REGATTA DIRECTOR NOTICE #5

Issued 10 June 2015

Re: AC Class Rule Appendix C, D and E.

The rules regarding one design structure and manufacturing process for AC Class Yachts was agreed by the Competitors and is being implemented into the AC Class Rules primarily in the Appendix C, Appendix D and Appendix E. This work is being performed as a collaborative effort between the Competitor's Design teams and is being led by Pete Melvin of Morrelli & Melvin Design and Engineering. This process involves collaboration, justification, and documentation to ensure the success of the AC Class Rule.

During this process, work in progress, documents and derivatives will be published for Competitors to consider and use. This means that all Competitors are aware of progress and may make use of information as it becomes available. The AC Class Rule provides for parts of this work to be frozen. Such frozen parts can only be changed by unanimous agreement. Competitors can take frozen parts of the AC Class Rule and act on them without concern that they may be changed without their consent.

The shape for Wing Spar is one such piece of information that is envisaged as being frozen quite soon. Unfortunately some other parts are heavily dependent on other design parameters such as laminate thicknesses and therefore may take longer to be frozen.

At all times I will push to have information released in as timely a fashion as possible – whilst still ensuring that the AC Class Rule is well founded and provides suitable platforms for this and successive America's Cups.

The anticipated schedule is as follows:-

<u>Appendix C: Design Information Release Schedule</u>

C1 June 20th, 2015. Base overview of the structural design, load cases, and scantlings.

(a) This will include the internal structural geometry to be included in the IGES file of the exterior shape.

(b) A description of the global load cases for which the structure is being evaluated.

(c) Informal transmittal or sketches of the current laminates being used in the analysis.

(d) Key structural responses. e.g., global deflections and select loads and strains of interest.

(e) A description of the material properties and factors being applied to the analysis.

C2 September 15th, 2015. Intermediate progress update. This will be a summary of the progress and largely a collection of intermediate updates distributed since June 20th.

C3 November 20th, 2015. Final detailed drawings. Drawings will be distributed as they are finalized with all structural drawings being distributed no later than November 20th.

Appendix D: Design Information Release Schedule:

D1 June 20th, 2015. Base overview of the structural design, load cases, and scantlings.

(a) This will include the internal structural geometry to be included in the IGES file of the exterior shape.

(b) A description of the global load cases for which the structure is being evaluated.

(c) Informal transmittal or sketches of the current laminates being used in the analysis.

(d) Key structural responses. e.g., global deflections and select loads and strains of interest.

(e) A description of the material properties and factors being applied to the analysis.

D2 September 15th, 2015. Intermediate progress update. This will be a summary of the progress and largely a collection of intermediate updates distributed since June 20th.

D3 November 20th, 2015. Final detailed drawings. Drawings will be distributed as they are finalized with all structural drawings being distributed no later than November 20th

Appendix E Design Information Release Schedule:

E1 June 20th, 2015. Base overview of the structural design, load cases, and scantlings.

(a) This will include the internal structural geometry to be included in the IGES file of the exterior shape.

(b) A description of the global load cases for which the structure is being evaluated.

(c) Informal transmittal or sketches of the current laminates being used in the analysis.

(d) Key structural responses. e.g., global deflections and select loads and strains of interest.

(e) A description of the material properties and factors being applied to the analysis.

E2 July 18th, 2015. Intermediate progress update. This will be a summary of the progress and largely a collection of intermediate updates distributed since June 20th.

E3 August 31st, 2015. Final detailed drawings. Drawings will be distributed as they are finalized with all structural drawings being distributed no later than August 31st.

Information contained in Appendix C, D and E

These appendices will contain the information required for a builder to build a yacht that can comply with the America's Cup Class except for specific areas that Competitor design teams must supply. The appendices will primarily consist of drawings that will define construction details that must be complied with to satisfy AC Class requirements.

A document list of AC Class Rule documents shall be maintained by the Measurement Committee and these documents shall form part of the Rule (the AC Class Document List). Additionally there may be construction and assembly methodology documents, digital files describing mold and pattern surfaces and other required documentation. Documents supplied that are not on the AC Class Document List do not form part of the Rule and may be works in progress, incomplete or subject to change.

It is anticipated that the AC Class Document List will contain the following:

General
Platform 3D Model (exterior surfaces only)
Wing 3D model
Wing tooling drawings
Hull tooling drawings
Cross Structure tooling drawings
Cross Structure Assembly and Hull Joining Details
Hull
Hull General Assembly
Hull and Deck Laminate
Net Track Laminate
Hull Skin Tie at Cockpit Drain
Hull Transom Laminate
Hull Internal Structure
Wing Winch Plinth
Deck Cockpit Capping
Bow Joint Detail

Hull Deck Joining and Taping
Fwd Hatch
Upper CP Detail
Lower CP Detail
Aft Beam to Hull Installation
Fwd Beam to Hull Installation
Whisker Stay Detail at Deck
Lower Shroud fitting
Cap shroud fitting
Pod
Pod General Assembly
Pod Shell Laminate
Jib Track Bracket Laminate
Pod Internal Structure
Pod to Forward and Aft Beam connection
Wing Ball
Bobstay CP Pin, Bushings
Mast Step
Spine
Spine General Assembly
Spine Laminate
Inboard Cup Fitting
Inboard Ball Fitting
Outboard Fitting
Aft Beam
Aft Beam General Assembly
Aft Beam Shear Web Laminate
Aft Beam D Laminate
Aft Beam Internals
Aft Beam to Pod connection
Aft Beam to Hull connection
Fwd Beam
Aft Beam General Assembly
Fwd Beam Shear Web Laminate
Fwd Beam D Laminate
Fwd Beam Internals
Fwd Beam to Pod connection
Fwd Beam to Hull connection
Hardware
Aft Beam to Pod attachment fittings
Fwd Beam to Pod attachment fittings
Aft beam to hull attachment hardware
Fwd beam to hull attachment hardware

Misc
Net Layout and attachment hardware
Rig and Wing
Rig and Sailplan drawing
Rigging Specifications
Jib Drawings and specifications
D spar General Arrangement
D-spar laminate definition
D-spar shear web laminate
Step structure
Wing Ball Cup Fitting
Wing Spar internal structure
Wing Spar Headstay tang / jib halyard
Wing Spar Upper shroud tang
Wing Spar Lower shroud tang
Wing Spar Aft Splice plates
Wing Spar fwd Splice plate
Service halyard fittings

The IGES file "AC_Class_Wing_V1-2.igs" is an AC Class Rule document and is the control information for confirming the shape of the wing. Other IGES files that may be issued include Master Pattern cut files for each certified Master Pattern. These IGES files may contain details for the patterns so that every pattern cut from it shall be the same – including run-offs, skirts, supports and mounting methods.

Molds – made from certified Master Patterns shall be fully specified and as such shall be fully described in the Appendix C, D and E with regard to their shape, flanges and splash shape and dimension, laminate, exo-framing and mounting. To become an AC Class mold this AC Class Rule documentation must be complied with and it is intended that all AC Class molds will be nearly identical.

IGES files of external surfaces of the AC Class Yacht will be supplied – in preliminary form initially. As the design matures these may change – but will only become part of the AC Class Rule where necessary for measurement and compliance purposes.

Load cases and reports of FEA results shall be included in the information to teams but shall not be part of the AC Class Rule. Similarly – other design information shall be supplied to allow teams to understand load case limitations and design genesis.

Iain Murray
Regatta Director