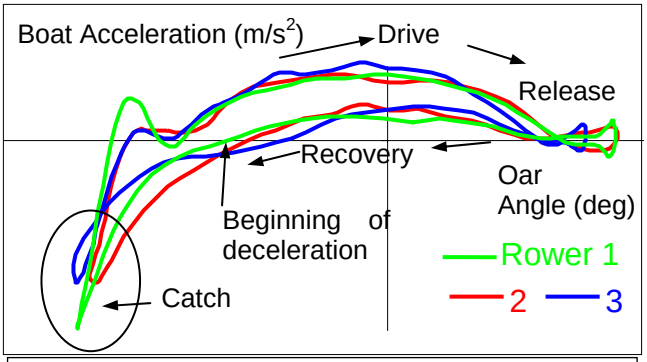
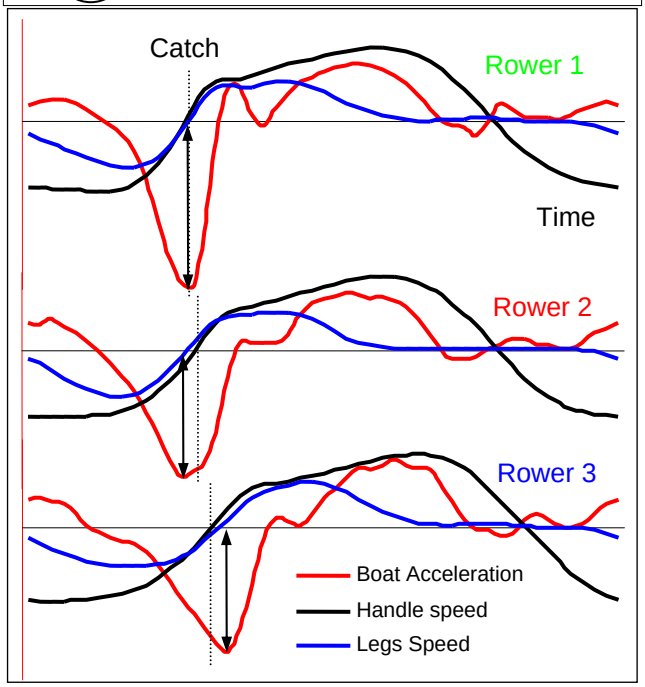
Facts. Did you know that...

✓ …boat acceleration can be used as useful diagnostic tool for defining various aspects of rowing technique? Discussed below are some of the features of the boat acceleration (**BA**) curve in conjunction with oar angle, force curve and segments work.

✓ … shape of the **BA** at catch is determined by coordination of the handle and legs movement? When plotted relative to horizontal oar angle, optimal shape of **BA** curve resembles a sharp wedge (Rower 1). If it is wide (Rower 2), minimal **BA** occurs before catch (change of the oar movement direction). This happens when legs start the drive earlier than the handle ("bum shooting").

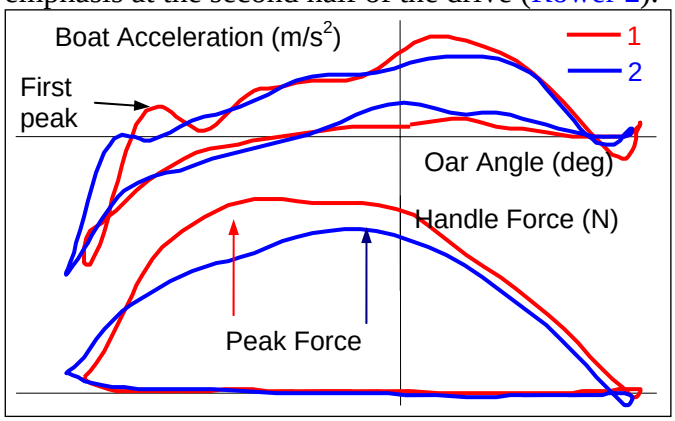




If **BA** curve makes a loop (3), then minimal **BA** is later then the catch. In this case, a rower starts the handle drive with the trunk rotation, while seat is still moving towards the stern.

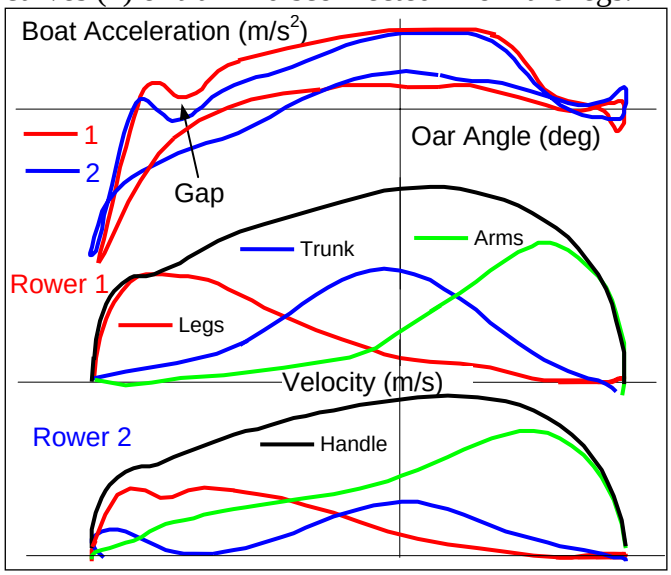
Point where **BA** crosses the X-axis during recovery defines the beginning of boat deceleration, i.e. pushing off foot-stretcher before catch. This happens later with good rowers (1) and then **BA** drops down quickly. Some rowers (3) try to pull foot-stretcher before catch that makes **BA** curve nearly horizontal.

✓ …so called "first peak" of **BA** during the drive is not as bad as some coaches think? It can be found in all crews with a fast increase of the force at catch (Rower 1). On contrary, the first peak was not found in crews with the force emphasis at the second half of the drive (Rower 2).



✓ …a gap after the first peak depends on coordination of legs and trunk, and on their movement patterns? The smaller gap and higher BA during the first half of the drive means that segments speed curves are smooth and the curves are well overlapped (Rower 1).

The **BA** gap can drop below zero (boat deceleration) if legs or trunk have double-peaked curves (2) or trunk "disconnected" from the legs.



References

📖 1. Kleshnev V. 2002. Moving the rowers: biomechanical background. Australian-rowing. 25(1), 16-19

Contact Us:

✉ ©2003 Dr. Valery Kleshnev, AIS/Biomechanics
tel. (+61 2) 6214 1659, (m) 0413 223 290, fax: 6214 1593
e-mail: kleshnevv@ausport.gov.au