



AC CLASS MEASUREMENT NOTICE No 2

Determining AC Class Rule Compliance of Hydraulic & Electrical Systems

Introduction

This document outlines several requirements and restrictions integral to the Measurement process intended to be used to determine compliance of each Competitor's yacht with the AC Class Rule.

Background

Due to the complexity of the yachts systems and the Rule, and the limited time available to measure or re-measure a yacht, it will be helpful if the design and implementation of the yacht and its systems make certain provisions for measurement.

This document describes a confidential, cooperative, iterative process by which each Competitor will work with the Measurement Committee in a practical manner to ensure compliance with the AC Class Rule.

Confidentiality

All interactions between the Measurement Committee and a Competitor as described herein shall be confidential unless that interaction is required to be made public by either the AC Class Rule or the Protocol.

Delivery of Documents

The required documents described herein shall be delivered via e-mail to the Chief Measurer, no later than December 27, 2016.

Updated documentation representing the yacht as she is intended to be measured shall be delivered via e-mail to the Chief Measurer no later than March 31, 2017.

Beginning April 1, 2017, the Chief Measurer shall be notified via e-mail of any modification that changes the yacht with respect to the then-current documentation supplied by a Competitor to the Measurement Committee per this Measurement Notice. Such notifications are to include revised documentation together with a summary of changes sufficient to allow identification of those portions of the documentation affected.

Note: Earlier delivery of preliminary documentation is highly encouraged and such documentation will be reviewed and feedback provided as quickly as practical to the benefit of the competitor.

Required System Documentation

The measurement and compliance process is likely to be easier and less obtrusive to the team if the following information is supplied to the Measurement Committee:

- Machine readable schematics that indicate manufacturer, make and model of each component used, the connectivity between components and the physical location of each component, for each of the following systems:
 - The rake control system(s) allowed by Rule 15.3
 - Other control system(s) as allowed by Rule 15.2

- Where custom components and/or printed circuit board assemblies are used, additional schematics and documentation of those components and/or assemblies.
- Assemblies and/or components that cannot be inspected because they are unmarked, proprietary, potted, etc. shall not be used in rake control systems allowed by Rule 15.3 or in other control systems allowed by Rule 15.2 unless and until the Competitor has satisfied the Measurement Committee that they are Rule compliant.

Required Inspection and Sealing

The Measurement Committee will inform each Competitor of those system components that shall be inspected and sealed as part of the Measurement process., such inspection and sealing to be solely at the discretion of the Measurement Committee. Four approaches to sealing are presently anticipated:

- A manufacturer's tamperproof seal.
- Delivery of an unsealed component from a manufacturer directly to the Measurement Committee for the purposes of affixing a seal and subsequent shipment to the Competitor.
- Disassembly, inspection, reassembly and sealing of a component by the Measurement Committee at a Competitor's site.
- Declarations that name specific components and/or assemblies and assert that the item(s) named have not been altered, modified, enhanced or in any way changed from the documentation that describes them.

No inspection, sealing or declaration shall in any way impinge upon the Measurement Committee's ability to scrutinize any aspect of any AC Class Yacht at any time or in any manner as deemed necessary to determine Rule compliance.

Required Declarations

Each member of a Competitors design, build, maintenance and sailing team(s) shall sign a Declaration, witnessed by a member of the Measurement Committee, stating that they:

- Have read, understand and are familiar with the America's Cup Class Rule and its associated Interpretations as they apply to their individual role; and
- State without reservation that their contributions comply with the Rule and its associated Interpretations; and
- Believe to the best of their knowledge that the AC Class Yacht(s) with which their team will compete complies with the Rule and its associated Interpretations; and
- Agree to notify the Measurement Committee in writing or via e-mail within twenty-four (24) hours of any occurrence that in any way affects the integrity of these Declarations.

Procedures for determining AC Class Rule compliance

Required documentation and procedures may vary depending upon a Competitor's design and implementation. The Measurement Committee will inform and agree to a procedure with each individual team after review of documents required of all Competitors per the following list:

1. For the purpose of determining compliance with 6.17:

An itemized list of each isolatable section of the hydraulic system with:

- a) A written procedure for determining that the pressure within the section shall not exceed 350 bar at its anticipated flow rate.
- b) A determination of the section's maximum pressure limit.

2. For the purpose of determining compliance with 15.2(a):

An itemized list of each input or feedback device that is present in any control system allowed by 15.2 or 15.3 with:

- a) An indication of whether the device is used by that control system and whether or not that device is prohibited for that system.
- b) A written procedure, for those devices that are prohibited and not used, by which the Competitor shall prove that the device will not be used and/or was not used.
- c) For the purposes of clarification, any aspect of any element of a 15.2 or 15.3 system that in any way senses any physical or environmental phenomena, including but not limited to those that detect or measure voltage, current, sound, light, orientation, magnetic fields, flow, pressure, distance, speed, acceleration and/or rotation in any manner shall be considered to be an input or feedback device.

3. For the purpose of determining compliance with 15.4, an itemized list of those control systems allowed by 15.2 and of those control systems allowed by 15.3 and a written description of the manner in which those systems and their associated wiring are isolated and clearly identifiable from one another and from all other wiring associated with any other systems.

4. For the purpose of determining compliance with 15.5:

A list of hydraulic valves, clutches and electrical actuators.

5. For the purpose of determining compliance with 16.2(a):

An itemized list of each stored energy device and a per-device written procedure for determining that device's compliance and its stored energy capacity.

6. For the purpose of determining compliance with 16.2(b):

An itemized list of each section of the hydraulic system that must be measured independently (e.g. wing, rake control, cant control, up-down control) with:

- a) A written procedure for pressurizing and measuring discharged fluid for each such section including a description of any required equipment.

7. For the purpose of determining compliance with 16.2(c):

An itemized list of each low pressure accumulator with:

- a) A written procedure for determining that its pressure will not exceed 6 bar.

8. For the purpose of determining compliance with 16.2(f), 16.2(g) and 16.2(h):

An itemized list of each battery and a written explanation of those systems it powers.

9. For the purpose of determining compliance with 16.3:

An itemized list of manually powered electrical systems with:

- a) A written procedure for determining their maximum operating voltage.

10. For the purpose of determining compliance with G3:

A written statement describing the design and implementation philosophy by which the hydraulic and electrical rake control systems are considered to be "fail safe".

Issued on behalf of the Measurement Committee on September 1, 2016

Ken McAlpine
Chief Measurer 35th America's Cup