

The Rolling Tool bag

Some history.

Rolling is for many paddlers the benchmark skill which once acquired gives paddlers ownership of their sport. It is one of a group of skills along with bracing that transforms a novice paddler to a competent one. That is not to say it is the only method of self rescue and many paddlers are content with paddle float re-entries. Two decades ago extreme kayakers like John Dowd were scathing of the British skinny kayaks which required rolling. He and his fellow paddlers advocated the use of self rescues other than rolling. They paddled huge distances in wide stable double kayaks in which they could rest and even sleep. Their influence sparked a generation of wide stable boat paddle float users and this hindered the developed of rolling amongst American sea kayakers in particular. This is no longer the case especially with the interest in America for Greenland kayaking. In Britain, the trend is also reversing. In the early days of sea kayaking, kayak design was heavily influenced by Greenland boats. These boats were narrow and tippy and rolling was essential. This had the effect of discouraging many paddlers. Today kayaks have reached an optimum width which gives a higher degree of stability whilst still being possible to roll.

A Revisionist View of the Kayak Roll.

Rolling seems to have been 'discovered' by European explorers and brought home from Greenland by the 1920s. In America explorers and missionaries described Greenland rolling in reports of their expeditions, but there is no evidence of it being practised until much later on. This is despite the indigenous population of King Island being highly adept at rolling. It is really due to Nansen and other Scandinavian explorers that rolling was imported to Europe. He spent time with the Inuit learning their skills and he published this in a book called '*Eskimo Life*'. It was a self taught paddler called Eddie Pawlata who first gave demonstrations of the roll named after him in 1927. He claimed that he had taught himself to roll from Nansen's descriptions. Some time later a roll was introduced from the Austro-Hungarian Empire which was a backwards starting roll. In the typical cultural imperialism of the times these rolls became known as the 'Pawlata' and the 'Steyr'. Both of these rolls could have been called 'Nansen Rolls' or even 'Inuit Rolls'. In Britain, an explorer called Gino Watkins taught a number of rolls to members of his Greenland expedition in the 1930s. He had lived with the Inuit and immersed himself in their culture, as Nansen had. He became a superb kayaker, hunter and roller but sadly this first 'Brituit' died a few years later in the Arctic without having the chance to name a roll after him! The BCU archive footage of him rolling is probably some of the earliest on film. He performed and taught many of the classic Greenland rolls with a traditional Inuit paddle.

What's in a Name?

'*Pawlata*', '*Steyr*', '*Combat*', '*Screw*', '*Brace*', '*C to C*', '*Reverse Screw*', '*Back Deck*'; these are all names of rolls commonly used by paddlers. Most of these names give no clue to how the roll is performed but they have fallen into general

usage even though many paddlers in different parts of the world may use the same name to describe a variety of rolls. For example, the generic term of 'screw roll' can be a 'brace roll,' a 'sweep roll', or a combination of both. The Inuit have a far more logical way of describing their many rolls. The full name for an Inuit roll often describes the starting position, the hand position and the finishing position. The roll we call a 'Pawlata' is the standard Greenland roll which is called '*Kinnguffik paarlallugu nerfallaallugu*' which means 'starting forward coming up on the opposite side on ones back'.

European Names.

The classic 'screw roll' was so named because the body and hands were screwed up at the start of the roll and unwound to complete the roll. This screwing up process occurred more with paddles with a 90 degree feather. The term 'sweep roll' is far more explanatory for the classic sweep and back deck finish of the old style 'screw roll'. The term 'brace roll' is generally more accepted as a better description of the 'C to C roll'. Most good paddlers evolve a mix of sweep and brace rolls and this hybrid roll is called a 'combination roll'. Kent Ford in his DVD describes an extreme version of this as a 'low resistance sweep roll'. Confused? To break this down further, we need a description of the common factors found in all rolls. All rolls have a set up position, a movement of the paddle away from the kayak followed by a hip and boat rotation top finish with a low centre of gravity position. The classic 'sweep roll' relies on a climbing blade angle to give purchase on the water, a rapid hip rotation brings the kayak upright with the body and the head especially finishing low over the back deck. A true 'brace roll' has no climbing angle of the blade and the paddle is swept out dry with the inboard hand over the upturned hull. This becomes an extreme version of the high brace position. It requires a very powerful hip flick followed by a reversing of the curve of the body thus the other name 'C to C Roll'. In both of these rolls the paddler can finish in an alternative forward position. Hybridising any of the elements from the brace or the sweep results in a 'combination Roll'. The modern 'combination roll' always finishes in a C upright position or a forward position. This development evolved along with modern play boats because these kayaks have less volume in the stern and any back deck recovery would result in the kayak tipping on end. This modern 'forward starting forward finishing roll' would be called by the Inuit '*Siukkut pallortillugu masikkut*'. So we can see that there is nothing new in rolling that the Inuit have not already demonstrated.

