

DRAFT MANUAL

# **Style Canoeing Supplemental Manual**

## **Manoeuvres - Execution and Application**

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This is not a Paddle Canada endorsed or supported manual. This draft manual is being developed for personal use in teaching Style Canoeing courses.

## Introduction

This document was developed to complement and support the Paddle Canada Style Canoeing Program Manual. The program manual identifies all of the skills and assessment criteria and provides some background information equipment, paddling strokes, and overall skills/manoeuvres. What was missing is actually how a paddler might attempt to complete each manoeuvre – what strokes, body position, etc.....

This supplement provides some ideas and suggestions on the mechanics of completing manoeuvres and paddling through transitions. Refer to the main program manual for terminology, stroke definitions, and general manoeuvre descriptions and criteria. This manual should *not* be treated a prescriptive reference but a guide on a few options. This is a draft manual and as such there is overlap and a significant amount of rambling/train of thought – constructive corrections and comments are welcome.

The assumption of most of the Canadian style portions of the program is a typical tandem canoe will be used that includes a centre thwart.

### Movements

When working through a manoeuvre break each of the moves down to the basic components

There are only two ways that a canoe and paddler can move across the surface of the water (a two dimensional plane). It is possible to add a third dimension but then the paddlers start to swim (or fly) – then it is no longer paddling.

- Line (arc). The centre point of the canoe moves along a line or arc.
- Pivot (point). The pivot point (usually the paddler) is still and the canoe moves around the point
- Both lines and pivots can be combined into any number of movements.

**Comment:** I do realize that a point can be considered a one dimensional line but – GIVE IT A REST ALREADY!

When paddling there are only four basic stroke directions (or forces). These strokes are used in different locations for moving and turning (through torque) the canoe.

- Forward
- Reverse
- Push (pry)
- Draw (pull)

**Comment:** OK, I know that there is only one but I did want to try to keep it conceptually easy as well.

Each of the basic strokes can be combined into a multitude of different ‘strokes’ creating forces to move the canoe in any direction. Each force may be applied through a dynamic or static stroke. Static strokes require the canoe to be moving.

When controlling the direction of the canoe subtle course corrections should be done at the trailing end (e.g. J or reverse J). Turns can be initiated at either end of the canoe although those initiated at the trailing end typically are used for stopping and those at the leading end are used when continuing after the turn.

The length of the stroke should be short and precise. Long power strokes usually require significant corrections. There are some exceptions such as full sweeps but even there the use should be limited.

**Comment:** Length is the distance covered by the stroke relative to the paddler or canoe. Some static strokes can be in the water for a long period of time as the canoe covers a significant distance. The relative movement of these strokes compared to the paddler is minimal.

Weighting the canoe is limited to two axes.

- Pitch (trim) – a level or trim canoe will have greatest length in the water with no point deeper than another. In this case the canoe is the most difficult to turn and s will typically move in a straight line. A canoe that is pitched to one end will ‘fix’ that end in the water releasing the opposite end to move freely toward either side. Pitching the canoe to one end puts the pivot point at that end of the canoe making the canoe itself a long lever amplifying any small amount of force or torque.
- Heel (roll) – a heeled canoe will ‘fix’ the pivot point at the deepest location and raise the ends of the canoe allowing freedom of movement around the pivot point.

**Comment:** There are three turning axes but yaw is dealt with as part of a pivot above.

By changing both the pitch and heel of the canoe many different hull shapes and pivot points can be moved as needed.

Direction of travel and the ‘ends’ of the canoe can get confusing. Although the bow/stern, port/starboard never change the terminology is not used consistently when paddling a symmetric hull where the boat and paddler can move and face either direction equally. Forward and Backward references the direction the paddler is facing although leading and trailing ends may be used to assist in paddle placement when the canoe is in motion. At intermediate levels the paddler should be able to control the canoe both backward and forward.

