible and visible in suitable and different parts of the boat. Total weight of all three, if dry powder, not less than 5kgs.	X	X			
17.02	Fire extinguishers, at least two, readily accessible and visible in suitable and different parts of the boat. Total weight if dry powder, not less than 4kgs.			X	X	X

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		Race Category 1	2	3	4	5
17.03	Fire extinguishers shall be serviced / tested / replaced as required.	X	X	X	X	X
17.04	Fire blanket readily accessible to galley.					
	Dry powder extinguishers type ABE or BE or fire blankets are recommended as the most suitable for dealing with galley fires and one should be kept near the stove.	X	X	X	R	R
	Foam or any dry powder fire extinguishers are suitable for engine fires. A nine litre foam or 2.5kg dry powder fire extinguisher should be kept in a suitable position near the engine.					
	Different types of fire extinguishers require different service procedures. Refer to manufacturers' specifications.					
	HALON or BCF are acceptable but cannot be recharged or refilled after use.					
	CO^2 (carbon dioxide) extinguishers must not to be carried in any place on board where leakage could allow the gas to enter accommodation spaces.					
	LIFEJACKETS (see SR Appendix 4)					
17.05	Lifejackets, one for each crew. The name of the yacht or owner shall be labelled on each lifejacket. Each lifejacket must supply at least 150 newtons of buoyancy.	X	X	X	R	R
	An attached light is required.	X	X	X		
	A splashguard/spray hood is recommended.	R	R			
	NZS 5823:2005. Type 402 or its equivalent.				X	R
	Must supply 71 newtons of buoyancy.					
	A lifejacket of at least 50 newtons of buoyancy.					X

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		Race Category 1	2	3	4	5
	Lifejackets must be fitted with a crotch or thigh strap.	X	X	X	X	X
	Warning: As this is only a minimum requirement, wearers are advised to test their PFD's performance under normal conditions. Some wearers may find they need more buoyancy.					
	"Attention of all skippers is drawn to Maritime Rule 91, Navigation Safety, which requires all vessels (including tenders) to carry a correctly-sized, serviceable lifejacket for each person on board. The Rule also requires the lifejackets to be worn at all times of heightened risk. Inflatable lifejackets do not restrict the wearer's ability to perform sailing functions and many are combined with a safety harness. The failure to wear a lifejacket or when appropriate, a safety harness, has resulted in loss of life from sailing vessels from time to time."					
	(Refer to SR Appendix 4)					
17.06	Whistles (without peas) attached to lifejacket and lifebuoys. All lifejackets must be fitted with marine retro-reflective tape.	X	X	X	X	R
17.07	Lifejackets are to be serviced in accordance with the manufacturers' requirements and the necessary documentation available for the Yacht Inspector at the time of inspection or the organising authority at the time of declaration.	X	X	X	X	X
	HARNESSES					
17.08 (a)	Safety harness and safety lines (tethers) one for each crew member.	X	X	X		
	Safety harnesses must be in good condition and show no signs of overload.					
(b)	50 percent of the crew must be equipped.				X	X

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		Race Category 1	2	3	4	5
(c)	All tethers to be double clipped.	X	X	X		
	The clip attached to the harness may be a snap shackle of requisite strength able to be released under load by pulling a short non catching non looped tag.					
(d)	Yacht or wearer's names to be on each harness.	X	X	X		
(e)	Each tether or safety line to be no longer than 2m.	X	X	X		
(f)	A mid-point snap hook is permitted in 2m tether.	X	X	X		
(g)	Three hook tethers (or separate 1m tethers) to be carried for 1/3 of the crew.	R	R			
(h)	It is recommended that safety lines and tethers have a coloured flag embedded in the stitching to indicate overload and have an indicator of date of manufacture visible.	R	R	R		
(i)	A crew member's harness and lifejacket shall be compatible.	X	X	X	R	R
17.09	A harness and tether shall comply with NZS 5823:2005, AS 2227, EN1095 (ISO 12401) or near equivalent.					
	Snap hooks must be of a type, which will not self-release from a U-bolt and can be easily released under load. (Crew members are reminded that a personal knife may free them from a safety line in an emergency.)					
	Crew members, before a race, should adjust a harness to fit, then retain the harness for the duration of the race.					
	If tethers are made of three stranded nylon rope, the diameter must be a minimum of 10mm and a					

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		Race Category 1	2	3	4	5
	breaking force not less than 22.1kN. (AS 4142.1, 2 & 4143.1) with splicing to NZS 704.2.1 which in essence simply means: four full tucks, two tapered tucks and whipped. (Refer to SR Appendix 3)					
17.10	An approved survival suit or thermotic flotation clothing for each member of the crew.	R	R			
	LIFE RAFT					
17.11	Life raft(s) capable of carrying the entire crew and meeting all the following requirements (refer SR Appendix 2).	X	X	R	R	
	(a) Must be carried on the working deck or in a special stowage opening immediately to the working deck containing the life raft(s) only. Life raft seals must be intact and the raft showing no signs of water ingress. The painter must be securely fastened to a substantial through-bolted fitting.					
	(b) For yachts built after July 1, 1983 life raft(s) may only be stowed under the working deck provided:					
	(i) the stowage compartment is water-tight or if self-draining, is not lower than the cockpit sole.					
	(ii) the cover of this compartment shall be capable of being opened under water pressure.					
	(c) Life raft(s) packed in a valise and not exceeding 40kg (88 lbs.) may be securely stowed below deck adjacent to the companionway.					
	(d) Each raft shall be capable of being taken to the lifelines within 15 seconds.					

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		Race Category 1	2	3	4	5
	(e) Must be designed and used solely for saving life at sea.					
	(f) Must have at least two separate buoyancy compartments, each of which must be automatically inflatable: each raft must be capable of carrying its rated capacity with one compartment deflated.					
	(g) Must have a canopy to cover the occupants, which will automatically be set in place when the life raft is inflated.					
	(h) Must have an adequate number of deep ballast pockets (bags) to resist capsize.					
	(i) Life rafts must be inspected and certified in accordance with the manufacturer's specifications, by an approved service agent. An approved service agent means a service agent who, at the time of inspection, holds a current approval from the life raft's manufacturer to undertake such inspections. The certificate obtained as a result of an inspection, or a copy thereof, must be carried on board the yacht.					
	(j) Must have the equipment referred to in SR Appendix 2.					
	(k) Provision for emergency water and rations to accompany rafts in buoyant grab bags. (Refer SR Appendix 2 for contents.)					
	(l) Category 2 only: life rafts may carry one extra person.					
	(m) Categories 3, 4, 5: one extra person on four-man life rafts and two extra persons on six-man (or larger) liferafts above the rated number of					

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		Race Category 1	2	3	4	5
	the liferaft, may be carried.					
	(n) (M) Life raft stowage shall be such that the life raft can be readily removed and launched regardless of whether or not the yacht is inverted.					
	(o) Life rafts with service dates after January 1, 2017 shall comply with ISO 9650 or the equivalent SOLAS standard.	X	X	X		
	Life rafts with a manufacture date later than January 1, 2012 must have sufficiently insulated floors and also have at least one ladder to assist entry from the water. It is recommended that life rafts should comply with ISO9650.	R	R			
17.12	Life raft **OR** approved dinghy.					
	(a) A life raft with a valid inspection certificate.			X	R	
	OR an automatically inflatable dinghy, on which should be painted 'do not over-inflate'.					
	OR a rigid dinghy or inflatable dinghy, fully inflated and ready for use with sufficient buoyancy to support all the occupants.					
	(b) In all cases dinghies must be carried on deck, and a waterproof flashlight and bailer must be lashed in. Oars and rowlocks must also be lashed in.			X	R	
	(c) Where the dinghy or raft is carried on deck, it shall be secured in a substantial manner to fittings which are through bolted.	X	X	X	X	
	(d) In all cases dinghies or rafts must be of a size so as to be able to carry the whole crew as specified by the manufacturer and be marked with the vessel's name.			X	R	

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		Race Category 1	2	3	4	5
	It is strongly recommended that the grab bag be lashed into the dinghy and should contain the equipment listed in SR Appendix 2 for a Category 3 life raft.	R	R	R	R	
	LIFE BUOYS and DAN BUOYS					
17.13	(a) At least one suitable life buoy marked with the yacht's name and equipped with a **drogue**, **pealess whistle**, a **self-igniting light** having a duration of two hours. Life buoys shall be predominantly brightly coloured and fitted with reflector tape each side.	X	X	X	X	X
	Note: Inflatable devices meeting these requirements are acceptable. Note that these devices usually require annual servicing and must be in date.					
	(b) At least one additional, suitable life buoy equipped with a **drogue**, **pealess whistle** and **dye marker**, (drogue: cone-shaped, approx. 38cm long, 25cms large opening, 8cm small opening), also a **self-igniting light**, either separate OR combined with a **pole with an orange coloured flag** (Dan Buoy).	X	X	R		
	(c) The Dan Buoy pole shall be either permanently extended or an approved folding or inflatable pole attached to the ring by a suitable floating line, the flag must fly at least 2m off the water.	X	X	R		
	(d) Life sling type devices for securing a person in the water and lifting them aboard.	R	R	R	R	R
17.14	Heaving line. Must be designed for the purpose and be 16m minimum length, 6mm minimum diameter of brightly coloured floating line with a floating weight tied or spliced at the outer end.	X	X	X	X	X

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		Race Category 1	2	3	4	5
17.15	Emergency knife. A properly housed sharp knife shall be stowed with ready access to crew in the cockpit.	X	X	X	X	X
17.16 (M) (a)	Axe (or suitable hull cutting tools) or a safe method of egress/entry from the vessel when inverted.	X	X			
(b)	A second emergency knife easily accessible when the yacht is upside down.	X	X	X	X	X
	SAFETY RAILS					
	Adequate handrails must be fitted to allow safe movement of crew around the deck. Handrails shall have a large percentage of through-fastenings. Adequate hand holds should also be fitted below decks.	X	X	X	X	X
	LIFELINES					
17.17	The minimum diameter lifeline **wire** shall be: Yachts under 8.5m (LOA) 3mm Yachts 8.5m to 13m 4mm Yachts over 13m 5mm	X	X	X	X	X
	Wire manufactured with a plastic coating shall not be used.					
	Grade 316 Stainless wire is recommended – 1x19. Tape unacceptable.					
	If fibre used instead of wire e.g. single braided dyneema, spectra, vectran, dynex or similar, there can be no tolerance for wear. Material must be protected from U.V. and chafe by a sheath.					
	Sheath can be taken as an overbraided core over the main load member of the same material or another type of material.					
	The strength of the fibre must be equal to or greater than that of the appropriate stainless-steel wire.					
	The wire shall show no significant signs of corrosion or weathering. When plastic tubing has been used it should be cut at its lowest point to allow any water to drain.					
17.18	Lifelines shall be taut. When a deflecting force of 50N (5kg) is applied to a lifeline midway between supports, the lifeline must not deflect more than 50mm.	X	X	X	X	X
17.19 (a)	(K) Lifeline terminals. A taut lanyard of synthetic rope may be used to secure lifelines, provided that when in position its length does not exceed 100mm and that sufficient turns are used to maintain strength.	X	X	X	X	X
(b)	(K) For in harbour racing i.e. **REGATTAS**. The top lanyard must always be taut. However, the bottom lanyard can be loosened to allow up to a maximum of 200mm movement as measured from the middle of the LOWER lifeline, between two adjacent stanchions. Sufficient turns must be maintained to preserve STRENGTH.				X	X
(c)	Tapes shall not be used in lieu of lifelines.					
17.20 (K)	Stanchions shall not be angled at more than 10 degrees from the vertical at any point above 50mm from the deck. Stanchions shall be straight, except that one bend is permitted in the first 50mm above deck. They may be displaced horizontally from the point at which they emerge from deck or base up to 10mm.	X	X	X	X	X
	For yachts with an age date of January 1, 1987, or later, stanchions, pulpits and lifelines shall not be made of carbon fibre. Stanchions may be fibreglass or alloy, but shall not be weaker than similar stanchions of stainless steel and not contain carbon fibre.					

