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Introduction

This document describes and gives tips on teaching many of the strokes paddlers use to propel and manoeuvre their canoe.

Some strokes are more common on lakes where others are geared for moving water. Stroke names may also vary depending on the region you are from. This document uses the most common names and descriptions for the strokes.

Strokes are not listed in any particular order in this document. These strokes are to be used by the paddlers to propel the canoe forward, backward, or for turning left or right. Strokes can be altered or blended by the paddler depending on the water features they may encounter in order to display smooth and control manoeuvres.

There are three basic phases to a stroke. They are the catch, power, and recovery. The catch is when the paddler plants the paddle blade in the water. From there paddlers show try to envision the power phase as the canoe or the paddlers body being moved towards or away from that blade, instead of the blade coming to the canoe/them. The recovery is how the blade returns to that catch position, either by under or above the water.

Instructors should, however, be aware that stroke acquisition is not the only road to competent canoeing.
MOMENTUM STROKES

Forward

Purpose
• Provide forward propulsion. This stroke may be used for extended repetitions as in canoe tripping.

Catch and Power Phase
• Keep the paddle as near vertical as possible when viewed from the head on position. The paddler will lean slightly forward and rotate their body. Immerse the blade fully. The paddle will look angled for the side view at this catch phase.
• Rotate the torso so that the shoulder nearest the paddle extends slightly forward. Keep the grip hand near shoulder to chin height and held away from the face. Arms should have a slight bend in them.
• As the paddler unwinds the torso the hip is pulled to the paddle. The power phase is complete before the hip passes the blade.

Recovery
• Slice the paddle blade up by dropping the grip hand, rotating the wrist so the grip hand thumb is pointing forward. Feather or slice the blade is horizontal/parallel to the water as the body unwinds to the catch phase.

Teaching Tips
• Move the grip hand out over the gunwale in a ‘cross-body punch’ movement to effect a more vertical position of the paddle.
• Ensure that the propulsion phase ends at the hip. Let the paddle ‘float’ to the surface with no lifting of water.

Must See
• Maintain constant forward speed.
• Keep the paddle vertical.
• Immerse the blade fully.
• Lean slightly forward from the waist.
• Rotate the upper body.
• During the recovery phase, slice the blade forward with the leading edge slightly elevated.

Errors & Corrections
• Error: There is excessive boat bobbing and body movement.
• Correction: Use less forward lean and more trunk rotation. Apply force smoothly during the propulsion phase.
• Error: The canoeist lifts water with the paddle at the end of the propulsion phase.
• Correction: End the propulsion phase at the hip. Slice the paddle diagonally forward out of the water.
Forward with Power

Purpose

• Provide forward propulsion with maximum power over short distances.

Catch and Power Phase

• Use a slight forward upper body lean. Rotate the torso so that the shoulder nearest the paddle extends forward. The upper body winds up tightly like a spring.
• The hip nearest the paddle may rotate slightly with the upper body. Fully extend the lower arm while slightly flexing the top arm keeping both out over the gunwale. Keep the grip hand at about chin level. The shaft hand remains above the gunwale.
• Immerse the blade fully keeping the paddle as near vertical as possible from the front view. Unwind the upper body like a powerful spring.
• End the propulsion phase as the hip is pulled to the paddle blade.

Recovery

• Slice the paddle blade up by dropping the grip hand, rotating the wrist so the grip hand thumb is pointing forward. Feather or slice the blade is horizontal/parallel to the water as the body unwinds to the catch phase.

Teaching Tips

• Emphasize that body rotation is an important component of this and many other strokes.
• Be aware that many adults do not have good upper body flexibility. Do warm up activities on shore that will help to increase torso rotation. For example, have the canoeist place the paddle shaft across the back of the shoulders and rotate to the right and the left.
• Contract abdominal muscles as power increases.
• Practice the stroke on land or standing in shallow water. Note, however, that while this may facilitate the learning of some aspects of stroke mechanics, the canoeist cannot, of course, realise the desired boat response.

Must See

• Maintain dynamic and consistent forward speed.
• Extend the arms to initiate the stroke.
• Lean forward slightly from the waist.
• Lead into the stroke with the shoulder on the paddle side—rotate the torso.
• Keep the elbow of the upper arm slightly flexed; it acts as an ‘anchor’ for the stroke.
• Keep the paddle vertical.
• Immerse the blade fully.
• Initiate the recovery phase when the shaft hand is at the hip.
• Utilise the entire power unit, i.e. the torso and arms.

Errors & Corrections
• Error: The canoeist uses arms only.
  Correction: Paddle like a stick man or tin soldier using upper body rotation only.

• Error: The canoeist lifts water at the end of the propulsion phase.
  Correction: Shorten the stroke. Slice the blade diagonally forward out of the water.
Traditional (Punch)

Purpose
• A relaxed traditional forward stroke for bow, stern or solo paddlers that relies on leverage, rotation and a short stroke length.

Catch and Power Phase
• Use a standard forward stroke grip but a relaxed stance. Start with the grip hand near the cheek and the blade in the water in front of the knee. Stern paddlers and solo canoeists may need a corrective stroke to provide steering.
• With the grip hand just ahead of your cheek and the blade in the water just ahead of your knee begin the stroke by punching forward and slightly downward towards the onside gunwale with your grip hand.
• The stronger the punch the quicker the stroke and the faster the canoe will go. Put some body weight and torso rotation behind the punch to maximize the power of the punch.

Recovery
• As the hip reaches the shaft hand loosen your shaft hand grip to allow the shaft to rotate. Untwist and straighten your back as you start to feather your blade out on the recovery Slice the blade forward and out of the water then elevate the leading edge of the blade slightly during the recovery so the blade is almost but not quite parallel to the water then to initiate the next stroke slice the blade in towards the hull.

Steering
• When a steering correction is needed with a traditional stroke it is recommended to do either a J or Canadian or Silent stroke: Perform the Traditional stroke but as your grip hand gets close to the gunwale roll your thumb down relax your arms, let the shaft rotate in your bottom hand and trail slightly behind you while finishing with the correction stroke. Constantly having that grip hand over the gunwale ensures that the blade is close to the hull throughout the stroke.

Teaching Tips
• Try doing a punch towards the gunwale without the paddle. Do you feel how the back muscles stretch and how your shoulder rolls? The shoulder roll will help with the important torso rotation.
• Perform the “punch with power” exercise with a fixed fulcrum by hooking the lower shaft hand on the gunwale at the hip. Then punch the upper grip hand towards the gunwale using a shoulder roll so the grip hand thumb touches the gunwale. Repeat this exercise numerous times until the student feels the power of the leverage. Note that a fixed fulcrum will facilitate some aspects of learning about leverage but when applying the traditional stroke, a travelling fulcrum is required.
• To facilitate straight line paddling and a greater power stroke keep the top grip hand over the gunwale. This keeps the blade close to the hull which counteracts the tendency of the canoe to veer away from the paddling side.

Must See
• Smooth short stroke length.
• Punching motion of top hand with shoulder roll.
• Torso rotation.

Errors & Corrections
• Error: The canoeist has locked elbow.
  Correction: Elbows should be bent through the stroke and the recovery. A bent grip arm elbow at the end of the recovery ensures a good punch for the next stroke. The bent lower elbow insures that the blade can be sliced under the hull.

• Error: The canoeist does not have the punch to the stroke.
  Correction: Start the stroke with the grip hand at cheek level and ensure the upper hand is pushed forward and down and that the lower hand acts as a moving fulcrum.

• Error: Shaft hand is turning the shaft on the recovery.
  Correction: If the shaft is gripped too tightly on recovery it competes with the upper hand which is the control hand. If this occurs it makes the stroke less smooth. Use analogy of an oarlock.

• Error: The spine is straight throughout the stroke.
  Correction: At the start of the stroke sit erect and slightly tilt the head to your paddling then as the shoulder roll/punch is applied allow the torso to rotate and bend forward to utilize the large back muscle groups. During the recovery return to the erect position and start the sequence again.

• Error: The paddle blade is meeting resistance at the beginning of the slice in.
  Correction: Accomplish the recovery, and then when the paddle reaches the 90 degrees point slice the blade slowly forward towards the knees.