**Comment:** This can be ambiguous in transverse kneeling position so leading/trailing maybe clearer.

Onside and Offside Turns- Onside is the side that the paddler would normally paddle on given the grip on the paddle. Offside is the far side from the normal paddling side. Inside is a turn toward the normal paddling side (the front moves toward the paddling side in the case of a pivot). Outside is a turn away from the paddling side (the front moves away from the paddling side in a pivot). Offside strokes may also be referred to as cross strokes.

**Comment:** Again there can be some confusion here since in a transverse kneel the terms can become ambiguous.

**Comment:** Note here I can not say the bow since that is not always the front. The canoe is not moving so forward or leading edge also do not work.

While executing or transitioning through a manoeuvre three sections must be considered.

- Initiation – what needs to happen to get the manoeuvre started.
- Body, action or placement – the manoeuvre itself and any actions that happen.
- Conclusion or follow-through – what stops the motion or leads into the next manoeuvre.

**Comment:** I didn't know what to call the actual move that is bookmarked between initiation and conclusion. Body is close but it may be confused with the paddler's body. Action is not quite right either since some moves are static with regard to the paddler/paddle. Placement applies well to AFS as those manoeuvres are typically controlled by static strokes.

Keep in mind the following core principles:

- Face direction of movement, or anticipated direction
- Keep within the paddlers' box
- Engage whole body when paddling
- Maintain connection to the boat
- Keep paddle vertical
- Control paddle through the grip hand

Pay particular attention to weight[ed] turns as they are critical to understand for all turns and running side slips. Style canoeists must be able to complete both forward and reverse inside and outside weighted turns consistently before moving to any other manoeuvre.

You might find that quick dry (nylon) pants and nylon covered kneeling pad help with weight shifts and movement in the canoe. Just enough slide to move freely across the bottom of the canoe but a little sticky. Style paddling is one place that you might not want to be 'locked' in the canoe.

## Manoeuvres

When executing manoeuvres as part of style paddling remember that there are usually multiple ways to initiate, control, and conclude each movement. The use of alternatives allows for multiple variations and increases the opportunities for various transitions.

### ***Straight line***

Limited heel to paddling side, weight toward trailing end. Keep paddle vertical with grip hand outside of the gunwale. Corrections should be done toward the trailing end of the canoe. Short strokes.

#### Forward

J

ALT 1: Canadian

ALT 2: Pitch

ALT 3: River J (include in-water recovery)

ALT 4: Cross forward

#### Reverse

Reverse J

ALT 1: Reverse Canadian

ALT 2: Reverse River J

ALT 3: Cross reverse

### ***Pivot***

Heel canoe with gunwale to water, sit midship (as close as possible anyway), body rotation somewhat toward gunwale. Choke up on paddle.

see: [http://home.cc.umanitoba.ca/~burchil/pm\\_canoe/pivot/index.html](http://home.cc.umanitoba.ca/~burchil/pm_canoe/pivot/index.html)

#### Inside

Initiate with slight push away in front, slice back behind and slight draw. Push or draw into canoe not to self. As canoe starts to pivot increase the amount of power. This is called a box stroke. Keep the shaft hand relatively still and move the grip hand back and forth, when choked up this moves the tip of the blade a significant amount. To stop the pivot use less power to slow the pivot and provide draw/push gently in opposite direction.

ALT 1: Once the pivot has started then switch to using 1/4 to 1/8 arc sweeps. Choke up and place the sweep as far as possible from pivot point. A slight pitch and up lift at end of short sweep will help maintain control. Ensure that paddle shaft is radial to pivot point. Long sweeps difficult to control and will usually cause cartwheel or circle (but see circle below)

ALT 2: Stand the paddle up a little and place the blade deeper. The push can be joined with the draw making a triangle with the tip of the blade.

ALT 3: Continue on and start to make a circle with the blade. Start with the tip of the blade deep and pushing out following an arc around the pivot point with the same face pushing the water all the way around. The will require a palm roll part way around the circle since. Next to the canoe, the

point where the paddle would return under the canoe slice blade forward making a short flat side to the circle (palm roll at the point push would start). This is a high kneel circle stroke.

