

International 2.4mR Class Association, Technical Committee

$$R = (L + 2d - F + \sqrt{S}) / 2.37 = 2.4$$


2.4mR TC MEETING 24 April 2024 (notes in blue)

Present

Peter Russell (AUS)
Keith Gordon (GBR)
Bruce Millar (CAN)
Stellan Berlin (SWE)
Rikard Bjurstrom (FIN) part
Thomas Jatsch (GER)

Apologies

General Business

1. Instructional Videos

24.04.2024 Buoyancy Certifier instruction video production ongoing – additional video programed for next buoyancy checks.

24.04.2024 Certification instruction video production ongoing.

2. Brian Harding Prototype 2.4 NOD Inspection

03.04.2024 Prototype 2.4 NOD boat No. 3 by Super 3 compliance with 2.4 NOD Class Rules advised by Keith Gordon. Dimensional compliance with 2.4 NOD jig and templates confirmed – hull and keel stiffness deflection test and chainplate deflection test passes noted - lifting eye load capacity test required. Keith Gordon noted stern profile template requires alteration to permit measurement on boat centreline. Keith Gordon noted 2.4 NOD boat construction is required to middle of tolerances to ensure template compliance.

Keith Gordon noted ballast is 170kg not 181kg + correctors – liquid foam buoyancy used in lieu of rigid closed cell foam buoyancy which we understand may add up to 12kg to the boat weight? CNC cut rigid closed cell foam to be used for future 2.4 NOD boats.

Keith Gordon noted boat floated bow down with ballast forward – 2.4mR CR C.5.2 (b) requires boat to float in an approximately horizontal position.

Waterline declaration by official measurer to 2.4mR CR D.6.1 (c) is World Sailing requirement.

Rikard Bjurstrom has issued 5 2.4 NOD stickers to Super 3.

Bruce Millar advised that the 2.4 NOD chainplate deflection test requirement was introduced to address boat flexibility issue (not chainplate screw fixing failure).

- ❖ Keith Gordon to issue 2.4mR Measurement Form, 2.4mR Waterline Declaration Form and 2.4 NOD Measurement Form
- ❖ Super 3 to issue 2.4mR Builder Declaration Form
- ❖ Keith Gordon to provide photo record of 2.4 NOD measurement for ICA records
- ❖ ICA approval of 2.4 NOD laminate on 06.12.2024 noted
- ❖ Keith Gordon to confirm compliance of 2.4 NOD moulds for ICA approval
- ❖ Super 3 to review 2.4 NOD Accredited Builder Declaration Form compliance

3. Evert Aartsen 2.4 NOD boats

24.04.2024 7 2.4 NOD boats by Ab Skim Kayaks Finland Oy completed and ready for measurement and shipping (5 - North America, 2 - Europe). All 2.4 NOD boats to be measured - Rikard Bjurstrom taking water tank from Tampere to Kokkola for waterline measurement. Rikard Bjurstrom noted 2.4 NOD boats include 175-179kg ballast not 181kg + correctors. Ab Skim Kayaks Finland Oy to review 2.4 NOD Accredited Builder Declaration Form compliance.

4. 2024 2.4mR World Championship Germany Review

24.04.2024 No revised NOR issued to ICA for approval to date. Keith Gordon noted no IM appointed to date. Bruce Millar noted that a NOR is posted on the Kieler yacht Club website.

5. 2.4mR Class Rule Changes

24.04.2024 TC reviewed draft World Sailing Class Rule Changes submission as follows.

- ❖ 2.4mR Headsail Proposal – RRS 50.4
- ❖ 2.4mR Sail Numbers Proposal – plaque numbers
- ❖ 2.4mR Pumps Proposal – electric pumps
- ❖ 2.4mR Sail Area Proposal – foot median
- ❖ 2.4mR Headsail 95% of J – GBR proposal
- ❖ 2.4mR Rudderstock – administrative clarification

Peter Russell to submit to World Sailing for approval after 2024 World Championship.

TC discussed WS approval timing for Class Rule Change «one or more electrical pumps». Event organising authorities can request 2.4mR Class Rule Change approval under RRS 87 if required. WS Class Rule Changes approval (including electrical pumps) is expected by end August 2024.

