

International 2.4mR Class Association, Technical Committee

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



2.4mR TC MEETING 29 November 2023 (notes in blue)

Present

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

Apologies

Thomas Jatsch (GER)

General Business

1. eAGM TC Documents

09.12.2023 AGM postponed so AGM 2023 documents supplemented as follows

- ❖ 2.4 & 2.4 NOD pumps proposal – electric pumps
- ❖ 2.4 NOD lifting eye proposal – load capacity
- ❖ 2.4mR & 2.4 NOD sail area proposal – foot median v.4

2. Buoyancy Checks

29.11.2023 Buoyancy Certifier instruction video production ongoing.

3. France request for Measurement Team advice

29.11.2023 Official Measurer training program issued to France by Keith Gordon with offer to assist in training.

4. WS 2.4mR Class Rules Changes

29.11.2023 No advice received from World Sailing to date regarding 2.4mR class rules amendment submission on seat/headstail boom weight, buoyancy validity and eMeasurement Form.

5. Hook Terminal Rigging Point

29.11.2023 World Sailing interpretation is that the rigging point is determined by the way the rigging is attached to the mast. TC noted that the photo supplied by Keith Gordon in World Sailing interpretation shows a retaining clip only. ERS F.2.3 Mast Dimensions (e) **rigging point** includes when rigging is attached by a hook terminal. Modifying the hook terminal by a clip fixing doesn't change the mast attachment so where mast dimensions do not comply with the class rules the use of a tang or similar fixing to lower the **rigging point** is recommended.

(e) RIGGING POINT

When **rigging** is attached:

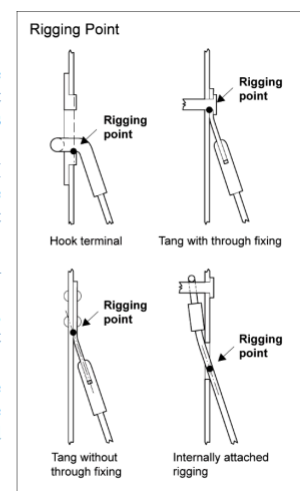
BY HOOK TERMINAL: The lowest point of the hook where it intersects the **spar**, extended as necessary.

BY TANG WITH THROUGH FIXING: The lowest point of the **spar** through fixing where it intersects the **spar**.

BY EYE WITH BOLT OR OTHER THROUGH FIXING: The lowest point of the **spar** bolt, or through fixing, where it intersects the **spar**.

IN OTHER WAYS: The intersection of the outside of the **spar**, extended as necessary, and the centreline of the **rigging**.

(f) FORESTAY HEIGHT



6. 2.4mR Finland meeting John Seepe, Peter Russell, Steve Bullmore

29.11.2023 TC noted GBR submission to AGM 2023 regarding 95% headsails. Stellan Berlin noted Peter Norlin preference for 2.4mR design with 110% headsail. Bigger roach of 95% headsail was seen as compensation for headsail boom limitations. Bruce Millar noted that no restrictions on 95% headsail use could foster sail development opportunities.

7. 2.4 NOD Inspections

29.11.2023 500kg lifting eye load capacity discussed. 1000kg total load capacity noted as excessive safety factor and difficult to validate with testing. Testing by laminate sample loading noted as option. Thomas Jatsch noted option to secure boat to ground and lift to load of 750kg between crane and lifting eyes. Lifting eye load capacity tests have been undertaken with failure of one lifting eye at 400kg load recorded with the laminate (not lifting eye) failing. We also understand that lifting strop breakage and lifting clip failure have caused lifting failures. 500kg total lifting eye load capacity agreed (modified to 520kg to allow for testing tolerance). Peter Russell to draft 2.4 NOD class rule proposal specifying two lifting eyes with a minimum load capacity of 520kg - a 2 times safety factor with scale calibration allowance. The proposed rule change facilitates a measurement process by the 2.4 NOD Accredited Builder using water ballast to minimize hull stress. Peter Russell to add lifting eye construction requirement to 2.4 NOD Construction Manual.

8. Brian Harding Prototype 2.4 NOD Inspection

29.1.2023 Brian Harding question on 2.4 NOD rudder maximum weight noted. TC agreed no maximum rudder weight required. Peter Russell to issue amended 2.4 NOD Construction Manual.

29.11.2023 Rikard Bjurstrom noted chainplate load test undertaken with load bar on chainplates to jack off mast step.

06.12.2023 IM Keith Gordon approval of Brian Harding 2.4 NOD proposed laminate design noted. Peter Russell issued 2.4 NOD laminate compliance advice.

9. Pumps

29.11.2023 2.4mR & 2.4 NOD pumps proposal – electric pumps issued for 2.4mR website.

10 Headsail Foot Median

29.11.2023 Carter Cameron (Quantum USA) advised new LM headsail foot medians measure 3906mm before shrinkage as noted in Canada National measurements. TC noted past cases including excessive mainsail head roach and excessive mainsail foot extension where sails were required to be modified to comply with amended class rules. TC noted that Quantum USA headsail complies with foretriangle dimensions.

11 Simon Hill Keel Proposal

29.11.2023 Simon Hill keel proposal discussed. As an International Class only World Sailing is able to make interpretations of the class rules. The 2.4mR Class Rules E.3.2 KEEL requires the keel to be fixed and E.5.2 requires ballast to be removable from the inside of the boat. The ICA can propose an amendment to the 2.4mR Class Rules for World Sailing approval. An IM (Keith Gordon) can also seek an interpretation of the 2.4mR Class Rules by World Sailing. For proof of concept, you could sail at local events where the Notice of Race is drafted to permit variations to the 2.4mR Class Rules.

12 Finland

29.11.2023 Rikard Bjurstrom noted that Ab Skim Kayaks Finland Oy 2.4 NOD builder has completed two boats with seven under production.

Next Meeting

Canada	12.00pm Wednesday 31 January 2024
UK	8.00pm Wednesday 31 January 2024
Sweden	9.00pm Wednesday 31 January 2024
Germany	9.00pm Wednesday 31 January 2024
Finland	10.00pm Wednesday 31 January 2024
Australia	6.00am Thursday 1 February 2024

2023 2.4mR TC Work Program

A EC Meetings

Bruce Millar to act as TC representative for EC meetings. TC meeting minutes to be issued to EC and website for information. EC/TC to review Mid-year Measurement Forum 2023.