ALT 4: Low kneel circle stroke. Same as above except the paddle blade passes under the canoe to the off side. The blade is shallow, near the surface instead of deep and shaft arm (at least) is in the water allowing blade to go under canoe. Pivot point of paddle (and canoe) is near the shaft hand grip. Return of blade across the offside of the canoe in a slicing motion. It is possible to keep the blade pitched so it pushes all the way around but because the shaft at this point also pushes water it often causes forward motion and the canoe cartwheels or moves in a circle.

Outside

### ***Side Displacement***

Most efficient is with heel away from direction of motion. This is not always convenient or possible for onside displacement with wider tandem boats. In any case reduced heel. see: [http://home.cc.umanitoba.ca/~burchil/pm\\_canoe/side\\_slip.html](http://home.cc.umanitoba.ca/~burchil/pm_canoe/side_slip.html)

Onside

Sculling draw

ALT 1: draw

ALT 2: off side heel.

ALT 3: cross pry

Corners - see bow pivot

Off-side

Sculling pry

ALT 1: pry/push away

ALT 2: cross draw (sculling or straight)

Corners – see bow pivot

### ***Angled Side Displacement***

Also see angled side displacement under power. Typically done with draw/pry done on the side of the pivot point for the leading edge. The greater the angle the further forward/back the draw is completed until over 60 degrees at which point switching to a pitched forward/reverse stroke may be necessary. Same alternatives may be used as the straight side displacement.

Onside front is leading edge

Sculling draw ahead of pivot point. Increased pitch on forward portion of scull.

Recovery portion of scull has less pitch (but still some)

Onside back is leading edge

Sculling draw behind paddler. Adjust pitch so there is more on backward motion.

Recovery portion of scull has less pitch (but still some)

Off-side front end is leading edge

Sculling pry in front of paddler with more pitch on the forward moving portion of the scull and slicing to return. Recovery portion of scull has less pitch (but still some)

Off-side front back is leading edge.

Sculling pry behind the paddler with more pitch on the backward motion of the scull and slicing to return. Recovery portion of scull has less pitch (but still some)

## **Stopping**

Important to keep paddle completely outside of canoe – grip somewhat further so blade is ‘under’ the canoe. Patience is paramount in stopping – keep the stopping motion of the paddle as far from the pivot point as possible until virtually all motion of canoe has stopped. At that point do minor corrections. Less or no heel, weighed to trailing end of canoe, lots of body rotation.

see: [http://home.cc.umanitoba.ca/~burchil/pm\\_canoe/stop\\_go.html](http://home.cc.umanitoba.ca/~burchil/pm_canoe/stop_go.html)

Forward

Body rotation. place paddle blade on surface of water add slight pitch open toward canoe (tap side of canoe with blade edge). push blade down into water slowly while pulling up on the grip hand.

ALT 1: Compound back stroke

Reverse:

Forward stroke.

Sideways (onside) (see above)

Sideways (offside) (see above)

## **Circles**

Special case of arc pivot where the pivot is in the same direction and speed as the circle being transcribed.

see: [http://home.cc.umanitoba.ca/~burchil/pm\\_canoe/circles.html](http://home.cc.umanitoba.ca/~burchil/pm_canoe/circles.html)

Inside (forward)

Outside (forward)

Inside (reverse)

Outside (reverse)

## **Spiral (to pivot, pivot to spiral)**

Special case of circles but decrease the size of the circle continuously until only pivot remains.

Forward

Inside

Outside



Reverse  
    Inside  
    Outside

### ***Bow Pivot (pinwheel)***

See side displacement as a related concept. Continue to heel canoe. May be easier with canoe weighted forward toward pivot point.

Onside  
    Sculling draw pitched almost like a forward paddle and sliced with some draw on recovery.

Offside  
    Sculling pry with lots of pitch on forward scull, thumb pointing out. Sliced recovery. Again almost like paddling forward with river J.

