

## Technical Committee Update January 2018

Greetings from Dave McNabb project manager for the Technical Committee (TC) of the International N17 Class Association. You can reach me at [measurement@nacra17.org](mailto:measurement@nacra17.org). Other Technical Committee members include athletes Laura Marimon, Moana Vaireaux, Thomas Zajak and class International Measurers Chris Henderson, Carla Schieffer, Leo Sanchez and others including Murray Jones World Sailing Equipment Committee and Peter Vink of Nacra Sailing. Please see the following update of our work together this past fall and our plans for 2018.

### *Committee Purpose:*

Protect & Strategically Evolve the Olympic Mixed Multihull - Nacra17

### Athlete question and answer service.

- Dave McNabb project manager of the International N17 Class Association Technical Committee has taken over the email address [measurement@nacra17.org](mailto:measurement@nacra17.org) where questions may be directed.
- Arrangements will be made to post rule questions and answers and any class rule interpretations publicly as soon as possible after each answer.
- When submitting your questions, please demonstrate that you have informed yourself about the relevant issue and rules you are questioning and provide necessary background include hyperlinks to material that supports your own interpretation, when submitting your question.
- Class rules questions and answers generally require the involvement of Nacra Sailing and the Technical Committee. Currently considering answers to questions including interpretation of:
  - o C.10.5(a) forestay control
  - o C.7 HULL C.7.3 REPAIR (c) Replacement of non-skid 'pro-grip'
  - o C.6.1(a)(ii) and C.7.1(a) Is non-skid tape allowed around the front of the forward beam? Is non-skid tape ever adhesive tape?
  - o C.10.1 (c) Is a spinlock PXR substantially the same design and function of supplied cleats and blocks.

### Technical Committee Reviews in process.

- Received November 2017-*Damaged bottom Bearing*- one athlete reports cracked bottom bearing cassette around screw holes and active bottom bearing binding or seizing in use. Athlete indicates some other teams have same issue. No other independent reports. Issue referred to Nacra Sailing for investigation. Initial response from Nacra Sailing indicates possible overtightening of screws fastening cassette to hull. Nacra Sailing guidance regarding seized bearing will be for athletes to protect bottom bearing cassette from intrusion by sand etc. Nacra Sailing is testing cracked bearing issue with other teams and will report back to Technical Committee. Will ask for Nacra Sailing to target for January 2018 final response.
- Received December 2017- *Starboard lower Gudgeon connection to Rudder Stock* disconnecting when in use. One athlete reports issue which is second occurrence while training. Initially referred and reported to Nacra Sailing earlier. March 30

- Received October 2017- *Flipped (Upside down)Traveler Block and cleat*. Suggestion from athlete. Being reviewed and determine if this is a matter of rules interpretation or not. It appears from review that it may be practical to flip one of the mainsheet and traveler blocks, although not both. Target March 30.
- Initially received from World Council October 2017- *Range of Mast Rake* - being reviewed actively by Nacra Sailing. May be related to a new required minimum beam deflection of 10mm and traveler and forestay control. Target March 30.
- Received October 2017 from World Council- *strengthening of the Rose Joint*. Following with Nacra Sailing by March 30th.
- Received October 2017 from World Council- *Etch Markings into Rudder adjustment* (make & apply stickers) for common measurements across the fleet. Following with Nacra Sailing for March 30 target resolution.
- Received September 2017 from World Council -*aero fitting for shrouds and trapezes, mast*. March 30 Nacra Sailing.
- Received September 2017 from World Council- *foil re-coating after class legal repair*. Following with Nacra Sailing for confirmation of possible wide access to coating product. March 30 target date resolution.
- December 2017 Technical Committee asked Nacra Sailing to *update its building specification lists* for rigging and parts included in the class rules. Target March 30.
- December 2017- *reviewing and developing plan for Equipment Inspection at major class events and World Sailing organized events*. In particular a plan will need to be developed to inspect compliance of platform geometry with assembled platform in use. It is our intention to arrange for new templates to check compliance of foils. Dave McNabb is investigating with and seeking advice from Class International Measurers and other Technical Committee members including athletes, Nacra Sailing and World Sailing technical for discussion with Technical Committee and recommendation to class. Supporting event Equipment Regulations, event Equipment Inspection Instructions and forms under review. Target February 15.

## Equipment Inspection

- Full Equipment Inspection planned for 2018 Princesa Sofia Palma Regatta

Timing is right for the first 2018 full inspection of boats at the Palma event. Plan on inspections all day March 30 and March 31 with remaining boats morning of April 1. It is our intention to request changes to the NOR for N17's to implement our plans for full event Equipment Inspection as necessary.

