



Request for Drawing Question / Interpretation No. 3

of

AC Class Rule Version 1.2: June 10th 2015

Rule References:

- 8.5 When viewed orthogonal to **MWP**, the combined projected area of the **cross structure** within 3.200 m of the **yacht centerplane** shall not exceed 33.00 m². Spray guards referred to in Rule 8.4(a) are excluded in this projected area calculation. Additionally:
- (a) this area shall be symmetrical about the **yacht centerplane**; and
 - (b) **rigging**, fittings, attachments or other surfaces shall be included in this projected area if they have a chord length/thickness ratio greater than 3:1.

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- 10.8 Each **rudder wing**, while in **appendage measurement condition**, shall not exceed 1.250 m in the **transverse** direction, and shall be symmetrical about the **hull centerplane** within a tolerance of 0.020 m. The planform area, excluding the area within 0.080 m of the **hull centerplane**, shall not be less than 0.170 m² and not greater than 0.190 m², when projected orthogonal to **MWP**.

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- 12.6 Items listed in Rule 12.3 (c) and (d) are permitted external to the **wing** surface. When viewed perpendicular to the **wing datum plane**, the projected area of these items outside the **wing** surface detailed in the **IGES File** in the region within:
- (a) 4.000 m below the **wing top plane** to the **wing top plane** shall not exceed 0.30 m²; and
 - (b) 2.000 m above the **wing datum plane** to the lowest extent of the **wing** shall not exceed 2.00 m².

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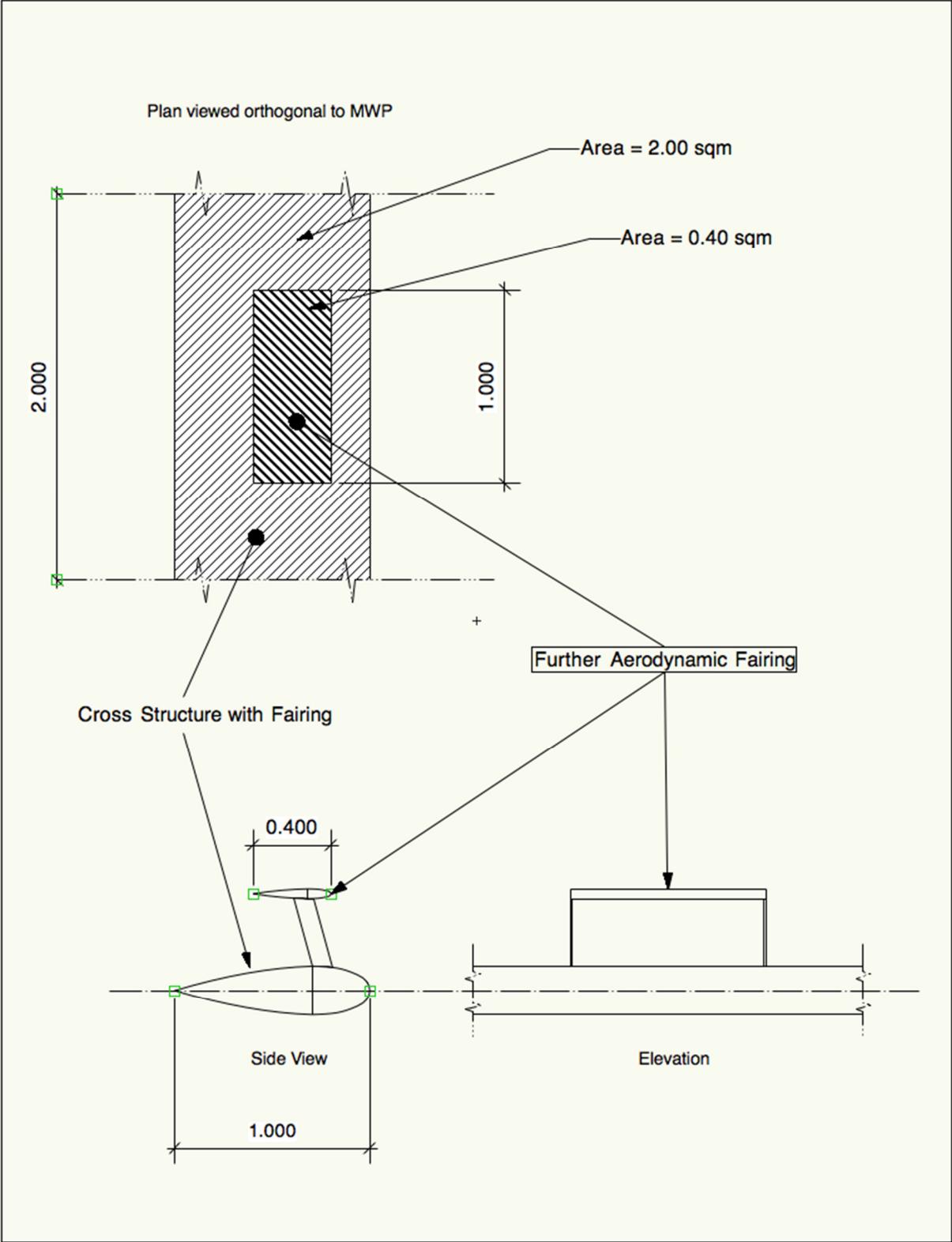
Appendix D ACC-1002-CROSS STRUCTURE GENERAL ARRANGEMENT.pdf

Question:

In AC Class Rules 8.5, 10.8, and 12.6, reference is made to the measurement of "projected area" (Rules 8.5 and 12.6) or "...planform area...when projected...". In all cases, the area to be measured is projected orthogonally relative to a reference plane.

When making these projections, some measured components may be partially or completely occluded or overlapped by other measured components. Is the measured area controlled by these rules (ignoring those areas or components that are specifically excluded) a true projection --effectively, a 1:1 silhouette on a plane surface? Specifically, if two or more components partially or fully overlap when projected, is the total measured projected area the silhouette or the sum of their individual projected areas as if they were not overlapped?

Attached is a sketch of an aerodynamic surface mounted above and overlapping the cross structure. Would the "combined projected area of the cross structure" shown here be 2.00 sqm or 2.40 sqm?



Interpretation

In general, the projection is defined by direction only and not the height/distance of the projection plane above or below the item being projected. Hence there could be multiple projection planes which satisfy the directional requirements each with area projected onto them.

On this basis the area constraint shall be complied with by the sum of the areas even if the areas are occluded. In the case of the sketch above the area is 2.40 sqm.

More specifically Rule 1.4(ee) rudder wing is defined as “an appendage attached to a rudder ...”. “An” in this clause implies a singular wing only. END

Issued by the America’s Cup Measurement Committee on November 24, 2015.

