Special Regulations Sub-committee Minutes

The Special Regulations Sub-committee met via Conference Call at 16:00 – 17:50 hours on Monday 26 October 2020

Please refer to the World Sailing website www.sailing.org for the details of the submissions and supporting papers on this agenda.

1. Opening of the Meeting
   The Chairman welcomed members and observers to the meeting.

2. Minutes of the Previous Meeting
   (a) Minutes
      i. The minutes of the Special Regulation Sub-committee meeting of 28 October 2019 were noted as a true record.
      
      ii. The Special Regulation Sub-committee conference call notes of 25 June 2020 (circulated and approved after the conference call) were noted as a true record.
   
   (b) Minutes Matters Arising
      There were no matters arising not otherwise on the agenda.
3. Special Regulations –Submissions

(a) OSR Title
Submission SR01-20 was received from Royal Netherlands Watersports Association regarding deleting ‘Offshore’ from the title of the regulations. Roy van Aller explained that as Appendix B is for inshore racing and Appendix C for inshore dinghy racing, the term ‘offshore’ does not cover the complete content. Race Organisers involved with racing on lakes and inland waters may feel the document is not relevant.
Sally Honey felt that the committee’s expertise was in offshore sailing and even though there are two small parts that do not deal directly with offshore, we should not move away from the focus that we are primarily dealing with offshore and she would oppose the submission.
Glen Stanaway did not support the submission for reasons of World Sailing resourcing which were not just limited to the cover of the document, but in unknown number of web pages and documents.
Roy van Aller also noted the development of foiling boats both offshore and inshore. Will Apold agreed that safety regarding foiling dinghies was an expanding issue that might be addressed by a more specialised group in that area.
James Dadd felt that the priority was the OSR be used as much as possible.
Per Bøymo noted that the Regulations originated with the Offshore Racing Council (ORC) and that the agreement between ORC and World Sailing should be reviewed should there be a wish to change the title.
On a proposal by Roy van Aller, seconded by James Dadd and a vote of 2 in favour, 5 against and 0 abstention, SR01-20 was rejected.
Recommendation to the Oceanic and Offshore Committee: Reject

(b) OSR 1.02 Responsibility of Person in Charge and Appendix B- inshore racing
Submission SR02-20 was received from the Chairman regarding the renumbering of RRS 4 to RRS 3.
On a vote of 7 in favour, 0 against and 0 abstention, SR02-20 was approved.
Recommendation to the Oceanic and Offshore Committee: Approve
Oceanic and Offshore Committee Decision: Approved

(c) OSR 4.26.2 a) Heavy Weather Sail Area
Submission SR03-20 was received from ORC regarding deleting the abbreviation ‘IG’ as the ‘height of foretriangle’
On a vote of 7 in favour, 0 against and 0 abstention, SR03-20 was approved.
Recommendation to the Oceanic and Offshore Committee: Approve
Oceanic and Offshore Committee Decision: Approved
4. **OSR 3.02 Watertight and Structural Integrity of a Boat - Appendix L Model Keel and Rudder Inspection Procedure**

   (a) **3.02 Structural Inspection**

   OSR 3.02.2 was reviewed, noting that the implementation date had been moved back to 1 January 2022.

   (b) **Appendix L - Model Keel and Rudder Inspection Procedure**

   Appendix L - Model Keel and Rudder Inspection Procedure was reviewed and typos noted for correction.

   (c) **Draft Frequently Asked Questions (FAQs) [Appendix to Minutes]**

   The Draft FAQs had been produced to provide clarity to OSR 3.02.2 and Appendix L. The document will be placed on sailing.org and it will be used to reach out to the sailing media as 2021 is the year that boat owners should be getting prepared for this to come into force 1 January 2022. An owner would want to have the inspection performed when the boat is hauled out for winter storage.

   Glen Stanaway felt that the FAQs go a long way to communicating what would be difficult to regulate. Probably the most significant Q&A is the one that attempts to address who is a ‘qualified person’. He felt that the proposed answer was reasonable. When the Q&As are communicated by World Sailing he suggested that the office ask MNAs to adopt the communication and promulgate the message through their own channels. This is something Australian Sailing will certainly do, but in order to reach into the sport, WS should adopt this communication approach.

