Racing Rules of Sailing

Rule A3

A submission from Sail Canada

Purpose or Objective

To ensure that when handicap or rating systems are used to determine finish places, the calculation of corrected times follow scientific rounding principles.

Proposal

. . . [no change in first sentence] . . . However, when a handicap or rating system is used a boat’s corrected time, rounded to the same level of accuracy as the recorded elapsed and/or finish times, shall determine her finishing place.

Current Position

As above

Reasons

1. All scoring computer programs round the corrected time to the nearest whole second, which is correct if the rule for the handicap or rating systems state so. However, Q&A 2018.003 states that rounding should not happen if the handicap or rating system is silent on the topic. Most handicap or rating systems rules do not cover rounding.

2. Scientific principle for rounding: For quantities created from measured quantities by multiplication and division, the calculated result should have as many significant figures as the measured number with the least number of significant figures.

3. Different computer systems such as operating systems and computer architectures\(^1\) can generate different floating point\(^2\) results if the results are not rounded to one or two decimal places. Since floating point calculations are used to compute the corrected time, not rounding as proposed means there is a potential for results to be affected.

\(^1\) 16-bit, 32-bit, 64-bit

\(^2\) The term floating point is derived from the fact that there is no fixed number of digits before and after the decimal point, that is, the decimal point can float.