• Error: The canoeist is unable to maintain a straight course.
  Correction: Keep the stroke as close to the canoe as possible by keeping the grip hand over the gunwale. Straighten the blade to right angles to the keel line as the shoulder roll punch is applied. To begin steering roll the grip thumb down as the grip hand nears the gunwale and ensure that the blade is positioned behind of the canoeist and is immersed fully. Do not over steer. Sight along the bow to a landmark.
• Error: The stroke is too long.
• Correction: Knife the paddle in before the knee to start the stroke. Have grip hand at cheek level and keep upper grip arm bent. The traditional stroke can’t be accomplished if the reach forward is too great and if either of the elbows are locked.
J Stroke

Purpose
• Counteract the tendency of the canoe to veer away from the paddling side of a solo or stern paddler. The J stroke may be used in the bow as a turning stroke or, occasionally, to assist the stern paddler in maintaining a straight course (see Bow J).

Catch and Power Phase
• Use a standard forward stroke grip and stance. A solo canoeist may, however, initiate the stroke with a diagonal draw when starting from a standstill or to provide further steering (see C stroke).
• Begin with a forward stroke then perform the correction phase.
• As the hip reaches the shaft hand, rotate the wrists so that the thumb of the grip hand points down and do a short, quick pry from the hull using the power face of the paddle. The paddle may be levered off the gunwale to provide extra force as necessary.
• Carve the J as close to the canoe as possible to maximize both tracking and power.

Recovery
• Slice the blade out of the water to initiate another stroke. Elevate the leading edge of the blade slightly during the recovery so that the blade is almost but not quite parallel to the water.

Teaching Tips
• Experiment with forward paddling without using a J stroke. How does the canoe respond?
• Perform a 360° inside turn that is turning towards the canoeist’s paddling side, using only J strokes.
• Assist in adjustment of the pitch of the blade as necessary by placing a hand on top of the canoeist’s grip hand.
• To facilitate straight line paddling, sight along the bow of the canoe to a distant landmark.
• Note that dry land practice of the stroke may facilitate some aspects of learning but teaches nothing about how canoes respond to applied forces

Must See
• Maintain a straight-line course or move the bow toward the canoeist’s paddling side to achieve the desired line of travel.
• Rotate the grip hand so that the thumb points down.

Errors & Corrections
• Error: The canoeist is unable to maintain a straight course.
• Correction: Carve the J as close to the canoe as possible. Do a short, quick pry as the shaft hand reaches the hip. Ensure that the blade is
positioned behind of the canoeist and fully immersed. Do not over steer. Sight along the bow to a landmark.

- Error: The upper arm is overextended.
- Correction: Extend the grip hand farther out over the side of the canoe during the first part of the power phase. Check that the paddle is vertical so that the stroke is applied closer to the canoe.

- Error: The grip hand is positioned too close to the torso.
- Correction: Bend at the elbow. Position the arm so that the grip hand is about shoulder height.

- Error: The grip hand rotates so that the thumb points up.
- Correction: Flex the wrist so that the thumb of the grip hand rotates downward or away from the body.

- Error: The hands are held too far apart so that the shaft hand is positioned at or below the gunwale.
- Correction: Shorten the grip.

- Error: The paddle trails behind the canoeist in an exaggerated and inefficient push away.
- Correction: Use upper body rotation ensuring that the grip hand is in front of the body and the shaft hand is at the hip. Then, with the blade positioned slightly behind of the torso, do a short, quick push away.
River J Stroke

Purpose
• To counteract the tendency of the canoe to turn away from the side of the canoe that the stern/solo paddler is paddling on while maintaining forward momentum.

Catch and Power Phase
• The standard forward stroke grip and stance are used. The standard forward stroke catch and propulsion phases are used. When the paddle blade passes the hip, the thumb of the upper hand points upward, toward the sky.
• The paddle shaft rests on the gunwale and the blade is pried away from the boat. The power face changes from the forward to the correction part of the stroke.

Recovery
• Drop the grip hand down as the blade is sliced up and out of the water. Rotate the wrists so the blade is feather back to the catch phase of the forward stroke.

Teaching tips
• Reinforce the idea of the stern paddler keeping the same cadence as the bow paddler, so there is not an exaggerated correction phase to the stroke.
• Encourage paddlers to use a series of small corrections rather than powerful, exaggerated strokes.
• If forward momentum is the desired goal then the river J will slow down the canoe, while the standard J maintains better forward momentum for the tandem canoe or and offside forward stroke for the solo paddler would be a better choice if forward momentum is desired. The river J is handy for making quick alterations to change course when forward momentum isn’t vital.
• Usually used in downstream travel.

Must See
• Straight-line course is maintained with forward power, no zigzag travel.
• Paddler blends the forward and the correction stroke in a continuous cadence (not forward and ‘rudder’ for several strokes).
• Paddler anticipates and instinctively responds with an appropriate stroke to steer the canoe, without stalling.

Errors & Corrections
See J Stroke
Reverse Stroke (Back Stroke)

Purpose
• Propel the canoe backwards or decrease forward momentum.

Catch and Power Phase
• Use a slight backward lean and body rotation to extend the reach toward the stern. Initiate the catch with bent arms; the upper arm is about shoulder level.
• Immerse the blade fully and flat/horizontal. Keep the paddle as vertical as possible, as seen from the front view throughout the propulsion phase. The paddler’s weight is used to "load" the paddle blade as the paddler pushes the canoe away from the paddle blade. The paddler will unwind their torso as the lower hand pushes on the shaft.

Recovery
• Lift the shaft hand up slicing the blade out of the water and the grip hand down into the canoe. Rotate the wrist of the grip hand so that the thumb points away from the torso. Feather or slice the blade horizontally toward the bow to the catch position.

Teaching Tips
• Stress the importance of body rotation and pushing the paddle during the power phase.
• Stress the importance of a flat paddle blade in the water throughout the power phase.

Must See
• Move the canoe backwards or decrease forward momentum.
• Ensure that the paddle is as vertical as possible during the power phase.
• Paddlers should be looking over their onside shoulder to see where they are headed. This also aids in body rotation. It also allows the bow paddler to see the alignment or position of the canoe.

Errors & Corrections
• Error: The wrist of the grip hand rolls into an open position so that the paddle is rotated the wrong way during the recovery phase.
  Correction: Rotate the wrist so that the thumb points forward, away from the paddler. Arms are in a push up position.

• Error: The paddle ‘pendulums’ through the propulsion phase.
  Correction: Use body lean and rotation. Keep the grip and shaft hands close to the body. Take shorter strokes.

• Error: Power during the propulsion phase comes from the arms.
• Correction: Stress body lean and rotation.

• Error: The canoe verse off away from the paddlers side instead of going straight back.
• Correction: Check the pitch of the blade. It needs to be perpendicular to the keel line throughout the power phase or it will be pushing or pulling the canoe instead of having the reverse momentum.
Compound Reverse Stroke (Compound Back Stroke)

Purpose
- Use for reverse paddling in the stern or solo position when more power and precise directional control are required.

Catch and Power Phase
- Using a standard grip, lean backwards and rotate the torso toward the paddling side.
  Plant the blade toward the stern and at right angles to the keel line. Point the thumb of the grip hand toward the onside shoulder; the wrist of the shaft hand is open. Ensure that the paddle is as near vertical as possible and the blade is fully immersed.
- Using the power face of the blade, pull the canoe through the water until the hip is opposite the shaft hand. At this point, rotate the paddle so that the back face of the blade is used for the remainder of the stroke.
- Continue as for a reverse stroke: Lean into the stroke and unwind the torso as the lower hand pushes on the shaft. Continue to apply force until resistance against the paddle begins to diminish.

Recovery
- Lift the shaft hand while slightly lowering the grip hand to lift the blade out of the water. Rotate the wrist of the grip hand so that the thumb points away from the torso. Slice the blade out of the water. Elevate the leading edge of the blade slightly so that the blade is almost but not quite parallel to the water. Alternatively, the canoeist may use an underwater recovery by slicing the blade back to the catch position.

Teaching Tips
- Imagine a stroke initiated with a 'back draw'/stern draw and ending with a forward push-away.
- Emphasize upper body lean and rotation.
- Use a short, quick blade flip to change from the power face to the back face.

Must See
- Move the canoe backwards with power and directional control.
- Rotate the paddle to change from the power face to back face as the hip reaches the shaft hand.
- Use upper body lean and rotation.
- Keep the paddle as vertical as possible and immerse the blade fully.

