

News

☺ Analysis of the stroke rates during the last World Championship in Seville was conducted recently. The measurements were done using broadcasted footage, therefore only some parts of the race were available (about 40% of the total number of strokes was measured). The data was captured in PC real time, filtered and compared with official splits and final times. These are some results of the analysis.

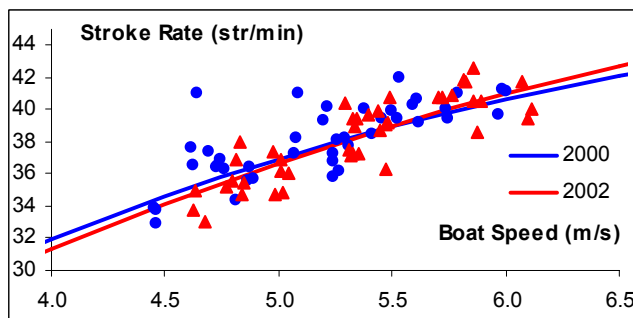
Facts. Did You Know That...

- ✓ ...average stroke rate of the medal winners in 14 Olympic boat types over the last Worlds was 38.19 str/min. The same parameter over the Sydney Olympics in 2000 was 38.07 str/min (1). So, we can see 0.12 str/min increase during the last two years;
- ✓ ...stroke rates in the majority of the boat types hadn't changed much. The largest increases of the stroke rate were in W4x (very low in 2000) and M4- (now the highest value of all boat types). Significantly decreased of the stroke rates occurred in W2- (very high in 2000) and LW2x.

Average stroke rate over 2000m in medalists of OG-2000 and WC-2002.

Boat	W1x	M1x	W2-	M2-	W2x	M2x	M4-
2000	33.5	35.9	38.4	38.8	35.8	38.0	40.1
2002	33.9	36.4	36.2	38.6	35.7	38.3	41.7
Diff.	0.5	0.5	-2.1	-0.2	-0.2	0.3	1.6
Boat	LW2x	LM2x	LM4-	W4x	M4x	W8+	M8+
2000	36.8	38.9	40.5	36.2	40.2	39.3	40.7
2002	35.7	38.6	40.8	38.4	40.3	39.7	40.4
Diff.	-1.1	-0.3	0.3	2.1	0.1	0.3	-0.3

- ✓ ...regression lines of the Rate/Speed dependence were similar in 2000 and 2002. This means that a higher boat speed in larger boats corresponds to a higher stroke rate:



Also, individual values are closer to the regression line in 2002 ($r = 0.85$), than in 2000 ($r = 0.75$). This

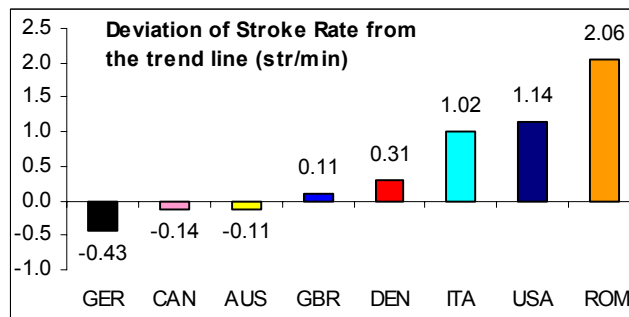
means that now there are fewer crews with very high or very low stroke rates. The majority of the crews choose a common trend line.

- ✓ ...having equated Rate/Speed dependence and trends of boat speed over the years (RBN 9/2), we can produce “prognostic” times and stroke rates over 2000m in different boat types for 2003:

Boat	W1x	M1x	W2-	M2-	W2x	M2x	M4-
Time	7:10.2	6:36.6	6:55.6	6:14.2	6:37.7	6:07.7	5:42.3
Rate	34.9	36.9	35.7	38.2	36.8	38.7	40.3
Boat	LW2x	LM2x	LM4-	W4x	M4x	W8+	M8+
Time	6:54.4	6:12.6	5:48.5	6:14.0	5:41.0	6:04.0	5:27.1
Rate	35.8	38.3	39.9	38.3	40.4	38.9	41.4

“Prognostic” here means the most statistically likely time and stroke rate of the Worlds-2003 winners.

- ✓ ...analysis of the stroke rate in different medal-winners didn't show statistically significant difference between them.
- ✓ ...crews from the main rowing countries perform differently in terms of rate/distance-per-stroke (DPS) ratio. GER, CAN and AUS usually have a stroke rate below the trend line, with longer DPS. ITA, USA and ROM, especially, emphasized a higher stroke rate by means of a shorter DPS.



Outstandingly low stroke rate and long DPS among the winners were shown in M2x (HUN, -2.46) and W1x (BUL, -1.98). On the opposite corner were found W2- (ROM, +2.12) and W8+ (USA, +1.82). So, once again (1), scullers tend to row with a longer DPS and sweep rowers use higher rate.

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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