

Contents

1	Introduction	2
2	Language	2
3	Reference frames and units	3
4	Component limits and modifications	4
5	Measurement	10
6	Interpretation and amendment	12
7	Non-compliance with the Class Rules	15
8	Meteorological and oceanographic data	16
9	Shrouding	16
10	Reconnaissance	17
11	Definitions	23
12	Agreement	37

1 Introduction

- 1.1 This document, the **AC Technical Regulations**, defines rules that govern **yachts** sailed by **Competitors** in the 37th America's Cup. It also includes rules relating to shrouding, **Competitors'** chase boats, weather collection and reconnaissance.
- 1.2 The **AC Technical Regulations** shall be read and interpreted in conjunction with the **AC75 Class Rule** and **AC40 Class Rule**.
- 1.3 Rules that classify or provide interpretation within the **AC Technical Regulations**, for instance the "Language", "Reference frames and units" and "Definitions" sections, apply to all documents that comprise the **Class Rules**.
- 1.4 **Competitors' yachts** shall comply with the **AC Technical Regulations** when racing, and at other times as required by the **Class Rules** and the **Protocol**.

2 Language

- 2.1 The official language of the **Class Rules** is English.
- 2.2 Within the **Class Rules**, the word "Rule" is a reference to a rule of the **Class Rules**, and unless specified otherwise is a reference to a rule within the same document.
- 2.3 Where words or phrases are printed in bold type their meaning is defined in Rule 11 of the **AC Technical Regulations**. Bold terms may be used in modified grammatical forms, in which case any modification to the term relates to a corresponding modification to the definition.
- 2.4 In some document viewers, the definition of terms in bold may be seen as a tooltip. Although these tooltips are intended to provide the correct and full definitions, they should not be relied upon; the text printed in Rule 11 of the **AC Technical Regulations** is the only authoritative source.
- 2.5 The interpretation of words not defined in bold shall be made with reference to The Oxford English Dictionary, as it exists online at www.oed.com (or such later official website of the Oxford English Dictionary). In interpretation, the **Rules Committee** shall determine the most appropriate definition of a word within the Oxford English Dictionary, or if no appropriate definition is found, from another authoritative source.
- 2.6 The words "can" and "may" are permissive, but the permission is restricted when followed by the words "not", "only" or similar. The words "will", "must", and "shall" are mandatory.
- 2.7 The word "or" is used as an "inclusive or", meaning the same as "and/or", except where it is clearly an "exclusive or" from the grammar or context, such as when:
 - (a) it is preceded by the word "either"; or
 - (b) the options separated by the "or" are logically exclusive.
- 2.8 Where the word "significant" is used, it means "non-negligible", or "sufficiently great or important to be consequential or influential". As an exception, the phrase "significant figure" has its usual mathematical meaning.
- 2.9 The phrase "for the avoidance of doubt" indicates that the subject that follows is already controlled by a more general Rule, but the specific Rule is included to remove any potential uncertainty in interpretation.

3 Reference frames and units

- 3.1 The Measurement Waterline Plane, **MWP**, is defined as the horizontal reference plane of the **yacht**.
- 3.2 The Longitudinal Centre Plane, **LCP**, is defined as a vertical reference plane, orthogonal to **MWP**.
- 3.3 The Transom Reference Plane, **TRP**, is defined as the vertical reference plane orthogonal to **MWP** and **LCP**.
- 3.4 The reference planes **MWP**, **LCP** and **TRP** are fixed to the **yacht**, translating and rotating as the **yacht** moves in space.
- 3.5 Except where otherwise specified, terms such as “above”, “below”, “up”, “down”, “forward” and “aft” refer to directions or relative positions aligned to the xyz-axes in the **yacht**-fixed reference frame, where:
- (a) the origin is at the intersection of **TRP**, **LCP** and **MWP**;
 - (b) *x* is the **longitudinal** axis, positive forward;
 - (c) *y* is the **transverse** axis, positive to port;
 - (d) *z* is the vertical axis, positive up.
- 3.6 The **mast** and **mainsail** shall be measured in a **mast**-fixed reference frame, where:
- (a) the origin is at **MRP**;
 - (b) *u* is an axis perpendicular to the shear web of the **mast tube**, positive towards the front of the **yacht**;
 - (c) *v* is an axis perpendicular to *u* and *w*, positive towards port; and
 - (d) *w* is an axis parallel to the intersection of the shear web of the **mast tube** with the **mast centre plane**, positive up.
- 3.7 The following tolerances shall be applied to all dimensions specified in the **Class Rules**:
- (a) where a measurement is required to be a specific value:
 - (i) where decimal places for a unit are given, the measurement shall be accurate to the least significant figure indicated. For example, if a Rule states that a length must be 5.0 m, that length must be at least 4.95 m and less than 5.05 m;
 - (ii) where decimal places for a unit are not given, the measurement shall be accurate to within 1% of the figure indicated. For example, if a Rule states that a component must weigh 1000 kg, that component must weigh between 990 kg and 1010 kg inclusive; and
 - (b) where a measurement is required to be “at least”, “at most”, “no less than”, “no greater than”, “a minimum”, “a maximum”, “between”, “within a range”, or other similar wording, no tolerance beyond that limit or outside that range is permitted, but the permitted measurement is inclusive of the limit value. For example, if a Rule states that a length must be no more than 5 m, that length must be no more than 5.000000 m.

4 Component limits and modifications

4.1 Key components of **AC75 Class Yachts** and **LEQ12 yachts** are restricted in quantity and degree of modification. Any listed component that serves or partly serves the purpose of a listed component shall be counted, where:

(a) a component **launched** on an **AC75 Class Yacht** or a **surrogate yacht** shall be treated as an **AC75 Class Yacht** component; and

(b) a component **launched** on an **LEQ12 yacht** shall be treated as an **LEQ12 yacht** component.

4.2 As an exception to Rule 4.1, unmodified **AC40 Class Yacht** supplied components are not counted in the quantity limits imposed by these Rules if they are installed on an unmodified **AC40 Class Yacht hull**. However, if:

(a) an **AC40 Class Yacht** supplied component is modified outside the scope of any modifications permitted in the **AC40 Class Rule**; or

(b) installed on any **yacht** except an unmodified **AC40 Class Yacht hull**;

and **launched**, it is then treated as a new **LEQ12 yacht** component.

4.3 For an **AC75 Class Yacht**, the components in the table below are restricted in quantity and degree of modification.

Component	Legacy quantity	Legacy immutable portion	New quantity	New immutable portion	Total quantity
Hull surfaces	1	87.5% area*	1	87.5% area	2
Foil arm stocks	4	100% mass	4	100% mass	4
Foil wings	2	100% mass	3†	80% mass	5
Foil flaps	2	100% mass	5‡	80% mass	7
Rudders	2	80% mass	2	80% mass	4
Mast tubes	1	See Rule 4.11	2	80% mass	3
Mainsail skins	8	85% area	12	85% area	20
Jib skins	10	85% area	15	85% area	25

*See Rule 4.8. †See Rule 4.9. ‡See Rule 4.10.

4.4 For an **LEQ12 yacht**, all components **launched** after 17th March 2021 shall be counted in the applicable limits. The components in the table below are restricted in quantity and degree of modification.

Component	New quantity	New immutable portion
Hull surfaces	1	87.5% area
Foil arm stocks	2	80% mass
Foil wings	4	80% mass
Foil flaps	4	80% mass
Rudders	1	80% mass
Mast tubes	1	80% mass
Mainsail skins	8	85% area
Jib skins	10	85% area

- 4.5 The values in the column “Legacy quantity” of Rule 4.3 are the maximum number of legacy components that a **Competitor** may **launch**. A legacy component:
- (a) is a component that was **launched** and declared by a Competitor of **AC36**, which need not be the same **Competitor** that is using it as a legacy component in **AC37**;
 - (b) in the case of a **foil flap**, is a pair of **AC36** foil flaps, since they were defined as separate items for each side of a **foil wing** in **AC36**;
 - (c) except for a **foil arm stock**, must have a Version A for **AC37** that exactly matches a configuration in which that component was **launched** during **AC36**, where:
 - (i) such configuration need not be the configuration in which that component was first **launched** during **AC36**, nor the final configuration of that component in **AC36**; and
 - (ii) the **Competitor launching** a legacy component in **AC37** must provide a declaration to the **Measurement Committee** that the declared configuration matches an **AC36** configuration. That declaration must include the date that the specific configuration was **launched** during **AC36**, and the relevant documentation such as IGES files or drawings supplied to the **AC36** Measurement Committee at that time. If the component has transferred ownership, this declaration must be supported by the **AC36** Competitor that originally launched the component; and
 - (d) in the case of a **foil arm stock**, must have a Version A for **AC37** that is an **AC36 foil arm stock** modified to match the **AC37 foil arm stock** specification detailed in the **foil arm** section of the **AC75 Class Rule**; and
 - (e) once declared in **AC37** in accordance with Rule 4.21, is treated in the same way as a new **AC37** component in terms of change and repair allowances described in this Rule.
- 4.6 The values in the column “New quantity” of Rules 4.3 and 4.4 are the maximum number of new components that a **Competitor** may **launch**. A new component need not be newly built; it could be a modified or unmodified component that was previously declared in **AC36** or **AC37** if that component cannot be declared as a legacy component, or if a **Competitor** chooses not to declare it as a legacy component.
- 4.7 The values in the column “Total quantity” of Rule 4.3 are the maximum number of components, whether new or legacy, that a **Competitor** may **launch**.
- 4.8 The **hull lower surface** of a legacy **hull** cannot be modified; changes to the **hull surface** of a legacy **hull** shall be confined to the **deck**.
- 4.9 The second and third new **AC75 Class Yacht foil wings** declared by a **Competitor** must have an identical Version A design to their first declared new **AC75 Class Yacht foil wing**. Those second and third new **foil wings** must also retain the same immutable portion as the first declared new **foil wing** throughout **AC37**.
- 4.10 The five new **AC75 Class Yacht foil flaps** shall have between them a maximum of two distinct Version A designs, and the new **foil flaps** corresponding each of those two Version A designs shall retain the same immutable portions as the first declared of each design throughout **AC37**.
- 4.11 Legacy **mast tubes** shall only be modified from their **AC37** Version A of the component within:
- (a) the **mast lower zone**; and
 - (b) additional regions that may be defined in the **mast** specification.