Errors & Corrections
- Error: The canoeist uses insufficient trunk rotation.
- Correction: Introduce exercises to increase upper body rotation.
• Error: The arms only provide propulsion.
  Correction: Stress reverse and forward lean and rotation of the torso.

• Error: The blade is not rotated quickly.
  Correction: Practice only the paddle rotation either out of the water or underwater. Have the paddler stall the power phase very briefly as the blade is rotated.

• Error: The paddle 'pendulums' through the propulsion phase.
  Correction: Increase upper body lean and extend the grip hand farther back for the catch. Shorten the propulsion phase of the stroke.
Canadian Stroke

Purpose

• Counteract the veering away from the paddling side of a solo or stern paddler.

Catch and Power Phase

• Start with a forward stroke.

Recovery

• The correction phase of the Canadian stroke occurs during the recovery. Lower the grip hand. Scull or knife the paddle forward underwater using the power face of the blade. Adjust the pitch of the blade slightly so that the leading edge is lowered slightly. Use a slight upward pull with the shaft hand as the paddle is brought forward. Paddlers will feel the resistance as they pull up because the leading edge, which is point down, will want to pull down. About halfway through the recovery, adjust the pitch of the blade up and slice the blade out of the water. Feather the blade forward to the catch position for the next forward stroke.

Teaching Tips

• Practice straight-line paddling or inside circles using the Canadian stroke.
• Assist the adjustment of the position of the paddle or the pitch of the blade by placing a hand on the canoeist’s paddle.
• Note that dry land practice of the stroke may facilitate some aspects of learning but teaches nothing about how canoes respond to applied forces.

Must See

• Maintain a straight-line course or move the canoe toward the canoeist’s paddling side to achieve the desired line of travel.
• Rotate the wrist so that the thumb of the grip hand points down or away from the torso.
• Apply a slight upward pull on the power face as the blade is brought forward during the underwater portion of the recovery.

Errors & Corrections

• Error: The canoeist is unable to maintain the desired line of travel.
• Correction: Do a short, quick pry as the hip reaches the shaft hand. Ensure that the blade is positioned behind of the canoeist and is immersed fully. Lower the grip hand and pull up with the shaft hand to initiate the recovery phase. Do not over steer.

• Error: The upper arm is overextended during the propulsion phase.
• Correction: Bend at the elbow. Position the arm so that the grip hand is about shoulder height.
• Error: The grip hand is positioned too close to the torso.
  Correction: Extend the grip hand farther out over the side of the canoe during the first part of the power phase. Check that the paddle is vertical so that the stroke is applied closer to the keel line.

• Error: The grip hand rotates so that the thumb points up.
  Correction: Flex the wrist so that the thumb of the grip hand rotates downward or away from the body.

• Error: The hands are held too far apart so that the shaft hand is positioned at or below the gunwale.
  Correction: Shorten the grip.

• Error: The paddle is too vertical during the recovery phase.
  Correction: Lower the grip hand bringing the paddle closer to horizontal.

• Error: The canoe loses forward momentum.
  Correction: Decrease the amount of correction.
Reverse J

Purpose

• Provide directional control from the bow or solo position when back paddling. Turning the canoe towards the paddlers side when applying a pry or turning the canoe away from the paddlers side when ending with a draw.

Catch and Power Phase

• The paddler will apply the reverse stroke then at the end of the stroke turn the thumb of the grip hand down, the shaft hand can move up the shaft. The blade is now parallel to the keel line. Then pry the blade away from the hull by pulling the grip inward toward the boat. The paddle shaft can be fulcrum off the canoe hull or gunwale. The grip should not go beyond the mid section of the paddler.
• The paddler may apply a draw stroke after the reverse stroke for the opposite direction. The paddler will apply a reverse stroke then turn the thumb of the grip hand down, slice the leading edge of the paddle away from the keel line so the paddle can be draw in towards the keel line at the end of the stroke.

Recovery

• Slice the blade out of the water, rotate and roll the wrists so the grip hand thumb is facing forward. Feather the blade back to the catch position.

Teaching Tips

• Practice with a paddle to get a feel for the position of the hands. Notice where the grip hand/thumb should be. Notice where your shaft should be.
• Concentrate initially on stroke mechanics rather than maintaining the direction of travel.
• Paddle backward toward a designated spot. Sight along the bow to a landmark and periodically look over the shoulder on the paddling side to monitor progress.
• Communicate with partner when paddling tandem.

Must See

• Maintain the intended line of travel.
• Keep a relatively vertical paddle during the propulsion phase.
• Turn the thumb of the grip hand down.
• During the correction phase, apply force as far the from pivot point of the canoe as possible while maintaining efficient stroke mechanics.

Errors & Corrections

• Error: The propulsion phase is ineffective.
Correction: Take advantage of the powerful muscles of the upper body by using torso rotation and lean. Check the pitch of the blade to ensure maximum resistance.
TURNING STROKES

Draw

Purpose
- Move the canoe toward the canoeist’s paddling side.

Catch and Power Phase
- Rotate the torso slightly toward the paddling side. Extend the arms so that the paddle shaft is opposite the hip. Keep the grip hand at approximately shoulder height. The grip hand and the shaft hand should be outside the canoe (gunwale).
- Immerse the blade fully, keeping it parallel to the keel line. The paddle should be as near vertical as possible.
- Using the grip hand as a fulcrum, pull the canoe smoothly to the paddle. The depth of the blade should remain roughly the same depth.

Recovery
- To begin the underwater recovery, rotate the blade 90° just before the canoe reaches the paddle. The thumb of the grip hand is turned outward on the recovery. Slice the paddle out to the extended arm position and rotate the blade back 90° to initiate another stroke.
- For an out of water recover, drop the grip hand down as the blade is slice out behind the canoeist.

Teaching Tips
- Encourage a long reach out with the grip hand. Make a ‘box’ with the paddle and arms. The upper arm should be kept as straight as possible at the elbow to affect this reach.

Must See
- Execute the strokes smoothly with rhythm and ease.
- Move the canoe smoothly toward canoeist’s paddling side with no forward/backward motion

Errors & Corrections
- Error: The canoe moves forward or backward.
  Correction: Ensure that the paddle blades is parallel to the keel line. Pull the canoe smoothly to the paddle until hip is by the shaft hand.

- Error: The canoe rocks from side.
  Correction: Apply force smoothly during the propulsion phase of the stroke. Avoid rocking the body from side to side with the stroke.

- Error: The paddle is not vertical.
• Correction: Extend the upper arm; keeping the upper arm elbow straight will help. Rotate the torso further to increase the reach of the upper arm.

• Error: The grip hand moves.
  • Correction: Focus on pulling with the shaft hand. Maintain a steady upper arm using the grip hand as a fulcrum.

• Error: Catching the paddle against the canoe at the end of power phase will cause the boat to rock, jerk, flip or force the paddler let go of their paddle.
  • Correction: Ensure the paddler shifts to the recovery phase sooner.
Pry

Purpose
• Move the canoe away from the canoeist’s paddling side.

Catch and Power Phase
• Slice the paddle blade into the water from behind. The paddle shaft should be resting against the hull of the canoe. The shaft hand, while holding the paddle may rest on the gunwale to help stabilize the paddle position. Caution that the thumb is not caught/pinched between the paddle shaft and the gunwale.
• Fully extend the upper arm at shoulder height so that the paddle is just past the vertical position with the blade under the hull and parallel to the keel line.
• Using the hull and gunwale as a fulcrum, pull the grip hand inboard until it reaches the body’s mid-line. A powerful prying action results if the upper body is incorporated with the arm motion.

Recovery
• To begin the underwater recovery, rotate the blade 90° so that the thumb of the grip hand is turned outward away from the canoe. Slice the paddle back in a small arc back under the hull and rotate the blade 90° to the starting position to initiate another pry.

Teaching Tips
• Use the chin as a landmark to end the propulsion phase.

Must See
• Move the canoe away from the canoeist’s paddling side with no side-to-side rocking or forward or backward motion.
• Use a short, powerful stroke during the propulsion phase.
• Initiate a smooth continuous recovery phase at the body’s mid-line.
• Use the hull gunwale as a fulcrum.