6. IM Seminar

24.04.2024 Keith Gordon noted next IM seminar programmed for Japan (Hungary?). Keith Gordon to liaise with World Sailing and Thomas Jatsch – Peter Russell noted comprehensive knowledge of ERS is required with closed book exam. Keith Gordon has contacted EC regarding financial support for Thomas Jatsch travel. Keith Gordon IM re-certification required 2024. Matti Muoniovaara IM re-certification required 2026.

24.04.2024 Keith Gordon noted possible GBR Official Measurer currently Etchells measurer.

7. World Championship NOR template

24.04.2024 TC noted prior request to delete WC NOR as not consistent with current RRS - TC noted WC Management Manuals not current version – Peter Russell to ask Webmaster to correct documentation.

8. 2.4 NOD Stickers

24.04.2024 TC noted some 2.4mR ISAF stickers are damaged/faded with plaque numbers no longer readable, some 2.4 NOD stickers have been damaged with sticker numbers no longer readable.

TC confirmed agreement of 22.06.2023 that replacement 2.4 NOD stickers (old stickers) be issued at no cost. Rikard Bjurström and Bruce Millar hold stocks of old 2.4 NOD stickers. Thomas Jatsch has 13 boats seeking 2.4 NOD certification. Rikard Bjurström to issue 20 old stickers to Thomas Jatsch for 2.4 NOD boats constructed prior to 2.4 NOD Accredited Builder Agreements. Rikard Bjurström and Bruce Millar administrative costs to be paid by ICA.

TC noted that World Sailing replacement plaques are available from WS with new R number.

9. 2.4mR Canada Ballast Motion Canadian 2.4mR AGM - April 11, 2024

24.04.2024

Motion:

I propose that in ALL Norlin Mk3 boats to carry up to a maximum keel ballast (lead) weight of 181kg in ALL regattas sailed in Canada.

Reasoning:

By restricting lead weight boats, it will be limited in their righting ability (“righting moment”) therefore equalizing a major component of boat speed especially in heavy air. This in turn makes the sailors skill the primary reason for performance. For the past 15 years or so there has been a One Design component for Norlin Mk3 (NOD)boats in North America. Within the current NOD rules the maximum lead is set at 181kg. All boats received in the past 15 years have been produced within this specification. The 2.4mR rule does not set a maximum lead. In theory you can take a boat and strip out the interior to add lead in the keel. There have been only a few examples of this in North America with 98% of the boats 181kg.

A boat with more than 181kg lead in the keel can easily be changed by taking the weight from the keel and attaching it as a corrector weight in the cockpit. This proposal would still allow any other 2.4mR design and any Norlin Mk3 boats that have not been measured to NOD to compete together in all regattas. This proposal has been suggested to the USA class as well for consistency across North America.

Suggested Implementation Date: September 1, 2024

During the Canadian 2.4mR AGM the motion was proposed discussed, and questions answered. A vote was held, and the result was unanimous in favour of the proposal. I am hereby requesting that the TC approve a recommendation of the 2.4mR class rules under section 87 of the RRS to be used in Canadian regatta's after September 1, 2024.

Bruce Millar, On behalf of the Canadian 2.4mR Class Association

TC discussed proposal that for 2.4mR racing in Canada the maximum ballast for 2.4mR Norlin Mk 3 boats is 181kg and commented as follows:

- ❖ The 2.4mR Norlin Mk 3 is a boat design but not a boat class.
- ❖ 2.4mR events preferably are inclusive of all 2.4mR rated boat designs.
- ❖ Certification of 181kg ballast weight questioned – no measurement noted.
- ❖ 2.4mR boat designs are noted as optimised up to approx. 190kg ballast.
- ❖ Re-certification of 2.4mR boats will be required with ballast changes.
- ❖ Competitor agreement to limit ballast to 181kg could be subject to competitor protest.
- ❖ Approved class rules changes are required in event NORs.

10. Buoyancy Certifier

24.04.2024 Thomas Jatsch endorsed Buoyancy Check competency for Kai Schreiber and Alfred Sulek. Request for Kai Schreiber and Alfred Sulek Buoyancy Check Certification approved by TC.