- 4.12 **New Competitors** may substitute up to 2 legacy **mainsail skins** and 5 legacy **jib skins** for equivalent replicas of legacy **sail skins**, provided that:
- (a) the **New Competitor** owns a legacy **hull** with **AC36** sail number 1, 2, 3 or 4 (the “paired **hull**”);
 - (b) each new replica **sail skin** has an identical blank design to a version of a **sail skin** that was:
 - (i) **launched** by a **Competitor** of **AC36**; and
 - (ii) first hoisted on a **mast** stepped on the paired **hull**;
 - (c) each replica **skin** is only ever hoisted on a **mast** stepped on the paired **hull**.
- 4.13 The following new **AC75 Class Yacht** components may not be installed on a legacy **AC75 Class Yacht hull**:
- (a) **foil wings**;
 - (b) **foil flaps**;
 - (c) **rudders**;
 - (d) **mainsail skins**; and
 - (e) **jib skins**.
- 4.14 A component shall be counted in the applicable limits regardless of whether that component satisfies the specific Rules controlling its parameters in the **Class Rules**. In the event that a test component cannot readily be identified as a specific component type, a classification of type and quantity shall be determined by the **Rules Committee** by following the interpretation process detailed in Rule 6.5, where:
- (a) components shall be classified according to resemblance in form or function to **AC75 Class Yacht** components, whatever their scale;
 - (b) test components shall be counted even if they only resemble one aspect of an **AC75 Class Yacht** component, without matching the overall functionality; and
 - (c) in an extreme case, a single test component may be ruled as comprising multiple declared components if it is effectively serving the purpose of multiple components, depending on its method of installation in a **yacht**. For example, a double-ended **rudder** that could be installed either way up, with only one half of the component tested at a time, could be ruled as two declared **rudders**. However, a conventional **rudder** that could be installed at different extensions, or an asymmetric **foil wing** with different design concepts on either side of its connection to a **foil arm** shall be treated as a single component.
- 4.15 **Competitors** must track listed components and versions of those components in a spreadsheet with the following columns:
- (a) ID: a number indicating the identity of a physical component;
 - (b) Version: a letter (or letters) indicating the version letter the component;
 - (c) SHA: the **SHA** of the component’s **blueprint**;
 - (d) Mass: the mass of the component, for components whose change percentage is controlled by mass;
 - (e) Area: the controlled surface area of the component, for components whose change percentage is controlled by area;
 - (f) Comment: text briefly describing the component or type of modification.
- Each row shall represent a version of a specific component. The rows shall be grouped by the component ID, where the first row for each component must be the declared “Version A” of that component.

- 4.16 The ID for a new **AC75 Class Yacht** component shall be distinct from any ID of the same **AC75 Class Yacht** component type **launched** by the same **Competitor** in **AC36**, such that any component from either **AC36** or **AC37** can be uniquely identified by the combination of the **Competitor** that launched it and the component's ID.
- 4.17 A new **AC75 Class Yacht hull's** ID or "hull number" shall be allocated by the **Measurement Committee** when it is **launched**. **Competitors** shall inform the **Measurement Committee** when this occurs, and hull numbers will be allocated sequentially, starting with 9, except that culturally objectionable numbers may be skipped at the discretion of the **Measurement Committee**.
- 4.18 Hull numbers for **AC40 Class Yachts** shall be allocated sequentially by the manufacturer, starting at 1.
- 4.19 "Version A" of a component is the version from which changes to that component are compared and measured. It may be the configuration in which the component was **launched**, or some other hypothetical configuration.
- 4.20 Version A of new **AC75 Class Yacht** components must comply with the relevant rules for that component type.
- 4.21 Except when restoring a component to a previously declared version, a new version of a component must be declared:
- (a) for components whose change percentage is controlled by mass, whenever any change is made to that component, even if there are no changes to its **blueprint**; and
 - (b) for components whose change percentage is controlled by area, whenever that component changes with respect to its **blueprint**.
- 4.22 **Competitors** may declare components and component versions by emailing an updated copy of the Rule 4.15 spreadsheet to the **Measurement Committee**. If a component or version of a component has not previously been declared, it must be declared within 48 hours of the component being **launched**.
- 4.23 For components whose change percentage is controlled by mass, the mass for the first **launched** version of a component must be determined by weighing that component. For other versions, a calculated mass can be declared based on the changes made to a **launched** component, or on a hypothetical configuration, but the **Measurement Committee** may require a component to be weighed at any time.
- 4.24 The material substance of the portion of the component indicated in Rule 4.3 must remain immutable through the life of the component, whereby:
- (a) at least the indicated percentage of the mass or surface area of every version of the component must remain unmodified from version A of the component;
 - (b) a common portion of at least the indicated percentage of the mass or surface area of version A of the component must remain unmodified and must match all declared versions of the component; and
 - (c) if Version A does not represent a physical version of a component, the immutable portion of the component must be referenced to material that would be present if the component was modified to Version A.

4.25 For **hulls, foil wings, foil flaps, rudders** and **mast tubes**:

- (a) the immutable portion of the component may comprise several disjoint regions divided by modified material, but those separate regions must remain in an identical position and orientation with respect to each other through the life of the component;
- (b) the **blueprint** of all versions of the component except Version A must include a surface entity or entities that enclose (for mass) or overlay (for surface area) regions that satisfy Rules 4.24 (a) and 4.24 (b); and
- (c) all **blueprints** for a component must be aligned with respect to these surface entities such that they overlay exactly across all versions.

4.26 For **sail skins**:

- (a) the immutable portion of the component may comprise several disjoint regions divided by modified material, and these regions are not required to be in the same position or orientation with respect to each other through the life of the component; and
- (b) addition of material for repairs or local reinforcement shall not count as replaced area provided the original **sail skin** remains.

Need to re-think this to ensure you can't replace an entire structural sail skin glued on to a thin cloth, but also to allow removal of original corner patches that are chafed.

4.27 As an exception to Rule 4.24, material within a component that has been:

- (a) replaced with identical or equivalent material as part of a repair permitted by Rule 4.28;
- (b) temporarily repaired according to Rule 4.29; or
- (c) modified locally in way of a fitting, or to open, close or change penetrations permitted by the Hull geometry section of the **AC75 Class Rule**

can qualify as an unmodified region.

- 4.28 It is permitted to repair or replace a new or legacy **hull surface, foil arm stock, foil wing, foil flap, rudder** or **mast tube** to restore it to an **AC37** declared configuration, where:
- (a) the material substance need not be the same material as in the declared component, providing that except where modification is permitted, surface geometry is identical and the material specification is equivalent to the satisfaction of the **Measurement Committee**; for example:
 - (i) dry fibre may be substituted for an equivalent pre-preg fibre;
 - (ii) two plies of 150 g/m² may be substituted for one ply of 300 g/m²; or
 - (iii) fibre may be substituted for fibre of a different modulus, provided that there is no significant change in the component's stiffness or behaviour under load.
 - (b) any construction forming part of the repair or replacement is built or prepared only once that component has been taken out of service, and that component is not installed with the yacht afloat again until that repair is complete;
 - (c) the restriction in Rule 4.28 (b) does not apply to the construction of:
 - (i) flat monolithic plate which has a uniform construction across the plate;
 - (ii) flat sandwich panel which has a uniform construction across the panel; or
 - (iii) round tubes of uniform construction and cross-sectional shape,but does apply to any incorporation of those components within a repair;
 - (d) in the case of a repair requiring replacement of more than 1 kg of material, a **Competitor** must inform the **Measurement Committee** when commencing the repair or replacement, and must provide the **Measurement Committee** with documentation they require; and
 - (e) a **Competitor** alone shall decide whether to repair or replace a component, and no evidence of damage is required.
- 4.29 If a **hull, foil arm stock, foil wing, foil flap, rudder** or **mast tube** is unintentionally damaged and a repair or replacement in accordance with Rule 4.28 cannot be completed in time for the **Competitor's** next race, the **Measurement Committee** may permit a temporary repair using alternative materials and construction methods, providing that:
- (a) the repair is no larger than required;
 - (b) the repaired component is no lighter than prior to the damage;
 - (c) the repaired component provides no performance advantage over a repair satisfying Rule 4.28;
 - (d) the outside shape of the repaired component is as close as possible to its shape prior to the damage;
 - (e) after the repair, the **yacht** still satisfies the **Class Rules**; and
 - (f) the temporary repair is replaced by a repair in accordance with Rule 4.28 as soon as possible.