5. **World Sailing Structural Plan Review**

   (a) It was noted that 210 certificates of structural plan review have been registered. A list of one-off yachts and the certificates for series-produced yachts can be found at http://www.sailing.org/classesandequipment/offshore/plan_review.php

   (b) It was noted the World Sailing ‘Scope of the Structural Plan Review’ was updated during the year and that it specifies that there is a transition period relating to the use of ‘ISO 12215-Hull construction and scantlings – Part 5: Design pressures for monohulls, design stresses, scantlings determination’. Under EU Recreational Craft Directive boat manufacturers can continue to use the previous standard until 30 June 2021. Until then both standards give the EU Presumption of Conformity and can be used for World Sailing Plan Review.

   (c) Glen Stanaway asked why does the WS Structural Plan Review Certificate not detail when an existing design is modified by a new designer? Jason Smithwick agreed that the certificate should detail designers associated with modifications. Simon Forbes confirmed future certificates with modifications would specify the designers involved.

6. **Working Party Reports**

   (a) **Keel Improvements – (Oceanic and Offshore Committee WP)**

   i. To note the statement of work

   Jason Smithwick Chairman of the Oceanic and Offshore Working Party introduced the subject of the International Standards Organisation (ISO) 12215-Part 9 Sailing craft appendages which is used as part of the World
Sailing Plan Review Scheme.

It was identified that the keel fatigue requirements could be quite low. The number of fatigue cycles is about 15% of that normally used on ship design. The Working Party had as an objective to look at some changes that could improve the strength and lifetime of a keel attachment. Hasso Hoffmeister (DNVGL) has been very helpful in sharing his expertise and technical background. The basic part of the work is assessing the feasibility of introducing a keel fatigue requirement in a revised standard and what effect that may have in the yacht designer’s approach.

Many classes like the TP 52 use this standard and so if we look to change the standard this could affect subsequent boats. If we cannot get ISO to be interested in this review then there is ultimately the option of changes to the Special Regulations and Plan Review Scheme. It has always been the case that World Sailing would like to avoid that as we prefer to rely on the international standard to which most boats are built. Hasso Hoffmeister went through what would be required to increase the fatigue life. He looked at hollow welded structures and in particular the fatigue methodologies used in 12215-9. A reduction in the stress range of 25% would extend the fatigue life by a factor of 2.

ii. A letter was noted from World Sailing to ISO TC 188 dated 3 August 2020 asking that a revision could be opened in 12215-9.

iii. The response from the Chairman of ISO TC 188 to World Sailing was noted, which was basically a flat ‘no’. The craft reviewed by World Sailing in the Plan Review were considered by TC188 as high-performance racing yachts which were notably excluded from the scope of the standard. That is not completely understood as we have many designs of racer/cruisers within our plan review scheme and that should be conveyed back to the Chairman.

Jason summarised that World Sailing will have to look again at what we do now with respect to the Working Party and what is the best course of action. Do we now continue to lobby the Working Group for 12215 to be reviewed? or do we look at the WS Plan Review Scheme to see if there is anything we can do there?

As an observer, Stuart Carruthers felt that the response from the chairman of TC 188 did not really consider the facts. It was an easy cop-out to say that racing craft are not covered by the Recreational Craft Directive (RCD) and therefore if you have a problem, sort it out yourselves. The point is that most people go racing in production craft and that within Europe those are built in compliance with the Recreational Craft Directive. Production craft are being built to a series of standards under the 12215 label to which part 9 deals with appendages. There is sufficient concern that Part 9 is not robust enough and needs to be reviewed. All standards have to be reviewed periodically and this one will lose it’s presumption of conformity with the RCD. He did not think the battle was over yet. Our comments relate to production craft used by people who want to go racing as well, therefore ISO TC 188 needs to satisfy itself that the standards it produces provide a presumption of conformity of structural integrity that is robust and satisfactory. He did not think ISO TC188 have done that. WS could reply to the new Chair of TC 188 saying you are basically missing the point and we still believe that for production craft this has got to be reviewed, if only to satisfy yourself that the standard is robust which we believe it is not. Stuart will be making that point when he meets TC 188 virtually throughout November.