We will return to these rolls later but now it is useful; to look at how to coach the 'extended paddle roll' or '*Kinnguffik paarlallugu nerfallaallugu*'. ('Pawlata') or as we used to call it at college the T.S.T.S roll (Too Stiff to Screw roll). But before we start here is a few ideas on protecting the rollers shoulder from injury.

Rolling Progressions

Shoulder Safety.

It is generally accepted that 'extended paddle' rolls are easier to learn and bring a higher success rate amongst novice sea kayakers. In all rolls and braces it is very important that the novice paddler learns the concepts related to their own shoulder protection. This simply means avoiding arm positions which strain your shoulder. These are positions in which the hands are behind the body and forced into an unnatural position by the leverage of the paddle. In reality this means always having their hands placed on the paddle shaft just inside the paddler's peripheral vision. This has been called the "paddlers box". The "box" is an imaginary area in front of your body in which your arms can operate safely. What this means in the set up for the roll is that if you look down at your paddle shaft and cannot see one of your hands then your shoulder is at risk of injury. In order to see your hands your torso and head can be rotated until the rear hand come into view or your hand simply moved in front of the body. This also provides the power to the sweep stroke of the roll by simply unwinding the torso. In an 'extended sweep roll' ('pawlata') the inboard hand should be placed at the hips or in front of the hips. During the roll the paddle moves across the chest and finishes on the chest somewhere under the chin. Many other strokes have key aspects that relate to shoulder safety and it is the coach/helpers responsibility to inform the beginner and look out for bad habits creeping in.

Coaching an 'Extended Sweep Roll' (ESR or Pawlata).

This roll uses a very slight climbing blade angle in the sweep part of the roll so prior to even getting in a boat, it is useful for the learner to play with a sculling blade angle whilst standing in the water. The angle of the blade should be as flat as possible whilst still providing support and lift. It is important to realise the too steep a climbing blade angle is probably more detrimental to the roll than a diving blade. The learner can also be encouraged to bend at the waist when sweeping so that their head is in the water or below the paddle to simulate the following exercises.

Quarter and Half Rolls.

Once the novice is in the kayak, a series of quarter and half rolls can be played with. These are simply exercises which allow the learner to try the sweep, boat rotation and recovery. It uses the same climbing angle but a helper or coach holds the kayak on edge by holding onto the cockpit on the opposite side from the learners sweep stroke. The helper can progressively increase the angle of tilt on the hull so that the learner is doing a full body sweep and recovering on the back deck.

Hip Flick and Boat Rotation.

This can be done from the side of the pool but it is best done with the coach holding the learners hands. The coach can then move the novice into a variety of recovery positions for example; hip flick and recover on the back deck, hip flick and recover on the front deck. Throughout the hip flick exercises the coach must emphasise the use of the dynamic seating position in the kayak and the body-boat contact which relay the forces through to the hull via the driving knee, hip

and heel. At this point the coach progresses to the full roll using the cross hands method.

Cross Hands Method.