B ICA Constitution

TC to review proposed ICA Constitution including TC responsibilities for official measurers, buoyancy check persons, 2.4 NOD builders and EC coordination.

22.03.2023 Proposed ICA Constitution reviewed, Peter Russell to prepare update for EC review.

- ❖ TC to be maximum five (5) members.
- ❖ TC to report to EC, no time limit.
- ❖ TC to liaise with World Sailing on technical matters.
- ❖ TC to provide guidance only for World and Continental Championship Equipment Inspection.
- ❖ TC to maintain Official Measurer database, publication by MNAs.
- ❖ TC to appoint Buoyancy Certifiers and maintain database, publication by NCAs.
- ❖ TC to review 2.4 NOD Accredited Builder applications and quality control.
- ❖ TC and Chairperson to be elected for period of two (2) years, no time limit.
- ❖ Part 20 Amendments to be consistent with AGM process.

Note TC to review Class Chief Measurer role. *Chief Measurer appointment? TC is responsible for guidance on equipment inspection procedures at 2.4mR class regattas. TC Chairman leads TC duties. Class IM is responsible for prototype production boat measurement to WS Regulation 10. Official Measurers certify 2.4mR boats. ICA certifies 2.4 NOD boats.*

19.04.2023 Proposed TC update to ICA Constitution reviewed:

- ❖ Keith Gordon noted number of NCAs including GNR, FRA etc do not have copies of 2.4mR Certificates – certificates kept by MNA only. 2.4mR Class to be amended to mean «body of NCA members». Vice President duties to be amended to delete Certificate records, NCA member records are specified under Treasurer. Certificates to be controlled in accordance with 2.4mR Class Rules.
- ❖ Election terms to be reviewed by EC.
- ❖ 2.4mR TC duties confirmed as follows:

g. TECHNICAL COMMITTEE

- I. Shall consist of a Chairperson and a maximum of four (4) Members of which three (3) members shall form a quorum.
- II. The Technical Committee reports to the EC.
- III. The Technical Committee shall be responsible for:
 1. Considering all technical matters concerning Class Rules,
 2. Putting forward proposals for amendments to Class Rules, Building Specifications and Measurement Forms,
 3. Prepare and make ICA submissions to WS on technical matters concerning Class Rules,
 4. Monitor any changes in WS measurement regulations or rules which may affect the ICA,
 5. Maintain 2.4mR and 2.4 NOD measurement forms and manuals defining preferred measurement methods,
 6. Manage 2.4 NOD measurement templates.
 7. Guidance on equipment inspection at World and Continental Championships,
 8. Maintain a current registry of the names and addresses of Official Measurers and Buoyancy Certifiers, and
 9. Review 2.4 NOD Accredited Builder Applications and Quality Control documentation in accordance with the 2.4 NOD Accredited Builder Agreement and 2.4 NOD Class Rules.

31.05.2023 Bruce Millar advised Constitution review ongoing, TC amendments noted.

22.06.2023 Bruce Millar advised Constitution review ongoing, TC amendments noted.

01.09.2023 Bruce Millar issued draft ICA Constitution for TC review.

28.09.2023 Proposed ICA Constitution 2023 is consistent with TC advice except 7 Class Chief Measurer to be deleted and section headings reviewed.

C 2.4mR and 2.4 NOD classes

TC to review 2.4mR and 2.4 NOD class descriptions for website.

14.12.2022 Peter Russell working to improve 2.4mR and 2.4 NOD description. Copy to be forwarded to Loic Eonnet (FRA) to develop description. Draft wording attached for review:

The International 2.4mR Class Association is the world organization that governs the International 2.4mR Class (2.4mR) and the 2.4 Norlin One Design Class (2.4 NOD).

All 2.4mR boats comply with the 2.4mR Rating Rule.

The 2.4mR World Championship includes all 2.4mR boats with the first boat awarded the World Cup Trophy and the first 2.4 NOD boat awarded the 2.4 NOD Trophy.

INTERNATIONAL 2.4mR CLASS

*The International 2.4mR Class is a development class with boats complying with the 2.4mR **Open Class Rules**. 2.4mR boats are administered by Member National Authorities under delegation by World Sailing.*

The 2.4mR class rule provides a development option for sailors looking at innovation within the meter rule which has produced beautiful boats for over a century.

Current production 2.4mR boats include the Super 3 and Stradivari. Home built 2.4mR boats can also be built under this rule.

2.4 NORLIN ONE DESIGN CLASS

*The 2.4 Norlin One Design (NOD) is a restricted class with boats complying with the 2.4 NOD **Closed Class Rules**. 2.4 NOD boats are a class of 2.4mR boat, based on the Norlin Mk III design and administered by the 2.4mR ICA.*

The 2.4 NOD class rule provides a one-design option for sailors with racing in boats of equal performance where results are determined by the skill of the sailor. The 2.4 NOD has been selected by World Sailing as the single person technical equipment for Para Sailing.

2.4 NOD boats are manufacturer controlled with the ICA looking at accreditation of new builders. 2.4 NOD builders know that they are building a standard product that will not be outdated and is subject to quality control.

18.01.2023 No advice received on proposed description. Peter Russell to forward to EC for review and website update.

D 2.4mR Class Rules

TC to obtain WS approval of seat and headsail boom amendments. TC to review headsail and mainsail foot median class rule requirement.

19.04.2023 Peter Russell to prepare draft submission to WS for amendment to 2.4mR Class Rules on seat and headsail boom weights.

31.05.2023 Peter Russell to prepare draft submission to WS for amendment to 2.4mR Class Rules on buoyancy check validity period.

20.07.2023 Draft World Sailing Rule Change submission for seat/headsail boom weight and buoyancy validity approved by TC for lodgement with WS. 2.4mR_CRC_20230720 REASONS version 2 to be used for submission. Keith Gordon to be nominated as IM change reviewer.

23.07.2023 Peter Russell issued 2.4mR World Sailing Rule Change submission for seat/headsail boom weight and buoyancy validity to World Sailing for review.

E 2.4 NOD Class Rules

TC to publish 2.4 NOD Class Rules and Construction Manual as approved 2022 eAGM.