As an observer Stan Honey agreed with Stuart’s comments and some of the
rational behind Jason’s statements but he felt it would be tragic for our sport if we ended up dealing with this in the OSRs separately from ISO. We would end up in a situation where the OSRs would only approve special purpose-built race boats. People could not take a regular sailboat which passed ISO and take it to race. It is critically important that we do not divide the fleet into race boats and cruising boats and he hoped that we solve that by going back to ISO and asking the question in a different way. Instead of referring to our problem as racing boats we refer to our problem as sailboats and try to get our problem fixed. It is critically important that we avoid having two different sets of scantlings for race boats versus regular sailboats.

Assuming we are able to succeed in getting ISO to increase the fatigue life by adding a modest amount of material at the top of the fin. Technically that would put the newer boats at a slight disadvantage relatively to the older boats but we can handle that. The amount of material we are talking about is small. A box rule class could address that with a small corrector weight and then the rating rules would pick it up so it would not have an effect.

Glen Stanaway highlighted that World Sailing is an international federation for a sport and that is its primary reason for existence. WS is not an engineering standards organisation, not even an educator of engineers or designers. He found the reply from ISO TC188 almost a little disingenuous. There is a bit of irony that WS has its structural plan review based on the ISO Standard because of observations being made about how keels for racing yachts were being designed and built in accordance with the American Bureau of Shipping (ABS) Guide for Building and Classing Offshore Yachts which did not really address the way engineering and design was going. ABS Guide had proved itself obsolete.

Glen Stanaway felt that the OSR were already dealing with one too many scantling standards, noting that ABS Guide is grandfathered in OSR 3.03.2 and he encouraged those involved in this project to politely press on with ISO and continue to lobby.

Jason Smithwick concluded that he felt the next step of the working party is to write again to TC188 addressing the new Chairman, highlighting our concerns and move forward from there.

The Chairman concluded that he felt the way forward is through working with ISO and not a specific WS OSR regulation.

(b) In-Build Validation

The Chairman reported that he had been contacted by David Lyons [who had been working on the In-Build Validation project until November 2019.]

David raised the absence of, and need to adopt, an independent in-build validation scheme (independent check that what is designed and plan approved, is independently checked to have actually been built) specifically with respect to targeted scope of fabricated (welded) metallic keels including their attachment to the yacht's hull. This is a narrowing of the previous scope to the highest at-risk category. He can envision its implementation pathway and can contribute, pro bono, in the interests of safety of life at sea and our sport.

The Chairman passed this on as information to the new 2021-24 Oceanic and Offshore Committee and Special Regulations Sub-committees.
7. Incident Reports

A report was received from the Executive Office highlighting known incidents that have occurred during races in the past year.

(a) GBR – Hugo Boss IMOCA 60 – keel collision and structural failure

A detailed report from Alex Thomson Racing was noted regarding a collision by the boat’s keel with an unidentified object during the Transat Jacques Vabre on 3rd November 2019. It was noted that the impact caused the boat speed to drop from 21.0 knots to 11.8 knots in 0.2 seconds. The maximum negative acceleration was 28.9 m/s^2. Both skippers were very lucky to be uninjured during the incident.

Report Recommendations included:

i. devising a way to release the canting keel ram shaft
ii. requesting IMOCA re-evaluate the One Design keel package and associated rules governing the composite structure
iii. re-design the one design keel package so that it includes a means to hold the forward and aft keel bearings together

Christophe Gaumont praised the Alex Thomson team for the thorough report and helping the class develop specifications.

(b) FRA – ‘Pinocchio’ Class 40 – swamping and abandoned

On 17/18 December 2019 the Class 40 ‘Pinocchio’ was rolled by a wave, swamped and suffered structural damage. Both crew were rescued by Search and Rescue helicopter from the Azores, the boat was not recovered.