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		Race Category 1	2	3	4	5
17.21 (K)	Overlapping pulpits. Lifelines need not be affixed to the bow pulpit if they terminate at, or pass through adequately braced stanchions 60cm [45cm for yachts under 8.53m] above the working deck, set inside and overlapping the bow pulpit, provided that the gap between the upper lifeline and the bow pulpit does not exceed 15cm.	X	X	X	X	X
17.22 (K)	Pulpit and stanchion fixing. Pulpits and stanchions shall be through-bolted or welded, and the bases thereof shall not be further inboard from the edge of the working deck than 5 percent of maximum beam (BMAX) or 15cm whichever is greater. Stanchion bases shall not be situated outboard of the working deck.	X	X	X	X	X
17.23 (K)	Jackstays shall be fitted on deck, port and starboard of the yacht's centre line to provide secure attachments for safety harnesses. Jackstays shall be attached to through bolted or welded deck plates, or other suitable and strong anchorages (eyebolts are not acceptable). The jackstays shall be fitted in such a way that a crew member, when clipped on, can move from a cockpit to the forward end and to the after end of the main deck 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. A crew member must be able to clip on before coming on deck, unclip after going below and remain clipped on while moving laterally across the yacht on the foredeck, the afterdeck and amidships. If necessary, additional jackstays and/or through bolted or welded anchorage points must be provided for this purpose. Jackstays shall have a minimum strength of 2000kg. Webbing that lies flat is recommended. Through-bolted or welded anchorage points or other	X	X	X	R	R

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		Race Category 1	2	3	4	5
	suitable and strong anchorages for safety harnesses must 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 harness lanyard can be kept as short as possible.					
17.24 (K)	**Lifeline Height**					
	(a) **For keelboats over 8.53m overall**					
	Taut double lifelines, with upper lifeline of wire at a height of not less than 60cm above the working deck, side and stern to be permanently supported at intervals of not more than 2.15m. When the cockpit opens aft to the sea, additional lifelines shall be fitted so that no opening is greater in height than 38cm.	X	X	X	R	R
	(b) **For keelboats under 8.53m overall**					
	Taut single wire lifelines, at a height of not less than 45cm above the working deck, side and stern to be permanently supported at intervals of not more than 2.15m. If the lifeline is at any point more than 56cm above the rail cap, a second intermediate lifeline must be fitted. If the cockpit opens aft to the sea, additional lifelines shall be fitted so that no opening is greater in height than 38cm.	X	X	X	R	R
17.25 (K)	**Pulpits**					
	Fixed bow pulpit (forward of head-stay) and stern pulpit (unless lifelines are so arranged as to adequately substitute for a stern pulpit). Lower lifelines need not extend through the bow pulpit. Upper rails of pulpits shall be at not less height above the working deck than upper lifelines. Upper rails in pulpits shall be securely closed while racing.	X	X	X	R	R

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		Race Category 1	2	3	4	5
	For Categories 4 and 5 where lifelines are fitted, they must be taut and no crew member shall station any part of their torso outside of the lower lifeline.					
	Any lifeline attachment point will be considered as a stanchion in so far as its base shall not be situated outboard of the working deck.					
17.26 (K)	**Split pulpits**					
	Where pulpits are split down to the deck from lifeline height, the opening between the pulpit and any part of the boat (usually the forestay) should not be greater than 200mm.	X	X	R	R	
	Where the opening is greater than 200mm it shall be able to be closed off at full height.	X	X	R	R	
	Where the forestay is ahead of where the pulpit ends and the opening is over 200mm, the top rail of the pulpit must be extended forward around the forestay.	X	X	R	R	
17.27 (K)	Toe rails. A toe rail of not less than 25mm shall be permanently fitted around the deck forward of the mast, except in way of fittings. Location to be not further inboard from the edge of the deck than one third of the local beam.	X	X	X	X	X
	Alternatively					
	A third lifeline (or second for yachts under 8.53m) overall at a height of not less than 25mm or more the 50mm above the working deck will be accepted in place of a toe rail. In yachts built before January 1, 1981 a toe rail of 20mm will be accepted.					
	<u>For Multihull Yachts</u>					
	Any of the following safety systems shall be provided (consult Inspector):					

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			Race Category 1	2	3	4	5
17.28	(a) (M)	Guard rails: pulpits and lifelines fitted continuously around the working deck with a minimum height of 600mm above the local deck with an intermediate lifeline fitted. These lifelines shall be permanently supported at intervals of not more than 2.13m by stanchions and pulpits which should be through-bolted or welded (an access gate of equal strength is PERMITTED).	X	X	X	X	R
		Lifeline terminals and lifeline material:					
		Where lifelines are required they shall comply with the same requirements for keelboats. A taut lanyard of synthetic rope may be used to secure lifelines, provided that when in position its length does not exceed 100mm. When the cockpit opens aft to the sea additional lifelines must be fitted so that no opening is greater in height than 380mm. Stanchions shall not be angled at more than 10 degrees from the vertical at any point above 50mm from the deck. Guardrails and lifelines and stanchions shall not be made of carbon fibre. Glass fibre or alloy acceptable but not weaker than stainless steel.	X	X	X	X	R
	(b) (M)	If the bow end of any hulls are not used as a platform for working a spinnaker or pole, no pulpit need be provided, except at the headstay base and then only if a headsail is to be flown.	X	X	X	R	R
	(c) (M)	Jackstays must be fitted on deck, port and starboard of the yacht's centreline to provide secure attachments for safety harnesses. Jackstays must be attached to through bolted or welded deck plates,	X	X	X	X	R

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	Race Category 1	2	3	4	5
or other suitable and strong anchorages. Eyebolts are not acceptable. The jackstays must, if possible, be fitted in such a way that crew members, when clipped on, can move from a cockpit to the forward and to the after end of the main deck without unclipping the harness. If the deck layout renders this impossible, additional lines must be fitted so that a crew member can move as described with a minimum of clipping operations. Crew members must be able to clip on before coming on deck, unclip after going below and remain clipped on while moving laterally across the yacht on the foredeck, the afterdeck and amidships. If necessary, additional jackstays and/or through bolted or welded anchorage points must be provided for this purpose.					
Jackstays shall have a minimum breaking strain of 2000kg. Webbing that lies flat is recommended.	X	X	X	X	R
Through-bolted or welded anchorage points, or other suitable and strong anchorages, for safety harnesses must 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 harness lanyard can be kept as short as possible.	X	X	X	X	R
In both cases, non self-righting yachts shall also be equipped with harness anchorage points on and beneath the hulls.					

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		Race Category 1	2	3	4	5
	ANCHORS					
17.29	Anchors and ground tackle to be carried shall include:					
	Two anchors with:	X	X	X	R	
	(i) A cable the boat's length on deck of chain (min) plus 60m of rope or chain, the bitter end of this cable to be secured to the hull.	X	X	X	R	
	(ii) A second anchor cable of 6m minimum of chain plus 40m of rope or chain.	X	X	X	R	
	Floating anchor warp not acceptable.					
	At least one anchor must be complete with tackle and ready for immediate use at all times.	X	X	X	X	X
	One anchor, a cable the boat's length of chain and 40m of warp.				X	X
17.30	Anchors and any chain shall be securely fastened in position when not in use. Where anchors are stowed in wells opening to the deck, they shall be lashed in place or the lid of the well shall be fitted with a positive action catch.	X	X	X	X	X
	Weight or size of anchors, chain and warp shall be in accordance with relevant class rules or the rules. Please refer to recommended anchor sizes from the recognised manufacturers.					
	Swivels are not recommended to be used on anchor chains.					

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		Race Category 1	2	3	4	5
	DROGUES AND SEA ANCHORS					
17.31 (K)	A **sea anchor** OR **drogue** OR **other recognised proven device** when crew number is less than five.	X	R			
	A **sea anchor** OR **drogue** OR **other recognised proven device** when crew number is five or more.	R	R			
	Note: A suitable device includes a parachute, drogues or tyres. Must be readily available for deployment and have adequate means of securing to vessel and be capable of keeping the vessel end on in storm conditions.					
17.32 (M)	A **sea anchor** OR **drogue** OR **other recognised proven device**.	X	X			
	GRAB BAG					
17.33 (K)	Grab bag, see SR Appendix 2. To be packed in a floating container complete with lanyard.	X	X	X	R	R
17.34 (M)	Grab bag see SR Appendix 2. To be packed in a floating container complete with lanyard	X	X	X	X	X
17.35	**FIRST AID KIT**					
(a)	Skippers and crew should have the knowledge and stores to cope with any reasonably expected medical emergencies that occur during the voyage taking into account the following conditions: trauma of all types and causes, medical problems involving pain, breathing, shock, infections, temperatures and dental accidents.	X	X	X	X	X
	Refer to SR Appendix 1 for guidelines.					
(b)	A suitable first aid manual.	X	X	X		

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		Race Category 1	2	3	4	5
18.0	**COMMUNICATIONS; radio, EPIRB, flares, flashlight**					
	RADIO					
18.01	Single sideband marine radio transmitter and receiver with minimum transmitter power of 60 watts. If the regular antenna depends upon the mast, an emergency antenna must be provided. For new installations minimum power of 100 watts is mandatory; **OR** approved satellite voice communication system, if the sailing instructions allow.	X	R			
18.02	(i) Installed marine VHF radio (55 channel), call sign and operator license required.	X	X	X	R	R
	(ii) Handheld VHF radio.	X	X	X	X	X
18.03	Radio receiver capable of receiving weather bulletins.	X	X	X	X	X
18.04	Category 5 must have either a waterproof handheld VHF radio OR a mobile phone protected from water ingress on board.	X	X	X	X	X
18.05(M)	An additional multichannel water proof hand held marine VHF transceiver to be carried in the grab pack. Battery life limited and needs to be checked regularly (see SR Appendix 2).	X	X	X		
	Note: It is recommended to fit a clear plastic curtain over radio and electrical equipment in the vicinity of hatchways.					
	LOCATOR BEACON					
18.06	Emergency position indicating radio beacon (EPIRB), 406 MHz (marine).	X	X	R		
	Personal locator beacon (PLB) 406 MHz **OR** EPIRB, 406 MHz (marine).			X	R	R

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		Race Category 1	2	3	4	5
	The EPIRB or PLB should be fitted with GPS.	R	R	R	R	R
	The 406 MHz EPIRB and/or PLB must be registered with Maritime New Zealand at www.beacons.org.nz.	X	X	X	X	X
	FLARES					
18.07	The following distress signals must be carried in addition to those in the life raft.					
	(a) Four red hand flares, additional to those in the life raft.	X	X			
	Two red hand flares, additional to those in the life raft.			X	X	X
	OR additional to those in the life raft, a LED or laser flare, which has been approved by the current international convention for the Safety of Life at Sea (SOLAS), United States Coastguard or Maritime New Zealand.					
	(b) Two orange smoke flares, additional to those in the life raft.	X	X	X	X	X
	Flares on the vessel must be within the expiry date at all times.					
	FLASHLIGHT					
18.08	Two flashlights, one of which is floating, suitable for signaling, water proof, with spare batteries and bulbs. Spotlight recommended.	X	X	X	X	X
19.0	**NAVIGATION; charts, compass, GPS, AIS, log, barometer, radar reflector, lights, day-shapes, foghorn**					
19.01	Compass. Marine type properly installed and adjusted with current deviation card.	X	X	X	X	R

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		Race Category 1	2	3	4	5
19.02	Spare compass suitable for steering (may be hand-bearing).	X	X	X		
	Note: A GPS is not acceptable as a compass.					
19.03	CHARTS PUBLICATIONS & PLOTTING EQUIPMENT					
	(a) Local tide tables.	X	X	X	X	X
	(b) Reasonably large scale marine charts of area to be sailed.	X	X	X	X	X
	(c) Plotting equipment, dividers etc.	X	X	X	X	X
	(d) Sailing directions or cruising guide for intended voyage.	X	X	R		
	(e) Tide tables for all ports on voyage	X	X	X	X	X
	(f) Operating instructions and manuals for navigation aids carried.	X	X	X	X	X
19.04	**NAVIGATION SYSTEMS**					
	(a) Mounted GPS.	X	X	X	R	
	(b) Back-up GPS.	X	X	R		
	(c) Second back-up GPS OR sextant, timepiece and tables with ability to use.	X	R			
	(d) Echo (depth) sounder.	X	X	X		
	(e) Echo (depth) sounder or lead line				X	X
	(f) Log or distance measuring instrument or GPS with independent power source.	X	X	X	R	R
	(g) Radar.	R	R	R		
	(h) Barometer.	X	X	R	R	

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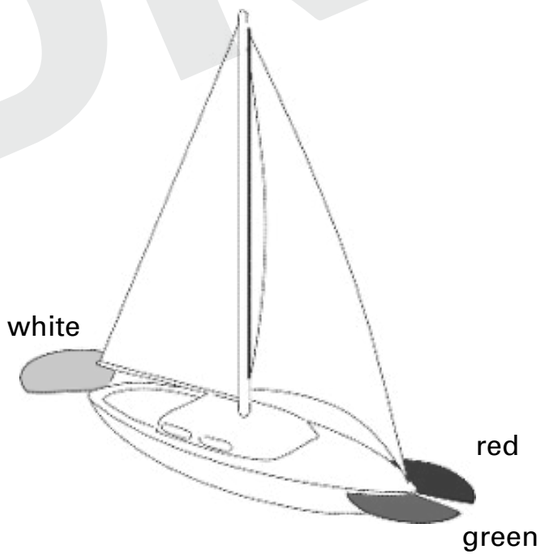
		Race Category 1	2	3	4	5
19.05	**PASSIVE RADAR REFLECTOR**	X	X	R	R	
	If a radar reflector is octahedral it must have a minimum diagonal measurement of 46cm or if not octahedral must have a documented equivalent echoing area of not less than 10m².					
	In addition to a passive radar reflector (above) it is recommended that an ACTIVE RTE (RADAR TARGET ENHANCER) that requires power be carried.	R	R	R		
19.06	**AUTOMATIC IDENTIFICATION SYSTEM (AIS)**					
	(a) AIS type B.	R	R			
	(b) AIS receiver.	R				
19.07	**NAVIGATION LIGHTS**					
	To be shown as required by the Collision Prevention Rules to be permanently mounted and wired into the vessel's electrical system so that they will not be masked by sails or the heeling of the yacht and are mounted above the level of the main deck. Side lights mounted into the hull are not acceptable.	X	X	X	X	X



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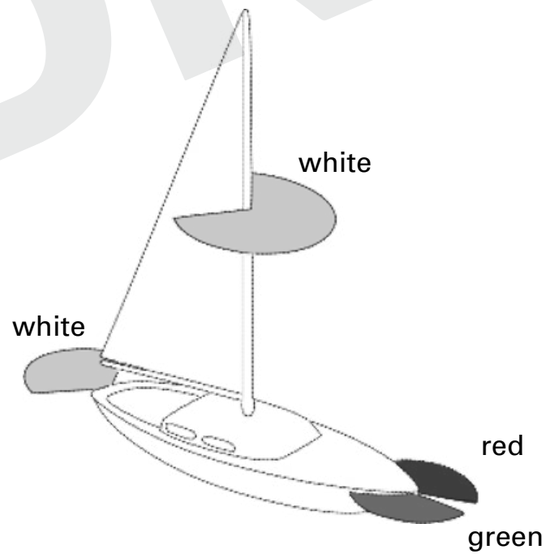
	Race Category 1	2	3	4	5
Sailing Boats					
Must show red and green sidelights and a white stern light. These three lights may be combined into a single tri-colour light mounted at the top of the mast on yachts less than 20m in length.					
Visibility (includes LED lights)					
Under 12m — Masthead light: 2 miles; Side light: 1 mile; Stern light: 2 miles; Tri light: 2 miles					
12m to 20m — Masthead light: 3 miles; Side light: 2 miles; Stern light: 2 miles; Tri light: 2 miles					
Dinghies					
All non-powered boats under 7m in length, such as a rowing dinghy, canoe, kayak or sailboat must show a white light or torch to indicate its presence.					