1. Teach the correct set up position which is low body position paddle extended inboard hand at the hip and correct blade angle
2. Explain briefly what they are about to do with you this would be something like "you are going to capsize towards your paddle and allow me to sweep your paddle out it will feel just like the first exercise we did. When you feel me gently pushing inward on the paddle hip flick and lay back"
3. The coach then stands in front of the boat crossing one hand underneath the other. The hand holding the paddle goes under the hand holding the boat.
4. At a given signal the learner capsizes towards the paddle and the coach rotates the paddle round the hull then they firmly push the hull away from them whilst walking with the paddle to 90 degrees from the upturned hull. A gentle push inwards on the paddle or a bang on the hull will be the signal the learner to hip flick up and finish lying back on the rear deck.
5. Repeat the process many times without too much verbal interference from the coach. Only correct one point at a time but do swap sides at regular intervals.
6. If all the earlier skills have been developed and chained together, the learner will progress to righting the kayak with less and less help from the coach. At this point the coach is controlling the setup position and the sweep and if the hip flick has been successful then less assistance can be given to the sweep. This is done by progressively letting go of the sweep earlier. The final evolution at this stage is simply a paddle rotation onto the surface by the coach and a powerful shove away from the hull

There are many tips, tricks and fault finding exercises which the coach can learn and add as they see fit. It is important that the coach realises that they must only concentrate on correcting one fault at a time as this is about the limit that a learner can take in whilst holding their breath underwater. It is very important that both sides are worked on as this will improve all skills as kayaking is a symmetrical sport. Once the basic roll has been mastered the learner can then progress with guidance to recovering in a more upright position with the C shaped body form of the brace roll alternatively the paddle can be progressively shortened by sliding the hands along the shaft.

As the paddle is shortened the reach of the set-up, the arc of the sweep and hip flicking must all be revised and improved. New styles of recoveries can be revised and added such as "C" Form and Front Deck.

Troubleshooting for problem rolling.

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This can be caused by the simple unfamiliarity of sweeping out from the boat whilst upside down or excessively steep climbing blade angle or a diving blade angle.

Exercise 1. Revise half rolls and sweeping with helper holding the boat on edge.

Exercise 2 Paddle lateral resistance – in the cross hands method hold the outside edge of the blade and ask the learner to push into your fingers whilst upright, keep this pressure on whilst they capsize and by simply letting go the paddle will fly side wards.

Exercise 3 Teach them to move the black blade away from the yellow boat (or whatever colour). You are basically asking them to follow the paddle out with their eyes and body.

Exercise 4: Pointing underwater – the coach can point in the direction they wish the paddle blade to move. Ask the learner to focus on the coaches hands in the water whilst capsizing. The coach then points towards the surface or away from the boat. This gives a visual reference for the learner

Exercise 5: Use a slalom pole and ask the learner to sweep the paddle above the pole. The pole is held just below the water parallel to the kayak and a few feet out from it.

Exercise 6: Possibly the best method for teaching sweep – is use an Inuit paddle as they are easier to sweep than pull down.

Exercise 7 : If it is the blade angle that is causing the problem then work on sweeping with a totally flat blade.

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This usually means the learner produces a short sweep because they are only using their arms and not the whole body. This can cause an early head lift as the paddler sweeps to just before 90 degrees with their arms and then lifts the head up to gain the surface.

Exercise 1: Use a buoyancy aid - the instructor grabs the shoulders and rotates the learner in the sweep

Exercise 2: Simply ask them to follow the paddle blade with their eyes.

Exercise 3: Assisted half rolls with a float developing into full sweeping rolls with a float.

Exercise 4: Standing by the side of the paddler and close in to the hull, a half roll is executed with the helper holding the paddle shaft in between the rollers hands. They can then rotate the paddle blade through the full arc.

1. – Armpit object grip – place an object under the inboard hands armpit and ask them to keep it there throughout the roll. Examples to use could be sponge ball, rolled up soft spray deck.

1.

This usually means the paddler forgets to hip flick or the hip flick is very late.

Exercise 1: Teach a mantra – e.g. ‘Reach’, (towards the surface), ‘Sweep

and flick', 'Recover'

Exercise 2: Revisit the half roll(exercise 1, section 1) with the mantra

Exercise 3: Simply ask them to speed their roll up – it often solves the problem.

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This is often caused by lack of suppleness.