Christophe Gaumont reported that the skipper Louis Duc attended a de-briefing with the Transat Jacques Vabre(TJV) race director and the Class 40 Association. Louis said that he wanted to thank everybody who wrote the Offshore Special Regulations. All the technical committees and scrutineers. He had all the OSR Category 1 safety equipment because he was returning from the Brazil finish of the TJV. Louis’ feedback is to thank the survival courses. Even with this preparation he made some mistakes, for instance giving the EPIRB to his crew who was air-lifted first. If the helicopter went away he would have been alone without an EPIRB. Following the de-briefing the Class 40 have increased the permanent buoyancy requirement from 3.5m^3 to 5m^3 for new boats and for boats which will compete in the Globe 40 Round the World Race.

(c) AUS – ‘Showtime’ Ker 40 (modified) – keel failure and capsize

5 January 2020 the keel broke off ‘Showtime’ a Ker 40 with a modified keel by a second designer. The boat capsized. Seven crew were rescued after 3 hours in a liferaft.

Glen Stanaway reported that Australian Sailing’s national safety committee have seen a draft of the review. The terms of reference of the review were attached as supporting papers for this meeting. In essence the Independent Review was asked to look at aspects of the keel, aspects of the delivery trip back from Hobart and the actions of the crew. The draft was sent back to the Review panel with feedback that they may wish to take onboard (they are an independent panel and are entitled to act or not on the feedback). Then the Review panel will issue the report to the National Safety Committee of Australian Sailing.
Australian Sailing will then take up matters which they can or cannot report and what will be referred elsewhere.

Glen advised that because of where we are in the process it would be premature for him to say anymore until the final review version is available. He was happy to advise committee members and observers that the issues discussed in this meeting regarding keel inspections, World Sailing Plan Review and relevant standards overlap many of the discussions that we were privy to in the draft review.

It is a remarkable story of survival. It does also draw attention to liferaft stowage, the importance of judgement of people in charge. It was a fabricated metallic welded keel which ties in with the In-build Validation proposal that this committee has considered in the past, (which was paused in favour of structural inspection.) It does also tie into keel inspection because in the draft review there was mentioned an impact with an object during a race. Also relevant to the standards conversation we were having earlier, ‘Showtime’ is a high-performance racing yacht using a standard that says ‘designers are strongly cautioned against attempting to design high-performance racing craft such that nearly all components only just comply. These are the issues that the review is discussing.

(d) FRA – Gamin 50ft trimaran – cross beam failure

8 July 2020 ‘Gamin’ a 1990 wooden trimaran broke its starboard crossbeam and dismasted 40 miles off the Scillies. The two crew were taken off by the St Mary’s lifeboat. The boat was subsequently towed to L’aber wrach (FRA).

The Chairman concluded from the Incident Reports that it was encouraging to know that in the case of the Class 40 changes are made, proper reports created and so the community can make changes in new builds or in existing boats.

8. International Regulations Commission

A verbal report was received from the Chairman of the International Regulation Commission which held its meeting on 24 October (see minutes of International Regulations Commission).

(a) International Maritime Organisation (IMO)

i. The only meeting attended was the NCSR7 Navigation, Communication and Search and Rescue in January.

ii. The Polar Code (International Code for Ships operating in Polar Waters) was under consideration to be extended to non-SOLAS vessels including pleasure vessels. The Code seeks to ensure that crew are adequately prepared and not a burden on Search and Rescue. WS is looking at an equivalent level of safety for pleasure vessels. Alan Green set up a Working Group to create a Polar Yacht Guide to give advice and guidance for those sailing in Polar Waters. IMO is now indicating it does not intend to extend Polar Code to vessels below 300 GT.

iii. NCSR discussed the plethora of AIS devices used for many purposes which is detracting from the original purpose. Stuart felt there was no chance of unravelling the current situation and that additional frequency channels will need to be allocated.

iv. Electronic interference from LED lights was highlighted as a concern.

v. Marine Environment Protection Committee (MEPC) and Marine Safety
Committee will hold virtual meetings in November.

(b) International Standards Organisation (ISO)

i. ISO 12215-Part 9, keel standard has already been mentioned. (Item 6)

ii. ISO12402-Part 6 Personal Flotation Devices has been re-published and now includes a standard for an offshore lifejacket, so manufacturers can now label their products as complying as an offshore sailing lifejacket, which is as specified in the OSR.

iii. ISO 12401 Harnesses and Tether Standard is under review. This has caused discussions in terms of tethers and tether length in the past, hopefully we can deal with these issues in the standard review.

iv. ISO 15207 Immersion suits is being reviewed to achieve a better alignment between SOLAS requirements and ISO standards.