## Technical Committee review of World Sailing Investigation Report N17 Incident

- Technical Committee reviewed the report and its recommendations in response to an athlete losing fingers on one hand. The traveler sheet was wrapped around the hand on which the fingers were lost.
- World Sailing Director of Technical and Offshore sent the report to the class with the following comments: *"I would urge the class to reconsider in light of the report, or at least consult with its members based on the recommendations. I would then have peace of mind that the class World Council is aware of the recommendations when voting on the matters"*.
- World Sailing indicated in discussion with McNabb that from its perspective the role of the class Technical Committee is related to safety of the equipment when considering the report, while athlete safety training etc. and field of play safety during racing and practicing is more of a race management responsibility for the class to consider and act on with athletes, coaches and event organizing authorities.
- Nacra Sailing comments that it prepared for the September 2017 Extraordinary General Meeting confirmed its safety concerns with certain equipment, via its response to special resolutions #1 3:1 traveler option, #4 additional large 4<sup>th</sup> foot strap, #11 minimum rope diameter of 6mm for Main, traveler and spin sheets. For information, Nacra Sailing delivers boats with and recommends a continuous 8mm Main and Traveler sheet. Nacra Sailing confirms that wrapping ropes around hands and fingers is dangerous. Nacra Sailing advocates for a change of athlete habits as necessary.
- TC member feedback has not changed materially from its advice to the Class via recommendations prepared for the Extraordinary General Meeting. On the issue of minimum rope diameters the majority of Technical Committee feedback for the Extraordinary General Meeting special resolutions, confirmed apparent athlete preference to self regulate minimum rope diameters. On the issue of wrapping ropes around hands at least one Technical Committee member suggests that this practice is used by some athletes just to help keep themselves on the boat, rather than in response to alleged high load on traveller sheet. No athletes preferred a 3:1 traveler although one was not opposed to introducing this as an option. One athlete reconfirmed concerns about safety if a 3:1 traveler sheet option adds more rope outside or on the aft beam.
- Unreconciled in this review of the report, are the comments of Nacra Sailing about a minimum 8mm diameter for the main and traveler sheet included in its response to proposed Extraordinary General Meeting special resolutions, that by extension, were not supported ultimately in voting at the Extraordinary General Meeting. 8mm sheets are supplied with the boat.
- Also unreconciled is the apparent preference of the athletes, Technical Committee and class for self regulation of minimum rope diameters, with the general practice of World Sailing classes having minimum rope diameters in class rules. Athlete feedback generally favours self regulation of minimum rope diameters. Athletes have complete responsibility for risk.

## Technical Committee Actions and Recommendations in response to the World Sailing Investigation Report N17 Incident

The Technical Committee completed its review of the WS Investigation Report and its recommendations as it pertains to equipment and is taking the following actions. Athlete training and field of play safety are left for class executive to address.

- Technical Committee advocates the point of view of Nacra Sailing and World Sailing that wrapping ropes around hands is dangerous and individual athlete habits need to change as necessary. Responds to report recommendation 8(a).
- The Technical Committee asked Nacra Sailing to update its building specification lists for rigging and parts now included in the class rules. It appears some of the items on the list may be out of date and in need refreshing. The Technical Committee will consider the Nacra Sailing submission and make recommendations to update class rules as necessary. Responds to report recommendation 8(b).
- The Technical Committee will explicitly consider safe loading in addition to general function of (non-supplied) equipment which is substituted or proposed to be substituted for supplied equipment as rules permit. Responds to WS rec 8(b).
- The investigation report notes that there are gloves very similar to the gloves used by Olympic sailors that have an industry cut proof rating sufficient to protect from knife edges. In [Appendix C](#) of the report, there is a review of commercially available cut proof gloves, including the preferences of these glove from sailors who tested them. Nacra 17 sailors should investigate their gloves, and upgrade to the cut proof versions if they so choose.
- The Technical Committee recommends the class consider the World Sailing report recommendations 8(d)(e) & (f) and the email request from World Sailing for the class to arrange sharing of report with class members and to ensure those members who voted at the last Extraordinary General Meeting are now informed of the report recommendations.
- Technical Committee recommends that class also consider field of play safety and awareness protocols and procedures to protect others including race committees, photographers, and spectators at events, particularly if fast racing rules will be adopted. Others will not have experienced the speed and agility of the boat.

### [World Sailing Investigation Report Recommendations](#)

## N17 World Council Work List of items actioned by Technical Committee

### Accepted by Nacra Sailing

- Strengthen Rose Joint- Nacra Sailing accepts this item needs attention and it will communicate directly with boat owners with a target to resolve this by the 2018 Sofia Princesa Palma regatta.
- Etch Markings into Rudder adjustment for common markings across the fleet. Nacra Sailing suggests it will arrange to provide stickers with desired markings with a target to resolve this with boat owners by the 2018 Sofia Princesa Palma regatta.