Next Meeting

Canada	12.00pm Wednesday 29 May 2024
UK	8.00pm Wednesday 29 May 2024
Sweden	9.00pm Wednesday 29 May 2024
Germany	9.00pm Wednesday 29 May 2024
Finland	10.00pm Wednesday 29 May 2024
Australia	5.00am Thursday 30 May 2024

2024 2.4mR TC WORK PROGRAM

2.4mR Technical Committee

Peter Russell (AUS) Chairman
Bruce Millar (CAN) EC Representative
Stellan Berlin (SWE)
Rikard Bjurstrom (FIN)
Keith Gordon (GBR)
Thomas Jatsch (GER)

ICA NOD Certification Administrator

Louise Anstey (CAN) (backup - John Seepe (USA))

ICA IM

Keith Gordon (GBR) IM
Matti Muoniovaara (FIN)

A 2.4mR Class

TC to review class documentation:

- ❖ Updated 2.4mR class rules issued by World Sailing 15 November 2022
- ❖ 2.4mR Measurement Manual 2020 (v. 9)
- ❖ 2.4mR Buoyancy certificate (v. 3)
- ❖ 2.4mR **Certificate** template for NCA Certification Authorities

TC to incorporate World Sailing class rule changes approvals:

- ❖ 2.4mR eMeasurement Form
- ❖ 2.4mR seat/headsail boom weight
- ❖ 2.4mR buoyancy validity

TC to seek World Sailing class rule changes approval:

- ❖ 2.4mR Sail Numbers Proposal – plaque numbers
- ❖ 2.4mR Sail Area Proposal – foot median
- ❖ 2.4mR Headsail Proposal – RRS 50.4
- ❖ 2.4mR Pumps Proposal – electric pumps

TC to review World Sailing RRS and ERS for class rule compliance.

31.01.2024 World Sailing advice that 2.4mR class rules amendment submission on seat/headsail boom weight, buoyancy validity and eMeasurement Form is acceptable – approval from World Sailing expected early February 2024. eMeasurement Form to be available on website / pdfMeasurement Form on World sailing website. World sailing logo instructions received – Peter Russell to forward to Rikard Bjurstrom for 6m class.

31.01.2024 Loss of plaque number on some World Sailing plaques noted. No alteration to World Sailing plaque is permitted so replacement plaques are required. New rating certificates to note original and new R plaque numbers.

28.02.2024 World Sailing approved 2.4mR class rules amendment submission on seat/headsail boom weight, buoyancy validity and eMeasurement Form with effective date 12 February 2024.

03.04.2024 No advice received from Norway to date regarding Blixten sails compliance with foot median class rule changes. Peter Russell to prepare World Sailing submission with effective date after 2024 Kiel 2.4mR World Championship.

- ❖ 2.4mR Headsail Proposal – RRS 50.4
- ❖ 2.4mR Sail Numbers Proposal – plaque numbers
- ❖ 2.4mR Pumps Proposal – electric pumps
- ❖ 2.4mR Sail Area Proposal – foot median

B 2.4 NOD Class

TC to review class documentation:

- ❖ 2.4 NOD Class Rules 2022
- ❖ 2.4 NOD Construction Manual 2023.1
- ❖ 2.4 NOD Drawings J1 – Measurement Section, J2 – Templates, J3 – Deck layout, J4 - Section
- ❖ 2.4 NOD Measurement Manual 2020 (v. 9)
- ❖ 2.4 NOD Measurement Report New Boats (v.5), Measurement Report – Old Boats (v. 4), Optional Measurement Report Mast & Boom (v. 5)
- ❖ 2.4 NOD **Certificate** template (v. 4)
- ❖ 2.4 NOD Accredited Builder stickers starting at number 1000

TC to incorporate class rule changes:

- ❖ 2.4 NOD Certification Proposal – spar certification
- ❖ 2.4 NOD Sail Numbers Proposal – plaque numbers
- ❖ 2.4 NOD Sail Area Proposal – foot median
- ❖ 2.4 NOD Pumps Proposal – electric pumps
- ❖ 2.4 NOD Lifting Eye Proposal – load capacity

28.02.2024 2.4 NOD class rules 2024 draft including World Council AGM approved rule changes agreed. Peter Russell to issue for website publication.

- ❖ 2.4 NOD Sail Numbers Proposal – plaque numbers
- ❖ 2.4 NOD Pumps Proposal – electric pumps
- ❖ 2.4 NOD Sail Area Proposal – foot median
- ❖ 2.4 NOD Certification Proposal – spar certification
- ❖ 2.4 NOD Lifting Eye Proposal – load capacity

C.5.2 (a) “One or more electric pumps with battery” reviewed – agreed reword as “One or more electric pumps” with battery reference deleted as batteries are intrinsic part of electric pump system and reference not required.