Will Apold thanked Stuart for his hard work, particularly on the personal flotation devices is an important component of our OSR.

9. Medical Commission

(a) Relevant documents published this year by the World Sailing Medical Commission regarding Medical Support for Offshore Yacht Races were noted. The above documents were considered in relation to OSR documents, Appendix H - Medical Training etc

i) Telemedical Advice (TMAS)

ii) Appendix 1 - Medical Training

iii) Appendix 2 - Medical Kit on Board – WHO format

iv) Appendix 2 - Medical Kit on Board – ATC Descriptive format

It was noted that these documents had been prepared by a working group of the International Maritime Health Association and the WS Medical Commission.

James Dadd felt this Sub-committee should consider in the future making sure we have someone who can speak to us about these matters.

Gary Jobson advised that he sits in on the Medical Commission meetings and he felt that they would welcome any input from this Committee.

Glen Stanaway felt that these documents should go through a consultation phase before final adoption. Australian Sailing has a skills based safety committee and Glen had consulted Dr David Austin, an associate professor in medicine, a trauma specialist and current offshore yachtsman. Feedback received was that:

i. Tele Medical advice is a resourcing problem for smaller events.

ii. some of the training recommended may be inappropriate such as urine analysis or taking blood pressure He questions why you would want to check a urine sample at sea. He gives a detailed critique of some of the items in the Medical Kit, some of the items were questioned such a s a pregnancy test for example, given the category of race.

Glen reported that David Austin offers his services to this committee and the Medical Commission for further discussion.

Sally Honey advised that the US Sailing Safety at Sea Committee has been
hoping for something from the Medical Commission for a while. US Sailing have been trying to establish its own organisations within the US that can provide first aid training, so that anything that comes from Medical Commission is welcome.

Roy van Aller requested clarification of what the ‘ATC format’ was and felt it was preferable to use the WHO format as that is used by all Coast Radio Stations.

Per Bøymo felt that this committee should reach out for advice to help incorporate the appropriate wording into the OSR documents in the future.

(b) Coronavirus (COVID-19) Guidance for Event Organisers of Offshore Yacht Races

As an observer Andrew McIrvine, commented that he appreciated how difficult it was for the Medical Commission (MC) to cover advice for all types of racing in one document. But when he was trying to restart racing when things were opening-up from COVID, the WS Medical Commission produced guidelines which were essentially unworkable for nearly all countries at all levels. Although there was a lot of sense in it, the MC did not want anybody who had any pre-existing condition or over the age of 65 to do any offshore sailing. Although RORC put in a joint document to try and get the MC to be a bit more reasonable with these restrictions, all that he felt came back was a document that was double the length, but was not particularly helpful. His impression is that the document was so complex that very few MNAs or Race Organisers actually took any notice.

Gary Jobson agreed, that there were two papers produced but they were pretty in-depth but did not give you a clear vision easily which is why the Special Regulations Sub-committee and Oceanic and Offshore Committee should have input and stronger links with the Medical Commission.

The Chairman proposed that a Working Party be created from Special Regs Sub-Committee and Oceanic & Offshore Committee to open a dialogue with the Medical Commission. The aim is a set of guidelines regarding Medical Training and Medical Kits that that could be incorporated into the OSRs or that could reference in the OSRs.

10. World Sailing Sustainability Agenda 2030

(a) It was noted that the World Sailing Sustainability Agenda 2030 is available here: https://www.sailing.org/about/Sustainability.php

(b) Recommendation One was noted, - Deliver Sustainability through Technical Standards. Bullet point 11:

“specify that all race yachts under World Sailing classes and ratings, will not be solely reliant on fossil fuels to produce power on board, or for auxiliary drive by 2030.”

Stan Honey highlighted that the word ‘power’ should be replaced by ‘energy’.

(c) It was noted that the OSR Environmental Code states:

“…encourage new offshore racing yachts (OSR Cat 0, 1 & 2) constructed after 2022, to produce at least 20% of their power requirements using renewable energy sources whilst racing.”

