

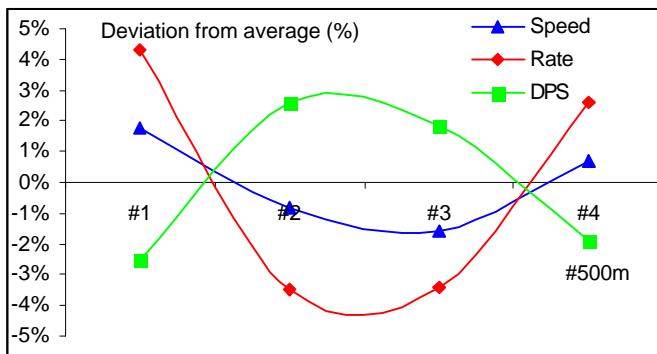
News

☺ We continue the analysis of the stroke rate during Worlds-2002 on the basis of measurements, which were done using video footage (RBN 1/2003).

Facts. Did You Know That...

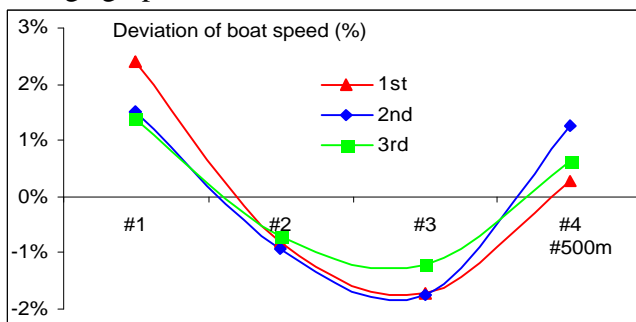
✓ ...analysis of stroke rate distribution during each 500m section of the race shows that it's similar to distribution of the boat speed (RBN 10/2002). However, the magnitude of the stroke rate deviation was larger. Being 4.3% higher than average over the 1st 500m, -3.5% and -3.4% lower in the middle of the race and 2.6% higher at finish.

Average deviations of race parameters in medalists of 14 Olympic boats during Worlds 2002



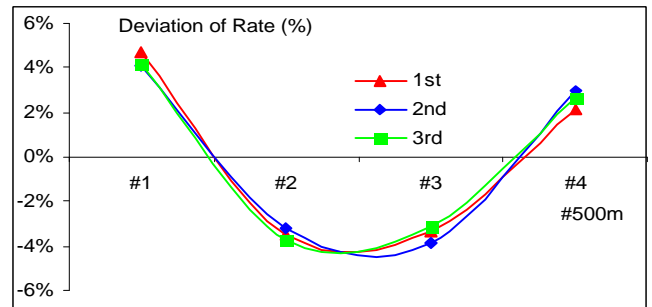
✓ ...distance-per-stroke (DPS) had an opposite distribution over the race: A 2.5% shorter DPS was observed over the initial 500m, 2.6% and 1.8% longer during mid race, whilst 1.8% shorter at finish. This means that rowers sacrifice DPS in favor of stroke rate to achieve higher speeds at the start and finish sections of a race, but use longer DPS at cruising speed during the middle of a race;

✓ ...there was no statistically significant difference found between the medalists in distribution of the stroke rate and DPS during the race. Though, the difference in boat speed distribution was quite significant (1, RBN 10/2002) as the comparison of the average graphs below indicates:

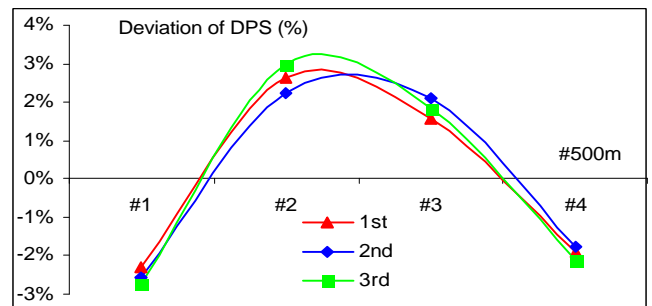


a

Curves of the stroke rate and DPS distributions were much closer to each other. Due to their very high variation between medalists (Appendix 1) we couldn't statistically verify the average difference. We can only state that, on average, winners had a tendency to have a slightly higher stroke rate and DPS at the start, which gives them a significant difference in speed. Looking at the graphs you can speculate yourself about other sections of the race

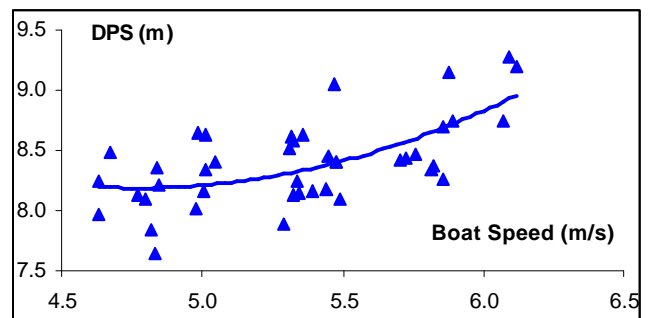


b



c

✓ ...faster boats usually have longer DPS, but correlation ($r=0.60$) was lower than between stroke rate and speed ($r=0.85$):



References

1. Kleshnev V. 2001. Stroke Rate vs. Distance in Rowing during the Sydney Olympics. Australian Rowing. 25(2), 18-21.

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Distribution of the boat speed, stroke rate and distance-per-stroke over 500m sections in the medalists of the World Championship 2002 in Seville.

Boat Speed (m/s)

Stroke Rate (str/min)

DPS (m)