Errors & Corrections
• Error: The prying action of the stroke is weak.
  Correction: Fully extend the upper arm out of the water so that the blade is under the hull. Using the paddle as a lever, pull smoothly and powerfully during the power phase to the canoeist chin.
• Error: The canoeist ‘lifts’ water or the canoe rocks from side to side.
  Correction: Initiate the stroke with the blade under the hull. The propulsion phase must end as the grip hand comes to the body mid-line and not past the chin.
• Error: The paddle shaft slides along the gunwale.
• Correction: Hook the thumb of the shaft hand inboard over the gunwale. Caution should be taken so that the thumb can not be pinched when the level action is occurring.
**Sculling Draw**

**Purpose**
- Move the canoe towards the canoeist’s paddling side.

**Catch and Power Phase and Recovery**
- Extend the paddle out from the hip with the shaft near vertical.
- Grip hand outside of the canoe, with the body rotation towards paddler side of the canoe.
- Fully immerse the blade.
- The leading edge of the blade or pitch of the blade should be (at an angle of 20 – 45 degrees) the same when sculled forward or sculled backward and parallel to the keel line. The paddle shaft should remain parallel to the keel line. With the grip hand acting as a fulcrum, the shaft hand should apply a steady forward or backward force while pulling inward, as the pitch of the blade will want to pull the paddle outward and away from the canoe.
- Scull an equal distance forward and backward along the canoe/paddler (or pivot point of canoe)
- Constant blade depth is maintained.

**Teaching Tips**
- Maintain equal pressure, pitch, and distance from the hip both forward and behind.
- Shorter sculls are usually better and easier to control than longer sculls. However when sculling in the bigger canoes (>18’), longer sculls work very well.

**Must See**
- Move the canoe sideward towards canoeist’s paddling side with no bow sway and no forward or backward movement.
- Alternate the leading edge of the blade.

**Errors & Corrections**
- Error: The drawing action of the scull is weak.
- Correction: Check the pitch of the blade. Maintain an angle of about 20° to 45° to the path of the stroke. Apply slightly more force.
Sculling Pry

Purpose
• Move the canoe away from the canoeist’s paddling side.

Catch and Power Phase and Recovery
• Fully immerse the blade. The shaft should be held close to vertical. The scull should follow the keel-line and can be either running along side the canoe or comfortably extend out from the canoe. With the grip hand acting as a fulcrum, apply a steady force with the shaft hand forward or backward at the same time applying a slight outward push, as the pitch of the paddle blade will want to move the blade under the canoe. Roll the wrists to adjust the blade pitch. Scull forward with the leading edge angled toward the canoe. The angle should be the same forward and backwards and can be adjusted depending on the desired speed and position of the canoe.
• Paddlers can use the hull or gunwale to slide the paddle shaft along. Caution, some paddlers may not want to rub the side of their canoe with the shaft of the paddle.

Teaching tips
• Fully immerse the paddle blade and keep the hands close to the torso.
• For solo sideward displacement, ensure that uniform force is applied equidistant from the pivot point.

Must See
• Move the canoe away from the canoeist’s paddling side.
• Scull with the paddle in a line more or less parallel to the keel line.

Errors & Corrections
• Error: The hands are held too high or away from the torso.
• Correction: Pull arms in toward the torso. Position the grip hand about shoulder level.

• Error: Sculling motion is inefficient.
• Correction: Adjust the pitch of the leading edge of the blade to between 20° and 45°. Apply outward force with the shaft hand.
**Bow Rudder & Draw**

Also known as the Bow Cut. Here we have an example of stroke blending or also known as having two components to the bow rudder: stationary/static and then turned into an active/dynamic draw)

**Purpose**
- Turn the canoe with forward momentum to the bow or solo canoeist's side.

**Catch and Power Phase (Bow)**
- Note that the bow cut and draw has both static and dynamic components. The power face is used throughout. Paddle forward in a straight line, and then use a slight forward and outward lean with the upper body. Extend the paddle forward with the shaft hand moving up slightly and grip hand thumb pointing down (toward the paddler’s shaft side arm pit). Immerse the paddle blade from ahead at approximately a 30° away from the keel line. The pitch of the blade can be open as required. Hold the paddle at this angle until the canoe begins to lose turning momentum. Finish the turn with a draw or forward stroke as necessary.

**Catch and Power Phase (Solo)**
- Use the same stroke mechanics as above to execute an inside turn using the bow rudder and draw.

**Recovery (Bow and Solo)**
- Slice the blade forward and out and into the catch position for the next stroke.

**Teaching Tips**
- Think of putting the grip hand thumb in the armpit of the other arm as the cut is initiated.

**Must See**
- Turn the canoe toward the canoeist’s paddling side. After the turn is initiated, hold the bow cut until the canoe has reached its desired direction. A bow draws maybe necessary if the desired direction has not been reach and the resistance on the blade or momentum of the canoe has ceased. Use the power face throughout the turn.

**Errors & Corrections**
- Error: Turning action is insufficient.
- Correction: Ensure good forward speed. Check both the angle of the paddle to the canoe and the blade pitch.

**Errors & Corrections**
- Error: Grip hand is held in front of face.
• Correction: Lower grip hand to armpit level.
Cross Bow Rudder & Draw (Running Cross Bow Draw)

Purpose
• Assists the turn of the canoe to the bow paddler’s off side by pulling the canoe bow further into the carve. This stroke is particularly useful in shallow water.

Catch and Power Phase
• Note that the cross bow cut and draw could have both static and dynamic components. The power face is used throughout.
• When the canoe has forward momentum, the bow paddler lifts the paddle out of the water, rotates their torso so they are now facing the opposite side their paddle was on, rotates the grip hand so the thumb is pointing out and immerses the paddle blade forward and about 30° away from the canoe. The grip hand is positioned near the forehead.
• Ensure that the paddle is vertical; grip hand is above the shaft hand. Hold the paddle at this angle until the canoe begins to lose turning momentum. Extend and fully immerse the paddle blade ahead in the water to the knees.
• The shaft arm is held or locked close to the body as it controls the position of the paddle as the force of the water is applied to the blade.
• The pitch of the blade maybe opened or closed to control the tightness of the turn.
• Finish the turn with a cross bow draw or forward stroke as necessary.

Recovery
• Lift the paddle blade forward and up out of the water and unwind the torso as the paddler returns to the original position.

Teaching Tips
• Keep the arms and hands in the same relative position throughout the propulsion phase.

Must See
• Turn the canoe towards the bow paddler’s offside. After the turn is initiated, hold the cross bow cut until the canoe begins to lose momentum. Complete the turn with cross bow draws as necessary. Use the power face throughout the turn.

Errors & Corrections
• Error: Turning action is insufficient.
• Correction: Ensure good forward speed. Check both the angle of the paddle to the canoe and the blade pitch.
• Error: Hands switch and becomes a draw.
• Correction: Encourage participants not to let go of their grip hand.
• Error: Elbow of the grip hand is higher than the grip hand. This may cause a shoulder dislocation.
• Correction: Ensure the elbow is lower than the grip hand.
Bow Jam (Running Pry)

Purpose
- Turn the canoe away from the bow or solo canoeist’s paddling side.
- This stroke is an alternative to the cross bow draw.
- It is commonly used in the running side slip manoeuvre.

Catch and Power Phase (Tandem)
- The bow jam is a static stroke requiring good forward momentum. A dynamic phase may follow with the addition of pry strokes. After several accelerating strokes, the stern paddler may initiate an outside turn with a J stroke.
- The bow paddler then applies a bow jam or a running to active pry. Slice and immerse the blade from behind toward the bow. Move the upper arm laterally outboard across the lower arm. The thumb of the grip hand points back to wards the paddler. Slide the lower hand up the shaft and position the blade parallel to the keel-line. Then slowly adjust the pitch of the back edge of the blade to 30° or 45°. Brace the shaft against the hull or gunwale.
- Use a J-lean to tilt the hull away from the pry.

Catch and Power Phase (Solo)
- After several accelerating strokes, initiate the turn with a forward sweep. Slice the blade forward as far as possible by moving the shaft hand up. Move the upper arm laterally outboard, as the blade is position under the hull. Slowly adjust the paddle blade angle. Brace the shaft against the gunwale or hull.

Recovery:
- Slice the blade backwards and out of the water.