C.5.2 (b) noted total portable equipment weight requirement to be amended to same paragraph as definition to avoid confusion due to page break.

Rudder appendage amendments amended as Rudderstock.

03.04.2024 Updated 2.4 NOD class rules issued for website publication on 29.02.2024 including class rule changes as follows:

- ❖ 2.4 NOD Sail Numbers Proposal – plaque numbers
- ❖ 2.4 NOD Pumps Proposal – electric pumps
- ❖ 2.4 NOD Sail Area Proposal – foot median
- ❖ 2.4 NOD Certification Proposal – spar certification
- ❖ 2.4 NOD Lifting Eye Proposal – load capacity

C Buoyancy Checks

TC to review ICA Buoyancy Certifier assignments:

- ❖ Buoyancy Certifier applications need to demonstrate competency either by current or past measurement qualifications or endorsement by an Official Measurer.
- ❖ ICA Buoyancy Certifier is a Measurer role appointed by the ICA (not MNA) where the person needs to have knowledge of the Class Rules and the ERS, respect competitors and officials and be aware of conflicts of interest.

TC to maintain 2.4mR Buoyancy Certifier database.

TC to prepare ICA Buoyancy Certifier instruction video.

03.04.2024 Thomas Jatsch endorsed Buoyancy Check competency for Lutz Christian Schröder. Request for Lutz Christian Schröder Buoyancy Check Certification approved by TC.

D 2.4 NOD Accredited Builders

TC to review 2.4 NOD Accredited Builder class rule compliance:

- ❖ 2.4 NOD Accredited Builder Application Process (v. 5)
- ❖ 2.4 NOD Accredited Builder Agreement (EC)
- ❖ 2.4 NOD Accredited Builder Boat Inspection Plan (v. 4)
- ❖ 2.4 NOD Accredited Builder Declaration Form (v. 3)
- ❖ 2.4 NOD scan prepared by *Vmax Yachting* in high definition for 2.4 NOD Accredited Builders and low definition for general distribution (EC)
- ❖ 2.4 NOD scan data file agreement (EC)

The EC has executed 2.4 NOD Accredited Builder Agreements as follows:

- ❖ *SUPER 3 (United Kingdom) Brian Harding*
- ❖ *AB SKIM KAYAKS FINLAND OY (Finland) Evert Aartsen*

31.01.2024 2.4 NOD laminate compliance advice issued to Brian Harding. Keith Gordon noted no 2.4 NOD prototype measurement to date. Brian Harding has 2.4 NOD templates for compliance checks.

28.02.2024 Prototype 2.4 NOD boat by Super 3 scheduled for measurement 2nd week March 2024. Keith Gordon to refer to updated 2.4 NOD Inspection Checklist and 2.4 NOD Builder Declaration Form. Super 3 to apply for NOD sticker.

31.01.2024 7 2.4 NOD boats under production by Ab Skim Kayaks Finland Oy scheduled for February 2024 completion. Ab Skim Kayaks Finland Oy to ensure all documentation completed and fees paid for boats under production.

28.02.2024 7 2.4 NOD boats under production by Ab Skim Kayaks Finland Oy now scheduled for March 2024 completion. Ab Skim Kayaks Finland Oy to ensure all documentation completed and fees paid for boats under production. Ab Skim Kayaks Finland Oy issued NOD stickers.

03.04.2024 Prototype 2.4 NOD boat by Super 3 scheduled for measurement 5 March 2024. Keith Gordon to refer to updated 2.4 NOD Inspection Checklist and 2.4 NOD Builder Declaration Form. Super 3 to apply for NOD sticker.

03.04.2024 7 2.4 NOD boats by Ab Skim Kayaks Finland Oy completed and ready for measurement and shipping (5 - North America, 2 - Europe). Ab Skim Kayaks Finland Oy to ensure all documentation completed and fees paid for boats. Ab Skim Kayaks Finland Oy issued NOD stickers.

E 2.4 NOD Certification

TC to review 2.4 NOD certification process – TC to prepare 2.4 NOD Certification video.