5 Measurement

- 5.1 The **Measurement Committee** may place measurement marks or seals on **yacht** components during construction or upon their completion. These marks or seals may include, but are not limited to, reference screws, punch marks, measurers' signatures, cable ties and stickers, on components or component tooling. **Competitors** shall permit inspections, allow such marks to be placed, and shall not move, remove or alter any such marks or seals without the express consent of the **Measurement Committee**.
- 5.2 **Competitors** shall permit the **Measurement Committee** to:
- (a) interview team members; and
 - (b) require team members to complete affidavits,
- relating to questions from the **Measurement Committee** on design, construction or use of components on the **yacht**.
- 5.3 Except where specified, it is not the responsibility of a **Competitor** to provide categorical proof of compliance with the **Class Rules**. Where proof by inspection or measurement is impractical, the **Measurement Committee** shall rely on interviews, affidavits and reference documentation. However, it always remains the responsibility of a **Competitor** to ensure that their **yacht** complies with the **Class Rules**, including in areas that cannot be easily measured.
- 5.4 Leading up to **events**, the **Measurement Committee** will publish dates of measurement periods, during which **Competitors** may present their **yachts** for measurement. The **Measurement Committee** will inspect the **yachts** for compliance with the **Class Rules**, and **Competitors** shall provide whatever assistance is reasonably requested by the **Measurement Committee** to facilitate this process.
- 5.5 The **Measurement Committee** shall use its own equipment for measuring a **Competitor's yacht**, except that a **Competitor's** equipment may be used at the discretion of the **Measurement Committee** if it is calibrated against the **Measurement Committee's** equipment and sealed to their satisfaction.
- This may need a little more clarity on how mass tolerances will be dealt with on foils, platforms, etc, to deal with measurement scale variations day-to-day.
- 5.6 When weighing components of a **yacht**, **Competitors** shall be permitted to dry any water on the surface of those components and replace wet rigging with equivalent dry rigging. The **Measurement Committee** shall make reasonable allowances for wet sail weights.
- 5.7 Where specific tolerances for component measurement are not given in the **Class Rules**, the **Measurement Committee** may make an allowance for unintended distortion of a component during manufacture when checking the shape of such a component against its **blueprint**.
- 5.8 The **Measurement Committee** shall, at times they choose during **AC37**, make spot checks of compliance with component declarations by requiring a **Competitor** to declare to them what component versions they sailed with on their last sailing day. The **Measurement Committee** may also request, and **Competitors** shall supply, **blueprints** corresponding to those component versions and declared **SHAs**.
- 5.9 Except as otherwise specified, **Competitors** are not required to routinely supply construction drawings of declared components. However, if the **Measurement Committee** have any doubt as to the compliance of a component they may request such drawings, which shall then be supplied by the **Competitor**.
- 5.10 **Competitors** shall inform the **Measurement Committee** immediately if they make any changes or repairs to the **yacht** that could affect her measurement certificate or her compliance with the **Class Rules**.
- 5.11 The **Measurement Committee** reserve the right to re-measure or inspect any aspect of a **yacht** at any time, before or after sailing, and may publish procedures for regular measurement inspections.

- 5.12 A measurement certificate shall be withdrawn if the **Measurement Committee** believe that:
- (a) the **yacht** no longer complies with the **Class Rules**;
 - (b) the certificate was issued in error; or
 - (c) the **yacht** no longer matches the configuration specified in the measurement certificate.
- 5.13 When a measurement period is open:
- (a) if the **Measurement Committee** believes there is ambiguity as to whether an element of a **Competitor's yacht** satisfies the **Class Rules**, they shall seek the advice of the **Rules Committee**. If the ambiguity remains, the **Rules Committee** shall rule confidentially on the compliance or otherwise of the **yacht**, based on the information presented to them by the **Measurement Committee**, after which a measurement certificate may be issued or withheld;
 - (b) if the **Rules Committee** becomes aware of an element of a **Competitor's yacht** that may not satisfy the **Class Rules**, they shall ask the **Measurement Committee** to inspect the element and report to them. The **Rules Committee** shall then rule confidentially on the compliance or otherwise of the **yacht**, after which a measurement certificate may be withdrawn or withheld;
 - (c) decisions on the compliance of a **yacht** made by the **Measurement Committee** and/or the **Rules Committee** may subsequently be changed by the **Measurement Committee** or the **Rules Committee** if new information comes to light, or if they believe the original decision was made in error. Only an interpretation or an amendment to the Rule providing clarification shall provide a **Competitor** with a guarantee of continuing compliance of an ambiguous design element; and
 - (d) if a measurement certificate is withheld from a **Competitor**, the **Measurement Committee** shall explain in full the reasons why the **yacht** does not comply with the **Class Rules**, including the detail of decisions made or advice given by the **Rules Committee**.
- 5.14 During training or racing, **Competitors** shall permit the **Measurement Committee** to install small video cameras onboard their **yachts** to assist the **Measurement Committee** in determining compliance, where:
- (a) the mass of these cameras shall not be included in the measurement mass of the **yacht**;
 - (b) the **Measurement Committee** shall where possible locate the cameras in locations that minimise any increase in aerodynamic drag, providing they are still able to capture the details required; and
 - (c) **Competitors** shall not adjust nor deliberately obstruct the view from these cameras.

6 Interpretation and amendment

- 6.1 These draft **AC Technical Regulations** and the draft **AC75 Class Rule** may be amended at any time by **COR/D** prior to the first official version being published. The **AC Technical Regulations v1.0** and **AC75 Class Rule v2.0** shall be published on 17th February 2022 NZDT.
- 6.2 The **AC75 Class Rule** may be amended:
- (a) at any time by **COR/D** whilst in draft format;
 - (b) at any time by unanimous consent of **Competitors**, either:
 - (i) via the mechanism described in Rules 6.5; or
 - (ii) by another process;
 - (c) at any time by the **Rules Committee**, with the agreement of **COR/D** and the **Regatta Director** (if they have been appointed), for changes relating to:
 - (i) supplied or specified components;
 - (ii) the supplied ultrasonic transmitter specified in the “Foil Wings” section of the **AC75 Class Rule**;
 - (iii) standard pressure relief valves and the supplied high-pressure accumulator specified in the “Hydraulics” section of the **AC75 Class Rule**;
 - (iv) the use of Samsung Knox management software specified in the “Crew information system” section of the **AC75 Class Rule**;
 - (v) safety;
 - (vi) media specifications; or
 - (vii) **event** branding,including their impact on masses and centres of mass controlled by **AC75 Class Rule**. In making any such amendments, the **Rules Committee** shall consider the impact of their proposed changes on all **Competitors**, taking account of the state of their design and construction programmes, so that any burden imposed is commensurate to the need for amendment.
 - (d) by **COR/D** alone for the items listed in Rule 6.2 (c) if the **Rules Committee** has not yet been appointed.
- 6.3 The **AC40 Class Rule** may be amended at any time by the **Defender**.
- 6.4 The **AC Technical Regulations** may be amended:
- (a) according to the same conditions that apply to the **AC75 Class Rule** in Rule 6.2;
 - (b) for Rule 4, “Component limits and modifications”, by **COR/D** at any time; and
 - (c) for Rule 10, “Reconnaissance”, by **COR/D** at any time.
- 6.5 A **Competitor** may submit a Rule Enquiry regarding the **AC75 Class Rule** or **AC Technical Regulations** to the **Rules Committee** in the form of:
- (a) an interpretation request;
 - (b) an amendment proposal, with or without additional commentary;
 - (c) two or more alternative proposals for an amendment; or
 - (d) a combination of the above.

6.6 Requests submitted according to Rule 6.5:

- (a) shall be a Microsoft Word document or compatible format, so that it can be edited easily;
- (b) may include references to relevant paragraph numbers within the **Class Rules**, indicated as “75-X.X”, “40-X.X” or “TR-X.X”, but should not include formal excerpts of those Rules except where used directly in the context of the question;
- (c) shall be in a form that can be directly and immediately forwarded to all **Competitors** without the need for further editing; and
- (d) shall be submitted by email to the **Rules Committee** or if advised, to a specific Rule Enquiry email address.

A mechanism may be implemented whereby these requests are forwarded automatically to **Competitors** as soon as they are received; otherwise, the **Rules Committee** shall forward them as soon as possible. In either case, the email subject line of the forwarded request shall include a sequential Rule Enquiry number.

6.7 The **Rules Committee** can also initiate a Rule Enquiry, providing that it does not reveal a design characteristic that might not have been considered by all **Competitors**.