Teaching Tips
- Extend the blade as far forward as possible while maintaining the correct stance.

Must See
- Use correct stroke mechanics.
- Accelerate going into the manoeuvre so that the canoe turns sharply.

Errors & Corrections
- Error: Turning action is incomplete
  Correction: Use good forward speed. Initiate the manoeuvre with a strong turning stroke. Adjust the pitch so that the blade catches more water.
- Error: The paddle slides under the canoe.
• Correction: Brace the shaft against the gunwale. In the case of bow paddlers, move the paddle forward so that the blade is supported against the side of the hull.

• Error: Turning action is weak.
• Correction: Paddle blade needs to be sufficiently in the water.
Cross Bow Jam (Cross Bow Rudder)

Purpose
- Turn the canoe to the bow canoeist’s paddling side.
- Not a common stroke.

Catch and Power Phase (Tandem Bow).
- The cross bow jam is a static stroke requiring good forward momentum. A dynamic phase may follow with the addition of off side pry strokes. After several accelerating strokes, the stern paddler may initiate an inside turn. The bow paddler then applies a cross bow jam. The bow paddler lifts the paddle out of the water, rotates their torso so they are now facing the opposite side, moves the shaft hand up slightly, rotates the grip hand so the thumb is pointing away and slightly up and immerses the paddle blade from ahead and parallel to the keel-line. The grip hand is positioned near its' own shoulder. The leading edge of the blade should remain next to the canoe and the back edge should be slowly pushed away from the canoe to about a 30° to 45° angle. Hold that position until the canoe begins to lose momentum. Finish the turn with a pry if necessary.

Recovery Phase
- Slice the paddle forward, up, and out of the water and unwind torso as the paddler returns to the original position.

Teaching Tips
- Extend the blade as far forward as possible while maintaining the correct stance.
- Use a strong turning stroke to initiate the turn.
- Use a J lean to centre body weight within the canoe while tilting the hull.
- Use correct stroke mechanics: Catch, arm extension, and paddle wedge.
- Accelerate going into the manoeuvre so that the canoe turns sharply towards the bow canoeist’s paddling side.

Errors & Corrections
- Error: Turning action is incomplete
- Correction: Use good forward speed. Initiate the manoeuvre with a strong turning stroke. Adjust the pitch so that the blade catches more water.
Stern Draw

Purpose
• To initiate a turn a canoe turn by the stern paddler or solo paddler away from their side.

Catch and Power Phase
• Stroke blending occurs here, combining the forward stroke and a varied draw stroke.
• The paddler will start with a forward stroke for momentum. Once the forward stroke reaches the knee the grip hand is dropped behind the onside knee while slicing the blade away from the paddlers’ side and behind the paddlers’ back.
• The blade is at about 45 degrees from the keel line.
• The power face is used throughout and the paddle is more horizontal than vertical.
• The shaft hand is extended over the water, behind the hip.
• Rotating the body toward the stern of the canoe as the grip hand is pushed out over the water powers the Stern Draw.

Recovery
• Lift and slice the blade out of the water just before it touches the canoe to avoid the blade being catch against the canoe.
• Either repeat the Stern Draw or resume with a forward stroke as necessary.

Teaching Tips
• Transition from the forward stroke to the start of the stern draw by slicing the paddle blade out and behind the hip, dropping the grip hand, and adjusting the blade angle to 45 degrees.
• Punch the grip hand out over the water.

Must See
• Turn the canoe away from canoeist’s paddling side. Use the power face throughout the turn.

Errors & Corrections
• Error: Turning action is insufficient.
• Correction: Ensure the follow through of the stern draw reaches the all the way to the back of the canoe. Check both the angle of the paddle to the canoe and the blade pitch.
Stern Pry

Purpose
- To initiate a turn a canoe turn by the stern paddler or solo paddler to the paddler’s side.

Catch and Power Phase
- Stroke blending occurs here, combining the forward stroke and a varied pry stroke.
- The paddler will start with a forward stroke for momentum.
- Once the forward stroke reaches the knee the grip hand is rotated so the thumb is pointing towards the paddler. The paddler’s grip hand is then dropped down, remaining over the water and above the onside knee. The shaft is more horizontal and paddle blade is slice back behind the paddler.
- The shaft hand is at the paddlers hip and bracing on the gunwale.
- More body rotation maybe necessary when slicing the paddle blade behind the paddler.
- The power of the Stern Pry is down when the paddler unwinds their body and uses gunwale as a fulcrum for the pry.
- More leverage can be achieved by going beyond the body’s mid-section to the outside knee. This may slow the momentum down when going beyond the midsection.
- Keep the paddle blade vertical and in the water while applying the pry.

Recovery
- Drop the grip hand down and lift the blade out of the water and feather the blade to start a forward stroke.
- If the stern pry is to be repeated apply an underwater recovery for a more efficient stroke (as opposed to bring the blade out of the water each time).

Teaching Tips
- Transition from the forward stroke to the start of the stern pry by slicing the paddle blade behind the hip along side the gunwale, dropping the grip hand, and bracing the shaft hand against the gunwale. Pry to the body’s mid-section.

Must See
- Turn the canoe towards from canoeist’s paddling side.
- Changing from the power face in the forward stroke to the non-power face for the pry.

Errors & Corrections
- Error: Turning action is insufficient.
• Correction: Ensure the power of the stern pry sufficient. Paddle blade is vertical and in the water. Check both the angle of the paddle to the canoe and the blade pitch.
Forward Sweep

Purpose
• Turn the canoe away from the canoeist’s paddling side.

Catch and Power Phase
• Place the top hand firmly on the grip in a standard forward stroke position. Slide the lower hand 10 to 15 cm up the shaft to extend the reach; the wider the sweep of the arc, the greater the turning effect. The paddle scribes an arc of 90° or a quarter circle for tandem canoeists and an arc of 180° or a semi-circle for a solo paddler.
• Bow Paddler. Rotate the torso and bend forward slightly from the waist. With the paddle nearly horizontal, immerse the blade by the bow of the canoe. Position the grip hand at waist height with the thumb pointing up. As the upper body unwinds, push the grip hand out slightly from the waist and swing the shaft hand in a wide arc until the lower arm extends out from the hip. The propulsion phase ends with the paddle perpendicular to the keel line.
• Stern Paddler. Extend the nearly horizontal paddle, perpendicular to the keel line. Immerse the blade keeping the grip hand at waist height with the thumb pointing up. Lean back slightly as the upper body rotates. Push out slightly with the grip hand and swing the shaft hand in a wide arc. The propulsion phase ends with the blade almost touching the stern.
• Solo Paddler. Rotate the torso and bend forward slightly from the waist. With the paddle nearly horizontal, immerse the blade toward the bow of the canoe. Position the grip hand at waist height with the thumb pointing up. Lean back slightly as the upper body rotates. Push out slightly with the grip hand and swing the shaft hand in a wide arc. The propulsion phase ends with the blade drawn in toward the stern.

Recovery (Bow, Stern, and Solo)
• Slice the paddle out of the water and feather/flatten the blade close to the water, diagonally forward to the catch position, by lifting the shaft hand and rotating the grip hand with the thumb facing forward.

Teaching Tips
• Imagine scribing an arc on a clock face; for example, a bow paddler on the right sweeping the paddle from 12:30 to 3:00 o’clock.
• Use the sayings “hip to tip” or “tip to hip” or tandem and “tip to tip” for solo.

Must See
• Turn the canoe away from the canoeist’s paddling side with some forward momentum. Rotate the torso to initiate the stroke. Extend the shaft arm and keep the paddle near horizontal. Move the blade through an arc of 90° for tandem canoeists and 180° for a solo canoeist.
• If paddling tandem the paddlers must never go beyond their hips into the midsection of the canoe. So the bow paddlers should never go behind their hips and the stern paddler should never go ahead of their hips. Any sweeping in that midsection is wasted energy and is not an efficient placement of the sweep stroke.

Errors & Corrections
• Error: The canoe does not turn
• Correction: Accentuate the wide sweeping motion as the paddle scribes an arc through the water. Ensure the blade is fully immersed and the blade is vertical in the water. Ensure the blade goes all the way to the stern of the canoe.