14.12.2022 2.4 NOD Class Rules 2022 and 2.4 NOD Construction Manual 2022 to be issued to ICA for website.

31.05.2023. The implication of changing spars on the 2.4 NOD certificate has been questioned recently. The 2.4 NOD class rules assume that spars may be replaced when damaged or different spars used in competition. The 2.4 NOD certificate is applicable to the boat hull, keel and rudder in accordance with the measurement report. The spar measurement report is optional only to assist owners in complying with the class rules and is not required for 2.4 NOD certification. Spars and their rigging all have different weights so when changing spars it is the owners responsibility to ensure that the boat weight is maintained (with ballast corrector weights) in accordance with its certificate. Peter Russell to prepare TC Advice note.

22.06.2023 Stellan Berlin (18.06.2023) and Bruce Millar noted that TC Advice required amendment to clarify that class rule amendment is subject to World Council approval. Existing 2.4 NOD spar measurement report is clearly optional only. Peter Russell to update TC Advice note.

F 2.4 NOD Boat Scan

TC to manage NOD digital file production by VmaxYachting as approved by EC 2 December 2022.

14.12.2022 Bruce Millar working with Heiko Kroger and Thomas Jatsch to complete 2.4 NOD boat scan, scan media including backup to be finalise.

18.01.2023 Bruce Millar advised scan expected mid February for issue to 2.4 NOD Accredited Builders.

22.02.2023 Bruce Millar advised scan delayed – completion now due March 2023.

22.03.2023 Heiko Kroger advised 2.4 NOD boat scan completed by Vmax Yachting, Max Gurgel. Two deck scans required to resolve data file. Scan precision is excellent at 0.5mm. Scan ready end March for distribution. Scan will be available in low and high resolution to assist distribution. Distribution control agreement to be resolved. File security to be resolved with dropbox and 2 x hard drive backups.

2point4 Laser Scan Screen Recording 2023_03_22 issued by Heiko Kroger explains scan findings. The hull is nearly symmetrical. Minor keel bend to starboard. Port deck high near cockpit. Minor hollow in hull near keel.

21.04.2023 Heiko Kroger issued 2.4 NOD boat scan file. TC noted 2.4 NOD boat scan file Document Control required, Bruce Millar to seek advice on Document Control forms. 2.4 NOD boat scan files issued for building 2.4 NOD boats (high res) or information for prospective builders (low res), no file alteration permitted, 2.4 NOD boat scan files property of ICA.

22.06.2023 Bruce Millar advised preparation of 2.4 NOD data file agreement ongoing. Key issues – scan issued for sole use of 2.4 NOD Accredited Builder – 2.4 NOD data file is ICA property - no modification to design permitted. 2.4 NOD data file to be issued to Evert Aartsen and Brian Harding. 2.4 NOD data file in low resolution to be added to website as class information.

G 2.4mR Measurement Forms

TC to review 2.4mR measurement forms including certification section for WS approval.

14.12.2022 Rikard Bjurstom to forward eform used for 6m & 8m boats for reference.

18.01.2023 Measurement eform to be reviewed for adoption as 2.4mR measurement form, WS plaque number required on each page.

22.02.2023 Measurement eform to be reviewed for adoption as 2.4mR measurement form, WS plaque number required on each page.

19.04.2023 Peter Russell to seek WS advice regarding adoption of Measurement eform in lieu of printed Measurement Form on WS website.

31.05.2023 Thomas Jatsch proposed deleting sail number, owner name and boat name from measurement form so alterations not required to measurement form on recertification. Owner name, boat name and sail number recorded on **certificate**. TC to review with proposed eMeasurement Form.

Existing Measurement Form
International 2.4 metre Measurement Form
Sail Number ISAF Plaque Number
Owner..... Name of yacht
Proposed Measurement Form
International 2.4 metre Measurement Form
WS Plaque Number 2.4 NOD Number (if applicable)

22.06.2023 TC approved 2.4mR Measurement Form amendments. TC to prepare eMeasurement Form for WS approval.

20.07.2023 Draft 2.4mR eMeasurement Form based on FINLAND excel form with headings and pagination as discussed approved by TC.Thanks Rikard Bjurstrom and Matti Muoniovaara for template setup. Peter Russell to issue to World Sailing for advice regarding adoption for 2.4mR measurement.

23.07.2023 Peter Russell issued 2.4mR eMeasurement Form to World Sailing for review.

H 2.4mR Certificates

TC to review standard 2.4mR Certificates for NCAs responsible for class administration.

14.12.2022 Bruce Millar to forward current Canada Rating Certificate for reference, valid Rating Certificate to include Measurement Form and Buoyancy Certificate.

19.04.2023 TC to develop standard 2.4mR Certificate Form for 2.4mR boats certified by NCAs.

22.06.2023 Standard 2.4mR Certificate Form issued by Peter Russell. Measurements except P, E, I, J and weight to be deleted. 2.4 NOD number to be included to assist with certification reference. Peter Russell to issue amended standard 2.4mR Certificate Form for TC review.

20.07.2023 Standard 2.4mR Certificate Form v. 2 approved by TC for website publication. Owner records required under class rules and to facilitate NCA class membership management.

I NOD certification

How to get all NOD boats certified? How to inform owners that they are responsible for obtaining NOD certificates and require them to compete at para events? NOD certification explanatory video by Bruce Millar. 2.4 NOD boat event NORs to include requirement for owners to issue certificates to organising authorities.

20.07.2023 Draft 2.4 NOD certificate form as single page word document approved by TC subject to removal of owner, owner address, owner email and sail number fields. Change of ownership does not invalidate 2.4 NOD certificate. Peter Russell to amend certificate for issue to ICA 2.4 NOD Certification Administrator.

30.07.2023 Bruce Millar advised Louise Anstey (CAN) has accepted the 2.4 NOD Certification Administrator role. John Sepepe advised that he will assist Louise Anstey if required.

31.08.2023 John Seepe advised he will attend to ICA thanks to Henrik Johnsson for his valuable contribution to the 2.4mR class over many years as Measurer and ICA Certifier.

06.09.2023 John Seepe ICA thanks issued to Henrik Johnsson with advice that a replacement Certifier has been appointed by the ICA.

J Official Measurer training

TC to review measurer training and certification process oportunities?