There were no other matters arising
11. **Personal Safety Equipment**

Will Apold explained that he was on the Equipment Committee Working Party regarding Personal Safety Equipment. They were looking at personal protective safety equipment, mainly on smaller boats because of the increasing speeds they were going at.

Will had circulated notes to the Special Regs Sub-committee and asked whether there should be a section in the OSR which would define the specifications or the ISO Standards for various bits of safety equipment like helmets, body armour. He received mixed replies on that proposal, some thought it would be ok, others that it required a lot of study, which he agreed was the case.

There are concerns about helmets, about people falling overboard at speed, failing off windsurfers at speed, the helmet can cause damage to their necks, all sorts of issues about what you wear, when you wear it. So he was not trying to get into when you would wear it, but when there are some specifications we want to put in the OSR regarding personal protective equipment designed for offshore sailing. We specify lifejackets but we do not deal with anything about helmets yet, or body armour, but we see it showing up in a number of the classes.

So should there be a Special Regulations Working Party to look in to this?

Per Bøymo felt it was difficult because the boats can so different. We could start from what personal protective equipment is currently being used. Which boats use what. Will Apold noted that if we look at helmets most people are using motor sport, white water rafting or skiing helmets. There is nothing that is really designed for sailing.

James Dadd noted we concentrate on offshore, this is going to the inshore racing which is away from our experience and we would need to bring expertise from inshore foiling events, we are going to be doing a bit too much guesswork.

Sally Honey agreed. She thought this is more for the Classes Committee or Equipment Rules Committee. It is getting into areas that this group are not expert in.

12. **Guide to Offshore Personal Safety**

The project to update the Guide to Offshore Personal Safety book and training material has not been progressed since the last meeting.

Matt Allen noted that the Cruising Yacht Club of Australia SOLAS Trust had offered to fund the production and re-writing of the guide subject to final cost. So we are ready to assist with the production of that book, we don’t wont to pay for the entire printing so I think we can come to a conclusion quite quickly.

Sally Honey highlighted that US Sailing has published online units for their training topics. https://www.ussailing.org/education/adult/safety-at-sea-courses
13. Racing Rules of Sailing 2021-2024

(a) New RRS 37 - Search and Rescue Instructions
The new Racing Rule of Sailing 37 was noted:

“Search and Rescue Instructions

When the race committee displays flag V with one sound, all boats and official and support vessels shall, if possible, monitor the race committee communication channel for search and rescue instructions.

It was considered that no action required in relation to OSR documents.

14. Any Other Business

(a) OSR 4.30 Emergency Pumps and 3.23 Bilge Pumps

In response to a question from Roy van Aller, Christophe Gaumont said he will make a submission to amend the OSRs next year regarding Emergency Pumps and Bilge Pumps. For the moment he was wondering if we need to keep Bilge Pumps in the OSR. Is a bilge pump safety equipment? (even if a dry boat is a safe boat.) An idea is to change the OSR to require that the total capacity of the non-manual pumps should be 12,000 litres per hour as specified in OSR 4.30.

Christophe also commented that he has since heard that emergency pumps enabled some boats to at least finish their races, or even save their boat.

(b) OSR 3.29.9 Standard-C Satellite Terminal

Christophe Gaumont highlighted the need to review next year the OSR 3.29.9 Standard-C satellite terminal requirement for Category 0. He understood that Standard C is at the end of its life and we need to replace it in the OSR and look at what other systems can do the polling requests.

There being no further business there was a motion to adjourn and the meeting concluded at 1750.

Will Apold and Roy van Aller were retiring from the Sub-committee and were thanked for all their efforts.

Attachments

Appendix 1- Structural Inspection FAQ
Appendix 1 - OSR 3.02 STRUCTURAL INSPECTION FAQs

3.02 Watertight and Structural Integrity of a Boat

**3.02.1 Essentially watertight and all openings shall be capable of being immediately secured. Centreboard, daggerboard trunks and the like shall not open into the interior of a hull except via a watertight maintenance hatch with the opening entirely above the Waterline.

