

WHAT'S IN THE



This month **Robin Williams** focusses on how the trunk works with your legs and shoulders to maximise power production in the stroke cycle

Racing pieces, starts, the skills of a good rhythm, and clever drills are all topics which we enjoy unravelling. Yet basic sequences and the feed of power into the stroke are the bread and butter of what we do, hence I make no apology for continuing from last month's piece about legs with a look at the trunk this time!

Just to recap a few points already made:

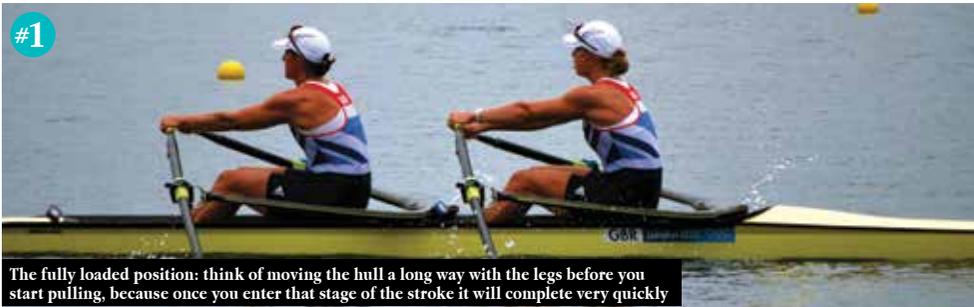
- The catch comes from the feet, but only needs a small amount of movement.
- The rest of the leg drive is a much longer movement, and moves the hull forwards.
- From catch to peak handle force, the

distance from the handle to the seat is constant (i.e. you don't need to pull the handle towards the seat just yet).

- Peak handle force is about 15° before the oar is squared off (orthogonal position).
- "Whichever body part is moving, that's how you are trying to move the boat." Paul Francis, bio-mechanist.

Trunk sequence

So, **picture #1** shows the rower at this fully loaded position whereby no more force can be created yet the hull will already be building useful speed from this initial leverage. It really helps to think of moving the hull a long way with the legs before you start



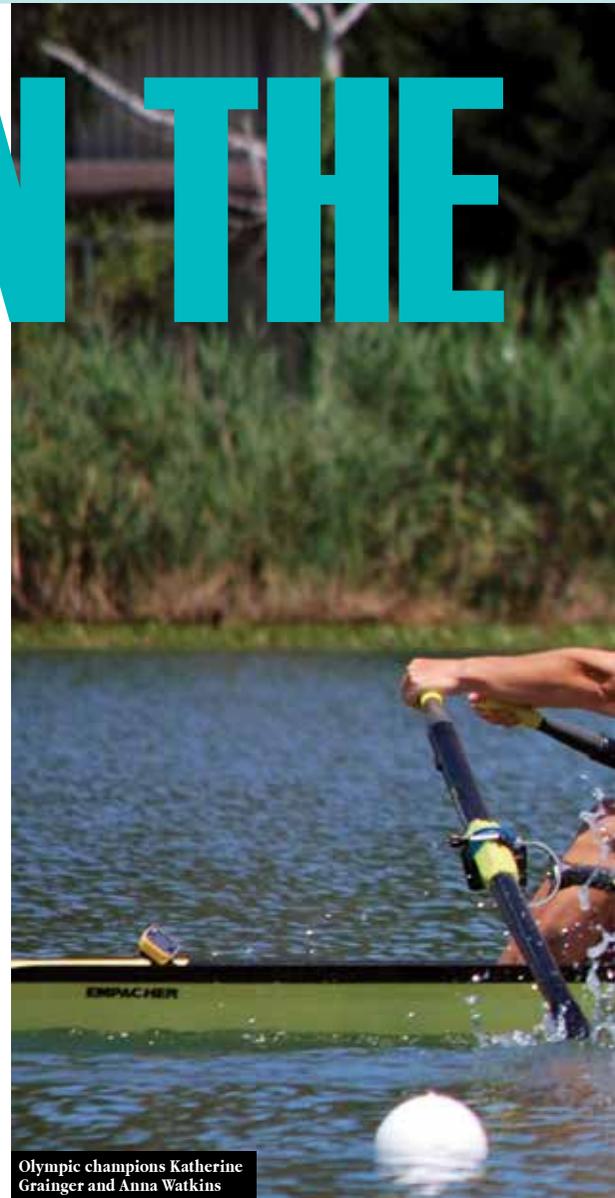
#1
The fully loaded position: think of moving the hull a long way with the legs before you start pulling, because once you enter that stage of the stroke it will complete very quickly