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		Race Category 1	2	3	4	5
	Navigation lights when motor sailing.					
	Sailing boats motoring or motor sailing					
	Considered to be powerboats and must display sidelights, a sternlight and a masthead light.					
	Navigation lights on all boats shall be fitted no lower than the height of the upper lifelines.					
	Lights must be switched on from sunset to sunrise and in restricted visibility.	X	X	X	X	X
	Vessels with an engine fitted must also have fitted the correct lights for a vessel under power i.e. masthead light.	X	X	X	X	X
	Sectored navigation lights shall not be fitted to rotating spars.	X	X	X	X	X
	Spare bulbs and fuses for navigation lights shall be carried as appropriate.	X	X	X	X	X
	Yachts under 7m LOA shall comply with the Collision Prevention Rules, for those between 7m and 12m LOA (i.e. they shall exhibit side lights and a stern light).	X	X	X	X	X
19.08	Emergency navigation lights and power source. Emergency navigation lights shall not be used if the normal navigation lights are operable.	X	X	X	R	R
19.09	Foghorn to be readily at hand for use in maneuvering signals.	X	X	X	X	X
19.10	Day shapes for anchor and motor sailing.	R	R	R	R	R
19.11	Safety location diagram, put in a prominent position. See sample of one in SR Appendix 5.	X	X	X	R	R

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		Race Category 1	2	3	4	5
20.0	**ENGINEERING SYSTEM: fuel, electrical, plumbing, skin-fittings, valves and propeller shaft**					
20.01	Installation of a propulsion engine shall be such that when running, the engine can be securely covered, and the exhaust and fuel supply systems are securely installed and adequately vented and protected from the effects of heavy weather, and water siphoning. The installation shall prevent movement of the engine during a severe knock-down or capsize. The engine compartment shall be adequately ventilated and moving parts protected from loose items.	X	X	X	R	R
20.02	The shaft must be in good condition and unable to withdraw. Propellers, keyways and locking nuts must be inspected and anodic protection in sound condition.	X	X			
	(a) Hose clips on hoses are recommended to be stainless steel or bronze.	X	X	X	X	X
	All hoses below the water line are to be double clipped including exhaust hoses.					
	(b) Vents on water tanks and fuel tanks to be fitted in such a manner as to prevent the loss of liquid or ingress of salt water when the vessel is heavily heeled.	X	X	X	X	X
	(c) Vents on fuel tanks to allow fumes to escape outside hull.	X	X	X	X	X
	(d) All tanks to have cocks in accessible places, with remote control if necessary, on all outlets except air vents.	X	X	X	X	X
	Electrical work should conform to the current version of applicable standards.					

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		Race Category 1	2	3	4	5
20.03	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.	X	X	X	R	R
20.04	All batteries must be installed securely in adequate battery boxes. The bottom of the box must be above the level of the cabin sole. Battery boxes must be acid proof unless all the batteries are fully sealed units.	X	X	X	X	X
20.05	A serviceable engine and propeller shall be installed, capable of driving the yacht in smooth water at the very least at a speed exceeding the square root of the LWL in metres after converting to feet or $\sqrt{\text{LWL(m)} \times 3.28}$ knots.	X	X	X	R	R
20.06	Petrol engines shall have efficient flame traps on their carburettors.	X	X	X	X	X
20.07	Fuel storage tanks shall be properly constructed and securely fixed in place. Fuel tanks, batteries and other heavy items must be secured so as to remain in place during a knock-down or capsize.	X	X	X	X	X
20.08	The minimum amount of engine fuel to be carried shall be as follows.					
	$\frac{\text{LWL(m)}}{0.135}$ Litres	X				
	$\frac{\text{LWL(m)}}{0.2}$ Litres		X			
	$\frac{\text{LWL(m)}}{0.4}$ Litres			X	X	X
	Organising authorities are recommended to state the minimum fuel requirements in the notice of race.					

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		Race Category 1	2	3	4	5
20.09	Where petrol is used as fuel, tanks shall be of metal or such other material certified by the manufacturer as suitable for the intended use and shall be vented to the open air. The tank filler should be so positioned so that spillage and fumes cannot enter the vessel.	X	X	X	X	X
20.10	For diesel fuel, tanks shall be of metal or such other material certified by the manufacturer as suitable for the intended use.	X	X	X	X	X
20.11	Fuel tank shut-off valve. A shut-off valve or cock shall be fitted directly to the tank at the outlet with remote control if necessary.	X	X	X	X	X
20.12	Fuel lines. A fuel pipe-line to an engine shall have a flexible connection to the engine of a type manufactured for that purpose, or sufficient coils in the pipe at the end connected to the engine to allow for the effects of engine vibration. Except for the special flexible connections, all fuel pipes shall be of metal and clear of the part affected by engine vibration and the pipes shall be rigidly clipped in place. Alternately a fire-resistant flexible line may be used throughout provided that the material and terminal fittings are designed for the purpose and certified by the manufacturer to that effect and are adequately separated from exhaust lines.	X	X	X	X	X
20.13	Outboard motors. Where a yacht is propelled by an outboard motor and carries fuel in separate containers, such containers shall be supplied by the fuel tank manufacturer for that purpose and shall be secured on deck or in a separate ventilated compartment. The outboard motor(s) must not be located near accommodation. It must be demonstrated that the outboard motor(s)	X	X	X	X	X

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		Race Category 1	2	3	4	5
	can be placed in the operating position and operated without the need for any crew member to be substantially outside the stern pulpit or lifelines. Yachts with other than outboard motor(s) having integral fuel tanks shall be able to demonstrate that the tank can be refilled when the motor is in its operating position. It is recommended that an outboard motor mounting at the stern be of the long shaft type. An outboard motor of the standard shaft type must be able to be operated efficiently and safely.					
20.14	Sea cocks or valves shall be fitted on all through-hull openings with the exception of integral deck scuppers, shaft log, speed indicators, depth finders and the like, however, a means of closing such openings when necessary to do so, shall be provided.	X	X	X	X	X
20.15	Transom outlets. When these are fitted securely, gate valves need not be fitted at the inspector's discretion providing that the outer hull aperture is in such a position that a suitable plug can be inserted at a maximum reach of arm's length from the deck. All such plugs shall be permanently attached to the hull by suitable cord or chain, long enough to allow insertion without disconnecting such cord or chain.	X	X	X	X	X
20.16	Soft wood plugs, tapered and of the correct size, to be attached to, or adjacent to, each skin-fitting. 21.1	X	X	X	X	X

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		Race Category 1	2	3	4	5
21.0	**SKIPPER & CREW SKILLS**					
	The adequacy of the skipper and crew is a matter to be determined by Yachting New Zealand Inspectors. While it is not possible to establish rigid guidelines to determine the adequacy of a skipper and/or crew in individual cases, the following guidelines give an indication of the test to be applied by inspectors. Exceptions to the following guidelines will be considered in individual cases:					
	(a) No pleasure craft should depart on an offshore voyage without there being at least one person on board who has had previous experience of ocean sailing.					
	(b) The skipper of a departing pleasure vessel shall possess the requisite knowledge and experience to ensure the safe operation of the vessel on the proposed voyage and the wellbeing of all persons carried on board, including, but not limited to, knowledge and experience of:					
	(i) The operation of all the vessel's equipment, machinery, safety and communications equipment.					
	(ii) Weather patterns and resulting sea conditions.					
	(iii) The International Collision Rules					
	(iv) Buoyage					
	(vi) Rigging and cordage					
	(vii) Boat stability					
	(viii) Boat handling					
	(ix) Survival at sea					

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	Race Category 1	2	3	4	5
(x) Handling emergencies at sea					
(xi) Management of crew					
If children are on board, there should be sufficient accompanying adults to attend to the children's needs as well as look after the vessel.					
As a minimum, all adult crew members on board should be proficient in the following matters:					
Starting and stopping the vessel's engine Understanding the circumstances in which the skipper is to be called					
The operation and stowage of fire extinguishers					
The stowage and operation of man overboard equipment, and knowledge of man overboard procedures					
The use of storm sails					
The use of white flares or spotlight					
Emergency use of the radio, EPIRB and flares					
The stowage and use of lifejackets and safety harnesses					
The stowage and use of the grab bag					
The stowage and deployment of the life raft					
Abandon ship procedures.					
(c) A yacht manual as per the example the example found under SR Appendix 5.					

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	Race Category 1	2	3	4	5
22.0 SAIL NUMBERS AND NAME					
22.01 Yachts shall clearly display in legible characters at least 50mm but preferably 100mm in size, their registered name on the hull and Yachting New Zealand sail number on the mainsail at least.	X	X	X	X	X
22.02 Portable sail number in black figures, no smaller than those on the mainsail, on an air/sea rescue orange background at least 2m x 1m in area. Or a V sheet.	X	X	R	R	
OR sail numbers, no smaller than those on the mainsail, on a storm jib or trysail.		X	X	R	R
22.03 A V sheet indicating assistance required.	R	R	R	R	R
22.04 Yacht's name or personal identification shall be marked on miscellaneous floating items such as grab bags, spare lifejackets, containers of spare fuel, equipment, cockpit squabs etc.	X	X	X	X	X
23.0 CLASSIC YACHTS					
As the classics have been around for over 50 years - and in many cases up to and beyond 100 years, it is apparent they are fit for the purpose of sailing short races, (Cat. 4) close to shore in relatively warm or protected waters and (Cat. 5) short races, inside harbour limits or within totally sheltered waters.					
With this in mind, it must be considered that they are fit for the purpose of cruising and racing under the above limitations and do not present a danger to the crew or risk of the loss of the vessel. Given that these yachts are now classified as protected objects under the 2006 Protected Objects Act (formally known as the 1975 Antiquities Act), they are not allowed to be sailed offshorewith out the necessary export documentation which is addition to the					

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	Race Category 1	2	3	4	5
Maritime New Zealand and Customs requirements. Further information can be found at the Ministry for Culture & Heritage.					
All classic yachts built before 1950 are granted recommended (R) status in Category 4 and Category 5 for all the following safety regulations:				R	R
11.02 Cockpit companionways...				R	R
11.03 Cockpits shall be structurally...				R	R
11.05 The maximum volume of all cockpits...				R	R
11.06 (K) For yachts > 8.53m... cockpit drains...				R	R
11.07 (K) For yachts < 8.53m... cockpit drains...				R	R
13.01 For mullet boats and those with centreboard trunks					
16.13 At least one securely installed water tank.					
All classic yachts built before 1950 are granted recommended (R) status in Category 5 for all the following safety regulations					R
17.08 50 percent of crew equipped with harnesses					

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PART III
PLEASURE YACHTS DEPARTING NEW ZEALAND FOR OVERSEAS

Section 21 of the Maritime Transport Act 1994 (the MTA) requires masters of pleasure craft departing from any port in New Zealand for overseas to notify the Director of Maritime New Zealand (the Director, Maritime NZ) of their proposed voyage. The Director must be satisfied that the pleasure craft, its safety equipment and crew are adequate for the voyage. A certificate of clearance from Customs cannot be issued until a safety inspection has been completed.

The Director has delegated this statutory power to Yachting New Zealand. Sub-delegation from Yachting New Zealand to Yacht Inspectors mean that the Yacht Inspectors carry out these inspections to Category 1 standards.

REQUIREMENTS BEFORE DEPARTING NEW ZEALAND FOR ANY PLACE OUTSIDE NEW ZEALAND

(1) All vessels must hold a registration under a flag state. New Zealand ships register with the Registrar of Ships Maritime New Zealand

(2) Yachting New Zealand safety inspection certificate and the Maritime New Zealand 12409 certificate

(3) Notify the Director of Maritime New Zealand by completing an intention to depart notification form. See www.maritimenz.govt.nz

(4) Completed New Zealand Customs requirements. Refer to the New Zealand Customs website, www.customs.govt.nz

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1.0 SHIP REGISTRATION

All vessels travelling internationally must be registered in a flag state such as with the Registrar of Ships, Maritime New Zealand www.maritimenz.govt.nz

Please note: Registration as a New Zealand ship is not the same as a Yachting New Zealand registration which is required for all vessels wishing to race in New Zealand. For more information contact Yachting New Zealand or see www.yachtingnz.org.nz

Registration as a New Zealand ship can be done either under Part A or Part B.

Both provide a ship with New Zealand nationality and protects a ship's name for as long as it is registered.

Note: New Zealand-registered vessels are required to fly either the New Zealand state flag or the New Zealand red ensign while in the territorial waters of foreign countries.

2.0 SAFETY INSPECTIONS

Under Section 21 of the Maritime Transport Act 1994, a New Zealand registered pleasure craft may not leave any port in New Zealand for any place outside New Zealand unless the Director of Maritime New Zealand is satisfied that:

- the vessel and its safety equipment are adequate for the voyage; and
- the vessel is adequately crewed for the voyage; and
- the master observes any other relevant maritime rules.

All New Zealand vessels must undergo a safety inspection prior to departure to obtain a Category 1 safety certificate. The inspection will focus on:

- the design and construction of the boat being suitable for the voyage and meeting the required standards
- the safety and communication equipment meeting specific

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requirements and all safety equipment being in date

- the skipper and crews ability to undertake the proposed voyage safety and demonstrate preparedness for emergency situations.