TC to manage 2.4 NOD sticker issue to 2.4 NOD Accredited Builders.

F Official Measurer Training

TC to support 2.4mR Official Measurer training program.

- ❖ NCA obtains expressions of interest in obtaining Official Measurer accreditation from interested persons and advises ICA of persons names and background.
- ❖ Interested persons attend National, Continental or World Championship events as Equipment Inspector for measurement introduction.
- ❖ Interested persons attend ICA 2.4mR measurement training program to enable interested persons to undertake 2.4mR measurement for external examiner review. 2.4mR training could be conducted on a four-year cycle subject to commitment from interested people.
- ❖ Interested persons obtain NCA support and attend MNA Official Measurer program to obtain Official Measurer accreditation.
- ❖ NCAs obtains required measurement equipment, templates etc for Official Measurer use.

TC to maintain 2.4mR Official Measurer database. All NCAs to advise Official Measurer details.

28.02.2024 Keith Gordon noted next IM seminar programmed for Japan – Keith Gordon to liaise with World Sailing and Thomas Jatsch – Peter Russell noted comprehensive knowledge of ERS is required with closed book exam.

03.04.2024 Keith Gordon noted next IM seminar programmed for Japan – Keith Gordon to liaise with World Sailing and Thomas Jatsch – Peter Russell noted comprehensive knowledge of ERS is required with closed book exam. Keith Gordon has contacted EC regarding financial support for Thomas Jatsch travel. Keith Gordon and Matti Muoniovaara IM re-certification required 2024. Bruce Millar contacted David Sprague who advised that an IM seminar is planned in “Europe by end of September and Hungary (Ballaton?) is the current best forecast”.

G 2.4mR Germany World Championship 2024

TC to review 2.4mR Germany World Championship 2024 race documents for compliance with equipment inspection guidelines.

31.01.2024 Notice of Race reviewed. Bruce Millar and John Seepe comments noted. Number of Equipment Inspection days not adequate for up to 120 boats – allow 2 days for equipment inspection with final morning for compliance wrap-up. Schedule to be amended and race numbers to be corrected for 11 races. Equipment Inspection to be in accordance with 2.4mR World Championship Inspection Plan. Event insurance to be reviewed E2 million is policy limit in many 2.4mR countries. World Sailing is the Organising Authority for the 2.4mR Para World sailing Championship – delegation to be agreed with World Sailing. Thomas Jatsch noted that Keith Gordon has been appointed as 2024 2.4mR World Championship IM. Peter Russell to forward the 2.4mR World Championship Inspection Plan and associated documents to Thomas Jatsch for a meeting with the Organising Authority. Peter Russell to prepare TC review for issue to EC meeting 06.02.2024.

28.02.2024 TC comments on NOR forwarded to Organising Authority by EC. TC can prepare Equipment Inspection NOR clause if required.

03.04.2024 Organising Authority has received TC comments on NOR – no revised NOR issued to date. Keith Gordon noted WS (Hannah Stodel) has commented on Parasailing World Championship requirements – WS comments to be addressed by EC - TC has not received any advice from WS regarding NOR for review. Keith Gordon noted no IM appointed to date.

H 2.4mR World and Continental Championship Management

TC to review 2.4mR World and Continental Championship Management documentation.

- ❖ 2.4mR World and Continental Championship Management Manual
- ❖ Event Form
- ❖ Inspection Plan
- ❖ Haul-out Form
- ❖ Substitution Form

I Instructional Videos

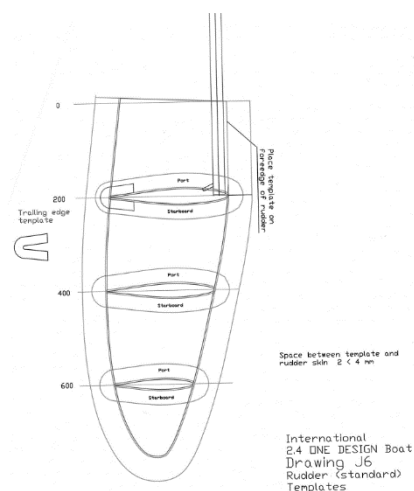
31.01.2024 Buoyancy Certifier instruction video production ongoing.