• Error: The paddle catches against the canoe at the end of the stroke.
• Correction: Emphasize the paddle’s correct range of motion during the propulsion phase and the importance of anticipating and initiating the recover phase quickly.
Reverse Sweep (Back Sweep)

Purpose
- Turn the canoe toward the canoeist’s paddling side.
- This stroke is to be used when the canoe needs to be pivoted. Reverse sweeps kill forward momentum. Use a stern pry or low brace instead when forward momentum is required.

Catch and Power Phase
- The paddler should rotate; slide the shaft hand up to extend the reach. The paddle scribes an arc of $90^\circ$ or a quarter circle for a tandem paddler, and an arc of up to $180^\circ$ or a semi circle for a solo paddler. The back face or non-power face of the blade is used.
- Primary a stroke for the tandem stern paddler and the solo paddler. The bow paddler can do a reverse stroke but a more efficient stroke here would be the draw.
- Tandem Stern Paddler may use this stroke to assist with a pivot turn or to turn when docking. Using a slight backward lean and rotate the torso toward the stern’s paddling side. With the paddle nearly horizontal, immerse the vertical blade into the water by the stern of the canoe. Position the grip hand at waist height with the thumb pointing up. As the upper body unwinds, swing and push the shaft hand in a wide arc. The propulsion phase ends with the paddle extending out of the water at the hip, a right angles to the canoe.
- Solo Paddler. Using a slight backward lean, rotate the torso toward the stern. With the paddle nearly horizontal, immerse the vertical blade into the water by the stern of the canoe. Position the grip hand close to the waist with the thumb pointing up. As the upper body unwinds, swing the shaft hand in a wide arc. Lean forward slightly as the propulsion phase ends toward the bow. The stroke can end anywhere along that arc when the desire direction is met.

Recovery (Stern & Solo)
- Slice the blade out of the water by raising the shaft hand. Rotate the grip hand wrist so the grip hand thumb is facing forward. Feather the blade forward to the catch position.

Teaching Tips
- Imagine scribing an arc on a clock face; for example, a stern paddler on the right side sweeping from 5:30 to 3:00 o’clock.
- Use of the quote “hip to tip” for tandem or “tip to tip” for solo.

Must See
- Turn the canoe toward the canoeist’s paddling side.
- Rotate the torso to initiate the stroke.
- Extend the shaft arm and keep the paddle near horizontal.
• Move the blade through an arc of 90° for a stern paddler, 180° for a solo paddler.

Errors & Corrections
• Error: The canoe does not turn
• Correction: Accentuate the wide sweeping motion as the paddle scribes an arc through the water. Ensure the blade is fully immersed and the blade is vertical in the water. Ensure the blade goes all the way to the stern of the canoe.

• Error: The paddle catches against the canoe at the end of the stroke.
• Correction: Emphasize the paddle’s correct range of motion during the propulsion phase and the importance of anticipating and initiating the recover phase quickly.
Bow J

Purpose
• Turn the canoe away from the paddling side of the bow paddler. Can also be used for quick side slipping manoeuvres.

Description Catch and Power Phase
• Use similar position and mechanics as for the forward and J strokes. Rotate the body and immerse the blade ahead. The paddle should be angled forward slightly as seen from a side view but vertical when seen from the front view. For example: short, quick pry as the hip reaches the shaft hand. Note that the pry is executed at the hip.

Recovery
• Slice the blade backwards and up of the water to initiate another stroke. Feather or slice the blade is horizontal/parallel to the water as the body unwinds to the catch phase.

Teaching Tips
• Do 360° inside circles using the bow J.
• Sitting in the canoe behind the bow seat, adjust the canoeist’s paddle position as required.

Must See
• Move the bow away from the canoeist’s paddling side.
• The thumb of the grip hand points downward or away from the body as the power face of the paddle blade is used throughout this stroke.

Errors & Corrections
• Error: The upper arm is overextended.
  Correction: Bend at the elbow. Position the arm so that the grip hand is at about shoulder height.

• Error: The grip hand is positioned too close to the torso.
  Correction: Extend the grip hand further out over the side of the canoe during the first part of the power phase. Check that the paddle is vertical so that the stroke is applied closer to the keel line.

• Error: The grip hand rotates so that the thumb points up.
  Correction: Flex the wrist so that the thumb of the grip hand rotates away from the body.

• Error: The hands are held too far apart so that the shaft hand is positioned at or below the gunwale.
  Correction: Shorten the grip.
• Error: The paddle trails behind the canoeist in an exaggerated and inefficient J Stroke.
• Correction: Use upper body rotation ensuring that the grip hand is in front of the body and the Correction shaft hand is at the hip. Do a short, quick J stroke.
Push-away

Purpose
- Move the canoe away from the canoeist’s paddling side. (This stroke is not a commonly used stroke.)

Catch and Power Phase
- Rotate the torso slightly toward the paddling side. Initiate the stroke with a vertical paddle shaft opposite the hip. Immerse the blade fully and ensure that the blade is parallel to the keel line and close to the canoe. Push with the shaft hand directly out from the hip, holding the top hand steady.

Recovery
- Rotate the blade 90° outward by turning the thumb of the grip hand away from the canoe. Slice the blade back to the starting position.

Teaching Tips
- Keep the grip hand stationary so that it acts as a fulcrum for the stroke. Must See
- Move the canoe away from the canoeist’s paddling side smoothly, with no forward or backward movement.

Errors & Corrections
- Error: The canoe moves forward or backward.
  Correction: Keep the blade parallel with the keel line & push the paddle directly out from the hip.

- Error: The canoe rocks from side to side.
  Correction: Apply force smoothly during the power phase of the stroke. Shorten the stroke Keep the paddle vertical.

- Error: The grip hand is inboard.
  Correction: Extend the upper arm.

- Error: The grip hand moves.
  Correction: Keep the upper arm close to the torso maintaining the grip hand as a fulcrum.
STABILIZATION STROKES

Low Brace (and Sculling Low Brace)

Purpose
• To prevent capsizing toward the canoeist’s paddling side and to centre your weight in the canoe.

Catch and Power Phase
• Rotate the torso toward the paddling side and commit body weight out onto the shaft of the paddle and lower the head. Position knuckles and thumbs of both hands away. The palm of the grip hand faces up.
• Extend hands out over the water keeping both arms bent. This will be easier to do when the canoe is committed to tilting over. Keep the grip hand low and raise the shaft hand slightly.
• Initially, the paddle should be perpendicular to the keel line. Push down and straighten the shaft arm. At the same time, unwind the torso while keeping the head low, and pull the grip hand across in front of the waist while sweeping the blade forward. While the grip hand moves across from one gunwale to the other, it is very important that the head stays low as it moves from the outside gunwale to the inside gunwale.

Recovery
• The canoeist may continue, if necessary, with a sculling action to maintain stability or continue with a forward stroke to maintain stability.

Teaching Tips
• Think of arms as being in a “push up” position.
• Keep head low.
• Focus on correct arm position and practice slapping the water with the back face of the blade. Push down with the grip hand first, and then the shaft hand, similar to a scissor motion.
• Standing in shallow water, tip the canoe so that the canoeist(s) must react quickly with a brace. Tandem canoeists may practice this on their own by having one partner tilt the canoe while the other braces. It is easier to do a low brace when the canoe is tipped because the grip hand has an easier time reaching out of the canoe when the gunwale is close to the surface of the water.

Progression to a sculling low brace
• Use the analogy of the paddle acting as an outrigger during the sculling brace to provide general stability.
• Keep the grip low and close to the gunwale, paddle blade on the surface of the water and move the blade with the shaft hand forward and back.
• Maintain an elevated leading edge of the blade so it stays on top and skims the surface of the water as a slight downward pressure is applied to the shaft.

Must See
• Provide general stability and prevent capsizing toward the canoeist's paddling side.
• Position both hands outside the gunwales over the water.
• Commit the upper body onto the brace.
• Keep the shaft nearly horizontal and sweep the blade forward.

Errors & Corrections
• Error: Body position is stiff and upright.
• Correction: Emphasize body rotation and commitment onto the paddle.
High Brace

Purpose
• Provides stability while the canoeist is performing a running sideslips, or executing eddy turns.