The decision on whether to grant section 21 clearance is made by the Director, or their delegate (i.e. a Yachting New Zealand Yacht Inspector).

In determining the adequacy of the vessel, the Yacht Inspector shall have regards to any previous offshore voyages undertaken by that vessel and will use the Category 1 requirements set out in Part II of these regulations except in exceptional circumstances.

There may well be occasions where there are justifiable grounds for not following these Safety Regulations, but these must be carefully considered and well recorded by the Yacht Inspector and Yachting New Zealand.

A Category 1 inspection certificate is valid for one clearance only and expires at first port of call, and then reverts to a Category II for two years.

Yachting New Zealand Safety Certificates are valid from the day they are signed, for a period of 60 days from the signed date on the certificate to allow adequate time for the vessel to leave.

Skippers can apply for a 30 day extension directly to the Yachting New Zealand Safety and Technical Officer stating the reasons for requesting an extension, provided there are no changes to the vessel, its equipment or crew as originally inspected.

Beyond this timeframe, the Yachting New Zealand Safety Certificate is considered expired (invalid).

During this 60 (or 90) day period, the Yachting New Zealand Safety Certificate remains valid, providing:

- There are no crew changes;
- The safety equipment on board remains in date until the estimated destination arrival date;

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- No significant alternations to the vessel have been made (including the hull, rig or equipment); or
- No damage has occurred to the yacht (i.e. as a result of grounding).

The following could be reasons for needing re-issue of the certificate:

- Notification to Yacht Inspector only:
  - Crew change
- Supply of photo(s) or other evidence to Yacht Inspector:
  - safety equipment change (out of date refreshing), minor equipment change
- Re-inspection required:
  - major equipment change or alteration to the yacht, or skipper change, or extending the certificate validity beyond 90 days

For information on contacting a Yacht Inspector and getting your boat inspected, please see the introduction to these regulations or the Yachting New Zealand website www.yachtingnz.org.nz

3.0 NOTIFICATION OF DIRECTOR

All masters must notify Maritime NZ of their intended departure.

Go to www.maritimenz.govt.nz to complete an intention to depart notification form.

4.0 CUSTOMS NEW ZEALAND

You must leave NZ waters from an authorised port of departure. Customs request the completed departure forms three days before departure to help avoid processing delays. www.customs.govt.nz

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PART IV
MOTORYACHTS EMBARKING ON OFFSHORE PASSAGES

BASIC REQUIREMENT (Based on Category 1 Requirements)

Any vessel venturing offshore shall be of sufficiently robust construction and be of a volume to be able to carry:

(i) Sufficient fuel in safe tankage, with strong preference for internal tanks.

(ii) Sufficient stores to make a safe trip.

INSPECTION LIST

1.0 Hull and Design

(a) Minimum 12m in length.

(b) All hulls should have designer's or builder's certificate as to suitability and fitness for the purpose. This includes stability calculations loaded and unloaded.

(c) Emphasis to be put on the displacement/length formula, which helps to validate the vessel's suitability.

(d) Minimum of two water-tight bulkheads - one collision bulkhead forward plus one other.

2.0 Tankage

(a) Ideally sufficient fuel capacity in integral tanks for the length of passage plus 10 percent at coastal cruising speed. Any temporary tankage should be able to withstand a knockdown when full and should not adversely affect the trim of the vessel. All tanks to be accurately calibrated to allow monitoring of fuel consumption.

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3.0 Mechanical and Fitted Systems

(a) Suitable main propulsion unit or units.

(b) Exhaust system and air intake suitable for continuous running.

(c) Adequate bilge pumps - electrical and hand pump.

(d) Alternative steering system to be demonstrated.

(e) Adequate starting batteries and house batteries.

(f) Dedicated battery for radio is recommended.

(g) Ability to charge batteries by alternator plus one alternate method.

(h) Secure fuel system with adequate filtering method.

(i) Suitable ground tackle recovery system (windlass).

(j) Appropriate stabilising equipment is recommended (flopper stopper - sail or active fin).

(k) Alternative means of propulsion (sail or secondary independent engine).

4.0 Accommodation

(a) Comfortable berths (with lee cloths when appropriate).

(b) Galley suitable for preparing hot food in rough sea conditions.

(c) Minimal large areas or suitable hand/grab rails for crew safety.

(d) Suitable area for navigation.

(e) Suitable stowage for provisions.

5.0 Safety

(a) Communication - SSB radio or satellite phone and mounted VHF and waterproof handheld VHF radio.

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(b) Handrails to regulation height around working deck (see SR Part II).

(c) Self-draining cockpit and freeing ports in bulwarks.

(d) Suitable ground tackle including two anchors, two warps and chains.

(e) Sea anchor, drogue(s) or tyres with suitable warps and chafing gear to enable the vessel to lie head to sea or slow down in storm conditions. Suitable bollards to be fitted.

(f) Flares, fire extinguishers, lifebuoys, lifejackets and EPIRB and all other relevant safety systems to the same specification as Category 1 yachts.

(g) Jack line plus two harnesses.

6.0 Spares

(a) Sufficient spare oil to effect a complete oil change plus oil filters.

(b) Adequate primary and secondary fuel filters.

(c) Adequate spare V belts.

(d) One or more injectors.

(e) One or more universal injector pipes.

(f) Engine spares as recommended by engine manufacturer and supplier.

(g) Water pump kit(s).

(h) Fuel lift pump kit(s), including tool to bleed fuel system.

(i) Adequate tools.

(j) A schedule of spares must be presented and approved by the Inspector.

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(k) Service manuals for all equipment.

7.0 Crew

Crew should be experienced and competent.

Reminder: It is the inescapable responsibility of the master to ensure the vessel has a crew that is sufficient in number and is:

(a) Able to navigate.

(b) Capable of handling the vessel in offshore conditions.

(c) Able to effect basic repairs at sea.

(d) Able to plan passage including fuel and stores consumption and graphs.

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PART V
TRAILER YACHTS & SPORTS TRAILER YACHTS

Preamble

These regulations are relevant to all trailer yachts and sports trailer yachts whether racing or cruising. Yachting New Zealand and the New Zealand Trailer Yacht Association (NZTYA) recommend that these Regulations be observed by all trailer yacht crews at all times.

The regulations are considered minimum standards that should apply throughout New Zealand. Individual class owners' associations may, with the approval of NZTYA, vary a particular regulation where the size, design or equipment of a yacht makes the application of any regulation impractical. Individual clubs, squadrons or class owners' associations may, in view of local conditions, also require additional safety provisions in their sailing instructions or class rules.

These regulations prescribe the basic design of trailer yachts in New Zealand and the design approval process. New designs must be approved by the NZTYA before a new design of trailer yacht may be registered with Yachting New Zealand and a sail number issued.

1.0 PURPOSE AND USE

1.01 These regulations apply to all trailer yachts.

1.02 It is contrary to the spirit of racing to reduce weight by sailing without equipment which should be carried. All yachts should be maintained and equipped to a seaworthy standard for the category of the events to be sailed. The equipment should be of a size and kind adequate for this purpose, and such equipment shall be carried at all times.

1.03 These regulations specify minimum requirements only and

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compliance with the spirit of the safety regulations is the sole responsibility of the skipper, who may be called upon to sign a declaration on entry in an event, that the yacht complies with the safety regulations.

1.04 When equipment is required to be of an approved type, this equipment shall conform to the requirements of the organising authority.

1.05 Organising authorities may select the category deemed most suitable for the type of event to be sailed (see Part V, Section 5, Categories of Events.

1.06 Sports Trailer Yachts

In the interests of promoting performance racing and design innovations, a 'sports' group of trailer yachts is allowed. This group may be raced in three lengths:

(a) up to 6.5m.

(b) up to 8m.

(c) over 8m.

No NZTYA handicap will apply. In encouraging this group, significant reductions in equipment standards have been allowed and it is therefore envisaged that this type of boat would only be suitable to participate in Category C-type events (see clause 5.2 (c) hereunder).

(i) Measurement of the length of the boat shall be from the tip of the bow to the aftermost point on the hull, but shall exclude bowsprits and rudders.

(ii) The maximum overall length, including bowsprit, prod and rudder shall not exceed:

(1) in the case of a 6.5m boat, 9m;

(2) in the case of an 8m boat, 11m.

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2.0 OWNER'S RESPONSIBILITY

2.01 The safety of a yacht and its crew is the sole and inescapable responsibility of the owner, or skipper as owner's representative, who must do their best to ensure that the yacht is fully found, thoroughly seaworthy and manned by a sufficiently experienced crew who are fit enough to cope with the weather conditions expected during the voyage or event being undertaken. The owner, or skipper as owner's representative, must be satisfied as to the soundness of hull, spars, rigging, sails and all gear. The owner, or skipper as owner's representative, 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.

2.02 Neither the establishment of these safety regulations, their use by organising authorities, nor the inspection of a yacht under these regulations in any way limits or reduces the complete and unlimited responsibility of the owner or skipper as owner's representative.

2.03 It is the sole and exclusive responsibility of each skipper to decide whether or not to start or continue in any event.

2.04 Neither Yachting New Zealand nor NZTYA are responsible for manufacturers' statements of compliance with these regulations.

3.0 INSPECTION

3.01 A yacht entering any event may be inspected at any time. If it does not comply with these safety regulations the entry may be rejected, or the yacht will be liable to disqualification or such other penalty as may be prescribed by Yachting New Zealand, NZTYA or the organising authority in the notice of race or sailing instructions.

3.02 All trailer yachts which swamp, capsize, suffer structural damage or equipment failure should furnish a mishap report to Maritime New Zealand (form available from www.mnz.govt.nz or Yachting New Zealand).

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3.03 **Indemnity**

The owner, or skipper as owner's representative, shall indemnify the club, class or inspector appointed by the organising authority against any claims that may occur from participating in an event or from undertaking any voyage.

4.0 BASIC DESIGN

4.01 A trailer yacht shall be defined as follows:

(a) A monohulled cabin yacht.

(b) Propelled principally by the use of sails and suitable for family participation in recreational yachting activities.

(c) A maximum beam of 2.95m and capable of being trailed on public roads without a special permit. Note, over width plates/ flags will need to be carried.

(d) Able to be rigged, launched from its own trailer and retrieved without the assistance of external equipment except for the towing vehicle.

(e) Fitted with at least two internal fixed berths having a minimum length of 1.8m, an average top surface width of no less than 450mm, and a minimum clearance of 400mm above the top surface of the berth.

(f) Be fitted with a retractable centreboard and having a maximum draft of 760mm with centreboard retracted. Equipment required to raise and lower the centreboard shall be part of the yacht and carried at all times. Bilge keels in lieu of a centreboard and with a maximum draft of 760mm may be deemed acceptable.

(g) A minimum freeboard (excluding the transom) of 450mm.

(h) A minimum cabin headroom of 1.05m over a continuous area of not less than 1m2. The measurement is to be made from the cabin sole with hatches and poptops closed, and all berths fixed in place.

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(i) The internal cabin length (excluding area under the cockpit) shall be not less than 40 percent of the overall length of the yacht excluding any prod or bowsprit.

(j) Shall not be fitted with trapezes, sliding seats, swinging straps, beam extensions or any similar fittings.

(k) Have a minimum self-righting index as established by the NZTYA.

(l) Have an auxiliary motor (inboard or outboard) as per Part V, Regulation 13.01 and 13.02.

4.02 A sports trailer yacht shall be defined as follows:

(a) A monohulled cabin yacht.

(b) Propelled principally by the use of sails.

(c) A maximum beam of 2.95m and capable of being trailed on public roads without a special permit. Note, over width plates/ flags will need to be carried.

(d) Able to be rigged and launched from its own trailer without the assistance of external equipment except for the towing vehicle.

(e) Capable of being fitted with at least two internal fixed berths having a minimum length of 1.8m, an average top surface width of no less than 450mm, and a minimum clearance of 400mm above the top surface of the berth.

(f) Be fitted with a retractable centreboard and having a maximum draft of 760mm with the centreboard retracted.

(g) A minimum freeboard (excluding the transom) of 450mm.

(h) A minimum cabin headroom of 1.05m over a continuous area of not less than 1m2. The measurement is to be made from the cabin sole with hatches and pop tops closed and shall not include any space required to meet condition (e) above.

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(i) The internal cabin length (excluding area under the cockpit) shall be not less than 40 percent of the overall length of the yacht, excluding any prod or bowsprit.

4.03 **Design Approval**

Trailer yacht designs shall meet the following criteria:

(a) Be constructed in conformity with a plan of an acceptable standard and with sufficient detail that is approved by the NZTYA. Hull plans must be to a scale such that all dimensions required for acceptance can be verified. Sail plan to include measurements of luff, foot, leech and width at half height (folded head to tack) for all permitted sails.

(b) An approved design shall be classified as Type 3 (see Part V, Regulation 4.5(c) below) until a satisfactory SRI test has been made.

(c) All hull, sail and operating systems shall conform to current World Sailing Racing Rules, current Yachting New Zealand prescriptions and Yachting New Zealand Safety Regulations pertaining to trailer yachts.

(d) Any changes to a trailer yacht's design (including changes to its hull, rigging or sail plan) after acceptance by the NZTYA shall render the yacht liable to disqualification from a race, cancellation of its acceptance and withdrawal of registration.

(e) A copy of all details of trailer yacht designs approved by the NZTYA shall be sent to Yachting New Zealand and held at the Yachting New Zealand office.

4.04 **Steps for Design Approval**

(a) A plan shall be submitted to NZTYA accompanied by a fee as specified by NZTYA.

(b) The plan shall be provisionally approved when the technical committee of NZTYA is satisfied that the plan meets the definitions and requirements of a trailer yacht.