31.01.2024 Certification instruction video production ongoing.

J Rudderstock

31.01.2024 Parts of rudder discussed – rudderstock (one word) agreed as correct term – word rudderstock and materials to be regularised. 2.4mR Class Rule D3.1 permits rudder stock to be “of any materials” E.4.2 prescribes rudderstock of stainless steel or aluminum. 2.4 NOD Class Rules E.2.6 & E.2.8 rudder stock.

28.02.2024 Parts of rudder discussed – rudder terms are rudder blade, rudderstock, rudder port tube, rudder armature, rudder steering lines. 2.4 NOD class rules to be amended with “rudderstock” one word and D.7.1(a) (3) “rudder post” deleted as not a fitting. 2.4mR Class Rule D3.1 permits rudder stock to be “of any materials” E.4.2 prescribes rudderstock of stainless steel or aluminum.



K Mainsail Edge Measurement

31.01.2024 Mainsail edge measurement discussed. There is no ERS or 2.4mR Class Rules for straight sail edges from top batten to aft head point. Sails with a local curvature to be measured with batten to ERS ensuring sail extension does not affect head width. North sails noted as straight and Neb sails noted as minor curvature between upper leech point and aft head point.

28.02.2024. Peter Russell advised Doyle sailmaker that local curvature from upper leech point to aft head point is required to comply with ERS H.5.4 Extended as necessary as follows:

H.5.4 Extended as necessary

If there is local curvature and/or irregularity in the **sail edge** leading into a corner point, the extension of the **sail edge** shall be found as follows using a batten as specified in H.5.4(e) :-

- (a) Hold the batten at its very ends with one end approximately where the **corner point** will be and the other end touching the **sail edge** being extended.
- (b) Apply compression only to the batten to produce a uniform curve when required.
- (c) If the batten does not replicate the sail edge shape exactly, move the end of the batten at the **corner** away from **sail** until the longest possible length of the batten touches the **sail edge**.
- (d) Where this technique does not provide a repeatable **corner point**, ERS H.1.2 shall apply.
- (e) Battens shall be of a specification approved by World Sailing unless otherwise specified in class rules.

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PART 3 RULES GOVERNING EQUIPMENT CONTROL AND INSPECTION

- (f) Class Rules may vary ERS H.5.4

L World Sailing Hannah Stodel Meeting

28.02.2024 Meeting with World Sailing on 12.02.2024 confirmed parasailing “inclusive” strategy. Bruce Millar preparing response on 2.4 NOD class rules. *NOTE The 2.4 NOD Class Rule controls all factors affecting boat speed but allows internal structure and rigging options to ensure that the boat is a truly inclusive class able to be sailed by people of all abilities.*

M 2.4mR Lifting Eye

28.02.2024 Peter Russell advised the EC on 16.02.2024 of a Rondar 2.4mR boat lifting eye failure. The failure occurred over water, and fortunately no-one was injured. The front lifting eye failed first so the rig was OK. Subsequent inspection has found that one other Rondar boat has lifting eye lamination failure. The lifting eye failure is a Rondar 2.4mR boat issue.

Lifting eyes are not required under the 2.4mR class rules. Lifting eye design is the responsibility of the builder. Keith Gordon noted that Weymouth Olympic Centre requires all boats to be lifted with their certified lifting slings. Keith Gordon noted that short lifting strops impose a sheer force on lifting eyes. Requirement for adding a lifting eye requirement to 2.4mR class rules discussed – agreed that the design of the method of lifting 2.4mR boats is the builder’s responsibility and that a class rule change to add lifting eyes is not consistent with the open rule. Requirement for periodic testing of 2.4 NOD lifting eye load capacity discussed – agreed that 5 yearly checks are not required however advise that all 2.4 NOD owners regularly check lifting eyes and lifting strops for potential failure as for all boat rigging. Lifting eye load capacity can be checked over water with boat not rigged to address safety protocols. EC to consider Rondar 2.4mR boat safety warning options.

03.04.2024 Bruce Millar advised that the EC has communicated with Super 3 regarding Rondar 2.4mR boat lifting eye safety advice to owners. Thomas Jatsch advised Rondar 2.4mR boat built 2021 single lifting eye successfully tested to 345kg load – Thomas to photograph next lifting eye test for information.

N 2.4mR Forestay Rigging Point

03.04.2024 Draft forestay rigging point interpretation request agreed by TC - Peter Russell to submit to World Sailing for interpretation.