- Aero fittings for Shrouds and Trapeze- Nacra Sailing will make these available to coincide with a necessary amendment to the related class rule by the 2018 Sofia Princesa Palma regatta.

Rejected by Nacra Sailing or requires further investigation or review

- Increase range of daggerboard raking by shortening aft edge of top bearing (see result of class rule change below)
- Remove or remake daggerboard stopper into a small diameter to allow trailing edge deeper (or explain via blog post)
- Use metallic bike pieces to fix rudders on the cassette- all plastic ones are breaking
- Allow aft plastic bushes to be a larger diameter to help to replicate rudder rake consistently
- Build bottom bearings to match bottom of boat to minimize drag
- Tooth rack instead of cleat for boards down or some other fixture

Class Rules approved by vote at the November 2017 Extraordinary General Meeting

- A boat shall not set the gennaker when sailing on a leg to a windward mark from a leeward mark
- Sail numbers and identification modernized
- Restrict Adhesive tape to above the waterline
- Two bolt head voids created by joining the rudder to the elevator may be filled and faired
- A void between the rudder and the elevator may be filled and faired.
- Four foot straps may be fitted to each hull

Class Rules Rejected by vote at the November 2017 Extraordinary General Meeting

- 3:1 Traveler System
- Open adjustment on daggerboards
- Speed device
- Minimum rope diameters

[Evolving the one design- Remaining N17 World Council work list items not actioned by Technical Committee.](#)

Advice for next steps is requested from Executive Committee for evolving the one design, since Technical Committee is now focussed on its 2018 operations, initiatives and interventions in support of the 2018 competition season. Remaining World Council list items not actioned by Technical Committee are to be considered by Nacra Sailing individually or as a package to Evolve the one design.

- Have Nacra sailing distribute ~ 10 different, but not class legal sets of bearings, 5 at increased toe out, 5 at decreased toe out, to large winter training groups for feedback – very clearly different color etc. to make obvious
- Complete Redesign of gudgeons and rudder case to
  - Move inwards
  - Make adjustable
  - Save Weight
  - Decrease windage of tiller bar (stop hitting feet)
  - Improve usability
- Built test mast with sensors to measure actual loads versus calculated loads
- Foils, Foil Repainting and filling At factory? At permitted vendors? By sailors?

- Brolga brand adjusters, they permit tool free forestay and sidestays  
Allow 2<sup>nd</sup> tiller extension (like 49er) for easier maneuvers – Class Rule
- Reduce drag via dieform standing rigging - sailors don't want it due to increased health risk on impact and increased chance of breaking.

#### Daggerboards, Bearings and Rake of Boards

- Sell class legal quiver of bearings, each color-coded, with incremental changes to be toe in/out. (5 paired sets at +2 degrees, + 1 degree, same (as today), -1 degree, -2 degrees)
- Toe Out of rudders adjustable using screw thread system rather than holes through elastomer joint
- Increase range of rudder adjustment slider so all teams have full design range, without being limited by tolerances (included in overall redesign request)
- Adopt system of active rudder raking (included in overall redesign request)

#### Rudder Gudgeon and Rudder Housing – By overall redesign

Alter lower gudgeon to remove drag

- Alter both gudgeons to reduce play in nylon bearing – already in process
- Alter both gudgeons to reduce weight
- Reduce gudgeons to a 4-fixing layout
- Move pivot point inward, by moving gudgeons over one hole, or via other changes, to reduce drag of rudder housing and to improve safety by having rudders more inboard.
- Angle tiller arms inward to reduce hitting of skippers foot
- Angle tiller arms lower to reduce drag of tiller bar
- Foam fittings on the rudder cassettes to have smooth angles or move all the cassette and make sure is not on the water when sailing
- Fit correct length fastenings with plain shank through the shear zone.

#### Jib and main

Recut jib to be flatter

Recut jib to be smaller – increase size of jib via roach

Increase depth of jib by improving way battens sit in light air

Change to soft jib battens with quick tension system

Use an adjustable main batten system (like the 49er)

#### Gennaker Upwind

Increase spec of tack line and halyard blocks

Stronger sail cloth for gennaker

Stronger mast for additional compression and loads

Investigate furler system

Investigate cleat for sheet

#### Foils, Foil Repainting and filling

Test higher aspect ratio elevator

Introduce minimum size on trailing edge of foils so excuse of sanding cannot be used to make a fine edge – Class Rule

Aero Package and Electronics

Ahead and Behind of rear beam (cheap and easy)

Aero spinnaker bag

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*“Nacra17 is a strict manufacturer class one-design with safe, fair, & exciting competition; excellent quality, & tight tolerances; resulting in a boat worthy of being an Olympic class.”*