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(c) Once constructed, the yacht is to be taken to a local trailer yacht club or squadron, where its measurements are checked and an SRI test undertaken.

(d) After meeting the above criteria, the technical committee will approve registration for a sail number to be issued by Yachting New Zealand. The yacht will sail with a provisional rating until such time as sufficient race data have been supplied to establish an NZTYA rating.

4.05 **Self-Righting Index (SRI)**

Trailer yachts shall be accepted as Type 3 yachts until classified as either Type 1 or Type 2 by NZTYA.

(a) Type 1 trailer yachts shall have an SRI of 1.00 or greater.

(b) Type 2 trailer yachts shall have an SRI between 0.550 and 0.999 inclusive.

(c) Type 3 trailer yachts shall have an SRI less than 0.550.

The SRI (self righting index) shall be established by using the NZTYA formula and test procedure (refer to TY Appendix 1).

5.0 CATEGORIES OF EVENTS

5.01 Three categories of event are detailed below to provide guidance to organising authorities and cruising skippers so they may select the category deemed most suitable for the type of sailing to be undertaken.

Organising authorities and cruising skippers should also consider the additional influences of water temperature and night sailing when selecting event categories.

5.02 Trailer yachts competing with keelboats and multihulls shall comply with the safety requirements as laid down in the notice of race.

(a) Category A: Applies to trailer yachts sailing across open water, most of which is relatively protected or close to shorelines. It is

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recommended that yachts entering such an event have a Type 1 SRI.

(b) Category B: Applies to trailer yachts sailing in substantially enclosed or protected waters or near other craft. It is recommended that yachts entering such an event have a Type 1 or Type 2 SRI.

(c) Category C: Applies to trailer yachts sailing in substantially enclosed waters under the direct supervision of a club or squadron and in the presence of other craft.

5.03 Trailer yachts sailing beyond these categories shall comply with Yachting New Zealand Safety Regulations Part II.

6.0 APPLICATION OF REGULATIONS 7 -15

6.01 In clauses 7-15, the 'X' indicates that the item is mandatory for the category to which the clause applies.

6.02 In clauses 7-15, the 'R' indicates the item is recommended for the category in that column.

7.0 BASIC STANDARDS

		Race Category A	B	C
7.01	All equipment must function properly, be readily accessible and be of a type, size and capacity suitable and adequate for the intended use and the size of the yacht.	X	X	X
7.02	All trailer yachts shall have self-righting hulls, be strongly built and sufficiently constructed that water can be prevented from entering the cabin or bilge in the event of a knock-down. They shall be properly rigged and ballasted, be fully seaworthy and shall meet the standards as set forth herein.	X	X	X
7.03	Rudders shall be secured to the hull so that the gudgeons and pintles cannot become disengaged when the hull is inverted.	X	X	X

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		Race Category A	B	C
7.04	Tiller and rudder blades if not permanently attached to the rudder stock shall be secured to it by a pin or lashing while the yacht is on the water.	X	X	X
7.05	Centreboards shall be so mounted that they remain in the case regardless of the attitude of the hull.	X	X	X
7.06	Centreboards shall be capable of being locked down where the SRI is reliant upon ballast in the centreboard.	X	X	X
7.07	All heavy items of equipment shall be adequately secured to maintain their position in the event of a knock-down or capsize.	X	X	X
7.08	Ballast shall be securely fastened or contained and water ballasted boats shall carry full ballast tanks at all times while sailing.	X	X	X
7.09	Washboards or effective waterproof covers capable of closing off the cabin area shall be carried.	X	X	X
7.10	Hatches shall be able to be securely fastened down.	X	X	X
7.11	Yachts shall be equipped with securely attached forward and aft fittings at, or near, deck level of sufficient strength for towing under adverse conditions.	X	X	X
7.12	Cockpit drains adequate to drain cockpits quickly but not less in combined area (after allowance for screens, if attached) than the equivalent of two 22mm diameter drains shall be installed.	X	X	X
7.13	Sink wastes and toilets shall have valves or stop cocks fitted (a plug is not sufficient).	X	X	X
7.14	Windows shall be fitted in such a manner as to withstand external pressure which could cause them to pop in.	X	X	X

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		Race Category A	B	C
7.15	Batteries shall be sealed and so mounted to prevent acid spillage in the advent of a knock-down.	X	X	X
7.16	Fuel tanks and gas bottles shall be stowed in such a position that in the event of a leak, fuel or gas will not seep into the bilges.	X	X	X
7.17	**Lifelines, Stanchions and Pulpits**			
	(a) Where pulpits are fitted, they shall comply with the appropriate regulations for keel yachts (Part II Offshore and Coastal Racing).	X	X	X
	(b) Where lifelines are fitted, stanchions may not be angled to the hull more than 10° from vertical throughout their length. A top wire lifeline (or non-stretch equivalent) attached at the pulpit must pass through or to the top of each stanchion to the aft corner post where it may be connected with a lanyard. Additional lifelines are permitted. Any slack in the top lifelines shall not permit them to come closer to the deck than 250 mm at any point.	X	X	X
7.18	**Buoyancy**			
	(a) Each yacht should be constructed or fitted so that with the fully equipped hull completely flooded the boat will support at least 9kg for each crew member on board. The importance of squabs of a buoyant nature will be recognized, provided they are secured and cannot float away.	R	R	R
	(b) Where closed cell foam buoyancy is used to meet the previous recommendation it must be secured by building in or by all around straps. Where bag buoyancy is used to meet the above requirement, it shall be secured to the hull in an inflated condition by all around straps or shall be completely enclosed.	X	X	X

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		Race Category A	B	C
8.0	**ACCOMMODATIONS**			
8.01	Adequate cabin ventilation is recommended.	R	R	R
8.02	The use of petrol for cooking or lighting shall be prohibited. Gas appliances shall comply with the accepted practice for gas appliances. This notice of a minimum size of 75mm x 150mm shall be visible adjacent to the stove, if applicable. TURN OFF GAS AT BOTTLE	X	X	X
8.03	2.5 litres of fresh water shall be carried for each crew member at the start of a saltwater event.	X	R	R
9.0	**GENERAL EQUIPMENT**			
9.01	Yachts shall have fixed or portable boarding equipment such as a ladder or step to enable easy access on board for a person returning from the water.	X	X	X
9.02	Miscellaneous buoyant equipment, such as lifebuoys, oars, buoyancy cushions, etc. shall be clearly marked with yacht's name or registered sail number. Lifejackets shall be clearly marked with the yacht's name, registered sail number or wearer's name.	X	X	X
9.03	All yachts shall clearly display their registered name and sail number on each side of the hull in not less than 50mm lettering and figures.	X	X	X
9.04	Each yacht shall carry an adequate tool kit for both hull and motor including means of clearing rigging.	X	X	X
9.05	A boat hook shall be carried. Note: For sports boats this is only recommended.	X	X	X
9.06	Yachts shall carry a tow line of adequate strength and of such a length that it will extend twice the	X	X	X

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		Race Category A	B	C
	yacht's length beyond the bow.			
9.07	**Anchors and Warps**			
	(a) Each yacht shall carry one anchor and warp (as prescribed below) complete with tackle and ready for immediate use.			

Overall Length	Anchor	Chain	Warp (Breaking Load)	A	B	C
Up tp and including 5.2m	Danforth 4S (2.3kg) CQR 4.5kg	6mm	900kg	X	X	X
Over 5.2m and up to and including 6.7m	Danforth 8S (4.5kg) CQR 6.8kg	6mm	1300kg	X	X	X
Over 6.7m	Danforth 13S (7.7kg) CQR 8.8kg	8mm	1300kg	X	X	X

		A	B	C
	Anchors carried of patterns other than Danforth or CQR shall be of equivalent holding power to that applicable in the above table. Warps shall include galvanized mild steel short link chain of the size specified above, and of a length not less than the overall length of the yacht. The total length of the warp (including the chain) shall be a minimum of 46m. Rope warps shall have a minimum breaking load as specified above, shall be of non-floating synthetic fibre, and attached to the yacht.			
	Note: 6mm chain may be substituted for 8mm chain, provided the length of chain is increased from one boat length to 1.6 boat lengths.			
	(b) An additional anchor shall be carried while cruising.	R	R	R

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		A	B	C
	(c) Anchors shall be safely stowed within the outer perimeter of the boat and not carried over the prow during racing.	X	X	X
9.08	**Bilge Pump**			
	(a) One manual bilge pump or one bucket of stout construction with a nine litre minimum capacity, with a lanyard attached, shall be carried.	X	X	X
	(b) One additional bucket of stout construction with at least a nine litre capacity, with a lanyard attached, shall be carried.	X	X	R
9.09	Each yacht shall carry one effective waterproof torch.	X	X	X
	Note: For sports boats this is only recommended.			
9.10	Each yacht shall carry a fog horn or whistle (without pea).	X	X	R
9.11	**FIRST AID**			
	(a) Each yacht shall carry a Day kit. Or Coastal Kit if racing outside harbour limits.	X	X	X
	Note: For sports boats this is a recommendation.			
	For the details of a complete first aid kit, refer to SR Appendix 1.			
10.0	**NAVIGATION EQUIPMENT**			
10.01	**Compass**			
	(a) A reliable marine-type compass shall be carried.	X	X	R
	(b) A reliable compass shall be carried.			X

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		Race Category A	B	C
10.02	A chart for the area to be sailed shall be carried for sea areas and a suitable map for inland waters.	X	X	R
10.03	Navigation lights shall be fitted to, and be operational on, all yachts sailing after sunset as required by the international regulations for the Collision Prevention Rules.	X	X	X
	Vessels with an engine fitted must also have fitted the correct lights for a vessel under power.	X	X	X
	Yachts under 7m LOA shall comply with the regulations for those over 7m LOA (ie they shall exhibit sidelights and a stern light).	X	X	X
11.0	**EMERGENCY EQUIPMENT**			
11.01	A minimum of one device capable of receiving a weather bulletin shall be carried.	X	X	X
	Note: For sports boats this is only recommended.			
11.02	A marine VHF radio shall be carried and available for use at all times. Radio operators are reminded of the requirement to hold an operator's license and call sign for a marine VHF radio.	X	X	R
11.03	If the regular antenna depends upon the mast an emergency antenna for the VHF radio must be provided OR a handheld waterproof VHF radio carried.	X	X	R
11.04	**Fire Extinguisher**			
	(a) A minimum of one 0.9kg dry powder or equivalent type fire extinguisher shall be carried in the yacht.	X	X	X
	For sports boats, the above requirements to carry a fire extinguisher shall only apply if the yacht is carrying either gas or liquid fuel.			

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		Race Category A	B	C
	(b) One additional extinguisher should be carried.	R	R	R
	(c) Fire extinguisher shall be properly positioned and mounted for emergencies.	X	X	X
11.05	**Sails**			
	(a) Sails shall be bent on in such a manner that will allow for the sail area to be readily reduced or removed.	X	X	X
	(b) Suitable sails capable of taking the yacht to windward in winds of 40 knots shall be carried.	X	X	R
12.0	**SAFETY EQUIPMENT**			
12.01	**Personal Flotation Devices** (see SR Appendix 4)			
	(a) A lifejacket of at least 50 newtons of buoyancy, one for each crew.			X
	(b) NZS 5823:2005 Type 402 or its equivalent, shall be worn while racing.	X	X	R
	(c) A whistle (without a pea) shall be attached by a lanyard to each lifejacket.	X	X	R
12.02	**Horseshoe type lifebuoy or life ring**			
	(a) One horseshoe type life buoy or life ring equipped with a whistle (without a pea) shall be carried in an accessible position.	X	X	R
	(b) For yachts sailing after sunset the life ring shall be fitted with a waterproof light which is operational.	X	X	R
12.03	**Safety Harness**			
	At least one safety harness, with locking clips on both ends of the lanyard, shall be carried and readily available for use.	R	R	R

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		Race Category A	B	C
12.04	**Distress Signals**			
	(a) One 600mm x 600mm or larger orange flag for waving shall be carried.	X	X	X
	(b) Two red hand-held flares and one orange hand-held smoke torch.		X	R
	(c) Two red hand-held flares, two orange hand-held smoke torches and two parachute rockets.	X	R	R
	(d) It is strongly recommended that Category A flares be carried during cruising.	R	R	R
	(e) All flares shall be carried in a waterproof container stowed so that they are available for immediate use.	X	X	X
	(f) Flares outside their expiry date are not acceptable.	X	X	X
12.05	**Emergency Knife**			
	A sharp knife properly housed shall be stowed, accessible to crew in the cockpit.	X	X	X
12.06	Emergency position indicating radio beacon (EPIRB) type 406.	R	R	
13.0	**AUXILIARY POWER**			
13.01	An outboard motor or an inboard auxiliary motor, together with fuel tank and fuel supply shall be carried in an operational position. 'Operational position' shall be defined as the proper position for the particular type of installation from which maximum propeller thrust can be obtained. The propeller may be raised clear of the water and fuel pipe disconnected to prevent syphoning when the motor is not in use. Note: For sports boats this is only recommended.	X	X	X

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		Race Category A	B	C
13.02	Motor rating shall be a minimum of 0.6 kW per metre overall length (approximately equivalent to 0.25 hp per foot of overall length). Motor rating shall be as per the manufacturer's specification. Note: For sports boats this is only recommended.	X	X	X
13.03	A minimum of five litres of fuel shall be carried at the start of racing. It is recommended that organising authorities state the minimum fuel requirements in the Notice of Race.	X	R	R
14.0	**INCREASING STABILITY**			
14.01	Where lifelines are fitted, no crew member shall station any part of his torso outside them except when complying with RRS 49.2. Note: This rule does not apply to sports boats.	X	X	X
14.02	Where lifelines are not fitted, no crew member shall incline their torso beyond the vertical outside of the gunwale. Note: This rule does not apply to sports boats.	X	X	X
14.03	Weight jackets (RRS 43.1, 43.2 & RRS Appendix H) shall not be permitted.	X	X	X
15.0	**BOWSPRITS**			
15.01	When a retractable prod or bowsprit is fitted and not being used for its intended purpose, then it shall be retained in its fully retracted position.	X	X	X
15.02	Where the prod is launched from within the hull, a suitable device for plugging the exit hole shall be carried to prohibit the ingress of water in the event of the prod being broken.	X	X	X

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Y APPENDIX I
SELF-RIGHTING INDEX (SRI)

The SRI formula provides an indication of a trailer yacht's ability to self-right when heeled to 90° under specified conditions.

$$SRI = \frac{(3T90 - T75) \times (lss + 0.5FML)}{(6B^2 \times L) + (3B^2 \times lss) + (40L \times FML)}$$

Where dimensions are in metres and loads in kg and:

B = Maximum Beam
L = Overall Length
FML = Freeboard at mid length
lss = Slant height of spinnaker halyard exit on the mast above the gunwale at deck level and mid length point.

