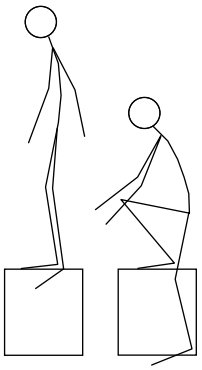
Questions and Answers:

✓ **Q:** Wilson Reeberg, Technical Director of Rio de Janeiro Rowing Federation, Brazil asks: "In your newsletter from July 2001 (Vol 1 N 7), you wrote "...one-leg squat, when you use the other leg for initial acceleration, looks much more similar to rowing than normal squat or jump-squat." Could you describe the "one-leg squat using the other leg for initial acceleration"? Is it like a jump-squat, but with one leg in front of the other? I would like to try it with our athletes, but in the right way."



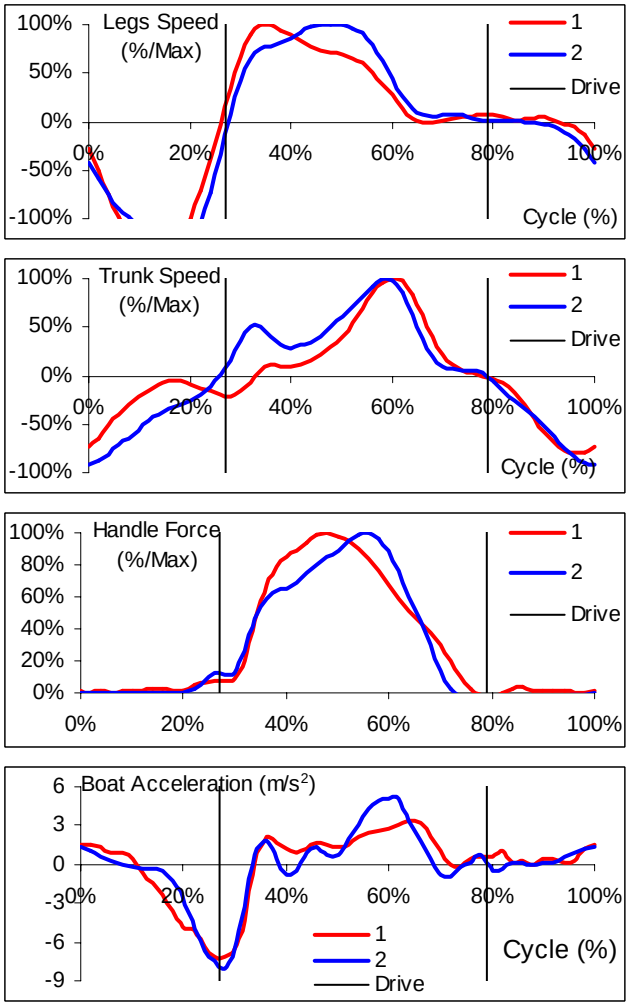
A: Use a block 5-10cm higher than the knee level of the athlete. Bend the working leg slowly; do not accelerate too much during downward motion. At the bottom point push the ground sharply with other leg and foot to change direction and accelerate body upward. This moment simulates change the direction of motion on water, when blade has no support yet. Then quickly shift the load onto working leg and continue motion upward in slightly decelerated manner.

✓ **Q:** This has been some interesting questions from Concept-II Training forum: "…Is the catch and the beginning of the drive initiated with the hands or the feet? Is there a catch that is distinguished from the beginning of the drive? Where do I feel resistance first, hands or feet? Hank" (http://concept2.ipbhost.com/index.php?showtopic=802)

A: If we understand the term "initiate" as movement of the legs or upper body, then emphasis at catch on the legs drive (stretcher push) or upper body work (handle pull) depends on rowing style. In RBN 2001/7 we defined consecutive (or classical, legs first) and simultaneous (legs and trunk together) rowing styles. We can see very successful rowers in both rowing styles: e.g., some Italian crews clearly belong to the first one, a number of German rowers use the second style (see Appendix).

Below are parameters of two single scullers, which styles can be defined as consecutive (1) and simultaneous (2). The first sculler has force peak earlier and the boat acceleration is more even during the drive. The second sculler has the force peak later and the boat acceleration is unstable.

However, we believe that the most efficient style is somewhere in between these two polar ones: legs initiate the drive and trunk starts working very soon after that.



Now we will try to make the second question clearer. We call "drive" when we drive or move something forward. This "something" can be the handle, or the boat, or whole rowers-boat system. We define drive phase using the handle movement, because this is the easiest method. Following our definitions of the drive micro-phases (RBN 2004/1,2,10), D1 is clearly different from the subsequent micro-phases. The boat and the system accelerations are negative during D1, that means the rower do not move, "drive" the them forward. The main tasks of D1 are changing direction of the rower's movement relative to the boat and placing the blade into the water. We call D1 "blade insertion", but it also can be denotes by the term "catch".

Considering forces applied by rower, the stretcher force always increase earlier than the handle force (e.g. RBN 2004/1, the first graph). On a stationary ergo this difference in timing is much bigger (RBN 2003/10). Therefore, we can answer is: the resistance has to be felt on the feet first.

Contact Us:

✉ ©2004 Dr. Valery Kleshnev
kleval@optusnet.com.au (m) +61(0)413 223 290

Examples of the simultaneous and consecutive rowing styles.

Top: simultaneous style, M4x Germany, World Championship 2003, Milan, 1st place.
Bottom: consecutive style, LM2x Italy, World Championship 2003, Milan, 1st place.
Video 25 fps, drive phase only.

1 **2** **2**

4 **5** **6**

7 **8** **9**

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