14.12.2022 Timeline for WS process to IM qualification to be scheduled, 2 events and IM seminar required.

Official Measurer training program sequence:

- ❖ NCA obtains expression 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 by interested persons.
- ❖ Interested persons attend MNA Official Measurer program to obtain Official Measurer accreditation.

- ❖ NCAs obtains required measurement equipment, tempaltes etc for Oficial Mesurer use.
- 20.07.2023 Keith Gordon is preparing a program for 2.4mR Official Mesurer training, Keith has liaised with France regarding program.
- 31.08.2023 Keith Gordon preparing 2.4mR Official Mesurer training program following completion of 2023 Paraworlds.
- 28.09.2023 Draft Official Mesurer training program issued by Keith Gordon. Preamble added by Peter Russell. Bruce Millar pictures of tank to be added to Appendix B. Keith Gordon to liaise with France regarding measurement team process.
- 01.11.2023 Official Mesurer training program approved. Keith Gordon to liaise with France regarding measurement team process.

K Buoyancy Checks

TC to establish 'competent persons' register for buoyancy checks. Note; Both 2.4mR and 2.4 NOD buoyancy checks can be preformed by a competent individual assigned by the TC.

Buoyancy Certifier requirements:

ICA notes Buoyancy Certifier applications need to demonstrate competency either by current or past measurement qualifications or endorsement by an Official Mesurer. Buoyancy Certifier is a Mesurer role appointed by the ICA (not NCA) 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.

14.12.2022 Buoyancy Check certificates register to be established, TC to consider addition to website for event organiser information?

22.06.2023 Bruce Millar conducted Buoyancy Certifier course on 12.05.2023. A video of instructions will be prepared as an aid for buoyancy certification instruction. Bruce Millar noted that video shows water flowing out of cockpit confirming that boat is full of water in accordance with class rules.

22.06.2023 Buoyancy Certifiers assigned by TC to 22.06.2023.

- 01 Henk van Heuvein NED
- 02 Henrik Johnsson SWE
- 03 Tony Pocklington USA
- 04 Paul Schroader GBR
- 05 Rupert Smith GBR
- 06 John Patrick IRE
- 07 Stephan Giesen GER
- 08 Louise Anstey CAN
- 09 Chris Anstey CAN
- 10 Dennis Woodward CAN

20.07.2023 Bruce Millar to prepare Buoyancy Certifier instruction video based on certifier course 12.05.2023.

28.09.2023 Bruce Millar advised Buoyancy Certifier instruction video based on certifier course 12.05.202 in production next month.

01.11.2023 Buoyancy Certifier instruction video parameter discussed – compensation for no sails and use of fresh (not salt) water for buoyancy test agreed – assume 2kg for sails and 3kg (check required) for fresh water – weight compenstaion to be placed in accordance with 2.4mR Class Rules Section L Buoyancy Check.

L 2.4mR boat builders

2.4mR builders are as follows:

- ❖ *SUPER 3 (UNITED KINGDOM)*
- ❖ *MALMSTEN BOATS (SWEDEN)*

M 2.4 NOD boat builders

2.4 NOD builders are as follows:

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

2.4 NOD interested builders are as follows:

- ❖ USA (Rudy Trejo)
- ❖ Australia (Michael Bunyard)
- ❖ Germany (Thomas Bergner)

TC contact persons are as follows:

- ❖ United Kingdom – TC contact Bruce Millar
- ❖ USA – TC contact Bruce Millar
- ❖ Australia - TC contact Peter Russell
- ❖ Germany – TC contact Thomas Jatsch
- ❖ Finland - TC contact Rikard Bjurstrom

14.12.2022 Brian Harding to be advised that 2.4 NOD Accredited Builder Agreement is under preparation, Bruce Millar is happy to be the GBR TC contact person.

14.12.2022 Evert Aartson to be advised that 2.4 NOD Accredited Builder Agreement is under preparation, Rikard Bjurstrom is happy to be the FIN TC contact person. 10 boats to be manufactured 2023, monitoring program to ensure complete boats and payment schedule.

22.03.2023 Ab Skim Kayaks Finland Oy 2.4 NOD builder represented by Evert Aartsen inspected by IM Matti Muoniovaara and OM Rikard Bjurstrom on 11.03.2023. Hull mould is previously licensed mould. Hull lamination is 3.62kg/m². Bruce Millar to coordinate Accredited Builder Agreement with Evert Aartsen and EC.

25.03.2023 Bruce Millar to coordinate Accredited Builder Agreement with Brian Harding and EC.

19.04.2023 EC to execute 2.4 NOD Accredited Builder Agreement with Evert Aartsen and Brian Harding.

31.05.2023 2.4 NOD Accredited Builder Agreements with Evert Aartsen and Brian Harding being finalised by EC.

22.06.2023 Bruce Millar advised 2.4 NOD Accredited Builder Agreements with Evert Aartsen and Brian Harding being finalised by EC. Brian Harding Agreement is with Super 3 Ltd with Heritage as builder with intention to build 5-10 boats following approval.

20.07.2023 Bruce Millar advised 2.4 NOD Accredited Builder Agreements with Evert Aartsen and Brian Harding being finalised by EC. Brian Harding agreement (Super 3 Ltd) now signed.

21.07.2023 Rikard Bjurstrom advised Evert Aartsen agreement (Ab Skim Kayaks Finland Oy) now signed. 2.4 NOD boats under manufacture subject to measurement and 2.4 NOD stickers before completion.

Accredited builder submissions shall include the following details prior 2.4 NOD boat certification:

- ❖ *Prototype measurement – refer WS regulation 10.5 (f) (vi)*
- ❖ *Lay-up design*
- ❖ *Hull/keel stiffness*
- ❖ *Chain plate deflection*
- ❖ *2.4mR WS plaque*
- ❖ *2.4 NOD plaque*
- ❖ *2.4 NOD Accredited Builder Declaration*

2.4 NOD accredited builder pathway available for issue to potential builders following receipt of applications.

EC to prepare 2.4 NOD accredited builder agreement.