Stance and Propulsion
• Use a similar arm position as for the draw stroke. Note that the upper forearm is at eye level or lower.
• At the catch position the blade should be parallel to the keel-line.
• Keep the paddle near vertical and open the leading edge of the blade by turning it away from the canoe.
• Hold the paddle firm as the force of the water will pull the paddle blade away from the canoe. Hold that position until the force on the blade lessens.

Teaching Tips
• Use the analogy of the paddle acting as an outrigger during the brace to provide general stability.
• When holding the the paddle vertically, feel the applied force as it pulls the arms away for the canoe but the paddler holding firm then the canoe is drawn to the paddle.
• Keep the upper forearm low. Be able to look out over the upper forearm.
• Grip hand over the water.
• Stress the pulling action on the paddle to stabilize/turn/pivot the canoe.

Must See
• Centre body weight in the canoe.
• Body rotation to allow for the reach
• Bend in both arms.
• Keep the upper arm at eye level or slightly lower.
• Grip over opposite shoulder or out over the water.

Errors & Corrections
• Error: The canoeist uses body lean causing the centre of gravity to be outside the canoe.
• Correction: More tilt on the canoe. J-lean, flex the spine at the hips to maintain the centre of gravity inside the canoe.
• Error: Arms are over extended or too high.
• Correction: Bend arms more at the elbow. Keep the upper arm at or slightly below eye level.
Righting Pry

Purpose
• To prevent the canoe from tipping towards the paddler’s offside by returning the canoe hull to an equilibrium upright position. This stroke compliments the low brace and the most effective off side stability stroke. Note: The mechanics of the righting pry compared to the high brace places the shoulder in a safer position that is less prone to injury.

Catch and Power Phase
• When tipping to the offside the paddle is quickly sliced, with the blade perpendicular to the keel-line and the grip thumb pointed away until the blade is under the canoe. Once the paddle is under the canoe, turn the paddle and position the blade parallel to the keel-line of the canoe and fully submerged in the water. The blade does not have to be as far ‘under’ the canoe as in a regular pry since the motion is to lift water with the blade rather than move the canoe sideways. The upper hand should be at shoulder height with the grip just inside the gunwale.
• Rest the paddle shaft against the gunwale, this is the point at which the power of the righting pry is applied.
• Using the gunwale as a fulcrum, pull the grip hand inboard and downward until it is well inside the canoe, forcibly lifting water with the blade. The force at the gunwale will push the raised side of the canoe down. A powerful prying action results if the upper body rotation is incorporated with the arm motion.

Recovery
• In the righting pry the blade will pull the water up as the paddle shaft is pushing the canoe down.
• Typically this is a single use stroke; if it does not work you might be wet. If you do have a second chance the recovery is the same as the pry.

Teaching Tips
• Use of body rotation and weight to pull down the grip into the canoe.
• It is often useful to have the paddling partner rock the canoe or, have the instructor, stand in waist deep water grab the gunwale over the bow (or stern) and push the side of the canoe down away from the paddling side.
• The Righting Pry uses an exaggerated prying motion to push the gunwale down.

Must See
• The canoe returns to level
• Use the gunwale as a fulcrum
• The paddle blade digs from beneath the hull of the canoe

Errors & Corrections
• Error: The prying action of the stroke is weak.
• Correction: Pulling the grip downward towards the middle of the boat, levering off the gunwale.
SOLO STROKES

C Stroke

Purpose
- Prevent the bow from veering away from the solo canoeist’s paddling side when getting underway or to do an inside circle. Use the C stroke to maintain a straight-line course when paddling in windy conditions.

Catch and Power Phase
- Use a slight forward lean and body rotation. Open the wrists and extend the blade forward and out from the bow. The shaft hand may slide up the paddle 10 to 15 cm to extend the reach. Draw the blade in toward the hull rolling the wrists into a closed position once you reach the hull. From this point, body position and mechanics are the same as those for the J stroke: Nearly vertical paddle and fully immersed blade, unwinding of the torso and a short, quick pry as the hip reaches the shaft hand.

Recovery
- Use either an out of water or underwater recovery. For an out of water recovery, slice the blade out of the water from behind, feather the blade forward to initiate another stroke. Elevate the leading edge of the blade slightly during the recovery so that the blade is almost but not quite parallel to the water.
- If there is a need for more correction or to reduce side drift, use an underwater recovery. After the pry of the J, change the pitch of the blade by rolling the wrists into an open position. Note the change of power face. Slice the blade forward to the catch position to initiate the next stroke.

Teaching Tips
- Use the C stroke to perform inside circles utilising an underwater recovery.

Must See
- Move the canoe forward without veering sharply away from the canoeist’s paddling side.
- Ensure that all components of the C stroke are smooth and fluid.
- Demonstrate an understanding of when to use the C stroke.

Errors & Corrections
- Error: The canoe veers away from the canoeist’s paddling side.
- Correction: Initiate the stroke with a draw. Carve the J as close to the canoe as possible. Do a short, quick pry as the hip reaches the shaft hand. Ensure that the blade is positioned aft of the canoeist and is immersed fully. Do not over steer; end the correction phase as turning momentum begins. Sight along the bow to a landmark.
• Error: During the J, the grip hand rotates so that the thumb points up.
Correction: Flex the wrist so that the thumb of the grip hand rotates downward or away from the body.

• Error: A loss of momentum results as the paddle trails behind the canoeist in an exaggerated and inefficient push away/pry.
Correction: Use upper body rotation ensuring that the grip hand is in front of the body and the shaft hand is at the hip. Then, with the blade positioned slightly aft of the torso, do a short, quick pry.
Inside Box Stroke

Purpose
• Pivot the canoe (the bow moves toward the paddle side) with no displacement.

Stance and Propulsion
• Use the box stroke for solo inside and outside pivots. Note that the turning action occurs at the pivot point of the canoe located approximately under the canoeist’s centre of gravity. The box stroke combines elements of the draw stroke, the push away, and slicing. Initiate the box stroke with a draw at a comfortable distance ahead of the pivot point. At the completion of the draw, slice the blade aft. Do a push away. Notice that the catch for both the draw and pry should be equidistant from the pivot point. Slice the blade forward to the starting point to initiate another stroke.

Teaching Tips
• Do the stroke slowly and focus on mechanics.
• Keep the grip hand close to the torso.
• Use the grip as the fulcrum for the stroke.
• Immerse the blade fully.
• Ensure that equal forces are applied at the same distances fore and aft of the pivot point.

Must See
• Pivot the canoe with no forward or backward movement.

Errors & Corrections
• Error: There is forward or backward movement.
  • Correction: Adjust the pitch of the blade. Generally, keep the blade parallel to the keel line. Ensure that forces are applied directly toward or away from the canoe rather than diagonally fore or aft.

• Error: The canoe rocks from side to side.
  • Correction: Avoid any lateral weight shift while slicing from the draw to the push away. Apply force smoothly.

• Error: Strokes are awkward and inefficient.
  • Correction: Keep the grip hand close to the upper body. Immerse the blade fully. Do the stroke slowly.

• Error: The pivoting of the canoe is irregular.
  • Correction: Equalize the draw and pry forces. Ensure that the forces are applied smoothly and at the same distance fore and aft of the pivot point. Review stroke mechanics.
Outside Box Stroke

Purpose
• Pivot the canoe (the bow moves away from the paddle side) with no displacement.

Catch and Power Phase
• Identical to the inside box stroke but the pry is ahead of the paddler and the draw is behind.
One Hand Pry (Running Pry)

Purpose
• Turn the canoe away from the canoeist’s paddling side.

Description Catch and Power Phase
• The running pry may comprise both static and dynamic phases. Establish good forward speed. Initiate the turn with a turning stroke such as the forward sweep. Using either an underwater or out of water recovery, slice the blade toward the bow, slide the shaft hand toward the bottom of the grip and remove the grip hand. The thumb points diagonally up and away from the torso. The grip hand may be placed on the off side gunwale. Extend the blade toward the bow and well under the hull. The shaft is inclined diagonally and rests against the forward part of the bilge of the canoe. As the forward speed lessens, one-handed pries may be used until the turn is complete. To do a one handed pry, pull the grip inboard using the gunwale as the fulcrum.

Recovery
• Roll the wrist inward to a closed position and slice the blade underwater back to the catch position.

Teaching Tips
• Note that the position of the hand on the shaft during the static phase of the stroke may vary with the canoeist’s strength.
• Keep the elbow bent at about 90°. Maintain the forearm and shaft at approximately a right angle.