6.8 When the **Rules Committee** receives a Rule Enquiry:

- (a) The **Rules Committee** shall immediately publish the Enquiry, if not automatically distributed.
- (b) Within 4 **working days**, **Competitors** may reply to the **Rules Committee** to:
 - (i) consent to a draft amendment; or
 - (ii) supply comments on the interpretation and/or amendment proposal; or
 - (iii) propose an alternative amendment wording.
- (c) Within 4 **working days** of the feedback from **Competitors** being due:
 - (i) *If* there is sufficient consent to implement a proposed amendment, *then* the **Rules Committee** shall amend the relevant documents of the **Class Rules**, publish the new version, and mark the Rule Enquiry as closed.
 - (ii) *Else if* the **Rules Committee** consider that there is the possibility that the issue can be resolved by an amendment, *then* they shall propose or revise a draft amendment, this option being preferred to an interpretation.
 - (iii) *Else if* there was no interpretation question as part of Rule Enquiry, the **Rules Committee** shall mark the Rule Enquiry as closed, there being no agreement on a proposed amendment.
 - (iv) *Else if* at least one interpretation draft has previously been circulated and the **Rules Committee**, having reviewed all feedback, is satisfied that the interpretation cannot be improved *then* they shall publish the previously circulated interpretation draft as a final interpretation and mark the Rule Enquiry as closed.
 - (v) *Else* the **Rules Committee** shall propose or revise a draft interpretation response, subject to Rule 6.9.
- (d) If not closed, the process shall then return to step 6.8 (b).

6.9 At the step described by Rule 6.8 (c) (v), if the **Rules Committee**, after considering the feedback from **Competitors**, determine an interpretation request included in the Rule Enquiry to be unreasonably long, or to cover an unreasonably large number or matrix of possible scenarios, they may withdraw the request and request the original **Competitor** to re-submit the Rule Enquiry with an interpretation request that limits the scope of the question to those elements which better clarify ambiguity in the **Class Rules**.

- 6.10 The Rule Enquiry, all **Competitor** responses, and all draft and final responses by the **Rules Committee** shall be published by the **Rules Committee** to the Official Noticeboard (as defined in the **protocol**). **Competitor** responses will not be published until either all responses have been received or the deadline detailed by Rule 6.8 (b) has passed, whichever is earlier. The Rule Enquiry and responses from the **Rules Committee** shall be published as soon as they are issued.
- 6.11 Rule Enquiries and response documents from **Competitors** shall be published in the form in which they are received without any additional information indicating who they are from. **Competitors** may anonymise their submission.
- 6.12 The **Rules Committee** may, at their discretion, shorten any of the times allowed in Rule 6.8, particularly leading up to **events**.
- 6.13 With the agreement of the **Competitor** seeking the amendment or interpretation, the **Rules Committee** may lengthen any of the times allowed in Rule 6.8.
- 6.14 Interpretations shall be based on the following principles:
- (a) interpretations shall consider only the words in the **Class Rules**, not their possible intent;
 - (b) where wording is ambiguous, the most reasonable and natural interpretation of the written words within the context of the whole **Class Rules** shall be taken;
 - (c) if a part of the **Class Rules**, or the understanding of it created by the application of clause 6.14 (b), is found to directly contradict another part, a part that refers to more detail shall take precedence over a part that is more general; and
 - (d) finally, if there remains ambiguity or contradiction as to whether a particular feature is permitted, and that ambiguity or contradiction cannot be resolved by application of the above clauses, an interpretation shall be permissive.
- 6.15 Draft responses from the **Rules Committee** shall not constitute a ruling of any form. Whilst **Competitors** may comment on these drafts, they are inadmissible as evidence of any interpretation of the **Class Rules** unless published as final.
- 6.16 The **Rules Committee** may seek the advice of independent experts, including members of the **Measurement Committee**, when considering an interpretation.
- 6.17 **Competitors** shall not conduct any private correspondence with the **Rules Committee** regarding any Rule, interpretation or amendment. Correspondence shall only be in form described by Rule 6.5, or within a group forum which all **Competitors** are invited to attend.
- 6.18 Advice or opinions on the meaning of a Rule, from a member of the **Measurement Committee** or **Rules Committee**, are not binding except through an interpretation.
- 6.19 Once an interpretation has been issued as final, it cannot be modified without the explicit agreement of all **Competitors**.
- 6.20 Interpretations that relate specifically to wording within the **Class Rules** that has since been amended no longer apply.
- 6.21 Separately to the interpretation and amendment process described in the above rules, **Competitors** may request clarification of the construction or operational requirements of specified or supplied components including **foil arm stocks**, **mast tube** specifications, **supplied rigging** and the **FCS**. Requests for clarification should be made to the **Rules Committee** who, after consultation with the designers of those parts, will issue a clarification notice to all **Competitors**.

7 *Non-compliance with the Class Rules*

This section will include procedures if found to be non-compliant when racing.

8 *Meteorological and oceanographic data*

- 8.1 Except as permitted in the **Protocol**, after the announcement of the Match Venue, **Competitors** shall only collect weather, wind, sea state or sea current instrument data relevant to the Match Venue:
- (a) from wind measuring devices that measure wind within 100 mm of a sensor mounted on any of a **Competitor's yachts**; or
 - (b) from a chase boat that is following a **Competitor's yacht**, limited to two chase boats per **yacht**, which must be the primary chase boats for that **yacht**.
- 8.2 Except for those primary chase boats identified in Rule 8.1 (b), **Competitors'** support boats shall not be fitted with any wind measuring devices.
- 8.3 Primary chase boats identified in Rule 8.1 (b) may only be fitted with wind measuring devices when following their **yacht** and undertaking operations directly related to following their **yacht**, such as travelling between a base and the **yacht** or refuelling. Except with the permission of the **Regatta Director**, such devices must be removed if the boat is being used for any purpose in the Racing Area unrelated to supporting a **yacht**.

9 *Shrouding*

- 9.1 No component or part of the **yacht** shall be covered for the purpose of hiding it from reconnaissance once it has been **launched**, or when it is about to be **launched** (i.e. prepared for being lifted into the water), unless:
- (a) it is not being used for sailing operations on that day; or
 - (b) the item providing cover (the 'cover') is a part of the **yacht** that satisfies the **AC75 Class Rules**, and remains in the same position whilst sailing.
- 9.2 Any temporary cover used for physical or sun protection during sailing operations shall be immediately removed at the request of reconnaissance teams. The **Measurement Committee** may remove the right of a **Competitor** to use any such covers if they believe the covers are being used to hinder the role of reconnaissance units.

10 Reconnaissance

10.1 This section sets out the regulations governing a joint **Competitor** reconnaissance programme, which shall be in place from 17th November 2021 until two months before the first race of the final Preliminary Regatta at the venue of the Match.

10.2 RMP

- (a) Within two weeks of their entry into the 37th America's Cup being accepted, or on 17th November 2021, whichever is later, each **Competitor** shall appoint a team member as their recon representative and notify the **Recon Administrator** of this person. This person shall be a member of all **RMPs** that the Competitor is a part of.
- (b) Any change in a **Competitor's RMP** representative shall be notified to the **Recon Administrator**.
- (c) The **Recon Administrator** may convene and manage meetings of **RMPs**, but shall not be entitled to vote.
- (d) Decisions within **RMPs** shall be made by a majority vote. In the event of a tie, a casting vote shall be given to:
 - (i) the Defender for the **RMP** that follows the Challenger of Record; and
 - (ii) the Challenger of Record for all other **RMPs**.
- (e) Any **Competitor** currently in default of its obligation under Article 20 of the Protocol shall be ineligible to participate in an **RMP**.

10.3 **Recon Unit** appointment

- (a) One **Recon Unit** shall be appointed to follow each **Competitor**, that appointment to occur during the two months before a **Competitor's** first **Sailing Session** (see 'Notification').
- (b) Each **Recon Unit** will comprise two people, of which at least one shall hold any licence required to operate the recon vessel in the operating country.
- (c) It is envisaged that **Recon Unit** personnel shall have expertise in sailing and the America's Cup environment, and that at least one member of the team shall have experience in media content generation. However, the decision on personnel will be solely the responsibility of the relevant **RMP**.
- (d) An **RMP** may ask an **Observed Competitor** for a recommendation of suitable local personnel but shall not be obliged to follow that recommendation.
- (e) Compensation for each **Recon Unit** will be the same for all contracted **Recon Units**, as outlined in Part 12 of these Conditions; other contractual terms will also be identical except as otherwise required by applicable laws. Initial discussions with prospective **Recon Unit** personnel shall be between those prospective personnel and the respective **RMP**. When an agreement is reached, the **RMP** shall inform the **Recon Administrator** of their chosen personnel, who will then confirm the appointment with the recon personnel and make arrangements for payment of their compensation. The **Recon Administrator** shall not refuse any appointment unless a person is not legally permitted to work in the given role, or is determined by the Arbitration Panel to be unsuitable for the role following an application by the **Observed Competitor** or the **Recon Administrator**.
- (f) A **Recon Unit** shall be engaged from one week before the first **Sailing Session** until the termination of the joint reconnaissance programme.
- (g) A **Recon Unit** shall travel with their **Observed Competitor** to any location where they are sailing, including the venue for the Match, except that they shall only travel to preliminary regattas if the **Observed Competitor** is sailing at that venue outside of the period allocated for official practice and racing. Travel and accommodation costs for each **Recon Unit** shall be dealt with in accordance with Part 12 of these Conditions.
- (h) Alternatively, an **RMP** may elect to switch their **Recon Unit** personnel to local personnel at each venue at which their **Observed Competitor** is sailing.