14.12.2022 Bruce Millar preparing draft 2.4 NOD Accredited Builder Agreement for review.

18.01.2023 Draft 2.4 NOD Accredited Builder Agreement prepared by Bruce Millar reviewed by TC. Key issues:

- ❖ No ICA financial responsibility
- ❖ Complete boats or hull only options
- ❖ Manufacture and/or assembly options
- ❖ Assembled hull to be capable of measurement to 253-254kg weight with 181kg of lead + corrector weight. Seat/headsail boom exclusion permitted.
- ❖ Moulds to be in possession of 2.4 NOD Accredited Builder, ownership not required
- ❖ Production capacity 10 boats per year with 4 month delivery time – failure to meet this requirement does not result in cancellation of Agreement

- ❖ Hull only (includes rudder) definition to be reviewed – ballast? deck separate? fittings? control console? Rikard Bjurstrom to check production weights with Evert.
- ❖ Complete boat and hull only boats 2.4 NOD Accredited Builder declaration forms to be designed.
- ❖ Prototype boat IM measurement check

22.02.2023 Draft 2.4 NOD Accredited Builder Agreement prepared by Bruce Millar reviewed by TC. Final comments from TC to Bruce Millar required by 27 February 2023 to allow for final draft to be submitted for EC approval. Key issues:

- ❖ Hull only to be redefined as base hull only – delete steering pedals, seat, control console, ballast, mast step, manual pump, backstay fittings (except fittings in hull). Headsail boom deck cutout and mainsheet traveller deck cutout to be scheduled as options.
- ❖ Rikard Bjurstrom to check production weights with Evert to inform production weight control plan for hull only boats.

22.03.2023 2.4 NOD Accredited Builder Agreement approved by EC.

- ❖ Rikard Bjurstrom to check production weights with Evert to inform production weight control plan for hull only boats.

TC to prepare 2.4 NOD inspection plan based on builder compliance declaration.

14.12.2022 Peter Russell preparing draft 2.4 NOD Accredited Builder Inspection Plan for review, prototype and boat 2 + 3 measurement and compliance declaration, other boats compliance declaration, checklist required.

18.01.2023 Draft Inspection Plan issued to Bruce Millar for 2.4 NOD Accredited Builder Agreement coordination.

22.02.2023 Draft Inspection Plan reviewed. Hull laminate sample to be weighed for checking compliance and weight photo recorded. Hull only to be redefined as base hull only.

22.03.2023 Waterline Declaration Form requirement deleted – Official Measurer's signature to Measurement Form is compliance with Class Rules H.6. Ballast Declaration Form deleted – requirement included in Accredited Builder Declaration Form. 2.4 NOD Inspection Plan approved by TC.

TC to prepare 2.4 NOD Accredited Builder Declaration Form

22.03.2023 Draft Accredited Builder Declaration Form reviewed. Name of authorised person to be added to signature section. 2.4 NOD Accredited Builder Declaration Form approved by TC.

TC to prepare new 2.4 NOD Hull Stickers for issue to 2.4 NOD Accredited Builders.

22.03.2023 Rikard Bjurstrom to follow up original hull sticker supplier. New 2.4 NOD plaques to commence at no. 1000, different green colour required, reference to «Licence» to be deleted, Bruce Millar to check artwork.

19.04.2023 2.4 NOD Hull Sticker design reviewed:

- ❖ Delete word «Licence», new wording «Fee Paid»
- ❖ Change colour to Forest Green, Bruce Millar to confirm colour PMS
- ❖ Start numbering at 1000
- ❖ Rikard Bjurstrom to confirm 2.4 NOD Hull Sticker quantity with supplier – say 200 stickers

31.05.2023 Bruce Millar confirmed new 2.4 NOD Hull Sticker colour as Pantone 350C. Rikard Bjurstrom confirmed stickers ordered, cost submitted to EC.

22.06.2023 Rikard Bjurstrom confirmed new 2.4 NOD stickers completed and available for issue to 2.4 NOD Accredited Builders.

01.11.2023 Keith Gordon advised prototype measured as 2.4mR with rating 2.978. Keith Gordon noted that Brian Harding has 2.4 NOD jig and templates – no 2.4 NOD measurement to date. Peter Russell noted 2.4 NOD Inspection Checklist requirements as follows:

2.4 NOD ACCREDITED BUILDER BOAT INSPECTION CHECKLIST

1. The Accredited Builder prepares the documentation specified in the 2.4 NOD Class Rules and Construction Manual:

- (a) Documentation of boat component manufacture by other builders (hull, keel and rudder to be built by Accredited Builder).
- (b) Documentation of any deviations from the specified layout of the hull shell and internal structure.
- (c) Documentation of hull and deck lamination details including specimen sample

01.11.2023 Reference to 500kg load capacity of lifting eyes to be added to 2.4 NOD Accredited Builder quality control checklist.

N 2.4mR Finland World Championship 2023

TC to review 2.4mR Finland WC 2023 documents.

19.04.2023 2.4mR Finland WC 2023 NOR equipment inspection requirements consistent with TC guidance.

O WC NOR Template

WC NOR template to be deleted from reference documents and the website – not in accordance with current World Sailing (WS) Racing Rules of Sailing.

P World Championship inspection plan and forms

TC to review World Championship inspection plans and forms including - Event Form, Inspection Plan, Haul-out Form and Substitution Form.

Q 2.4mR World and Continental Championship Management Manual update

TC to update 2.4mR World and Continental Championship Management Manual to clarify division scoring requirement.

14.12.2022 2.4mR World and Continental Championship Management Manual v.8 update including division scoring instructions to be issued to ICA for website.

20.07.2023 Bruce Millar advised EC is to review insurance requirements for World Championship events following questioning of E300,000 requirement for 2.4mR Finland WC 2023. EC approval of NOR noted. Bruce Millar advised high cost of insurance is a barrier to event participation. Keith Gordon advised UK insurance GBP 2,000,000 is about GBP 60.

R Measurement Manual update

TC to revise 2.4mR and 2.4 NOD measurement manuals to new 2022 2.4mR and 2.4 NOD class rules.

S Class Rules education

TC to develop a program of class rules education.

The 2.4mR Class is a development class granted international status in 1993. The 2.4mR Class is administered by Member National Authorities (MNAs) under delegation by World Sailing (WS). Where there is no MNA the International Class Association (ICA) may carry out administrative functions.

