

Teaching Efficient, Injury-free Technique

a discussion among coaches

A. Behind a Successful Coaching Philosophy

- You can learn something from everyone. Look, See, Hear, Listen, THINK.
- Sharing your experiences and thoughts builds a stronger you. It does not disadvantage you.
- Today is the start of a new experience ... Learn from the following pages and share with others; participate in these kinds of discussion webinars and help grow a stronger paddling community in NSW.

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B. What are we Teaching?

- **INJURY FREE MOVEMENTS:**

- Reduce jolting and jerky movements, especially those that reverberate through the hands up the arm to the shoulder.
- Death Gripping the shaft. Teach the paddler to hold the shaft firmly but without a death grip. When changing to a high-performance paddle, especially those with very powerful catches, put the paddler on a grip and forearm strengthening program before making the transition.
- Cocking of the wrist during the stroke. Causes rsi. Check paddle angle first. Set the paddle angle to the paddler's biomechanics. Use tape or a brace to help the paddler identify when they are cocking their wrists and to teach them to stop doing it.
- Cocking the wrist on the exit. Causes rsi. Very common among surf paddlers on the exit. Use tape or a brace to help the paddler identify when they are cocking their wrists and to teach them to stop doing it. Another method is to get the boat speed up and then ask the paddler to take their bottom hand off the shaft. What happens? This will give them an idea of the dynamics of the blade in the water and whether they need to cock their wrists on exit.
- Holding the paddle evenly. One hand slips inwards or outwards. Can use tape to provide a cue for when this is happening.

- **POSTURE:**

- Sitting up off hips. Slight forward lean. Do not allow paddlers to slouch into the seat. This is common in ski and leads to injury. Need to teach paddlers to sit up off their hips.
WHAT YOU WILL SEE ... rounded back. Some masters and para paddlers will have rounded backs – it is worth getting professional advice from their doctors. Some conditions can be greatly improved by working on posture in the boat.
METAPHORS include ... Sit up Tall; Angels have your hair and are pulling you upward and forwards; Sit up from the hips and then lean slightly forward.
- Shoulders down and back. This is to ensure that the chest/thoracic region is open. If it is not, the paddler will not be able to rotate properly through the stroke.
WHAT YOU WILL SEE ... rounded shoulders, head pushed forwards.
METAPHORS include ... Roll your shoulders back and down, now relax; bend your head forwards, tuck your chin in and now straighten your back without your chin moving upwards.
- Chest in over or slightly in front of the hips. Leaning slightly forwards will help balance. Paddlers will often lean backwards when unstable in the boat. You will see this movement towards the back end of the stroke.
WHAT YOU WILL SEE ... Paddler leaning backwards.
METAPHORS include Sit up tall and lean slightly forwards.

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- **CATCH.** Torso does not move from the exit position. Front hand (at eye height in recovery position after exit) drops down, positioning the blade for the catch. Back hand (still at ear height) stabs the paddle into the water along the shaft so the the blade moves into the water in a forward movement. Torso does not move. Blade is submersed with bottom arm straight, torso pointing away from stroke side – preferably in same position as at the exit. Boat is moving over the paddle during the entry process and the bottom arm bends slightly at the elbow to accommodate this.

WHAT YOU WILL SEE:

- Big splash of water as the blade submerses. Caused by unwinding of the torso to cycle the paddle into the water; results from having a very straight top arm at the end of the recovery period of the stroke. To prevent this from happening, the top arm has to have a slight bend in it to allow the stabbing movement.
- Instability of the boat and pelvic platform during the recovery and preparation for the catch. This will impact on the ability of the paddler to execute a good stab catch.
- If you are in a tinnie, you will know when your paddlers are getting the stab catch right because you will see a second vortex develop after the blade has left the water about 1 m behind the stern of the kayak. It will look like it starts from under the water and rises up to the surface, which is why you don't see it immediately after the paddle leaves the water. The faster the boat speed, the further back you will see it surface. The second vortex is to the bank side of the starting vortex (which runs alongside the hull of the kayak from the moment the paddle is put into the water) about the distance from elbow to wrist away from the starting vortex. It should be at right angles to the starting vortex – if it is behind the starting vortex, the paddle is slipping, most likely due to the exit movement but sometimes through the stroke.