### ***Stern Pivot (pinwheel)***

See side displacement as a related concept. Continue to heel canoe. May be easier with canoe weighted to back.

Onside  
    Sculling draw with lots of pitch on the back paddle portion of scull, still some on recovery but less.

Offside  
    Sculling pry but almost feels like a reverse J.

### ***Line Pivot***

A line pivot has the canoe turning in a pivot while the pivot point moves along a line. The line can be straight or curved. Work with pivots and angled side displacement for practice prior to starting on line pivots. Heel canoe with gunwale to water, sit midship (as close as possible anyway), body rotation somewhat toward gunwale. Choke up on paddle.

Start with slow forward straight line. Because side displacement is slower than forward to keep a constant speed along the line forward and reverse portions should be fairly slow.

- Initiate with a river-J and recovery moving forward with some pitch (like a sculling pry). This will move the back of the canoe away from the paddling side.
- Turn grip thumb into canoe and slice to back of canoe. Scull forward adding more pitch each stroke until canoe is perpendicular to line of travel.
- Sculling pry once when canoe is perpendicular.
- Sculling pry from back of canoe to continue pushing canoe around but also start backward motion. Repeat increasing pitch on blade each stroke and slicing forward.
- As canoe turns parallel to line of travel add a back stroke starting with a pitched pry, and finishing with a draw at front.

- Continue with sculling draw and slice to turn canoe perpendicular to the travel. The canoe will turn fairly easy this way as from the Canadian position the front will move quickly.
- Continue drawing to the front pitched to pull canoe forward and slice back.
- As the canoe turns back to parallel line of travel drop the paddle blade back and push-away from back end and draw at from with most pitch forward
- Light forward stroke and J – repeat back at start..

Once the line pivot has started virtually no forward or backward stroke is required since the canoe will move fairly quickly compared to side and angled directions.

### ***Arc Pivot (circle pivot)***

The easiest arc pivot to follow is there the direction of the pivot is in the same direction as the circle being transcribed.

### ***Displaced Circle***

Special case of arc pivot where the pivot is in the reverse direction of the circle (or arc) being transcribed.

### ***Weight Turns***

The ability to complete weight turns under control consistently is critical for all of the manoeuvres after this point. Weight turns are all about initiation and momentum – once a turn is initiated and the canoe is heeled it will continue to turn in that direction.

Although there is a ‘natural’ tendency for the direction the canoe will turn under perfect conditions the effect of initiation and inertia overwhelm this tendency.

see: [http://home.cc.umanitoba.ca/~burchil/pm\\_canoe/landing.html#weight](http://home.cc.umanitoba.ca/~burchil/pm_canoe/landing.html#weight)

Inside (forward). Initiate with a slight C or J alternative to initiate the direction of the turn. Heel the canoe so the gunwale is near the water surface. In some canoes with weight back of centre the natural tendency is for the canoe to turn toward the heeled side of the canoe. Shift weight forward, after initiation, to speed the rate of turn, shift backward to slow, remove heel and shift back to stop the turn. With forward weighting (see AFS) the natural tendency of the canoe is to turn away from heeled side but any inertia in the canoe completely overwhelms this effect.

Outside (forward)

Inside (reverse)

Outside (reverse)

### ***Stop Turns (special case of line pivot)***

Inside (forward)

Initiate with J stroke rolled into a reverse sweep. Hard heel into the turn and then level out with a standard draw to stop sideways travel.

ALT 1: Initiate with a bow draw (duffek) and strong heel. Drop draw stroke back to stop turn and side displacement. Keep pitch on paddle open in the direction of travel to stop forward motion.

ALT 2: Cross running pry, may do this with off side heel. Increase in pitch of pry until back stroke to stop forward motion. If necessary slice back (thumb forward) and push away to stop side displacement.

Outside (forward)

Initiate with straight through stroke with hard heel into the turn then level out. Slice blade forward and pitch open to back of canoe to stop forward motion as well as side displacement.