The 2.4 NOD Class is a restricted class based on the Norlin Mark III introduced in 2011. The 2.4 NOD Class hulls and rudders are manufacturer controlled with rigs and sails measurement controlled. The 2.4 NOD Class is administered by the ICA.

Class Rules are prepared from the World Sailing 'Standard Class Rules template' in accordance with World Sailing recommendations.

«As part of the World Sailing initiative to improve and standardise class rules and certification for the sailor, the Standard Class Rule template and Equipment Rules of Sailing has been developed. Through a common format, individuals can find relevant sections of each class rules easily and effectively. The World Sailing can consult and advise to aid a class in encompassing this rules system within their class. Class Rules are based on the ERS.»

Class Rules are rules that specify the boat, the crew, the personnel and portable equipment, and any other equipment limited by the Class and their certifications and administrations.

The Class Rules are read in conjunction with the Equipment Rules of Sailing (ERS) which provide more general governance of the equipment used in the sport.

It is the owners responsibility to ensure that their boat complies with the Class Rules and has a valid certificate.

22.03.2023 TC advice notes as follows approved by TC for website publication.

- ❖ CARBON MAST SPAR FITTINGS
- ❖ SAIL AREA – sail foot median and tack class rules proposal
- ❖ IS A HATCH AN OPENING
- ❖ IDENTIFICATION ON SAILS
- ❖ SAIL CERTIFICATION

19.04.2023 TC noted advice notes are NOT Class Rule Interpretations – notes advise applicable class rules addressing 2.4mR owner questions.

22.06.2023 TC advice note as follows approved by TC for website publication.

- ❖ SPAR CERTIFICATION

31.08.2023 TC advice note as follows approved by TC for website publication

- ❖ BATTEN POPCKET
- ❖ RRS 50.4

T Measurer Recognition

TC to develop Measurer jacket/hat for events.

14.12.2022 Thomas Jatsch suggested Measurer jacket/hat be considered for measurere recognition and events.

U Replacement WS plaques

22.06.2023 Replacement WS plaque management:

- ❖ Issue of replacement WS plaque with new number invalidates certificate – new certificate required recording original and new WS plaque number.
- ❖ Issue of replacement WS plaque with new number does not invalidate Measurement Form – no measurement form update required.

V 2.4 NOD Sticker Management

22.06.2023 2.4 NOD sticker management agreed as follows:

2.4 NOD boats built prior to 2.4 NOD Accredited Builder agreement

- ❖ ICA stickers issued at no charge to owner, Rikard Bjurstom and Bruce Millar hold stocks of stickers – costs for 2.4 NOD sticker management to be funded by ICA.

2.4 NOD boats built by 2.4 NOD Accredited Builders

- ❖ ICA stickers issued at cost E50 in accordance with 2.4 NOD Accredited Builder Agreement.

Rikard Bjurstom to invoice 2.4 NOD Accredited Builders for 2.4 NOD stickers with copy to John Seepe for records pending EC appointment of Treasurer and new bank account implementation.

X 2.4mR Sail Numbers

31.05.2023 Keith Gordon advised that RYA wil in future issue sail numbers matching plaque numbers. Peter Russell noted that 2.4mR class rule A.10 requires sail numbers to be issued in consecutive order starting at “1” unless they are personal numbers. Keith Gordon to follow-up with RYA the background to this decision.

22.06.2023 Keith Gordon no advice to date.

20.07.2023 Peter Russell to prepare Sail Number advice for World Council approval permitting owner use of World Sailing plaque numbers.

Sail numbers have been issued by MNAs (or NCAs) in consecutive order starting at “1” with personal numbers used by some owners in accordance with the 2.4mR class rules. The TC recognizes that a number of owners are now using plaque numbers as personal sail numbers. The use of plaque numbers as sail numbers is seen as showing the strength of the class internationally. It can also assist with boat identification at international events where boats from different countries may have the same sail number. The proposed amendment to the 2.4mR class rules permits sail numbers to be either “consecutive numbers starting at “1” or World

Sailing plaque numbers". A change of sail number to certified 2.4mR boats invalidates the certificate – a new certificate is required if the owner changes sail number from a consecutive number to World Sailing plaque number. The TC acknowledges that 2.4mR fleets may include boats with both consecutive and plaque numbers with new boats typically using plaque numbers. The use of personal sail numbers is retained to enable sailors to use the same sail number for different boats.

Y 2.4mR Batten Pockets

22.08.2023 Keith Gordon advised that 80% of mainsails did not comply with 2.4mR Class Rule batten pocket length as follows:

Gentleman, report on regatta.

First problem 80% of mainsails did not measure. Reason, batten pocket length, outside.

Not something I would normally even think of measuring. First sails to measure were Faber Munker, 2.4 sails which breached the median rule and had to be altered, (measurement was to OD). I have aluminium battens for all 2.4 sail measuring and just checked the batten as I had a problem with new Doyle sails at Worlds in Sweden (they were 50mm oversize) it was 20mm oversize as were all the battens on the two FM sails. Having found this on the first competitors sail I had to check all the sails. This was a WS World Championship. 80% were over long. The dacron sails were OK as was one sail using "plastic" fabric. Problem is one of manufacture. The batten to max. Length is laid on the sale then an adhesive sail cloth/tape, acting as the pocket is placed overextended beyond the batten and cut off. Solution, change rule from outside batten pocket to inside. I am talking to WS as IM on another matter but have asked the question would it be possible to change without going through EGM. I assume perhaps 75% of fleet have this problem.

Other problems, measuring to OD, ballast was weighed. Longest time taken to remove 3 hours. At least 3 tied up use of measuring gantry to put boats on side and lift keel to remove leads. Thomas ended up doing most of this work. It was in NOR and SI Some competitors had no able support and too few volunteers.

Problem which should have been picked up at Finland. John Steepe sailed with a new North US sail with a white class emblem. WS stamp.

The sailing was good, it was commented by a Dutch volunteer on the water how there was a great difference in the sailing ability of the 2.4 sails and the other classes.

Thomas will make a great IM. Lots of support from all the officials. We just have to get him into and through the course and exam.

31.08.2023 TC discussed batten pocket length rule – change from batten pocket outside length to inside length not supported. Batten fixing subject to different methods including glue and stitch, inside length relies on identification of batten pocket stitch line, outside length is simply batten pocket ply edge. Peter Russell to prepare batten pocket TC Advice note.