10.4 **Recon Unit** replacement

- (a) An **RMP** may elect to replace a **Recon Unit** at any time, subject to any notice period or other restriction contained in their contract or applicable law. Such notice period is anticipated to be one month but may vary according to applicable law.
- (b) In the event that a **Recon Unit** is to be replaced, the **RMP** shall inform the **Recon Administrator**, who shall make the necessary contractual arrangements.
- (c) An **RMP** shall be required to replace a **Recon Unit** if that **Recon Unit** is no longer able to work in the country that their **Observed Competitor** is sailing.

10.5 Recon vessels

- (a) During any **Sailing Session**, an **Observed Competitor** must make a recon vessel available to their **Recon Unit**, which shall:
 - (i) be at least 9 m long, of a form equivalent to a Protector rib;
 - (ii) have a top speed in flat water of at least 45kts;
 - (iii) provide a windscreen and covered area for at least two people;
 - (iv) be in good working order;
 - (v) be otherwise suitable as a working recon vessel;
 - (vi) be moored at or within five minutes' walk of that **Observed Competitor's** base, and accessible to the **Recon Unit**;
 - (vii) be available for use by the **Recon Unit** at least one day before any **Sailing Session**, and always remain available for that **Sailing Session**.
- (b) An **Observed Competitor** shall make best endeavours to ensure the provided recon vessel is always in service. If the provided vessel is at any time inoperable or out of service, and a suitable replacement boat is not available, the **Recon Unit** shall be entitled to observe from the **Observed Competitor's** primary chase boat.
- (c) An **Observed Competitor** shall either ensure the recon vessel boat is fuelled for a day, or provide the **Recon Unit** with a fuel card or other payment method for purchasing fuel.
- (d) Subject to the relevant **Recon Unit's** operational requirements, an **Observed Competitor** may on occasion place team members, VIPs or media on the provided recon vessel, to accompany the **Recon Unit**, but the boat shall be skippered by the **Recon Unit** who shall make all decisions about the boat's location and schedule. If additional personnel on recon vessels are found to hinder the operational duties of the **Recon Units**, the combination of all **RMPs** can elect to suspend this right.
- (e) Unless agreed otherwise between the **Recon Unit** and the **Observed Competitor**, a **Recon Unit** shall only use the recon vessel for reconnaissance of an **Observed Competitor** whilst sailing, before sailing, or after sailing, or to re-fuel the vessel, etc.

10.6 Notification

- (a) An **Observed Competitor** shall notify their **RMP** and the **Recon Administrator** a minimum of two months before their first **Sailing Session**.
- (b) An **Observed Competitor** shall notify their **RMP** and the **Recon Administrator** a minimum of two months before sailing at a new location (i.e. from a different base).
- (c) It is strictly prohibited for a **Competitor** to sail or tow an **LEQ12 yacht** or an **AC75 Class Yacht**, at any location, without having notified their **RMP** and the **Recon Administrator** as required above.
- (d) Once a **Recon Unit** is appointed, the **Recon Administrator** shall put them in contact with their **Observed Competitor**, who shall arrange access and notification.
- (e) During a **Sailing Session**, a **Competitor** must notify a **Recon Unit** of their intent to launch and/or sail any of their yachts at least 24 hours beforehand and notify them again as soon as possible if that launch or sailing is cancelled. They shall keep the **Recon Unit** informed of the planned shed roll-out and launch time.
- (f) A **Competitor** must notify a **Recon Unit** of planned **Sailing Sessions**, days off and extended non-sailing periods as soon as they are known and notify them again as soon as possible if those plans change.
- (g) Each time a **Competitor** sends an updated component schedule to the Measurement Committee, a copy shall also be sent to their **RMP**, **Recon Unit** and **AC Media**. This component shall indicate component IDs and versions but need not include any descriptions.
- (h) Notification shall be by text or email.

10.7 Access

- (a) A **Competitor** shall provide their **Recon Unit** access to the forecourt from which they launch their yachts in a location that provides an unobstructed view of the yacht (except where obstructed by the yacht's cradle, etc). Such location shall be no more 25m from the usual location of the mast base of the yacht when preparing to launch.
- (b) A **Competitor** shall provide access to the edge of a wharf overlooking the yacht when at the dock, or to the dock itself, no further than 25m from the mast base of the yacht.
- (c) **Recon Units** must abide by the health and safety regulations of the **Observed Competitor**, and may be required move from the nominated locations during crane operations, etc. However, the **Observed Competitor** shall not impose health and safety regulations on their **Recon Unit** that are above and beyond those of the **Observed Competitor's** own team members, and shall provide the **Recon Unit** with the appropriate health and safety training if necessary for them to observe a **yacht** launch.
- (d) Following a sailing day, a Competitor shall provide access to one sailor who sailed on the yacht that day, or a designer who was on the water, for an interview lasting no more than 3 minutes, within 15 minutes of docking. This interview shall be with a:
 - (i) helmsperson at least 25% of the occasions;
 - (ii) foil or aero trimmer, or grinder, on at least 25% of the occasions;
 - (iii) a designer on at least 25% of the occasions.
- (e) On request, a **Competitor** shall provide access to a suitable member of their technical team to provide commentary or explanation on an aspect of another **Competitor's** yacht, a recent interpretation draft, **Class Rules** amendment, or similar.
- (f) **Competitors** shall not be obstructive in answering interview questions, and whilst they are permitted to withhold confidential information, shall provide an informative report on the sailing day.

10.8 Recon equipment

- (a) **AC Media**, in conjunction with the **Recon Administrator**, shall provide to each **Recon Unit** a standard set of recon equipment including cameras, video cameras, gimbals, a hand-held anemometer, laptops and software.
- (b) **Recon Units** shall not use any photo or video equipment for recon except that standard equipment provided, and/or their own personal mobile phones.

10.9 **Recon Unit** duties

- (a) During any **Sailing Session**, a **Recon Unit** shall:
 - (i) Take photos and video of a **Competitor's** yacht on each launch or sailing day during roll-out, whilst sailing, and when lifting-out.
 - (ii) Follow a sailing day on the water, recording the amount of sailing time vs. stoppage and towing time, sails used, approximate wind speeds and sea-state, approximate boat speeds and sailing angles, significant events, crew changes, etc.
 - (iii) Interview a team member following a day's sailing, asking about what was learnt, how the day went, and for feedback on any new components or events observed whilst sailing.
 - (iv) Within six hours of the end of a sailing day, upload all photos and videos recorded to the **Recon File Store**.
 - (v) As soon as possible, compile and collate images, videos and daily summaries for distribution to **Competitors** and **AC Media**. These summaries shall include observations and comments on photos and videos, in addition to some statistics, and shall be uploaded to the **Recon File Store**. The format of the reports may be specified by **AC Media**.
 - (vi) A **Competitor** from a **Recon Unit's RMP** may propose specific areas of interest to focus on, but any information captured by the **Recon Unit** shall be shared equally with all **Competitors** via the **Recon File Store**. A **Recon Unit** shall not provide any photos, video or other data to any **Competitor** except via the **Recon File Store**, but this does not prohibit verbal discussions between a **Competitor** and a **Recon Unit**.
 - (vii) On request from **AC Media**, a **Recon Unit** shall interview a member of their **Observed Competitor's** technical team on specific technical questions, and upload that interview to the **Recon File Store**.

10.10 On-water management

- (a) When following a **Competitor**, a **Recon Unit** in the recon vessel shall not obstruct sailing, and shall always remain at least 50 m from the yacht they are observing.

10.11 **AC Media**

- (a) **AC Media** shall employ a dedicated technical writer with sailing and America's Cup expertise to edit and supplement recon data with technical commentary sourced from:
 - (i) Analysis of information provided by **Recon Units**
 - (ii) New components declarations; and
 - (iii) Interpretation and amendment analysis.
- (b) **AC Media** shall publish edited information supplied by **Recon Units** on a technical area of the Official America's Cup Website and the Official America's Cup Social Media Channels. This will include feature stories, interviews, photos, videos and sailing statistics.
- (c) Stories and interviews provided by **Recon Units** shall be credited on the website with the names of the **Recon Unit** personnel, which is intended to encourage good quality commentary and content from those teams.

10.12 Costs

- (a) The compensation for each member of a **Recon Unit** shall be a:
 - (i) monthly retainer to be agreed by **COR/D**;
 - (ii) an additional contracted rate to be agreed by **COR/D** for any day that falls within a **Sailing Session**.

These costs shall be borne by the **Observed Competitor**. The **Recon Administrator** will calculate and invoice each **Observed Competitor** for the relevant **Recon Unit** costs on a monthly basis.