#2
Maximising the pressure: pushing your hips up from the seat by squeezing the 'glutes' will keep weight off the seat and force your upper and lower body apart with even more power



#3
The shoulder draw: they connect the existing power from the leg / back movement to your arms and help sustain that suspension in the hips



Olympic champions Katherine Grainger and Anna Watkins

pulling because once you enter that stage of the stroke it will complete very quickly. If the power phase takes, say, 0.8 seconds in all, the push-only bit may easily last for 0.4 seconds of that time.

I mentioned previously that if the **trunk** tries to move too soon it over-resists the legs and stops them from building speed. If the **arms** pull too soon they impede the trunk movement, so you might need to experiment with what is optimum for you.

The feeling you want is for the legs to get moving, so only bring in the trunk when you feel your legs will keep going down no matter how hard you pull with your back. I don't want to imply that the trunk is passive during this loading phase; in fact the legs are not directly connected to the oar at all so unless the trunk does a good job of transmitting the leg force, the leg movement will not be effective. It's very much a question of whether your trunk can hold the leg drive: many of us open early because we are not conditioned in the abs and lower back to hold the push. However, if you are, then you can really exploit the hip opening when the time comes.

Picture #2 shows the rower at this stage. On the force curve* you are trying to hold on to the peak pressure but because the boat is getting faster you have to push and pull with ever-increasing speed. This is power production, of course, and your back is phenomenally strong and fast. Think of

TRUNK?

“A good adage is that you can only make a movement once”



judo, kayaking or hammer throwing. The hips are the hinge between lower and upper body so your thighs can push into the hips and your back can extend away from them, but the hips themselves can also contribute. The gluteal muscles are very strong so if you can think of pushing your hips up from the seat by squeezing the ‘glutes’ at this point then you can keep weight off the seat and force your upper and lower body apart with even more power.

So the force and leverage you are able to load into the first half of the stroke generates the power and acceleration you enjoy in the second half, and as you enter the last third of movement from the legs and back your secondary technique comes into play.

How can you prolong the time in the water?

Picture #3 introduces the shoulders, which are extremely strong but do not have much movement available to them. Try stretching your arms out in front of you and then retract the shoulders. The range of movement is maybe 2-3 inches. Nevertheless they make a huge contribution because they connect the existing power from the leg / back movement to your arms, and help sustain that suspension in the hips. That’s why the arm draw is fast – because the legs, back and

shoulders, all strong muscle groups, have built so much speed into the handle already.

A good drill for the trunk movement is to row to three-quarter slide forwards (keeping heels on the footboard and chest tall) and cut off half the arm

“The hips are the hinge between lower and upper body”

pull at the finish. This concentrates the stroke into the middle half with a solid platform on the legs to drive with and a strong body position so you can open the trunk powerfully. You can do it at low rate firm or as a race pace drill once you are happy with the coordination.

What problems might you encounter?

If you are too far over with your body at the catch, the trunk cannot resist the legs well enough to transfer the load to the oar so the peak force will be weak and late. If you are too upright at the catch, your trunk may open early causing an early peak but you’ll find it hard to hold the finish. The arms will struggle to produce power unaided and you’ll lose suspension early too, sitting down on the hull before the handle reaches the finish.

The most common problem with the mid-section is to pull the arms when the shoulders are still in front of the hips. So make sure the **first** pull is from your back and the **second** pull from the arms. A good adage is that you can only

make a movement once – if you retract your shoulders at the catch, for instance, you can’t do it again in the second half when you actually need them.

To help cement these sequences, try rowing just the first half of the stroke, then just the middle part, and finally the last half, working out how to order and overlap these movements.

Robin Williams

Robin coaches the GB women’s pair who delivered Team GB’s first gold at London 2012. He coached the lightweight men’s four to gold at the 2007 Worlds and to fifth at the 2008 Olympic Games. From 1995 to 2005, Robin was Chief Coach at CUBC, achieving seven wins out of 10 in the Boat Race against Oxford. After learning to row at Monmouth School and then representing the University of London Boat Club, he gained his first GB vest in 1981 when he was selected for the Worlds.