Alt 1: Blend forward stroke into stern (or back) draw (or just plant stern draw) with blade increasingly pitched open to stop forward motion.

Alt 2: Initiate with straight through but slice paddle into a forward running pry. An outside weight turn must be initiated or canoe will side slip instead of turn (see below).

Alt 3: as above except plant an reverse (power-face) running pry. This typically must be done from a high kneel position and is the most precarious (see AFS Wedge)

Alt 4: Offside running draw. This may be done with the canoe heeled either to the outside or inside. In Canadian Style where the canoe is wider this may require some movement in the canoe.

Inside (reverse)

Outside (reverse)

### ***Turn and Continue***

(these are wider turns than a pivot turn and may leave perpendicular or back along the route of approach – included here are ‘U’ turns).

Inside (forward)

Outside (forward)

Inside (reverse)

Outside (reverse)

### ***Pivot Turn (special case of line pivot/turn and continue)***

In all of the pivot turns the canoe is rotated more than 90 degrees and there is continued motion after the turn.

Inside (forward)

As with stop turn but duffek or running draw turn is used. Paddle out with C stroke.

Outside (forward)

As with stop turn but use Jam (running pry) or offside running draw.

Inside (reverse)

Outside (reverse) – Rockford Turn ☺

### ***Running Side Slip***

Canoe must be moving. Limit the heel when doing running side slips. In narrow enough then heel the canoe away from the side slip direction. Weighting the canoe toward the trailing end may help. Paddle should be sliced into the water without any pitch until it is in the correct location – any slight pitch as the paddle is being sliced forward will turn the canoe. Keep blade fully submersed in the water and the shaft vertical – with grip hand outside of the gunwale and above the shaft hand and blade.

Onside (forward)

Initiate a slight onside weight turn with a light rolling J (or J)

Palm roll out and slice into a running draw beside paddler.

Complete by dropping the blade back behind the paddler and adding a slight river J then forward stroke.

ALT 1: move the shaft hand to the neck of the blade and plant paddle one handed with out pitch, slowly twist paddle to open pitch. Tilting the blade forward from shaft hand may be necessary.

ALT 2: off side heel

ALT 3: running cross pry.

Offside (forward)

initiate a slight offside weight turn with a straight through stroke.

From a rolling J slice the paddle forward (just in front of knees)

Support shaft on gunwale and open the pitch (pry), if the canoe starts to turn away from paddling side slide the paddle backward and open pitch again. Grip hand should be outside the gunwale and the paddle vertical in water.

ALT 1: Cross running draw

ALT 2: one handed pry (like jam) but without turning canoe.

ALT 3: inverse running pry – this is usually used for turning (wedge)

Reverse running side slips should be done from as close to the midship as possible against the centre yoke. Reverse side slips are somewhat more difficult to control because of the weighting to the leading end.

Onside (reverse)

From a reverse line complete a soft reverse J or river J to initiate an inside turn.

Slice into a running draw just aft of the paddler, move forward as the canoe slows.

Conclude with the paddle dropping toward the trailing end then pushaway and continue into rolling reverse J.

ALT 1: one handed holding shaft at neck of paddle.

ALT 2: Running cross pry – with thumb pointing to trailing end. Alternatively point grip thumb in opposite direction with forearm outside of the shaft. This is harder to slice in but provides a stronger hold and control.

ALT 3: off side heel.

Offside (reverse)

Initiate with a straight through stroke as if to initiate an outside weight turn.

Roll paddle as if doing a reverse J and slice back toward the leading edge with thumb to trailing end. Open pitch into running pry until it catches. Conclude with reverse sweep, thumb up then transition to draw to the trailing end.

ALT 1: Off side reverse running draw.

ALT 2 May be done with one handed running pry but it is difficult to control.

### ***Diagonal Line (under power)***

See side displacement but adding forward motion. Similar to a running side slip but it is completed with ongoing power.

