



Request for Interpretation No. 28

of

**AC Class Rule** Version 1.4: December 8<sup>th</sup> 2015

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**Rule References:**

12.9 A flap shall only rotate, or twist as a result of the differential rotation at the top and bottom of the flap, and:

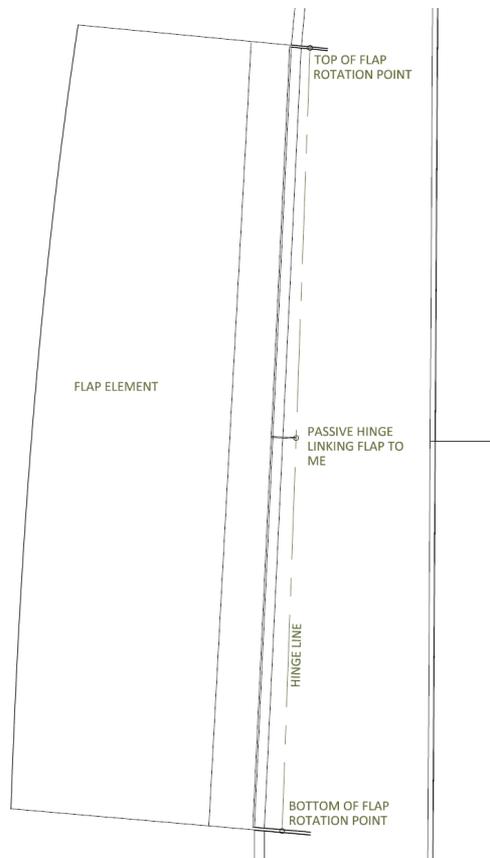
- (a) that rotation shall be about the flap pivot points that shall be centered within 0.004 m of the wing centerplane and specified in Appendix E; and
- (b) the horizontal sectional shape of a flap shall not be adjusted.

No other flap movements are allowed, except for incidental movements caused by normal wing deformations while sailing.

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**Background:**

The sketch below shows a flap pivoting at its top and bottom ends about an axis compliant with Rule 12.9.



**Question:**

Is it permissible to add a passive “hinge” near the mid span of the flap, provided the axis of the passive hinge is co-axial with the axis of flap rotation

**Interpretation:**

Yes, the midpoint 'hinge' is considered to be part of the control system in Class Rule 12.3 (c) and therefore permitted.

Rule 12.3 requires the shape of the wing to be built in accordance with the IGES files with defined tolerances. Only the D shaped section of the wing is structurally defined. Other wing structure including the structure of the flaps is to be determined by the competitor. The drawing in Appendix E defines the main components of the wing.

12.3 (a), (b), (c) and (d) provide exemptions for various wing components to be outside the IGES file shape.

12.3 (c) anticipates wing control systems being outside the IGES surfaces but does not define or limit "control systems".

Control systems could take many forms as may be determined by competitors.

Except for the pivot points of the flap, which are defined by position only, competitors decide upon the devices required to control the aerodynamic surfaces of the wing. Control could include providing additional support to the flaps to maintain the IGES defined shape. Accordingly, a passive (applying no moment) hinge on the flap which "controls" the bending of the flaps is permitted.

Attention is drawn to Rule 12.9. which states that "A flap shall only rotate, or twist as a result of the differential rotation at the top and bottom of the flap". The passive hinge shall be co-axial with the rotation of the flap pivot points.

END

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