CHALLENGER OF RECORD & DEFENDER

AMERICA'S CUP 36

AC75 Interpretation 002
of
AC75 Class Rule Version 1.1 issued 29 June 2018

<u>Rule References:</u>

21.2   No **control system** or part thereof shall be capable of using feedback from the **yacht state** to control a **control surface**, except:

   (a)   motion of a **control function** may be restricted where permitted by Rule 21.3;

21.3   A **control system** may restrict a **control function** as follows:

   (a)   fixed stops, or stops engaged and disengaged **mechanically**, may limit the travel of a **control function**;

   (b)   locks that engage **mechanically** at (or very nearly at) either end of the extent of motion of a **control function** may be disengaged by an **ECC** and/or **HCC**, providing those extents of motion are not adjustable; and

   (c)   locks that limit the direction of motion of a **control function** at discrete points, e.g. ratchets, may engage **mechanically**.

   However, stops and locks permitted herein shall not be combined to provide greater control of a **control function**, and shall not be used in mechanisms such as, but not limited to, escapements, to achieve the effect of indexed control or position control.

Drawings:

031 750 520A_Code 0 Lock Box
031 750 101A_Rig and Sailplan

<u>Background:</u>

A typical set up for a Code zero is to hoist it with a cable at the leading edge of the sail. The upper end of the cable will be locked in the "Code 0 Lock Box" at the mast (see drawings "031 750 520A_Code 0 Lock Box" and "031 750 101A_Rig and Sailplan"). The lower end of the cable is typically held with a hydraulic ram. This ram can be equipped with or without locks. For this request of interpretation we consider four configurations:

   A)   A lock at the top and a hydraulic ram at the bottom without any locks, just stops on both extremities.

   B)   A lock at the top and a hydraulic ram at the bottom with locks on both sides, close to the end stops.

   C)   A lock at the top and a hydraulic ram at the bottom with three locks, two of them as in B) and the third half way between the other locks.

   D)   A hydraulic ram to hoist the halyard (hoist ram), a lock at the top and a hydraulic ram at the bottom without locks, just stops on both extremities. The stroke of the hoist ram allows to lock the Code-0 cable into the lock at the top.

For the purpose of this interpretation we assume that all locks on the lower ram comply with Rule 21.3 (a), (b), and (c) and that the lock at the top is compliant with the respective OD drawings and specifications.

Questions:

1. Is configuration A a combination of stops and locks banned by rule 21.3?

2. Is configuration B a combination of stops and locks banned by rule 21.3?

3. Is configuration C a combination of stops and locks banned by rule 21.3?

4. Is configuration D a combination of stops and locks banned by rule 21.3?

5. If the answer to question 3 is "YES": Is it also considered a banned combination of stops and locks if the Code zero cable is slack when it is locked in the upper lock and the ram holding the lower end is locked in the middle position?

6. If the answer to question 4 is "YES": Is it also considered a banned combination of stops and locks if there is no lock at the top?

7. If the answer to any of the Questions 1 to 6 is "YES" can the Rules Committee provide guidance as to why the respective configuration does not comply with the AC75 Rules, Version 1.1.

Answers

The above set up describes two devices that operate on distinct **control functions** (Halyard lock and bottom hydraulic ram). In such case:

1. No, this set up does not provide greater control than that permitted by 21.3 a).

2. No, this set up does not provide greater control than that permitted by 21.3 b).

3. Yes, if the lock at the halfway position engages automatically rather than by action of the crew. The half way lock does not comply with 21.3 c) because there are 2 directions of motion in the hydraulic ram, therefore the half way lock is an absolute position lock and not a lock limiting direction. As such, this set up contravenes the last paragraph in 21.3 by combining locks to provide position control.

4. No, this set up does not provide greater control than that permitted by 21.3 b).

5. Yes. The combined set up described still provides position control in the lower ram. See 3 above.

6. Not applicable.

7. See above.