T75 and T90 are the loads required on the spinnaker halyard, acting at right angles to the mast to maintain angles of heel of 75° and 90° respectively.

For more information, including test procedures and calculation sheets, contact the technical committee of the New Zealand Trailer Yacht Association.

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PART VI
SPORTS BOATS

Definition of a Sports Boat

A sports boat shall:

1.0 Be a ballasted, single-masted monohull with a hull length (measured from transom to bow) of 6.5m – 8.5m.

2.0 Have a maximum sailing beam of 4.9m including racks or similar. Trapezes allowed, but trapezing crew not included within this measurement.

3.0 Use only asymmetrical downwind sails (gennakers), flown from a gennaker prod or the centreline of the boat. Movement of pivoting gennaker prods is restricted to 20 degrees either side of the centreline.

4.0 Comply with the stability requirements for keelboats racing in Category 4 and 5 events.

Note: Compliance is to be proven by a physical pull-down test in which the masthead shall be pulled down until it touches the surface of the water. The yacht will maintain a positive righting moment at all times during the test.

During the pull-down test all gear shall be stowed normally, outboard motors shall be in the required position, the keel locked down and no sails shall be hoisted.

The pull-down test shall be at the owner's risk and cost, and no liability will be accepted by the club, Yachting New Zealand or any of its members, officers or servants.

5.0 Carry safety equipment as defined by NZSBA.

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6.0 Have a lock-down keel, if the keel is retractable.

Have sufficient buoyancy to maintain the boat and its crew above the water level and in near level trim should the boat become swamped.

(Does not apply to boats launched prior to January 1, 2009, however, it is recommended for all boats.)

7.0 Be designed to be capable of sailing across open water, most of which is relatively protected or close to shorelines.

8.0 Be constructed so as to be able to prevent water entering the cabin in the event of a knockdown.

Safety Regulations

Category B: For day sailing events in substantially enclosed or protected waters, or near other craft.

Each sports boat shall carry:

1.0 One lifejacket per crew member, to be worn at all times while racing as for Category A.

2.0 Sports boats shall be fitted with a towing position at the bow, suitable for towing the boat in adverse conditions, and shall carry a suitable towrope.

3.0 Rudders, tillers, and retractable keels shall be fitted to the boat in such a manner that they remain attached during a severe broach or knockdown.

4.0 Two buckets, minimum nine litre capacity each, one with lanyard attached.

5.0 All sails shall be secured in such a way so that they can be lowered readily.

6.0 All equipment must function properly, be readily accessible, and suitable and adequate for intended use and the size of the sports boat.

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7.0 All heavy items of equipment shall be secured to maintain their positions in the event of a knockdown.

8.0 All buoyant equipment shall be marked clearly with the Sports Boat's identification.

9.0 A first aid kit is recommended to be carried at all times.

10.0 A 600mm x 600mm or larger orange flag shall be carried for waving in an emergency.

11.0 A sharp knife properly housed shall be stowed in the cockpit, accessible to crew.

12.0 Outboard motors are optional.

13.0 A retractable prod shall be retained in its fully retracted position when not being used for its intended purpose (i.e. to be retracted as soon as is practical after use).

14.0 A paddle suitable for propelling the boat shall be carried at all times.

15.0 An anchor chain and warp appropriate to the size of boat, capable of holding the boat moored safely in moderate weather (15-20 knots of wind).

16.0 Boat number shall be displayed on side of boat and all sails as required by the racing rules of sailing.

Category A: Additional safety requirements for races sailed across open water most of which is relatively protected or close to shorelines:

The following additional mandatory items must be carried: Outboard motor

Fire extinguisher

One orange hand-held smoke torch One red hand-held flare

Either a VHF radio or cellphone in waterproof bag

Lifejackets to be worn by crew at all times.

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PART VII
SPORT MULTIHULL YACHTS

Definition of a Sports Boat

A lightweight, high performance multihull. They are often but not necessarily foiling, with little or no access into the hulls. These vessels are light weight and can be re-righted by their support vessel

Limits

It is suggested that entries for these vessels should only be accepted for Category 4 and 5 races as they are generally suitable for inshore and not open waters.

Sport Multihull Equipment

Helmet – each crew member to wear a suitable water sports helmet. In light conditions, with the skipper's express permission, these may be removed but must be carried on the vessel at all times.

Personal Flotation Device - worn by each crew of at least 50 newton meters of buoyancy with pea-less whistle and of such a fit that it offers some protection for the chest area of the wearer.

Wetsuits – each crew member should wear a suitable wetsuit to protect them from the elements, provide buoyancy and protect knees and elbows. It is suggested that each crew member wear wetsuit-type booties on their feet.

Fixed blade knife – each crew member to have a fixed bladed blunt tip knife, with a lanyard, in a sheath located on their chest area and easily accessible in a panic situation.

Emergency knives – two fixed bladed emergency knives accessible when the vessel is inverted.

Waterproof VHF radio

Ability to drop jib and reef main

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Support Boat Requirements

Definition – a vessel suitable for the support of the vessels such as a RIB with suitable horsepower, buoyancy and suitably experienced crew.

Ratio – a ratio of one support boat to six vessels.

First aid kit – suitable for collision type trauma (splints, equipment to stabilise a spinal trauma, combat bandages to stop bleeding etc).

Two serrated emergency knives – sharp tips acceptable.

Portable bilge pump – a manual pump mounted on a board with suitable plumbing or a powered pump with suitable plumbing and power source.

Tool kit

Buckets – two strong buckets with lanyards attached.

Flares – two red and one orange.

Tow line for righting and towing

Documented righting plan for each vessel being supported in a waterproof cover.

Waterproof VHF

Mobile telephone – each support boat to have at least one mobile telephone on board.

Dive mask

Portable breathing apparatus – recommended.

Support Boat log – that the support boat is suitably crewed and equipped to be signed off by crew before going on the water.

Bosuns chair or suitable climbing harness (Lirakis) – each vessel to have at least one bosons chair or suitable climbing harness.

Tools – suitable tools for the individual vessel requirements.

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SR APPENDIX 1
MEDICAL STORES

MEDICAL STORES

The following are standards for medical stores onboard. If medicines are not provided in commercial kits (some firms supply them) then it will be necessary to get them from a doctor or specialist marine medical supplier.

If crew members have special medical requirements, they should have at least TWICE the amount that they need for the trip, half of which is held with the crew member and the other half stored in the ship's grab bag.

Prior to departure specialist medical advice regarding prophylactic medications and vaccinations should be sought depending on the final destination of voyage.

Amounts shown represent minimum required quantities to meet category and may need to be varied depending on the size of the crew, destination and time away. In some cases, a quantity range e.g. 5-10 has been provided.

Where an item is 'recommended' in the note's column, its inclusion is optional.

Recreational vessels not subject to category inspection may choose to adopt these standards.

Any vessel may choose to increase or add to the requirements on the advice of a medical practitioner or licensed medicine supplier conversant with medical requirements at sea.

Associate Professor David Austin
8th December 2020

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At least two crewmembers onboard should hold, a current first aid certificate as a minimum standard.

A marine based first aid course (such as "Dr Dave's Offshore Medic" or "Coastguard Coastal Medic" courses will provide knowledge and skills more appropriate to the crew.

A. Inshore Kit

Also used as Day Kit for coastal and offshore races.

Contents:
Keep in a watertight container

1. Iodine based cleaning solution – 100ml. (Chlorhexidine recommended if allergy to Iodine)
2. Band-Aids x 20
3. Elastoplast fabric dressing – 1m
4. "Emergency bandage" 10cm x 1
5. Paracetamol 500mg x 20
6. Aspirin 300mg x 20

B. Coastal Kit

For coastal races – for example Coastal Classic

Taken in ADDITION to inshore kit

Contents:
Keep in a watertight container

1. Non-sterile gloves x 6
2. Crepe bandage 10cm x 2
3. Paraffin gauze dressing 5 x 5cm x 5
4. "Emergency bandage" 15cm x 1
5. Skin Stapler x 1
6. Sea sickness tablets x 40 (various types, suggest Ondansatron oral dispersible 4mg or Stugeron =Cinnarizine 15mg)
7. Non-steroidal tablets x 10 (various types available)

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8. Oxycodone tablets (Oxycodone hydrochloride) 10mg or equivalent x 20 tabs
9. Cephalexin 250mg tablets x 20
10. Loperamide tablets x 10
11. Chlormycetin eye ointment x 1 tube
12. Gladwrap strips 1 small roll (for burns)
13. Adrenaline 1:1000 injection x 2
14. Syringe 5ml x 2
15. Needle 22g x 2
16. Alcohol skin prep x 2
17. Nitrolingual spray x 1

C. Offshore Kit

Taken in ADDITION to inshore and coastal kit

Contents:
Keep in a watertight container

1. Emergency bandage 15cm x 1
2. Elastoplast fabric dressing – 1 metre
3. Large Steri-Strips x 9
4. Sea sickness tablets x 60 (various types, suggest Ondansatron oral dispersible 4mg or Stugeron 15mg Note: take a **DIFFERENT TYPE** to coastal kit
5. Ondansetron sublingual 4mg if have not included already
6. Non-steroidal tablets x 20 (various types available)
7. Oxycodone tablets (Oxycodone hydrochloride) 20mg or equivalent x 20 tabs. Note – this is a larger dose than in the Coastal Kit
8. Chlormycetin eye ointment x 1 tube
9. Framycetin sulphate ear drops x 1
10. Mupirocin (Bactroban) ointment x 30g (2 x 15g)
11. Antifungal cream 30g (e.g. Daktarin)
12. Omeprazole capsules 20mg x 10
13. Prednisone tablets 20mg x 10
14. Antihistamine tablets x 20 (e.g. Loratadine)
15. Metronidazole tablets 200mg x 30

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16. Amoxycillin / Clavulanate Acid 500mg tablets x 21
17. Cefuroxime 750mg injection x 5 amps (given intra muscularly)
18. Dulcolax tablets x 20
19. Morphine 10mg/ml x 5 amps
20. Midazolam 5mg injection x 5 amps
21. 5ml syringe x 5
22. 22g needle x 5
23. Saline amps (10ml) for injection x 5
24. Alcohol swabs x 10
25. Naloxone 400mcg amps x 5
26. Skin stapler x 1
27. Oil of cloves – 1 bottle
28. Temporary filling material x 1

D. Cruising Kit

Suggested in **ADDITION** to inshore and coastal kit if extensive cruising to very remote regions.

Contents:
Keep in a watertight container

1. Rehydration fluid - many commercially available in liquid or powder form. Enough to make 5 litres.
2. Intravenous fluid – 2 litres normal saline + giving sets + IV cannulae + dressings – If Medic competent to place an intravenous line
3. Splint for arm/leg – suggest SAM splint
4. Thermometer
5. Anti-itch cream – suggest Eurax 30g
6. Hydrocortisone cream 1% 30g
7. Amethocaine eye drops 1% (minims) x 2
8. Ciprofloxacin 500mg tablets x 20Forceps and scissors
9. Adrenaline 1:1000 amps x 5
10. Promethazine 25mg amps x 3
11. Skin Stapler

For **CATEGORY 1**, an extensive medical kit is needed. Depending on length of time away, destination and size of the crew, there may be a need for

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quantities to be increased. Any crew member's special medical needs should be addressed to by their own doctor well before the trip.

All crew should have a medical and dental check prior to departure. At least two crew members shall have a current first aid certificate and a minimum of one crew member (suggested two crew members) shall have an advanced first aid certificate or special training, covering the safe use of medications and treatments required for offshore sailing.

NOTES WITH YACHTING NEW ZEALAND MEDICAL KITS:

It is assumed that all boats carry the following and hence are **NOT** included in medical kits:

- Sun lotion
- Insect repellent (if required)
- Duct tape
- Electrical tape
- Batten material, which may be cut to use as a splint
  If not, take a SAM splint

Numbers relate to the item number in the medical kit.

Inshore Kit:

1. Iodine cleaning solution – used for cleaning wounds. May be used in eyes, ears, mouth etc. If allergy to Iodine, use an alternative, suggest Chlorhexidine.
3. Elastoplast fabric dressing – use for larger wounds that a band-aid will cover. Cut to length.
4. Emergency bandage 10cm – used for large, vigorously bleeding wounds. May be tightened and used as a tourniquet as required. Watch video on how to use prior to departure. As with ALL bandages – check blood flow to fingers/toes below bandage. It may require loosening as bleeding settles.
5. Paracetamol – a simple pain reliever. Avoid if you have liver or kidney disease.
6. Aspirin – a simple pain reliever. Also used in suspected heart attack. Avoid if you have a bleeding disorder, stomach ulcer or asthma.