Must See
• Turn the canoe away from the canoeist’s paddling side.
• Use correct stroke mechanics. Effect a smooth transition from the running to the one hand pry.

Errors & Corrections
• Error: The paddle slides backward during the static phase of the running pry.
• Correction: Slide the hand down the shaft slightly. If necessary, reposition the paddle along the hull so that the fulcrum is closer to the canoeist.
Offside Forward Stroke

Purpose
• To maintain forward momentum in conditions where timing is important. Used primarily by solo paddlers. However the bow tandem paddler may apply this stroke once they have completed a Cross Bow Draw stroke.

Catch and Power Phase
• The standard forward stroke grip is used. The paddle is brought across the bow of the canoe. The torso rotates onto the offside as the paddle comes across the boat. The paddler leans forward to initiate the forward stroke.
• The power face will be the same as with the standard forward stroke. Both hands are out over the water, keeping the shaft vertical throughout. Use the strength of the upper body to complete the stroke by returning the upper body to vertical. The stroke is short and quick, performed in front of the paddler’s knees.

Recovery
• The recovery is done under the water. It is initiated when the blade reaches the paddler’s knees. The grip hand is rotated so that its thumb points forward. The blade is then sliced toward the front of the boat by leaning the body forward once again for the catch of the next stroke.

Teaching Tips
• Use the similar body rotation as the cross bow draw stroke except you do not have to rotate as far.
• Perform the stroke on flat water, and then try it on the downstream side of a ferry.

Must See
• No more than 3 or 4 offside strokes before the paddler goes back to the on side.
• Canoe should maintain desired line of travel and forward momentum.

Errors & Corrections
• Error: Paddle blade not planted forward of paddler’s knees.
  Correction: Emphasize torso rotation and upper body lean.

• Error: Paddle blade travels past paddler’s body.
  Correction: Shorten the stroke.

• Error: Sloppy recovery.
  Correction: Stress firm grip on paddle and directional control by the upper hand. Remind students to lean forward with the paddle as the recovery is being executed.
Draw or Rudder (static/stationary or dynamic/active)

Purpose
• To move the canoe towards the paddle side, while the canoe is moving.

Catch and Recovery
• In the solo position, draws can be performed in a number of positions. Ahead of the paddler’s knees (bow draw), behind the paddler’s hips (stern draw), or at the hip (side wards draw). Bow draws can be seen in stoke blending with forward strokes while linking manoeuvres when in eddy turns and peel outs. A stern draw or rudder may be seen in setting ferry angles and for surfing. A side ward draw/rudder could be seen in lateral movement. The paddle blade is inserted parallel to the keel line, either from behind or ahead, into the water at the desired location, both hands out over the gunwale; blade fully immersed in the water. Paddle is firmly held in position anticipating increasing force. Leading edge of the paddle blade is set away from the canoe to initiate the turning effect.

Recovery
• The grip hand maybe dropped as the paddle blade is sliced out of the water or moved into another stroke. If additional force is required, a draw with an underwater recovery or sculling draw could be used.

Teaching Tips
• Ensure students know the correct entry position; start on flatwater or in an eddy.
• Practice by moving away from small obstacles.

Must See
• Vertical paddle shaft.
• Consistent resistance on paddle.
• Tilting the canoe toward paddle side.
• Canoe moves toward paddle side in a dynamic fashion.

Errors & Corrections
• Error: Boat turns wrong way.
  Correction: Review upper hand position, twist thumb towards your face.

• Error: Boat stalls.
  Correction: Too much angle on blade, straighten it out a bit.

• Error: Wobbly, uncertain.
• Correction: The power of the blade moving through the water provides a stabilizing effect. Demonstrate this to paddlers to show the extent to which they can commit themselves to the stroke.
**Duffek**
(Also know as blending the stationary Draw, with an active draw, and then a forward stroke)

**Purpose**
- Used by bow paddlers and solo paddlers to enter or exit an eddy (eddy turns and peel outs); an advanced variation on the draw stroke.

**Catch and Power Phase**
- Use a standard grip on the paddle. Place forearm to forehead with grip thumb toward the face and insert blade in the water slightly head and to the side of paddler’s knees. Leading edge of the blade is approximately 45° to the keel line. As soon as blade is planted in the moving water, the turning action begins. Blade is drawn towards and slightly ahead of the knees if more turning effect is needed. Shaft arm is bent slightly and tucked firmly to the paddler’s side (flexed).

**Recovery**
- Once the turn is completed, move into a forward stroke, in a smooth blending of strokes. If done properly, there is no need to do more than one Duffek for eddy turns and peel outs.

**Teaching Tips**
- Stress ‘forearm to forehead’ for the catch phase.
- Also spend time reading the water with the class, so they all see the eddy lines and understand where/when to plant the paddle.
- Have class members experiment with different blade angles, to determine what is most effective.
- Once the turn is completed, move into a forward stroke, in a smooth blending of strokes. If the hull is tilted, students will not need to lean their bodies out of the canoe to accomplish a turn.

**Must See**
- Forearm to forehead; shaft arm flexed.
- Near vertical shaft; both hands out over the water.
- Hull tilted toward bow (solo) paddler’s side.
- Paddle planted as the bow crosses eddy lines (timing).
- Smooth exit/entry from the eddy, while under power.
- Crisp turn into or out of the eddy with forward momentum; boat tilt is maintained throughout the turn.

**Errors & Corrections:**
- Error: Forearm above head for the catch phase (dislocation of shoulder possible).
- Correction: Stress ‘forearms to forehead’; physically move forearm into proper position for the candidate.
• Error: Shaft arm fully extended.
  Correction: Plant blade closer to hull of canoe; do not reach out so far away from body.

• Error: Paddle blade inserted behind the paddler’s body rather than slightly ahead of the knees for the catch (this turns the Duffek into a back stroke and stalls the canoe).
  Correction: Emphasize blade entry ahead of the knees or out from the hip. Stand in water beside the student and move the blade to desired catch position.
2 x 4 Forward Stroke Technique

An Explanation of Carving

Paddling a solo canoe is made challenging because the canoe tends to veer away from the canoeist’s paddling side. Padding the inside circle is a strategy that compensates for the spin effect following a forward stroke. The inside circle refers to paddling an arcing path while stroking on the side of the canoe that faces the inside of the turn. Naturally, the inside circle can be on either a paddler’s on or off-side. Straight line paddling in a solo canoe is often less efficient than paddling an arcing path using the inside circle. This is because the inside circle permits the use of momentum strokes and avoids the use friction strokes (e.g. stern pry) when ever possible.

The “2 X 4” refers to the use of the two forward strokes, both the on-side and cross forward, and four stroke elements (see chart) to provide complete control of the solo canoe. This skill builds on the concept of carving while paddling an arcing path between point A and B. As the canoe moves forward, water pressure in the form of bow waves creates resistance on either side of the canoe. When travelling an arc, the resistance is greater on the outside edge. By using the resistance of the outside wave, the tendency of the canoe to spin after each forward stroke can be prevented.

The 2 X 4 technique manages bow resistance to steer the canoe while maintaining forward momentum. It reduces the dependence on traditional stern strokes and the unnecessary friction, which often leads to slow starts and awkward eddy exits. 2 X 4 works best in flatwater and current but is less effective in the large waves found in turbulent rapids. In wavy conditions, it may be necessary to use traditional stern strokes, at the expense of momentum, to steer the solo canoe.

Summary Chart of the 2 X 4 Elements:

<table>
<thead>
<tr>
<th>Stroke</th>
<th>2 X 4 Elements</th>
<th>Tightens Inside Circle</th>
<th>Straightens or Switches Inside Circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward stroke and Cross Forward Stroke</td>
<td>1. Timing</td>
<td>Slow or pause your stroke.</td>
<td>Increase your stroke rate.</td>
</tr>
<tr>
<td></td>
<td>Paddle Angle</td>
<td></td>
<td>Boat Tilt</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>1.</td>
<td>Hold your paddle vertical.</td>
<td>1.</td>
<td>Tilt the hull.</td>
</tr>
<tr>
<td></td>
<td>Hold your paddle inclined over the canoe.</td>
<td></td>
<td>Level the hull.</td>
</tr>
</tbody>
</table>