- (b) It is expected that **Recon Unit** members will, in general, already be based in the location where the **Observed Competitor** will be sailing. As such, when operating at the home base of the **Observed Competitor**, no additional expenses shall be payable to a **Recon Unit**. However, an **RMP** may choose to make their own arrangements to provide accommodation and travel expenses for their chosen **Recon Unit** if necessary, those costs to be shared equally between the **Competitors** of that **RMP**.
- (c) An **Observed Competitor** shall be responsible for providing travel and accommodation for their **Recon Unit**, for any venue at which they sail away from their home base except the venue of the Match. Such travel and accommodation shall be of a standard equivalent to that provided to that **Competitor's** own team members.
- (d) The **Recon Administrator** shall arrange travel and accommodation for **Recon Units** at the venue of the Match, these costs to be shared by all **Competitors**.

10.13 Restrictions

- (a) **Competitors** are prohibited from carrying out their own reconnaissance on other **Competitors**, with the following exceptions:
 - (i) casual photos taken on a mobile phone from shore are permitted;
 - (ii) only when two or more **Competitors** are based at the same location for an event, **Competitors** are permitted to observe each other from a recon vessel or their own chase boats, but photos, videos, and any electronic position, speed or course estimation of a **Competitor's** yacht is prohibited.
- (b) **Competitors** shall not obstruct **Recon Units** from performing their roles efficiently, and shall be always courteous and considerate to their assigned **Recon Unit**.

10.14 Remedies

- (a) A **Competitor** that fails to:
 - (i) notify a **Recon Unit** of an intended outing;
 - (ii) provide a suitable recon vessel or access to their primary chase boat; or
 - (iii) provide other access as required herein;shall be referred to the **Regatta Director** and is subject to a fine of NZ\$10,000 for the first offence, NZ\$20,000 for the second offence, and so on for each subsequent offence.
- (b) If the breach in Rule 10.14 (a) is considered to be deliberate by the relevant **RMP**, in consultation with their **Recon Unit**, the matter shall be referred initially to **Regatta Director** and ultimately to the Arbitration Panel who shall determine additional remedies (including points penalties).
- (c) If a **Competitor** fails to give the required notification for a **Recon Unit** to witness the launch of a new component or component version, as declared to the Measurement Committee, in addition to the fine listed above, that **Competitor** shall be obliged to immediately make that component available for viewing to the **Recon Unit**, whether on the yacht or otherwise.
- (d) Any other breach of these conditions shall also be referred to the **Regatta Director** in the first instance, and ultimately to the Arbitration Panel for remedy.

11 Definitions

11.1 AC Media

As defined in the **Protocol**.

11.2 AC Technical Regulations

The technical regulations governing the yachts, including **AC75 Class Yachts** and **LEQ12 yachts**, used by any **Competitor** in addition to any rules specific to the class of yacht. This included all amendments to, interpretations of and rulings regarding such technical regulations.

11.3 AC36

The 36th America's Cup, and the time period spanning from the completion of the final race of the 35th America's Cup to the completion of the final race of the 36th America's Cup.

11.4 AC37

The 37th America's Cup, and the time period spanning from the completion of the final race of the 36th America's Cup to the completion of the final race of the 37th America's Cup.

11.5 AC40 Class Rule

The rule governing the yachts to be used in the first and second America's Cup Preliminary Regattas, the Youth America's Cup and the Women's America's Cup and/or in any other regattas sailed in AC40 Yachts (if any), including all amendments to, interpretations of and rulings regarding such class rule.

11.6 AC40 Class Rules

The combination of the **AC40 Class Rule** and the **AC Technical Regulations**.

11.7 AC40 Class Yacht

A yacht that complies with or could comply with the **AC40 Class Rule**.

11.8 AC75 Class Rule

The rule which, together with the **AC Technical Regulations** governs the yachts to be used in the Final Preliminary Regatta, America's Cup Challenger Selection Series and the Match, including all amendments to, interpretations of and rulings regarding such class rule.

11.9 AC75 Class Rules

The combination of the **AC75 Class Rule** and the **AC Technical Regulations**.

11.10 AC75 Class Yacht

A yacht that complies with or could comply with the **AC75 Class Rules**.

11.11 **AC75 event stage**

One of:

- (a) an entire Preliminary Regatta, if raced in **AC75 Class Yachts**;
- (b) a Round Robin stage of the Challenger Selection Series;
- (c) a Semi-Finals stage of the Challenger Selection Series;
- (d) the Finals stage of the Challenger Selection Series; or
- (e) the entire Match,

where those regattas or parts of regattas listed above are detailed in the **Protocol**.

11.12 **Actuator chamber**

A volume occupied by hydraulic fluid within a **hydraulic actuator** and extending until the first valves in connected lines.

11.13 **Batten**

A beam used to locally stiffen a sail.

11.14 **Bearing centre**

The centre of rotation of a bearing.

11.15 **Blueprint**

An IGES file, drawing or other document or collection thereof that provides information about the design and/or construction of a version of a component. Specific requirements for **blueprints** for each component type are provided in the relevant sections of this **AC75 Class Rule**, these specific requirements taking precedence over this general definition.

11.16 **Cant**

Rotation of a **foil** about the **foil arm** rotation axis.

11.17 **Carried equipment**

Clothing, safety equipment, other equipment, food and drink carried aboard by the crew, excluding crew supplied media equipment.

11.18 **Challenger of Record**

As defined in the **Protocol**.

11.19 **CIS**

Crew information system: an electronic system connected to the **Media System** to display the raw or processed **Competitor** data output from the **Media System** to the crew, and to provide voice communication between the crew.

11.20 **Class Rules**

The combination of:

- (a) the **AC Technical Regulations**;
- (b) the **AC75 Class Rule**; and
- (c) the **AC40 Class Rule**.

Where the term is used in relation to an **AC75 Class Yacht** or an **AC40 Class Yacht**, it refers to the **AC Technical Regulations** in combination with either the **AC75 Class Rule** or the **AC40 Class Rule** respectively.

11.21 **Clew point**

The intersection or projected intersection of the **leech** and **foot** of a **sail skin**. The **leech** or **foot** will be projected tangentially from the point where the **leech** or **foot** curvature reduces below a radius of 1.0 m when approaching the intersection.

11.22 **Commercial Core**

The **core** category of a **commercial product**.

11.23 **Commercial Hardware**

The hardware category of a **commercial product**.

11.24 **Commercial Paint**

The paint category of a **commercial product**.

11.25 **Commercial pre-consolidated FRP**

The pre-consolidated **FRP** category of a **commercial product**.

11.26 **Commercial product**

A classification of products controlled by the Commercial Products section of the **AC75 Class Rule**.

11.27 **Competitor**

As defined in the **Protocol**. Where the term **Competitor** is used in the context of interpretations or amendments, it refers only to those **Competitors** that are still competing and who are not in default of their payment obligations required by the **Protocol**.

11.28 **Control surface**

One of the following:

- (a) A **foil flap**;
- (b) A **rudder**; or
- (c) A **rig**.

Where position, orientation or movement of a **control surface** is mentioned herein, that position, orientation or movement is implied to be relative to the **yacht**, except that for a **foil flap**, it is relative to the **foil wing** to which it is attached.

11.29 **Control system**

A system used for the adjustment of **control surfaces**, including all mechanical, hydraulic and electrical components involved in supplying or transmitting power or information used for such adjustment.

11.30 **COR/D**

The **Challenger of Record** and the **Defender** jointly.

11.31 **Core**

Material that is bonded between two structural **FRP** skins in a sandwich construction, primarily to transfer shear. **Core** includes any material that is bonded to both skins, such as a corrugated laminate between two skins, but excludes:

- (a) solid laminate or metal used within edge, taper or local reinforcement details; and
- (b) adhesives and resins used to bond skins and core, or to fill honeycomb cells.

11.32 **Crew indication device**

Any device that:

- (a) contains an electronic system, or is connected directly or indirectly to an electronic system;
- (b) displays or plays audibly information that it has received or generated internally;
- (c) is worn or installed on the **yacht**;
- (d) can be seen or heard by the crew, directly or indirectly; and
- (e) may process data internally,

such as a display, LED or speaker.

11.33 **Deck**

That part of the **hull surface** that is not the **hull lower surface**.

11.34 **Defender**

As defined in the **Protocol**.

11.35 **Dock tune**

The state of the rig as it is positioned on the **hull** before and after sailing with no sails hoisted.

11.36 **ECC**

Electrical control circuit: an electrical and/or electronic circuit within a **control system** and/or for sending commands to an **FCS**.

11.37 **Electric actuator**

An electric linear or rotary motor, or functionally equivalent device, that converts electric power into force and translation, and/or torque and rotation.

11.38 **Electric appendage actuator**

An **electric actuator** used in a **foil** or **rudder control system**.

11.39 **Event**

Any regatta that forms part of the 37th America's Cup.

11.40 **External forces**

Forces applied from outside the **yacht** to the **yacht**, such as fluid pressure, fluid dynamic friction and gravity.

11.41 **FCS**

Foil cant system: a supplied system for controlling the rotation of the **foils** about **longitudinal** axes in the **hull**.

11.42 **Foil**

An appendage that can provide hydrodynamic side force and vertical lift.

11.43 **Foil arm**

A component of a **foil** that connects the **FCS** to the **foil wing**.

11.44 **Foil arm drum**

A fairing to close a penetration in the **hull** that allows **cant** rotation of a **foil arm**.