28.09.2023 2.4mR batten pocket length advice issued by Peter Russell for website publication.

Z Hook Terminal Rigging Point

02.08.2023 IM Keith Gordon advised that he has submitted a note to WS for a definitive interpretation from ERS Committee. Peter Russell noted that ERS defines the measurement point for a hook terminal. The question relates to a fitting with modified hook terminal and clip where the measurement point is determined by the intersection of the outside of the spar and the centreline of the forestay under F.2.3 (e) IN OTHER WAYS. Keith Gordon to advise WS interpretation. Stellan Berlin noted that a previous request to WS was not answered.

27.09.2023 World Sailing (WS) issued an interpretation of the hook terminal rigging point following a request by IM Keith Gordon. Based on the photo supplied, World Sailing has advised that the rigging point is found as the lowest point of the hook to ERS F.2.3 (e) HOOK TERMINAL – the rigging point is determined by the way the rigging is attached to the mast.

28.09.2023 TC noted that the photo in World Sailing interpretation shows a retaining clip only – the clip does not alter the rigging attachment to the mast. Keith Gordon to provide alternative photos for review showing modified hook terminal fixing before resubmission to World Sailing.

01.11.2023 TC noted that the photo supplied by Keith Gordon in World Sailing interpretation shows a retaining clip only – the clip does not alter the rigging attachment to the mast - alternative photos showing modified hook terminal fixing required for resubmission to World

Sailing. World Sailing advised that the rigging point is determined by the way the rigging is attached to the mast.

AA 2.4mR Class Rules RRS exemptions

31.08.2023 Peter Russell advised WC Jury questioned 2.4mR Class Rule C.1.1 (b) (1) deleting RRS 50.4 and questioning RRS 50.2.

RRS 50.4 has been deleted from RRS 2021-24. RRS 2017-20 was included RRS 50.4 as follows:

RRS 50.4 Headsails

For the purposes of rules 50 and 54 and Appendix G, the difference between a headsail and a spinnaker is that the width of a headsail, measured between the midpoints of its luff and leech, is less than 75% of the length of its foot. A sail tacked down behind the foremost mast is not a headsail.

ERS G.1.3 Sail Types

(d) HEADSAIL A sail set forward of the mast spar or of the foremost mast spar if more than one mast, where the measurement between the half luff point and the half leech point is less than 75% of the foot length.

ERS 2021-24 definition of headsail is consistent with 2.4mR Class Rules with half width at 48% of foot length and sail set forward of mast spar (not tacked down). Peter Russell to prepare 2.4mR class rules change advice for ICA World Council review.

RRS 52 specifies that only manual power provided by the crew is permitted – 2.4mR Class Rules prescription that this shall not apply is required to allow disabled sailors to use power other than provided by the crew.

28.09.2023 Headsail advice deleting RRS 50.4 exemption issued by Peter Russell for website publication.

AB 2.4mR Class Rules Hollows

17.11.2022 Keith Gordon raised question of hollows in bow section of boats – hollows to be checked on 2.4 NOD scan boat. 2.4mR D.8.2 follows.

D.8.2 HOLLOWWS

(a) There shall be no hollows in the surface of the hull between the LWL plane and the sheerline except an area at the stern between the buttock lines 100mm from the yacht centreline and below L1. For the purpose of rating, any hollows in the entry of the boat below the LWL plane shall be bridged by a straight line from points on the entry at a vertical distance of 30mm above and below the LWL plane.

07.03.2023 Keith Gordon advised as follows

I finally go to look at a group of 3 boats.

Yes there are hollows, but forget them, they were minute.

From what I can ascertain, and using a modern engineers straight edge (0.1mm over 1 meter) and kevlar fishing line, any hollow in the bow between WL and the bow are so small that they are beyond the capacity of either the original mould manufacturer or the boat builder to work to. Refinishing the joint after joining the two boat half's, and control and confirm with the rule is not possible. My personal opinion is that after joining the two halves the exterior of the joint is filled with resin and finished and polished by hand this is the probable answer. Other reasons, plastic stress relief, plastic memory, pounding from trailer support during travel, faulty molds, it may be age related, lots of possible reasons.

The future, unless the hollow can be viewed by eye, recommended to the owner fairing. It will be beyond the area where certification measurement are taken, so no problem for a 2.4mR. No reason to introduce rule change or relaxation. Just keep an eye out.

AC Size of Hatches

17.11.2022 Keith Gordon raised question on size of hatches – 2.4mR D.4.2 (c) limits deck openings to no more than 0.7m², 2.4mR D.5.1(c) requires inspection hatches of minimum 100mm dia to watertight compartments., 2.4 NOD D.2.3 (h) permits hatches to be of any plastic material provided no lighter than deck. 2.4 NOD D.2.4 (f) permits one forward and one aft hatch in addition to the rudder hatch.

18.01.2023 World Sailing confirmed openings definition to Keith Gordon. Openings include openings covered by hatches. Keith Gordon to forward WS Interpretation to TC. Area of opening to be checked for 0.7m² compliance.

WS Interpretation of International 2.4mR Class rule D.4.2 (c)

Question

1. *Is hatch an opening and is part of the total allowable openings?*
Yes
2. *If fitted with a cover, screwed, bolted or glued is this then a fitting?*
No, the fitting will only be the cover
3. *Is the mast hole part of the opening particularly if surrounded by a fitting?*
Every hole in the deck shall be considered part of the openings (including holes where the ropes pass through)
4. *Does a hatch have to have a practical use, i.e access to a fitting equipment etc.?*
**This last question is to stop use of hatches purely to lighten deck.
If we understand well, rules are open; hence, if it the use of the hatch is not limited in the rules, it should not have a practical use.
An option to limit the use of hatches to lighten the deck could be to specify the number of allowed hatches**

25.03.2023 Deck openings to 2.4mR checked based on averaged dimensions as follows:

- ❖ Cockpit = 0.483m²
- ❖ Mast = 0.009m²
- ❖ Rudder = 0.038m²
- ❖ Other = 0.002m² (shrouds, drains etc)
- ❖ TOTAL = 0.532m²
- ❖ RULE = 0.7m² MAXIMUM

AD Sail Area

14.12.2022 2.4mR class rules do not include foot median controls, sail area is based on maintriangle and foretriangle dimensions only with foot extensions not considered in the rules. 2.4 NOD class rule G.3.4 includes mainsail foot median of 4900mm, there is no headsail foot median.