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Coastal Kit:

2. Crepe bandage 10cm – used as a general bandage if bleeding not too severe and emergency bandage is not required.
3. Paraffin gauze dressing 5 x 5 – used for weeping wounds.
6. Sea sickness tablets – important to try on shore prior to departure to ensure no side effects.
7. Non-steroidal tablets – very good pain relief for most things, however, do have a number of side effects including – avoid if you have a bleeding disorder, stomach ulcer, kidney or liver failure or asthma.
8. Oxycodone tablets (*Oxycodone hydrochloride*) 10mg x 20 tabs – this is a strong pain relief for severe pain. Side effects are sleepiness, avoid in liver disease, constipation, severe heart/lung disease.

Note: Some overseas countries have Targin 10/5 tablets (*Oxycodone hydrochloride and naloxone hydrochloride anhydrous*) which has a second agent (Naloxone) in it to avoid constipation. Targin is the preferred choice (if available) because of this feature.

9. Cephalexin 250mg tablets – this is a general antibiotic for lacerations, chest or other infections. If allergic to penicillin-type antibiotics, discuss with your GP prior to trip.
10. Loperamide tablets – for diarrhoea. Take 1-2 with each loose motion, maximum of eight per day.
11. Chlormycetin eye ointment – for eye infections. If infection due to foreign body in eye, wash out with salt water first. May be used for local skin infections also.
12. Gladwrap strips – used to cover burns. Firstly, cool burn with immersion in salt water for 20-30 minutes then cover in Gladwrap strips. Note: as burns swell, they should not be tightly wrapped.
13. Adrenaline 1:1000 injection – is used for **SEVERE allergic reactions** to any medication or a bee/wasp sting. It is safely given into the outer edge of the thigh. If severe anaphylaxis, give ALL of the ampoule.
17. Nitrolingual spray – used in severe chest pain / suspected heart attack. Spray two pumps under tongue, give one aspirin and call for help.

Offshore Kit:

3. Large Steri-Strips – these are used to close a wound edge however it must have stopped bleeding or they will not stick. If bleeding, use

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paraffin gauze dressing and then apply Steri-Strips the next day. If a large wound, use either the emergency bandage to control bleeding or staple it closed. 4. Sea sickness tablets – take a different type of tablet in coastal kit as some tablets work more effectively for different people.

7. Oxycodone tablets (Oxycodone hydrochloride) 20mg x 20 tabs. Note: these are STRONGER than the Oxycodone in the coastal kit. Same side effect profile.

Note: some overseas countries have Targin 20/10 tablets (*Oxycodone hydrochloride and naloxone hydrochloride anhydrous*) which has a second agent (Naloxone) in it to avoid constipation. Targin is the preferred choice (if available) because of this feature.

9. Framycetin sulphate ear drops – used for ear infections. Note: some ear infections are very painful.
10. Mupirocin (Bactroban) ointment - an antibacterial ointment for an infected wound. Patient may also require oral antibiotics.
11. Antifungal cream – for fungal skin infections e.g. athlete's foot. If a wound has fungus it often smells fishy.
12. Omeprazole tablets – for sever heart burn / reflux. Ensure the pain is not cardiac (heart) first. Cardiac pain is more likely to be severe and crushing in nature and may move into the patient's jaw or down the arm. If severe pain and possibly cardiac, call for help.
13. Prednisone tablets – for allergic reactions and asthma. If in doubt about use, call for help.
14. Antihistamine tablets – used in allergic reactions or hay fever. Loratadine suggested as it is less sedating, however side effects are sleepiness, dry mouth/eyes, headache and diarrhoea.
15. Metronidazole tablets – used for most gut infections and giardia (eggy smelling burps and wind). Side effects are numerous – most common is diarrhoea, nausea (made much worse by alcohol), headache and abdominal pain.
16. Amoxycillin / Clavulanate Acid (Augmentin) – a penicillin-based antibiotic for most infections. If allergic to penicillin, take Cephalexin, HOWEVER 30 percent of patients with allergy to penicillin will be allergic to Cephalexin. Side effects include nausea, diarrhoea and rash.
17. Cefuroxime 750mg injection – for the most severe infections. If using suggest discussion with a medical officer. Comes as a powder so mix

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with saline to 5ml and give into outer aspect of thigh. Side effects are the same as Cephalexin.

18. Dulcolax tablets – for constipation. Not to be used if patient has a bowel obstruction. If unsure, suggest discussion with a medical officer.
19. Morphine 10mg/ml – **for SEVERE PAIN**. Discuss with Medical Officer prior to using. Add to saline in a syringe to make up to 5ml and give 2.5ml, which is 5mg (1/2 syringe) at a time into outer aspect of thigh.
20. Midazolam 10mg injection – used in seizure or to relax muscles to reduce a fractured bone or dislocated joint. Discuss with a medical officer prior to using. Add to saline in a syringe to make up to 5ml and give 2.5ml, which is 5mg (1/2 syringe) at a time into outer aspect of thigh.
25. Naloxone 400mcg amps – used in morphine or Targin severe sedation. Used if patient stops breathing or has a large drop in blood pressure. Discuss with a medical officer prior to using. Add to saline in a syringe to make up to 5ml and give 2.5ml, which is 200mcg (1/2 syringe) at a time into outer aspect of thigh.
26. Skin stapler – used for large wounds to draw edges together. Simply push wound edges together, lay stapler against skin and pull trigger. Apply one staple per 0.5cm-1cm of wound. If a lot of bleeding, use emergency bandage instead until bleeding is under control and staple the next day.
27. Oil of cloves – used for toothache. Apply directly to tooth on your finger.
28. Temporary filling material – mix together and push into cavity in tooth.

Cruising Kit:

1. Rehydration fluid – for sever vomiting or diarrhoea. If run out of solution, use water with sugar and a pinch of salt. Give in small amounts or a full stomach may make them vomit.
2. Intravenous fluid – **only use under direction of a medical officer.**
3. Splint for arm/leg – SAM splint is shaped to limb and bandaged into place. Check colour of fingers or toes BELOW splint and loosen bandage if required.
4. Thermometer – used under armpit or under tongue. Normal temperature is 36.5-37.5C
5. Anti-itch cream – used for severe itch from bites (insect, sea lice etc).
6. Hydrocortisone cream 1% 30g – used for skin allergy.
7. Amethocaine Eye drops x 2 – drops to 'numb' eye and allow removal of a

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foreign body. Should NOT be used repeatedly for pain relief.

8. Ciprofloxacin 500mg x 20 – used for uninary, gut or general infections. Side effects are headache, dizziness, blurred vision, fever, chills, flu symptoms, swollen glands, rash, joint pain or general ill feeling, diarrhoea that is watery or bloody.
9. Adrenaline 1:1000 – used for SEVERE allergic reactions to any medication or a bee/wasp sting. It is safely given into the outer edge of the thigh. If sever Anaphylaxis, give ENTIRE ampoule.
10. Promethazine 25mg amps – a sedating antihistamine injection for allergic reactions. Discuss with a medical officer prior to using. Add to saline in a syringe to make up to 5ml and give 12.5mg (1/2 syringe) at a time into outer aspect of thigh.

Associate Professor David Austin
Director Intensive Care Services Central Queensland
8th December 2020

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SR APPENDIX 2
LIFE RAFTS AND GRAB BAGS

LIFE RAFTS

Preamble

Life raft design and manufacture has evolved in recent years. The current ISO 9650 specification requires a minimum level of design and specification in advance of previous requirements. Vessels voyaging long distances or to extreme areas should consider the manufacturer, model, age and specification of their life raft in accordance with latest developments.

Minimum Life raft equipment

A SOLAS life raft shall contain as a minimum a SOLAS A pack;
Category 1

An ISO 9650 life raft shall contain as a minimum pack 1 (greater than 24-hour pack) Category 1

An ISO 9650 life raft shall contain as a minimum pack 2 (less than 24-hour pack) Category 2, 3.

The minimum contents of the ISO life raft equipment packs are listed under the appropriate section of the World Sailing offshore special regulations.

GRAB BAG REQUIREMENTS FOR KEELBOATS AND MULTIHULLS see 17.33 and 17.34

The grab bag should be of a style, design and size appropriate to the vessel and number of crew. The grab bag shall float and have a lanyard attached. A multihull grab bag shall be accessible regardless of whether the vessel is upright or upside down

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Equipment in the grab bag may be counted as part of the general equipment under safety regulations Part II.

A grab bag containing the following:

Required for all yachts (keelboats and multihulls)

1 Small first aid kit suitable for life raft

2 Cyalume light sticks or 2 throwable floating lights

1 Daytime signaling mirror

1 Signaling whistle

1 Signaling flashlight

Survival blankets

Seasickness pills

Distress V sheet or printed sail number on orange background

The following is required in addition to the above for multihulls (recommended for keelboats)

Appropriate flares

1 waterproof handheld VHF (must be additional to general equipment under SR Part II)

1 406 MHz EPIRB, see SR 18.6 Part II (for Category 1 and 2 only, Recommended for Category 3)

1 PLB (personal locator beacon), see SR 18.6 Part II (for Category 3 only, recommended for Category 4 & 5. A PLB is not required if a 406 MHz EPIRB is already being carried in the grab bag.)

1 sharp knife in a pouch

Note: It is highly recommended that another form of contacting assistance

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such as a cellphone in a water-tight bag be carried in the grab bag)

The following additional items are recommended for Category 1 & 2 for all yachts (keelboats and multihulls)

Water-tight receptacles containing fresh water (at least 500ml per person)

1 plastic drinking vessel graduated in 10, 20 and 50ml

Non-thirst provoking food rations (like glucose)

Thermal protective aids

Nylon line

Polythene bags

A copy of the illustrated table of life saving signals

Sponge

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SR APPENDIX 3
SAFETY HARNESSES AND TETHERS

The use of an integrated inflatable PFD and harness is highly recommended.

SAFETY LINE OR TETHER

The safety tether shall be readily detachable from the safety harness by the wearer by means of a hook attached to either safety harness or the safety tether.

GENERAL USE

1. The wearer should locate strong anchorage points on the yacht capable of accepting the hook provided on the safety harness. Life lines (guard rails) are not adequate.

2. The safety harness and tether should be kept clean, dry and free from oil or grease. Wash in clean fresh water after use.

3. The safety harness and tether should be frequently inspected for signs of deterioration.

4. The safety harness and tether should be replaced when they have been subjected to a severe load. Stress flags recommended.

5. When it is intended to wear a safety harness and tether in conjunction with a lifejacket, users are advised to try them on together to ensure that one does not interfere with the function of the other and in particular, that in use, the tether is not likely to foul the lifejacket or restrict its inflation.

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6. Instructions for adjusting and wearing the harness should be supplied when necessary. These instructions should include an appropriate phrase such as “adjust to fit the wearer as tightly as possible”.

7. Skippers are reminded that the wearing of harnesses is a matter of crew training.

NOTE: A certificate of compliance by the manufacturer may be required by the inspector.

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SR APPENDIX 4
LIFEJACKETS, PERSONAL FLOTATION DEVICES (PFD) & LIFE BUOYS

This is a definition of the MINIMUM requirements of Yachting New Zealand for all events sailed under its jurisdiction.

In the selection of a flotation device, care should be taken to ensure that the device is tried on and fits the wearer correctly and is of the appropriate body mass range.

STANDARDS AND SPECIFICATIONS

(a) PFDs, lifejackets and life buoys complying with specifications issued or approved by:

(i) a national authority affiliated to World Sailing or the Offshore Racing Congress.

(ii) a standards organisation or certification authority recognised for the purpose by its respective government, will be accepted by Yachting New Zealand provided the device bears an official mark certifying compliance with the relevant standard, and the device is used within the category of use for which it was certified, and the device is in sound condition in accordance with the specification within which it was certified.

(b) All PFDs bearing the SANZ mark or other accepted international standard will be accepted by Yachting New Zealand, provided the device is used within the category of use and is maintained in sound condition all in accordance with the above standard.

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The standard of harnesses with integrated harness and inflatable PFD is highly variable depending on brand and model.

(c) Inflatable flotation devices approved under (a) above are acceptable to Yachting New Zealand and must be of equivalent buoyancy or more than those that comply with NZS 5823:2005 (adult 150N). Inflatable jackets to be serviced to manufacturer's requirements. Regularly check for air retention and damage, the CO^2 cylinder for corrosion and that it is securely screwed into the inflation mechanism.

(d) Wetsuits and dry suits are not acceptable to Yachting New Zealand as adequate personal buoyancy, except when used for boardsailing.

(e) Inflatable lifejackets for boardsailors are acceptable.

* Small children and ** extra small children must have a crotch strap. Crotch straps are mandatory on all lifejackets including inflatable types for vessels in Category 1, 2 & 3.

Attention of all skippers is drawn to Maritime Rule 91, navigation safety, which requires all vessels (including tenders) to carry a correctly sized, serviceable lifejacket for each person on board. The mule also requires the lifejackets to be worn at all times of heightened risk. Inflatable lifejackets do not restrict the wearer's ability to perform sailing functions and many are combined with a safety harness. The failure to wear a lifejacket or, when appropriate, a safety harness has resulted in loss of life from sailing vessels and tenders.

All PFD's for Category 1, 2 & 3 must have a crotch strap or thigh strap.