SOLUTIONS:

- Need to convince the paddler that this is a better way to do the catch than what they see on youtube. Use seated row to demonstrate the significant increase in power to the hand from a starting position where the torso is rotated away from stroke-side vs a starting position with the torso facing forwards.
- Work on getting a slight bend in the top arm. This is hardest to fix in paddlers who have been taught to punch out the stroke at the exit with a straight top arm into the catch.
- Teaching stab movement is easiest on land first. Stab the blade into the water quickly, feel the concrete feeling as the blade grabs the water at the end of the catch. This feels like you are putting your weight onto the catch. But rather than leaning onto the catch, use the dynamic movement to generate the drag.
- Spear or stab the paddle across your knees – don't need to reach for the catch. The blade will end up buried at your feet if you stab in a forward movement.
- Work on leg drive timing. Keep pressure on the exit side hip to give the paddler a firm platform for a rapid and aggressive stab catch, transfer to stroke side heel once the blade is fully submersed and start leg drive. This transfer movement is quick. Another way of saying this is to release the leg once the blade is buried and drive with the stroke-side heel.

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B. What are we Teaching?

- **STROKE.** As soon as the blade is submersed, force from heel on footrest, traverses through core to opposite shoulder and onto the two-point fulcrum (hands), to the paddle and pushes the boat past the paddle. The torso rotates to keep the connection. Stroke-side elbow stays close to the torso and do not lift it through the stroke. Torso stays tall and firm with no crunching of the side muscles through the stroke.

WHAT YOU WILL SEE:

- Shoulders and hips should move together – a parallelogram.
- Shaft of the paddle stays the same distance from the torso through the whole stroke.
- Knee on stroke-side drops at a steady rate through the stroke – make sure leg drive starts when the blade is fully submersed and not before or late. If leg drive starts early, you will see a splash on the catch.
- Stroke-side elbow runs along the cockpit line. It does not migrate outwards through the stroke. Paddle is not pushed away from the boat.
- Crunching leads to the boat lifting up on stroke side towards the end of the stroke.

SOLUTIONS:

- On land drill with a ball on chest and broomstick shaft doing the movement to teach the feeling of the parallelogram of shoulders, hips and shaft. Paddler needs to get the feel of the whole system moving together through the stroke, connected by a strong core.
- Seated 1 arm row working on timing of leg drive and start of the rotation.
- Elbow of the top hand starts at armpit height and stays below the shoulder through the stroke, top hand does not drop through the stroke and stays at between eye and throat height; top hand moves along the interface between land and water from catch to exit. If you have eyes on your elbow joint, the eyes are looking down at the water at all times (helps prevent elbow from lifting through the stroke). This metaphor will also keep the stroke side elbow in the right position through the stroke.
- Crunching is often caused by weak QLs. Get this assessed professionally and start a strengthening program. Sitting tall through the stroke and keeping the weight on the stroke side butt helps.
- Teach the hips to move around the seat, rather than off the back of the seat. This will help the paddler learn to keep the parallelogram rigid.

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B. What are we Teaching?

EXIT. The stroke ends when the stroke-side hand reaches the hip and the elbow does not go behind the torso. Simply pick the blade up out of the water. If the position of the exit is correct, the water will run down and off the blade in a small puddle.

WHAT YOU WILL SEE:

- Water flying off the blade, often going backwards or across the back of the boat. Paddler has not simply picked the blade out of the water but cycled it out. Often this is associated with the paddle following a cycle in depth through the stroke.
- Bucketing of water off the blade ... exit initiated too late, hand past the hip. Blade is at the wrong angle for an efficient exit.

SOLUTIONS:

- Lead the exit with the knuckles. Lift knuckles to the sky.
- Do a drill taking the paddle out at the knees to get the paddler the correct feeling of a square blade.
- Shallow water drills (hold front of their boats) working on identifying the relationship between wrist position and blade aspect.
- See earlier comments about cocking the wrist on the exit.

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C. Useful Coaching Aids.