HEADSAIL

- ❖ Headsail foot median for standard headsails varies from 3760mm to 3785mm.
- ❖ Headsail foot median for Quantum medium headsail is 4125mm with 230mm luff extension.
- ❖ Headsail foot median for Quantum heavy headsail is 3910mm.

MAINSAIL

- ❖ Mainsail luff extension for Quantum mainsail is 190mm.

KEEPING EXISTING SAILS COMPETITIVE

Do we need to introduce foot median controls as follows to keep existing sails competitive? One set of sails should be available for all events.

FOOT MEDIAN	2.4mR	2.4 NOD
Headsail	I x 1.02 (proposed)	3825mm (proposed)
Mainsail	P x 1.054 (proposed)	4900mm (existing)

14.12.2022 Peter Russell to follow-up with World Sailing regarding 2.4mR interpretation options – (1) introduce foot median controls OR (2) introduce tack limit controls? TC to check proposed 2.4 NOD headsail foot median class rule.

18.01.2023 2.4mR Sail Area submission to World Sailing and 2.4 NOD headsail foot median submission issued by Peter Russell. Stellan Berlin noted requirement for 2.4mR World Council approval of proposed rule changes required prior to WS submission/rule amendment. Rikard Bjurstrom noted both foot median and tack controls recommended. 110% and 95% headsail to be considered. Peter Russell to redraft submissions as advice to website/NCAs only of intended rule proposal to address «sail area not in the spirit of the rules». Bruce Millar noted that in WC races there was no significant speed difference with luff increase.

22.02.2023 Peter Russell to redraft class rule amendments as advice to website/NCAs of pending 2.4mR TC submission to next eAGM. Keith Gordon noted option for event NORs to amend class rules to add foot median controls.

30.08.2023 Bruce Millar forwarded advice from Quantum (Carter Cameron) regarding headsail design as follows:

A few years ago, when Mark Reynolds was working with Dee Smith and Tony, they designed the jibs to match the new commonly used 4.190m headstay length that almost all 2.4mR sailors in the US now use. Since then, and looking back into the Quantum records, there have been 87 jibs sold since January 1, 2018. These are all jibs sold by us, which is our Light-Medium and Medium-Heavy designs, all dacron or laminate. The measurement for the foot median on our LM jib is 3913mm, and is 3855mm on the MH jib. What concerns me is that we have been building these jibs for a number of years, and neither of them will comply with the new 3825mm foot median rule and be made obsolete.

Please be aware that these jibs are not the extended Tricky Foot jibs that were built for Dee. These are the jibs that we have sold for the Norlin OD class and have complied with the Norlin OD rules since they were designed. I think it would be safe to say that at least 80% of members of the US 2.4mR class use one of these 2 jibs.

31.08.2023 Peter Russell noted that the extensive measurements were undertaken but the samples did not include Quantum headsails to 4190mm forestay length. Rikard Bjurstrom noted Neb sails designed to 4130mm forestay length. Bruce Millar to organise foot median check measurements to assist with finalising the ICA World Council submission.

26.09.2023 Bruce Millar advised results of Quantum headsail foot median measurement checks as follows:

Quantum Sails checked:

3882 mm LJ-1 Dacron

3858 mm LJ-1 Mylar

3870 mm LJ-1 Mylar (New)

3891 mm LJ-1 Dacron

3882mm LJ-1 Mylar

3867 mm LJ-1 Mylar

3882 mm LJ-1 Mylar

3889 mm LJ-1 Mylar (New)

3832 mm MH-1 Dacron

3840 mm MH-1 Dacron (New)

3894 mm Dacron (New)

Range 3832mm to 3894mm

28.09.2023 The TC reviewed Quantum headsail measurements - the headsail foot median for standard headsails varies from 3832mm to 3894mm based on a typical 4190mm forestay length. The proposed headsail foot median is increased to 3900mm to keep existing sail designs class rule compliant. The option of "grandfathering" sails with a foot median greater than 3825mm was not supported.

To keep existing sails designs competitive, and sail designs to the spirit of the class rules, the following class rule changes are proposed.

Add foot median dimension controls as follows:

FOOT MEDIAN	2.4mR	2.4 NOD
Headsail	I x 1.04 (proposed)	3900mm (proposed)
Mainsail	P x 1.054 (proposed)	4900mm (existing)

Add tack controls as follows:

MAINSAIL

The tack point of the sail shall not be set below the upper edge of the mast lower limit mark.

HEADSAIL

One cringle / tie attachment point is permitted at the tack point of the sail.

AE eAGM TC Documents

28.09.2023 TC reviewed eAGM documents prepared by Peter Russell as follows:

- ❖ eAGM report to be completed with final sail area proposal and WS hook terminal interpretation
- ❖ 2.4 & 2.4 NOD sail area proposal – foot median to be amended to headsail foot median maximum 3900mm
- ❖ 2.4mR and 2.4NOD sail numbers proposal – plaque numbers approved
- ❖ 2.4mR headsail proposal – RRS 50.4 approved
- ❖ 2.4 NOD class certification proposal – spar change heading to be amended to spar certification

01.11.2023 TC eAGM 2023 documents issued to EC on 9 October 2023 as follows:

- ❖ eAGM report 2023
- ❖ 2.4mR & 2.4 NOD sail area proposal – foot median
- ❖ 2.4mR and 2.4NOD sail numbers proposal – plaque numbers
- ❖ 2.4mR headsail proposal – RRS 50.4
- ❖ 2.4 NOD certification proposal – spar certification

16.11.2023 eAGMTC postponed so eAGM 2023 documents supplemented as follows

- ❖ 2.4 & 2.4 NOD pumps proposal – electric pumps

AF Electric Pumps

01.11.2023 Bruce Millar noted hand pump capacity varies with pump model and hose diameter. TC confirmed 0.5l/stroke requirement for hand pumps. TC noted that pumps are critical to sailor safety and enjoyment. TC noted that some sailors are not able to use hand pumps. TC agreed that one or more electronic pumps should be permitted. Peter Russell to prepare sailor advice for 2.4mR website.