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SR APPENDIX 5
YACHT MANUAL EXAMPLE

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3. TRAINING POLICY
4. SAFETY HARNESS AND PFD POLICY
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6. EQUIPMENT CARRIED ON VESSEL
   - 6.1. Life Raft
   - 6.2. Grab Bag
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   - 6.4. Dan-buoy
   - 6.5. Navigation Lights
   - 6.6. Personal Floatation Devices (PFDs)
   - 6.7. Tethers
   - 6.8. Jack Lines and Strong Points
   - 6.9. Heaving Line
   - 6.10. Flares
   - 6.11. Medical Kit
   - 6.12. Emergency Position Indication Radio Beacon (EPIRB)
   - 6.13. Personal Locator Beacon (PLB)
   - 6.14. Flashlights
   - 6.15. Navigation Lights
   - 6.16. Tools

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   - 6.17. Engine Spares
   - 6.18. Fire Extinguishers
   - 6.19. Fire Blankets
   - 6.20. HF Marine Radios
   - 6.21. VHF Hand Help Radios
   - 6.22. LPG Stove
   - 6.23. Storage
   - 6.24. Sails
   - 6.25. Engine
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SECTION 2 - RISK AND HAZARD MANAGEMENT

7. RISK MITIGATION AND CONTROL STRATEGIES:
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   - 7.3. Abandon Ship Procedure
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   - 7.5. Emergency Steering
   - 7.6. Broaching or Pooping
   - 7.7. Loss of Mast
   - 7.8. HF/VHF Radio Calls
   - 7.9. Vessel Running Aground
   - 7.10. Capsize
   - 7.11. Medical Assistance

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7.13. Flooding

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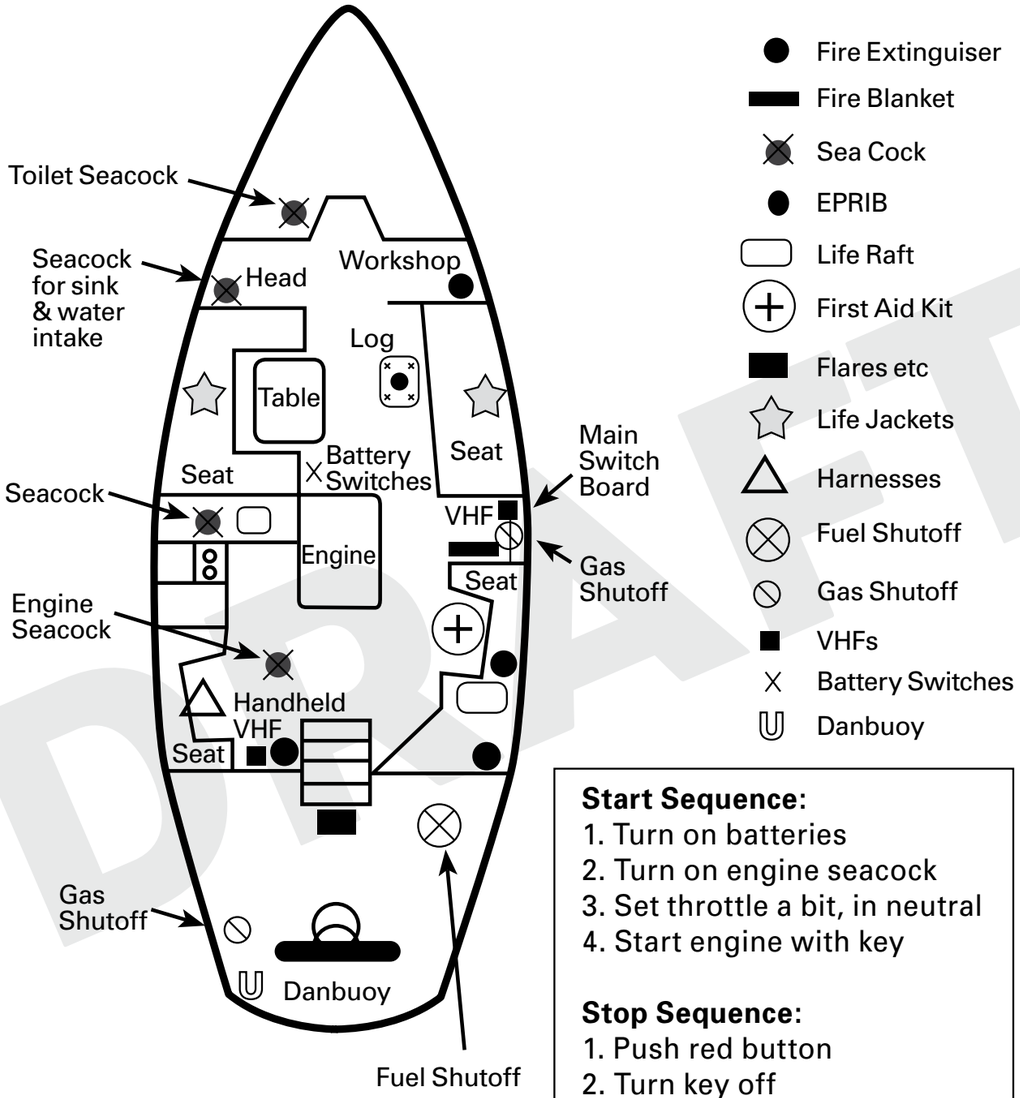
Yacht Diagram Example



Start Sequence:
1. Turn on batteries
2. Turn on engine seacock
3. Set throttle a bit, in neutral
4. Start engine with key

Stop Sequence:
1. Push red button
2. Turn key off
3. Turn off engine seacock
4. Turn off batteries

Thanks to Brian Petersen (Ran Tan 2) for allowing us to use his Yacht Manual as an example.

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SR APPENDIX 6
ADVANCED SEA SURVIVAL TRAINING

At least 30 percent, but not fewer than two members of a crew, including the skipper, shall have undertaken sea survival training within the five years before the start of the race.

Except as otherwise provided in the notice of race, an in-date certificate gained at a World Sailing-approved offshore personal survival training course shall be accepted by a race organising authority as evidence of compliance.

At least two members of the crew shall hold a valid first aid certificate. It is strongly recommended that all crew members undertake sea survival training at least once every five years.

Advanced sea survival training meeting the World Sailing, Yachting New Zealand and Australian Sailing regulations is available in New Zealand through Yachting New Zealand-approved training providers. Training courses are of two days duration and include a wet drill with a life raft. For a list of approved training providers visit www.yachtingnz.org.nz

Yachting New Zealand reminds all skippers of their paramount duty to manage all risks on board and to pay particular attention to those manoeuvres that carry a high level of risk.

Proper training and practice is an essential part of the skipper's duty. It is essential that training includes simulation of emergencies using most realistic scenarios possible.

It is recommended that crews should practice safety routines at regular intervals including the drill for man-overboard recovery.

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SR APPENDIX 7
CONSTRUCTION STANDARDS

(a) **A monohull yacht of less than 24m in hull length** (measured in accordance with ISO 8666) with the earliest of age or series date on or after January 1, 2010 built for racing to Category 0, 1, & 2 shall have:

- been designed, built and maintained in accordance with the requirements of ISO 12215 Category A or as from time to time specified by World Sailing.
- on board a certificate of building plan review from a notified body recognised by World Sailing.
- on board a declaration signed and dated by the builder to confirm the yacht is built in accordance with the plans reviewed by the notified body.

(b) **A monohull yacht of 24m in hull length and over** (measured in accordance with ISO 8666) with the earliest of age or series date on or after January 1, 2010 built for racing to Category 0, 1 & 2 shall have:

- been designed, built and maintained in accordance with requirements of a classification society recognised by World Sailing.
- on board a certificate of building plan review from a classification society recognised by World Sailing.
- on board a declaration signed and dated by the builder to confirm the yacht is built in accordance with the plans reviewed by the classification society.

(c) **A monohull yacht of less than 24m in hull length** (measured in accordance with ISO 8666), with the earliest of age or series date on or after January 1, 2010 built for racing to Category 0, 1 & 2, if subject to any **significant repair or modification** to the hull, deck, coach roof, keel or appendages, shall have:

- the repair or modification designed and built in accordance with ISO

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12215 Category A or as from time to time specified by World Sailing.

- on board a certificate of building plan review for the repair or modification from a notified body recognised by World Sailing.
- on board a declaration signed and dated by the builder to confirm that the repair or modification is in accordance with the requirements of ISO 12216 Category A or as from time to time specified by World Sailing.

(d) **A monohull yacht of 24m in hull length and over** (measured in accordance with ISO 8666), with the earliest of age or series date on or after January 1, 2010 built for racing to Category 0, 1 & 2, if subject to any **significant repair or modification** to the hull, deck, coach roof, keel or appendages, shall have:

- the repair or modification designed and built in accordance with the requirements of a classification society recognised by World Sailing.
- on board a certificate of building plan review for the repair or modification from a classification society recognised by World Sailing.
- on board a declaration signed and dated by the builder to confirm that the repair or modification is in accordance with the plans reviewed by the classification society.

(e) In cases when a builder no longer exists, a race organiser or class rules may accept a signed statement by a naval architect or other person familiar with the requirements of (a) through (d) above and in lieu of the builder's declaration required by (a) through (d) above.

(f) A **multihull** built for racing to Category 0, 1 & 2 shall comply with Appendix M to the World Sailing Offshore Special Regulations (available from www.sailing.org).

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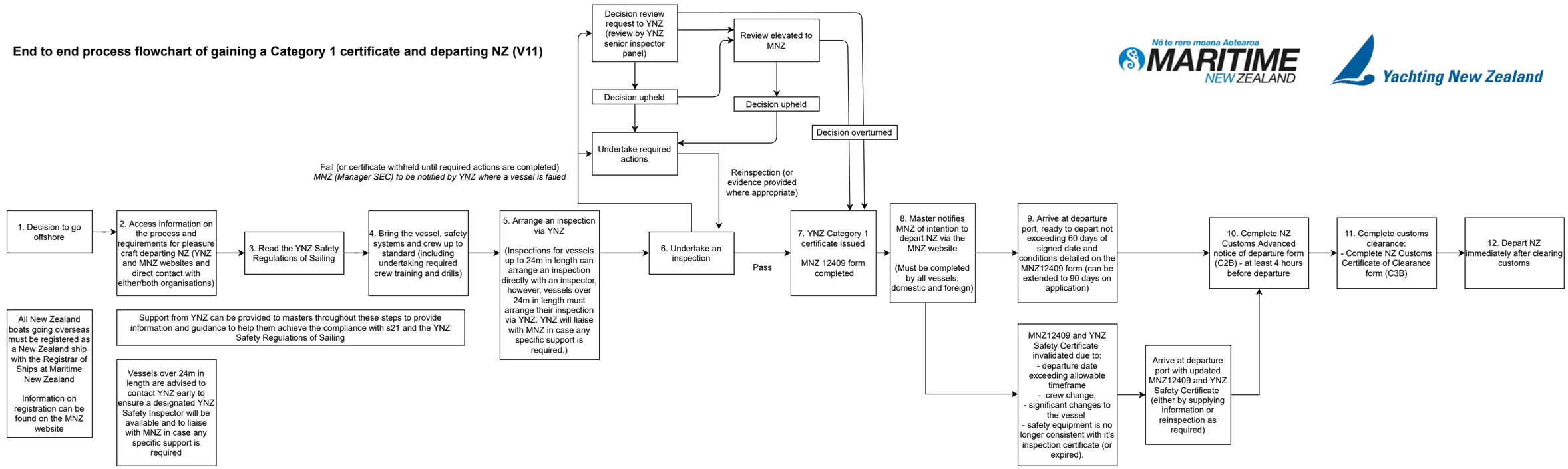
SR APPENDIX 8
FLOWCHART TO CATEGORY 1 CERTIFICATION

End to end process flowchart of gaining a Category 1 certificate and departing NZ (V11)



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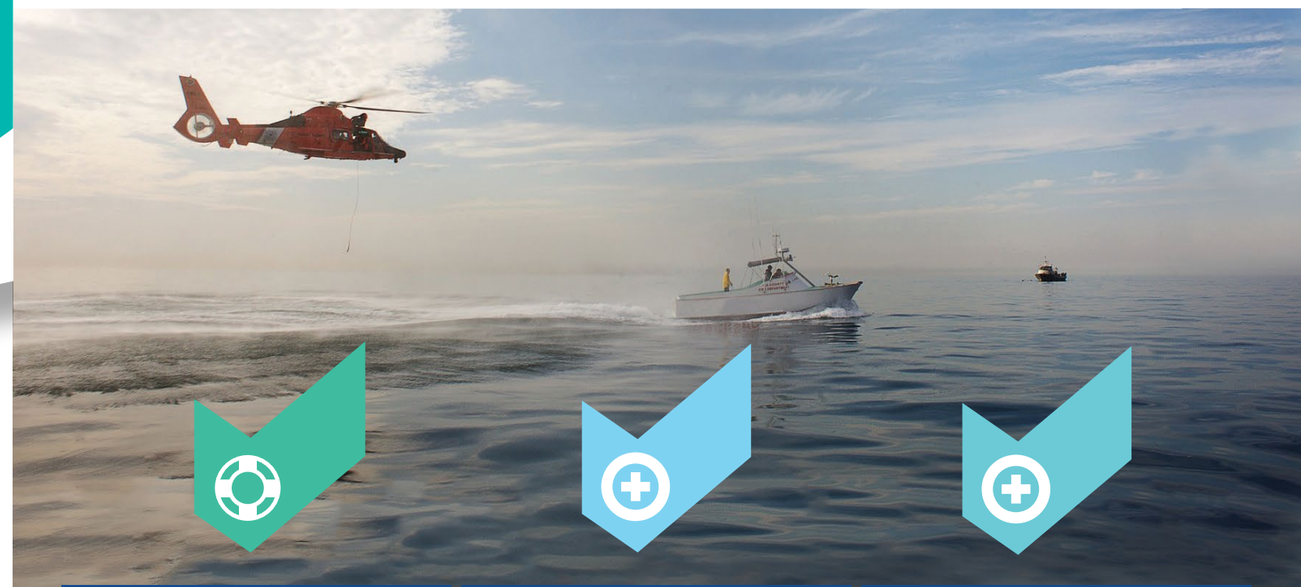

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