

Perpendicular to Extraction Acceleration

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The Oar Perpendicular to Extraction Acceleration is the measured boat acceleration (m/s^2) between the oar perpendicular to the boat and blade extraction. This factor provides values that measure the athlete/crew's ability to apply power and stay connected with the blade in the water in the late drive phase.

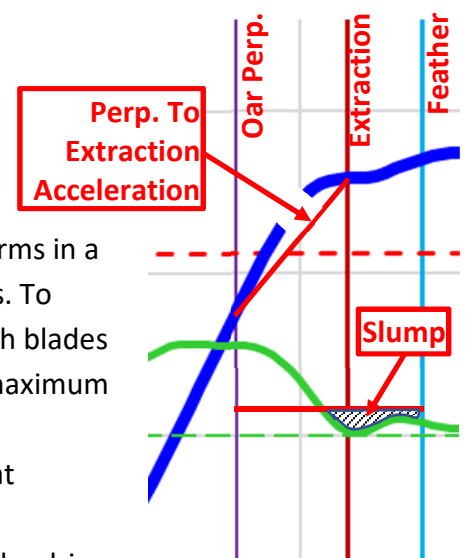
³ **Perp to Extract Accel.** (m/s^2) **2.44** boat acceleration between oar at perpendicular and blade extraction

Purcerverance Boat Speed Curve Sheet – Perpendicular to Extraction Acceleration

The ability to maintain boat acceleration in the late drive phase is critical to performance. Typically, Perpendicular to Extraction Acceleration is greater than Drive Acceleration values. Lower values indicate a loss in blade connection with the water or reduced power application due to biomechanical inefficiency. Blade connection or power application inefficiencies lessen the force on the oarlock pin, and boat acceleration decreases.

Coaching:

- Late drive acceleration is a combination of body mechanics and blade connection.
- Ensure oarlock height allows the oar handles to draw to the body at a biomechanically effective position in the late drive. The forearms should be parallel to the water's surface, with the elbows and upper arms in a position to allow a strong connection with the latissimus dorsi muscles. To check the oarlock height, the athlete is sitting in the finish position with blades flat on the water, and the oar handles should be at a height to allow maximum power application through the torso and arms.
- When the oars cross perpendicular to the boat, the arms maintain boat acceleration in the late drive.
- The torso reaches the full layback position before the arms complete the drive phase of the stroke.
- Good torso posture is maintained in the late drive with no collapse of the lower back.
- The shoulders are drawn back as the lats pull the upper arm towards the spine.
- It is critical that the oar blade remains buried and maintains the resistance as long as possible until it is quickly and cleanly extracted from the water.



Drills:

- Zero to one hundred percent power application through the drive
- Pause one – emphasis on good finish position.
- No-power finishes, maintaining blade depth.
- Sweep rowing: outside arm only.
- Wide grip.
- Late drive pic drills.