11.45 **Foil arm fairing**

Those parts of a **foil arm** that are not part of the **foil arm stock**. Although a **foil arm fairing** may be referred to in the singular, it can comprise several unconnected parts, each attached to a different region of the **foil arm**.

11.46 **Foil arm stock**

A supplied component forming the structural spar of a **foil arm** combined with a leading edge. The items included in the foil arm stock are defined in the AC75 One Design Foil Arm Assembly drawing.

11.47 **Foil cant reference point**

The point at the intersection of the **foil cant** axis and the **FCS transverse** reference plane, as defined in the one-design **FCS** drawings.

11.48 **Foil flap**

A component of a **foil**.

To be expanded (ideally without introducing any unintentional extra requirements)

11.49 **Foil flexure**

A region of a **foil wing** and/or **foil flap** that is declared by the **Competitor** as flexible.

11.50 **Foil wing**

A component of a **foil**.

To be expanded (ideally without introducing any unintentional extra requirements)

11.51 **Foil wing box**

A 2D region with extents defined in the **Foils** section of the **AC75 Class Rule**.

11.52 **Foot**

The bottom edge of a **sail skin**.

11.53 **Foot girth**

The distance from the **tack point** to the **clew point** for a **jib sail skin** or **tack point** to the **lower leech point** for a **mainsail sail skin**.

11.54 **Force input device**

A device that is moved by one or more crew members to provide control and/or power input, and whose movement, resistance to movement or response can, where expressly permitted within the **AC75 Class Rules**, be affected by certain parts of the **extended yacht state**. Examples are a sheet or winch connected to a sail, a grinding pedestal connected to a mechanical drive train or hydraulic pump, and a helm wheel connected through cables to a **rudder**.

11.55 **Force input device, primary**

A **force input device** that allows crew to provide power to mechanical drive trains and **HCCs**.

11.56 **FRP**

Fiber-reinforced polymer matrix composite.

11.57 **Hardwired**

Physically connected by electrical wires, including localised electromagnetic or optical coupling between system components (e.g. galvanic isolation of protocol bus, optical isolation of IO device) provided information exchange is confined to the wiring circuit.

11.58 **HCC**

Hydraulic control circuit: a hydraulic circuit within a **control system**.

11.59 **Head**

The top edge of a **sail skin**.

11.60 **Head girth**

The distance from the **head point** to the **peak point** of a **sail skin**.

11.61 **Head pennant**

A nominally round piece of rigging used as an extension of a halyard to accommodate a sail with reduced **luff** length.

11.62 **Head point**

The intersection or projected intersection of the **luff** and **head** of a **sail skin**. The **luff** or **head** will be projected tangentially from the point where the **luff** or **head** curvature reduces below a radius of 1.0 m when approaching the intersection.

11.63 **High-pressure circuit**

All hydraulic circuits within an **HCC** that are not **actuator chambers** or **low-pressure circuits**.

11.64 **Hull**

The main body of the **yacht**, including the bottom, sides, transom, **deck**, cockpit and internal structure but not the **mast**, rigging, sails, appendages or fittings.

11.65 **Hull lower surface**

The lower part of a **hull surface** that is divided by the **perimeter line**, extending downwards from the **perimeter line**.

Consider how this rule relates to the FCS cylinder exemption.

11.66 **Hull shell**

The monolithic or sandwich panel construction that forms the structure of the **hull surface**, excluding:

- (a) internal structure and local reinforcements such as bulkheads, ring frames, longitudinal beams, stringers and taping details; and
- (b) surface finishes such as paint and vinyl.

11.67 **Hull surface**

The external surface of a **hull**, where:

- (a) fittings such as pedestals, helm wheels and deck gear shall be excluded; and
- (b) local details may be excluded, provided they have no significant aerodynamic, hydrodynamic or hydrostatic effect. Examples of such details that may be excluded are:
 - (i) local reinforcements for deck hardware;
 - (ii) recesses for winches; and
 - (iii) local foot rests.

The **hull surface** is divided into the **deck** and **hull lower surface** by the **perimeter line**.

11.68 **Hydraulic actuator**

A hydraulic ram, hydraulic motor or functionally equivalent device that converts:

- (a) hydraulic pressure and flow into force and translation, and/or torque and rotation; and/or
- (b) force and translation, and/or torque and rotation, into hydraulic pressure and flow.

11.69 **IG**

The intersection of the centre line of the forestay with the leading edge of the **mast**, as shown in the **mast** section of the **AC75 Class Rule**.

11.70 **ILS**

Instrumentation and logging system: an electronic instrumentation circuit including devices such as sensors, processing units and logging systems.

11.71 **Isolated**

Electrically insulated so as to prevent the passage of electricity, and physically separated so that isolation is apparent by inspection. **Isolated** cabling may be bundled together, so long as individual cables within a bundle can be followed, but cables from two **isolated** systems must not share common connectors.

11.72 **JG**

The distance between **MRP** and the intersection of the centreline of the forestay and a plane 1.500 m above MWL with the rig at dock tune as shown in the **mast** section of the **AC75 Class Rule**.

11.73 **Jib**

A sail set forward of the **mast** hoisted on the forestay.

11.74 **Launched**

- (a) First installed on an **AC75 Class Yacht** with that yacht afloat where the term appears in relation to an **AC75 Class Yacht**.
- (b) First installed on an **AC40 Class Yacht** with that yacht afloat where the term appears in relation to an **AC40 Class Yacht**.
- (c) First installed after 1 March 2021 on a **LEQ12 yacht** with that yacht afloat where the term appears in relation to a **LEQ12 yacht**.

11.75 **LCP**

Longitudinal centre plane.

11.76 **Leech**

The aft edge of a **sail skin**.

11.77 **Leech points**

For any **sail skin** a **leech point** is the intersection of **leech** and a line perpendicular to the line from the **lower leech point** to the **head point** taken at the corresponding percentage of **LL** from the **lower leech point**. **Leech points** are illustrated in the **jib** and **mainsail** sections of the **AC75 Class Rule**.

11.78 **LEQ12 yacht**

Any sailing yacht (or platform towed to simulate a sailing yacht) including an **AC40 Class Yacht**, that exceeds 6 m LOA, is less than or equal to 12 m LOA (including all fittings when sailing such as rudder struts and bowsprits) and that is capable of producing meaningful design or performance information for use either directly or indirectly in the design, construction or sailing of an **AC75 Class Yacht**, excluding yachts of classes existing on 17th March 2021, providing they are used only with their standard equipment for participation in and preparation for their in-class racing.

11.79 **Linear component**

A component of the **yacht**:

- (a) that has no moving parts or mechanisms;
- (b) for which any two points on or within it must either always be in contact, or never be in contact;
- (c) whose overall deformation at any point, in response to normal sailing loads, is approximately linear; and
- (d) that always returns to the same state in the absence of applied load.

Such components may be constructed from multiple parts and fastened together **mechanically**, but such fastening must be such that the final component satisfies the above conditions.

As an exception to Rule 11.79 (b), a **linear component** may contain voids in materials such as wood or foam, which may close under normal sailing loads, provided that those materials are not engineered to provide globally non-linear characteristics through internal contact mechanisms.

11.80 **LL**

The distance from the **head point** to the **clew point** for a **jib sail skin** or the lower **leech point** for a **mainsail sail skin**.

- 11.81 **Longitudinal**
Orthogonal to **TRP**.
- 11.82 **Low-pressure circuit**
Hydraulic circuits within an **HCC** that return hydraulic fluid to reservoirs and supply hydraulic pumps with hydraulic fluid from reservoirs.
- 11.83 **Lower leech point**
For any **sail skin** of the **mainsail** the **lower leech point** is the intersection of a 26.750 m radius circle centred at the **head point** and the **leech** or the projection of the **leech**. For any **jib** the **lower leech point** is at the **clew point**.
- 11.84 **LP**
The distance, measured perpendicular to the **luff**, from the **luff** to the **clew point** of a **sail skin**.
- 11.85 **Luff**
The forward edge of a **sail skin**.
- 11.86 **Mainsail**
The combination of **sail skins** and associated components that are hoisted on the **mast**.
- 11.87 **Mast**
All components of the rig that are not hoisted with the **mainsail** or **jib**. This includes **mainsail** support structures and **control systems** such as booms that are not part of the **mainsail** as well as the **supplied rigging**, rigging, halyards, spreaders, fittings, luff tracks, fairings, instrument displays, instrument sensors, cameras, cables, flotation systems and hydraulic rams that remain as part of the rig whilst sailing. Sheets shall be considered as part of the **mast** if they cannot be easily disconnected from **mast** structures and **control systems**.
- 11.88 **Mast centre plane**
The plane perpendicular to the aft face of the **mast surface specification** and coincident to the lengthwise centre line of the aft face of the **mast surface specification**.
- 11.89 **Mast lower zone**
The lower **mast** zone as shown in the **mast** section of the **AC75 Class Rule**.
- 11.90 **Mast surface specification**
The external surface of the **mast tube** as given in the **mast** drawing package.
- 11.91 **Mast tube**
The principal spar of the rig. This includes the one design laminate provided in the **mast** drawing package as well as any team designed reinforcements permitted by the **AC75 Class Rules**. The **mast tube** excludes any attached components such as luff tracks, **mainsail** support structures and **control systems** as well as taping or local reinforcements for the connection of such components.
- 11.92 **Mast upper plane**
The plane oriented at 95° to the aft face of the **mast surface specification** at $w=26.5$ m in **mast**-fixed reference frame, as shown in the **mast** section of the **AC75 Class Rule**.