Exercise 1: Ask them to do yoga or consider losing weight to allow them to tuck up tighter to stretch to the surface (be tactful)

Exercise 2: Go through the C to C exercise – which is .Stretching with both hands to the surface from an upturned hull.

Exercise 3: For those still not able to reach the surface with the paddle – teach the push-pull exercise which is; in the setup position - Pulling slightly down with the inboard hand whilst pushing up with the outboard hand. This allows the paddle blade to clear the water before it starts to sweep.

Exercise 4: If the fault is caused by the paddler having trouble pushing a flat blade onto the surface they can be taught to rotate and slice the blade upwards before commencing the sweep. (This is an advanced exercise)

Exercise 5: Teach the paddler to hold the outboard blade against the hull and then slice upwards. This is similar to the lateral resistance exercise and can be practised in an upright position with the paddler slicing downwards.

1. Early head lift

Exercise 1: Coach sliding the shoulders onto the back deck to finish looking at the roof. (for the Pawlata roll) Coach looking to the underside of the paddle keeping the head under the paddle in the sweeping phase. (Brace and Sweep roll).

Exercise 2: Return to all the exercises for poor sweeps as they are often related to head up early.

Exercise 3: Cheek to shoulder contact in the brace and sweep rolls – a foam ball placed on the shoulder may help with this ask the paddler to roll whilst keeping the ball pressed between their cheek and shoulder.

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This is common error when the paddler moves on to the more advanced rolls in which the paddle is held in a normal position. Brace Rolls in particular require a strong flick whereas a Pawlata can be done with a well timed boat rotation and less powerful flick. However a hip flick is useful to the Pawlata.

Exercise 1: Revise Hip Flick exercises using the side of the pool, instructor's hands, use pool floats but try to add a sweeping action.

Exercise 2: Work on Chaining and Timing exercises by revising the quarter sweep to the point the flick takes place.

Exercise 3: Teach body boat contact, work on the driving knee, heel hip contact.

Coaching the Screw Roll Family

In these rolls the paddle is held in the normal paddling position. This requires the roller to be more flexible, use a more powerful hip-flick and have a well developed sweep with good blade angle awareness.

A good progression through the rolls could be;

- 1) Pawlata, also know as the Extended Sweep Roll.
- 2) Sweep Roll but still with a back deck finish.
- 3) Sweep Roll with "C" upright finish.
- 4) Brace Roll (C to C)
- 5) Combat or Storm Roll with a forward finish.

By progressively moving the hands along the shaft from the Pawlata position a gradual change can be encouraged in the rolling style. Many of the previous exercises can be used but much more emphasis must be placed on the hip flick, the stretch of the set-up and the full arc of the sweep.

To protect the shoulder in these rolls the learner must rotate and stretch to the side in order to bring both hands in view. If the stretch is done properly then the inboard (back hand) can now be placed behind the hips but not excessively so.

Improving the Hip flick

This can be done through float rolling exercises. Float rolling where the roller is encouraged to sweep the float prior to flicking is a very good progression to add. Revising the half roll up to the point where the hip flick is added is also a useful. This can be done with a helper lightly holding the paddle at ninety degrees.

Improving the Setup

Stretching is the key here and paddlers will need to do some yoga to stretch the torso and hamstrings to allow the paddle to reach the surface.

The C to C stretching exercise or the "elbow over the hull" stretch exercise are both good exercises to get the learner to feel how far they have to reach before the roll actually starts. The use of a paddle float which is gradually deflated is very helpful in teaching a Brace Roll. The paddle float will help stretch them onto the surface.

Improving the Sweep

A poor sweep can be caused by a diving blade angle but it is usually caused by a poor set up and lack of body awareness about what the sweep feels like (kinaesthetic awareness). It is worth reducing the climbing angle of the blade to flat as this produces a very fast swipe. Another very common fault in non-extended paddle rolls, the "power punch". This is an attempt to get more power into the end of the roll by punching the inboard hand high to finish in a draw stroke position. This actually causes a weak roll by finishing with the paddle vertically providing little support. This finish can put the shoulder at risk if the upward hand is extended behind or way above the head. The cure for this is the "armpit object exercise". The coach can also encourage the roller to finish looking down the shaft with the paddle shaft on their chest below the chin. Using an Inuit Paddle in the extended position, then gradually shortening it to the normal paddling position is excellent teaching aid as Inuit paddle give little support if "power punched" but give good support when swept.

