

**Facts. Did You Know That...**

✓ ...at the last World Championship in Lucerne the boat speed was faster than at the Sydney Olympics in all boat types. On average it was 1.39% faster in Finals A and winners were 1.52% faster. The biggest differences were achieved in LM4-, M8+, LW2x, W2-, M4x, W8+ and M4-, the lowest were in M2-, W1x, M2x and M1x.

% to Gold Times	OG 2000 Finals A	WC 2001 Finals A	Diff. 01-00 Finals A	OG 2000 1 <sup>st</sup> place	WC 2001 1 <sup>st</sup> place	Diff. 01-00 1 <sup>st</sup> place
W1x	95.19%	96.03%	0.85%	96.40%	98.35%	1.95%
M1x	94.93%	95.83%	0.90%	95.87%	97.26%	1.39%
W2-	94.98%	96.78%	1.79%	95.82%	98.04%	2.21%
M2-	94.40%	95.14%	0.73%	95.17%	96.50%	1.33%
W2x	94.37%	95.82%	1.45%	95.80%	97.03%	1.22%
M2x	94.54%	95.42%	0.88%	96.12%	96.75%	0.63%
M4-	95.56%	97.02%	1.46%	96.56%	98.57%	2.01%
LW2x	94.53%	96.36%	1.83%	96.06%	97.70%	1.64%
LM2x	96.17%	97.62%	1.46%	97.18%	98.47%	1.29%
LM4-	95.40%	97.53%	2.13%	96.22%	98.43%	2.21%
W4x	95.07%	96.14%	1.07%	96.42%	98.14%	1.71%
M4x	95.33%	96.88%	1.56%	96.65%	97.98%	1.32%
W8+	95.13%	96.65%	1.53%	96.61%	97.34%	0.74%
M8+	95.05%	96.88%	1.83%	96.07%	97.72%	1.64%
Aver.	95.05%	96.44%	1.39%	96.21%	97.73%	1.52%

✓ ...analysis of the boat speed in different placeholders confirms above results for Finals A (1-6 places). However, the boat speed in Finals B was faster at the Sydney Olympics. This fact, and our previous facts (RBN #7,2001), probably could be explained by significant differences in wind conditions of Finals A and B in Sydney.

Place	OG 2000	WC 2001 Olympic Boats	Diff. 2001 - 2000	WC 2001 All Boats	Margin from the 1 <sup>st</sup> place (%)
1	96.21%	97.73%	1.52%	97.59%	0.00%
2	95.83%	97.33%	1.50%	97.18%	0.40%
3	95.53%	97.04%	1.51%	96.85%	0.74%
4	95.02%	96.45%	1.43%	96.41%	1.17%
5	94.19%	95.56%	1.37%	95.62%	1.97%
6	93.49%	94.50%	1.01%	94.71%	2.87%
7	94.79%	94.16%	-0.63%	94.27%	3.31%
8	94.44%	94.03%	-0.40%	93.94%	3.64%
9	93.66%	93.90%	0.24%	93.42%	4.16%
10	93.49%	93.47%	-0.02%	93.21%	4.38%
11	93.46%	92.78%	-0.68%	92.62%	4.96%
12	91.31%	92.17%	0.86%	92.23%	5.36%

**Ideas. What if...**

? ...you use the most effective exercises for back pain prevention on a more regular basis? The major cause of back pain is irregular stress of the intervertebral disks when the spine bends under load. It is critical to maintain good condition of small muscles, which surround the disks and hold vertebrae together. Also, good balance of the front and back layers of the muscles is important. Usually, rowers have no problems with back layer, so development of the front intervertebral muscles must not be forgotten.



The most effective correction exercise against back pain is legs lifting on the bar. One-two sets of 10-15 reps. must be done straight after each rowing or ergo session, when the body is still warm. It is a good idea to construct the bars in the boat shed or not far from it.

This exercise also stretches the disks that improves their regeneration after workload by means of shape correction and increasing of blood circulation. The experience of a number of coaches and athletes in other sports with heavy spine loads (weightlifting, gymnastics) tells us that back pain is practically unavoidable unless the athletes always do correction exercises.

**News**

☺ Comprehensive biomechanical measurements were conducted in Canberra during September. 19 channels were measured from the single: two horizontal and two vertical oar angles, two orthogonal and two axial forces at the gate, two footstretcher forces, one handle and one blade forces, seat and trunk positions, boat and seat accelerations, boat speed, wind speed and direction. The purpose was modeling of the biomechanical rower-boat system.

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