11.93 **Measurement Committee**

A committee responsible for ensuring a **yacht** satisfies the **Class Rules**.

11.94 **Mechanically**

Only through contact of components, without the use of hydraulic, pneumatic, magnetic or electrical components.

Check foil wing actuator interpretation, and consider revising this definition.

11.95 **Media System**

A supplied system for managing the flow of data, audio and video around the **yacht** and off the **yacht** for broadcast.

11.96 **MRP**

Mast rotation point. The point about which the mast base rotates relative to the **hull**.

11.97 **MWP**

Measurement waterline plane.

11.98 **New Competitor**

As defined in the **Protocol**.

11.99 **Observed Competitor**

The **Competitor** that a specific **Recon Unit** is engaged in providing reconnaissance on.

11.100 **Passive input device**

A device that is moved by a crew member to produce an electrical control signal, where that control signal relates only to the crew member's manual input and is not significantly affected by the **yacht state** (except for unintended manual input caused, for example, by a crew member falling on to a button). Examples are buttons, joysticks, sliders or touch screens.

11.101 **Peak point**

The intersection or projected intersection of the **leech** and **head** of a **sail skin**. The **leech** or **head** will be projected tangentially from the point where the **leech** or **head** curvature reduces below a radius of 1.0 m when approaching the intersection.

11.102 **Perimeter line**

The line on the **hull surface** that forms the perimeter of the **hull surface** when **projected** on to **MWP**. Where the **hull surface** is vertical on its perimeter, the **perimeter line** shall pass through the highest points on that vertical surface.

11.103 **Platform**

The **hull, foils, rudder** and other systems, hardware, fittings, rigging and supplied equipment that is weighed with those components.

11.104 **Projected**

The **projected** shape of a part is the shape of a shadow cast by that part on the specified plane from a parallel light source acting normal to that plane.

11.105 **Protocol**

The Protocol of the 37th America's Cup between the Royal New Zealand Yacht Squadron and Royal Yacht Squadron Racing.

11.106 **Quasi-isotropic FRP Plate**

Flat, monolithic, in-plane quasi-isotropic **FRP** plate of uniform thickness, that is of dimensions no larger than 600 mm x 1200 mm x 50 mm at the time compaction pressure greater than 1.1 bar is applied.

11.107 **Recon Administrator**

A Regatta Official such as the Regatta Director, their assistant, or other appointed person who manages contractual matters for the Joint Recon Programme. Until such time that the **Recon Administrator** is appointed, their role will be undertaken by a representative from **COR/D**.

11.108 **Recon File Store**

An online file storage resource, with upload access to a specific folder provided to each **Recon Unit** and download access to all folders provided to all **Competitors**.

11.109 **Recon Unit**

A team of two people engaged to provide reconnaissance and media on a specific **Competitor**.

11.110 **Regatta Director**

As defined in the **Protocol**.

11.111 **Rig**

The combination of the **mast, mainsail** and **jib**.

11.112 **Rig control**

A permitted degree-of-freedom of motion, or deformation, of the **rig** that is controlled with a **control system**.

11.113 **RMP, Recon Management Panel**

For a specific **Observed Competitor**, the **RMP** is a panel comprising one team member from each **Competitor** except the **Observed Competitor**, responsible for determining the personnel in a specific **Recon Unit**.

11.114 **Rudder**

An appendage positioned on the centreline of the **hull** which is rotated to affect yaw and trim.

11.115 **Rules Committee**

A committee responsible administering **Class Rules** enquiries, ruling on interpretations of the **Class Rules** and producing measurement procedures.

11.116 **Sail hardware**

Components of a sail for the purpose of attachment or applying pre-tension of sail controls and **battens**. If two or more components are rigidly connected together then they will be considered as a single piece of **sail hardware**.

11.117 **Sail skin**, also **skin**

A thin and predominantly flexible membrane of a **jib** or **mainsail**. **Sail skins** include stickers, branding, **batten** pockets, **luff** pockets, attachment devices such as bolt ropes and zips as well as any reinforcements such as edge tapes or corner patches.

11.118 **Sailing Session**

For a specific **Observed Competitor**, a **Sailing Session** is any period during which the **Observed Competitor** has declared they will be sailing a yacht of at least 6m LOA at any location. Any periods of less than 7 days between sailing days do not constitute a break in a **Sailing Session**. For example, if sailing on days 1-3, 8-12 and 18-19, but then not again until day 30, the **Sailing Session** begins on day 1 and ends on day 19.

11.119 **SHA**

An SHA-512 of a component's **blueprint**, generated according to the Secure Hash Standard (SHS) (FIPS PUB 180-4) issued by the National Institute of Standards and Technology. This shall be generated using a tool such as the Windows software "Hash Tool" by DigitalVolcano Software.

11.120 **Supplied rigging**

The supplied forestay, V1 cap shrouds and D1 lower shrouds.

11.121 **Surrogate yacht**

As defined in the **Protocol**.

11.122 **Symmetric**

A component that is required to be **symmetric** must be designed to be exactly symmetric, and the built shape must lie within the specified tolerance of the designed shape everywhere on its surface. Such a component must also be designed to be almost exactly symmetric in its structure, where any structural asymmetry can only result from details such as:

- (a) asymmetries at the individual ply level (e.g. lap joints or staggers), provided the overall laminate has symmetric structural behaviour;
- (b) fastenings across the symmetry plane; and
- (c) right-handed screw threads;

which are not designed to induce asymmetric structural behaviour.

11.123 **Tack point**

The intersection or projected intersection of the **luff** and **foot** of a **sail skin**. The **luff** or **foot** will be projected tangentially from the point where the **luff** or **foot** curvature reduces below a radius of 1.0 m when approaching the intersection.

11.124 **Transverse**

Orthogonal to **LCP**.

11.125 **TRP**

Transom reference plane.

11.126 **Wet box**

A volume within the **hull surface** that is separated from the remainder of the enclosed volume of the **hull** by a watertight boundary, and shares a penetration with the **hull surface**.

11.127 **Wetted**

The **wetted** part of a component is that part of a component that extends or can extend outside of the **hull surface** below the **perimeter line**.

11.128 **Woolly**

A piece of wool or light fabric used only for flow visualisation.

11.129 **Working day**

A period of 24 hours excluding:

- (a) Sundays;
- (b) Saturdays prior to 3 months before the first race of the America's Cup;
- (c) 25/12/2021 to 4/1/2022;
- (d) 15/4/2022 to 18/4/2022;
- (e) 25/12/2022 to 3/1/2023;
- (f) 7/4/2023 to 10/4/2023;
- (g) 25/12/2023 to 2/2/2024; and

where the above are defined using the current time zone in New Zealand, being either New Zealand Standard Time (NZST, UTC+12) or New Zealand Daylight Time (NZDT, UTC+13). For example a working day beginning on Friday 8th July 2022 at 09:00 NZDT ends on Monday 11th July 2022 at 09:00 NZST.

11.130 **WSP**

Wing symmetry plane.

11.131 **Yacht**

- (a) An **AC75 Class Yacht** where the term appears in the **AC75 Class Rule**.
- (b) An **AC40 Class Yacht** where the term appears in the **AC40 Class Rule**.
- (c) An **AC75 Class Yacht** or a **LEQ12 yacht** where the term appears in the **AC Technical Regulations**.

11.132 **Yacht assembly**

The combination of the **platform**, the **mast**, the **mainsail** and the **jib**.

11.133 **Yacht state**

The specific condition of the **yacht**, comprising all of the following:

- (a) the position and orientation of any part of the **yacht** with respect to a earth-fixed datum;
- (b) the position and orientation of any part of the **yacht** with respect to the body of water on which she is sailing;
- (c) all time derivatives of the above; and
- (d) all proxies of the above;
- (e) all quantities derived from any of the above; and
- (f) all quantities from which the above can be derived or approximated.

11.134 **Yacht state, extended**

The **Yacht state** extended by the addition of:

- (a) the position and orientation of any **control surface** with respect to the **yacht**;
- (b) the position and orientation of a **foil** with respect to the **yacht**;
- (c) the position and orientation of any **force input device** or part thereof, with respect to the **yacht**;
- (d) the stress, strain, tension and force in any part of the **yacht**, except in **passive input devices**;
- (e) other force-related quantities in any part of the **yacht**;
- (f) the volume, velocity, flow rate or pressure of fluid within, or acting on, any part of the **yacht**;
- (g) all absolute measures of the above and quantities measured relative to each other;
- (h) all time derivatives of the above;
- (i) all proxies of the above;
- (j) all quantities derived from any of the above; and
- (k) all quantities from which the above can be derived or approximated.

12 Agreement

COR/D agrees to the draft publication of these **AC Technical Regulations**.

Signed on this 17th day of November 2021

Defender



by Grant Dalton, CEO

Challenger of Record



by Ben Ainslie, CEO.