Forward onside angle

forward offside angle

reverse onside angle

reverse offside angle

### ***AFS***

Virtually all of the American Freestyle manoeuvres are extensions of moves already defined except the canoe is pitched (or weighted) to the leading end of the canoe at initiation. The AFS shift and Gimbal have not been included here since they are equivalent to running side slips and pivots.

Weighting the canoe in the direction of travel allows the canoe to swing quickly in the initiated direction allowing 180° (or more) turns with no need for additional work or effort beyond control and transitioning out of the move.

#### Forward

Christie

Axle

Cross Axle

Post

Cross Post

Wedge

Cross Wedge

#### Reverse

Christie

Axle

Cross Axle

Post

Cross Post

Wedge

Cross Wedge

## **Transitions**

Use of stroke blending

- Rolling strokes
- Palm Rolls

Manoeuvres and Transitions

- Initiation
- Body or Action
- Conclusion
- Setup (change-up) – this is a component of the conclusion or initiation the moves through the transition between each manoeuvre.

Notes on transitions:

- Limit heel when running straight lines
- Heel canoe when turning or doing pivots.
- Weighting toward the turning side (rear weighting) improves turn. (interesting weighting away from turning side is improved with forward weighting).
- Heeling canoe away from side displacement direction.
- Remember that inertia/momentum wash out minor advantages.
- Forward weighting (in direction of initial travel) will allow back of canoe to 'swing' around pivot point.
- Backward weighting will slow turns
- Understanding weight turns
- Consider body position
- In water or Rolling strokes best to use allowing multiple paddle placements and power
- Consider next move at initiation since where you start often defines the conclusion; conclusion will define the initiation of the next move.
- Multiple alternatives have been provided earlier in the document and will give some clues which moves work together the best.
- Change direction of turn, level out heel then weight forward and/or opposite heel.

### **Easiest Transitions**

- Straight Line to inside pivot
- Straight Line to inside turn-continue (using running draw or surface sweep)
- Straight Line to outside pivot
- Inside turn to inside pivot
- Inside turn to line with straight through stroke

- Outside turn to outside pivot
- Inside pivot to forward line (use C stroke – rolling J to exit)
- Outside pivot to reverse line (use reverse C or reverse rolling J to exit)
- Transition outside arc (turn) to Inside turn with River J (push away) just before transition point. Add heel to canoe, or heel to paddling side at push away. Slice forward to bow draw and straight stroke.
- Transition inside arc (turn) to outside turn with forward transition to sweep/rear draw at ½ way point
- Running onside side slip to outside turn or pivot with rolling sweep.
- Running offside side slip to inside turn or pivot. Although with a rolling sweep to outside turn/pivot also works well.

AFS – from Marc Ornstien thread on Paddle.net.

Most used ‘linkages’

Cross Axle to Cross Rev. Axle is one of my favorites. The Cross Axle gets you partway into a transverse stance from which it is fairly easy to slice back and do the Cross Rev. Axle with only 1 or 2 Cross Rev. strokes in between to gain some momentum. Both are powerful/dramatic maneuvers, especially if heeled to the rail. The audience hardly notices the Cross Rev. strokes as it all happens so fast and most are still trying to figure out which is the bow and stern.

A Prying Side Slip to an Axle works well as long as the canoe still has some forward momentum when you make the transition. The boat already has a bit of heel during the SS, the paddle is already in a "high brace" position and the stern is already skidding to the offside.. It only takes a slight repositioning of the blade a small initiation and increased heel/pitch to get the hull turning. If done smoothly, with enough momentum, to power strokes are necessary between the moves.

A Drawing Side Slip to a Wedge is another that I've used. The drawing side slip has the stern already moving toward to on side. Slicing the paddle forward and in toward the bow gets it into position for the setting the placement which nudges the bow offside. One needs to be smooth in transitioning the heel from offside (during the SS) to onside for the Wedge. I've continued the sequence into a gimbal though some would maintain that a gimbal is in itself not a maneuver. The gimbal may be for 180 deg., 270 deg., 360 deg. or more as required for positioning and to follow the music.