Mo0,1,2,3 3.02.2 Effective 1 January 2022: Structural Inspection - Consult the owner’s manual for any instructions for keel bolt checking and re-tightening. The following inspection to be conducted by a qualified person externally with the boat out of the water. Check that there are no visible stress cracks particularly around the keel, hull/keel attachment, hull appendages and other stress points, inside the hull, backing plates, bolting arrangements and keel floors. (See Appendix L - Model Keel and Rudder Inspection Procedure)

Mo0,1,2,3 3.02.3 Effective 1 January 2022: Evidence of a structural inspection in accordance with 3.02.2 within 24 months before the start of the race or after a grounding whichever is the later.

Mo0,1,2,3 3.02.4 Effective 1 January 2022: Inspection after Grounding – an appropriately qualified person shall conduct an internal and external inspection after each unintentional grounding.

Frequently Asked Questions

What are the checks designed to do?
Keels have been breaking off yachts for many years. The yacht types losing keels and rudders range from cruising to high performance racing yachts and from newly built to old. This regulation is designed to require a visual inspection each 2 years. It is designed to capture visual signs (cracks, movement, corrosion, loose keel bolts, loose or irregular rudder bearings) that may indicate a potentially serious problem. It is expected that once noted, the Owner would undertake a more detailed investigation or just get it repaired.

Who is a ‘qualified’ Inspector to conduct this visual inspection?
The range of Inspectors has been kept broad since the inspections are visual and no specialized equipment or techniques are required. Inspectors could be marine surveyors, naval architects or engineers, or shipyard mechanics with a minimum of 5 years’ experience working on yacht mechanical systems or composite materials. The Owner or persons directly employed by the Owner is not considered suitable. Some countries may require additional certification in order to undertake yacht inspections. Each MNA will have to determine if they will require additional qualifications.

Does this keel inspection ensure seaworthiness of my yacht?
This is not a guarantee that the yacht is seaworthy or that the keel or rudder will not fall off.

What are causes of keel loss?
Keel and rudder losses are generally as a result of the following factors:
- Unrepaired damage from a grounding
- Poor maintenance with resulting corrosion of metal components
- Damage from at sea impacts (logs, marine life, etc.)
- Metal and composite fatigue: Yachts appendages are designed for a maximum number of loading cycles (waves primarily). Cruising yachts are designed to have a large number of cycles, hence a long sailing life, however racing yachts, designed for reduced weight and higher keel loads have a limited life. This life is determined by the design specifications, the days sailed and size of the loads (pounding into waves).

What risks does a keel inspection reduce?
The visual inspection is targeted to reduce losses due to unrepaired grounding damage, poor maintenance, and at sea impacts.

What is fatigue?
In materials science, fatigue is the weakening of a material caused by cyclic loading that results in progressive and localised structural damage and the growth of cracks. Once a fatigue crack has initiated, each loading cycle will grow the crack a small amount, typically producing striations on some parts of the fracture surface. The crack will continue to grow until it reaches a critical size which exceeds the fracture toughness of the material, producing rapid propagation and typically complete fracture of the structure.

Which risks does it not address?
It does not target fatigue unless there are visible signs (cracks, movement).

How is a tip swing test conducted?
The yacht is suspended with the keel off the ground/cradle. A member of the inspection team braces himself and attempts to move the keel while the Inspector looks, both from the outside and at the inside (keel floor) of the yacht, for movement (opening and closing of any cracks) at the keel/hull interface.

Do Race Organizers have to verify the qualifications of the inspector?
The OSRs do not expect or require the Race Organizer to verify the Inspector’s qualifications. If the Race Organizers or MNA wish to add additional qualifications and possible verifications, they may do so in the Notice of Race.

What have Race Organizers to do?
Note in the Notice of Race for an OSR category 0 – 3 event under Eligibility and Entry, that in addition to a copy of the valid measurement certificate, a copy of the “Keel and Rudder Inspection Form” shall be submitted to the race secretary and/or shown at registration.

What shall the Technical Committee of the Race Organizer have to decide if in the column Inspector’s Notes, negative remarks are made? Such as small cracks in gelcoat, slight clearance in rudder bearings, slight deflection or items to be kept under surveillance?
Allow her entry.
What shall the Technical Committee of the Race Organizer do if the inspector has noted structural failures in the form column and the owner has no proof of any action taken or has done nothing about it at all? Refuse her entry.