- **VIDEO.** Probably the best aid for teaching technique if you can give immediate feedback. A phone and a tinnie is all you need. Having the ability to film during any session is really useful as you can pull the paddler over and show them what they are doing and help them fix it on the spot. Many paddlers are visual learners and don't easily relate words to movements. Film them, bring them over, talk over what they see and suggest how to fix it. Weekly group sessions are useful. Teach them to help each other. One of the most efficient ways to learn is to teach, especially difficult skills. Electric motors can now get to 20 km/hr and are really quiet so you can easily talk with your paddlers whilst motoring beside them. Expensive though! Around \$9000 including battery (Vortex). Have to charge each night. Centre console is best for coaching tinnie layout.
- **EYES CLOSED DRILLS:**
 - Position kayak on land with rudder off the ground. Paddler in boat with broomstick shaft of the same length as that from pinkie finger to pinkie finger on their paddle shafts. Get them to go through the stroke with their eyes closed. You can call the actions ... recovery position, shaft parallel to water at eye height; drop front hand, stab catch, engage heel and push boat past paddle, exit ... get them to stop at different positions and open their eyes to see where their bodies are. Discuss any differences between where they perceived their bodies when their eyes were closed to where their bodies actually were. Very useful for paddlers who drop their hands through the stroke, who pull the paddle past the hip on the exit and who unrotated their catch.
 - Paddling in the dark. When very calm, teach them to listen to the sounds of their stab and exit. Most people will learn to love paddling in the dark - it improves their feel of the water.
 - Paddling in team boats with closed eyes in seats behind stroke. Helps to learn to feel timing.
- **TEACHING WATER FEEL.** If you can feel it, you can usually fix it. There are a couple of different drills to help paddlers develop the ability to feel what is happening in the water and relating it to what they feel their bodies doing:
 - Paddle using the correct technique without a paddle. Works your stabilising muscles and teaches the paddler how to develop a stable platform from which to execute the stroke.
 - Paddle through the stroke but instead of exiting, bring the blade back to the catch position. Helps the paddler feel the water-paddle connection. This is also built by teaching strong, efficient side strokes and experimenting with different blade angles and shaft lengths.
 - Slow, dynamic paddling - slow stroke rate with high power. Snap the exit and hold for 2-3 seconds before initiating the next catch. Should do these at least 2x per week.

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D. Building Good Technique into Speed.

- Unfortunately, technique is a neuro-muscular skill that is not automatic once learned at slow stroke rates and boat speeds. As soon as a paddler increases his/her stroke rate or power, they tend to resort back to their original way of paddling. So, teaching technique is a continuous activity and is best taught in speed increments. Paddlers who want to be the best they can be will need to go through this process if they want to have an efficient stroke at high boat speeds. There are no shortcuts!
- **BLOCK PERIODISATION:**
 - Track speed-technique through each week working on extending good technique to slightly higher stroke rates and boat speeds continuously. Technique is taught in all sessions although dedicated sessions per week are useful with beginners or with paddlers struggling to get a component of the stroke right. Technique is very tiring. Our neurological systems can usually only take about 30 minutes of intense instruction and drills.
- **STROKE RATE DRILLS:**
 - Perfect technique with low power at about 40-60 strokes/min. Then work on increasing power until the paddler can paddle at those stroke rates with very high power. Then work on 70 strokes per minute etc. Only increase the stroke rate once the skill has become consistent. Can also do this by boat speed.
- **TESTING:** Regular testing is the only way to know if your coaching program is working. This is about testing technique and not performance.
 - Physio feedback – strategies in the gym to strengthen muscle weakness or unevenness, e.g., QLS to reduce crunching.
 - Blood lactate testing – if done regularly, you can determine where stroke inefficiency is preventing improved performance. Very useful for paddlers who fixate on fitness rather than technique.
 - Strength in gym – test differently at different times of the year depending on the program goal. Bench pull, squats, deadlift, chin-ups, core strength (hip bridges, slide planks, back extension), pushups, bench throw, standing vertical jump, 100 m run etc.
 - Time trials on the water.
 - VIDEO during on-water time trials can be very illuminating if the paddler loses form at faster speeds. So comparing technique between 5000 m and 200 m.