For many finding the correct paddle blade angle is also problematic and this is made worse by the variety of feather angle found on modern paddles. This is not such a big problem when doing a true Brace Roll but it is for the Sweep Roll. Newer paddles with offset oval shafts can solve this so long as the roller learns to set the angle with the lead out board hand only. Learning to roll with a flat blade and loose hand grip is very effective in producing a sweep which has little

resistance thus making for a very fast roll. This again is part of the benefit of using an Inuit paddle as these paddles give very little resistance when swept.

Some Ideas in Lesson Structure

The following are some ideas and proven methods used by expert coaches in many outdoor sports. They are based on the Eight Essentials, a system used to plan a comprehensive lesson in Nordic Skiing. If you use half of these then it will be a good lesson.

1. Introduce yourself properly and remember the names of the learners.
2. Choose your terrain wisely for the skill you are about to teach.
3. Ask them what stage they are at and what they did last.
4. Decide on where your lesson will start i.e. could it be a new skill or the revision of the last sessions practice.
5. Your lesson should include a brief explanation of what you are about to teach, a simple demonstration at full speed and then slowed down. The demos are not strictly necessary for rolling as most of it is done under water. If you have time to do two demos then get the learner to watch a surface then underwater sequence? However good demos are very important for all other kayak skills.
6. Get them to try the skill or your series of progression (this may be where your full series of progressions for the roll starts).
7. Correction using positive specific and measured feedback.
8. At the end of the session review the athletes progress so far and get them to appraise their own performance. From their appraisal and your own impression of their development you can leave them with a task for the next session.

Using a progression is often described as "Chaining Skills" in sports coaching. Later you may isolate area for correction before adding the skill back into the sequence of the roll. This is called "Whole-Part-Whole" coaching.

Giving feedback

Verbal feedback should be given in a positive way. The best forms of feedback should have a **specific**, **measured** and **positive** content for example "*well done (positive) your head stayed down (specific) until well past 90 degrees with the sweep (measured)*". This type of feedback provides more information and positive affirmation to the learner than something like "*well done your roll really worked that time you must be getting the hang of it (positive)*" or worse; "*well you got up that time with a bit of luck*".

Feedback specific to Rolling

As rolling is such a counter intuitive activity, some of the rules of coaching upright skills have to be left behind. We should still try to correct only one fault at a time. We should try to decide what the main problem is and work on that first. For example; in an ESR the paddler can actually get up with a poor hip flick and a diving blade angle as long as they have a good sweep and back deck recovery. In the brace or sweep rolls a very powerful hip flick can get the paddler upright,

even if the blade has been placed wrongly or is diving. So good observation skills are very important when coaching rolling. It is important that you do not overload or clutter the learner with too many faults to work with. One scenario that causes much anger and frustration is the tendency for observers who are not directly involved in the specific coaching relationship to interfere by throwing in suggestions for faults they have noticed. This is again another form of overload on the learner. **DO NOT COACH FROM THE SIDELINES BY SHOUTING TIPS AND FAULTS. REMEMBER, THE COACH IN THE WATER BESIDE THE LEARNER HAS A PLANNED PROGRESSION.** This is not to say that the coach/helper should not consider asking for someone else to quietly observe and give feedback directly to the coach to use if appropriate in their lesson.

Psychology and Rolling

There are many psychological factors as well as neuro-biological ones which theorists use to describe the ways in which our bodies, brains and environment interact to affect a physical performance.

The main relevant ones which affect rolling are; 1) Cold Water Reflex, Mammalian Dive Response - These are primitive instincts which kick when humans are immersed in water. 2) Arousal State - This is the affect that excitement and fear have on how we learn and reproduce physical skills. It is closely studied as part of Skill Acquisition Theories. 3) Bi-lateral Transfer and Contextual Interference - This relates learning all paddle skills on both sides of the body from the start. These have been reported in Code and the Coaching Handbook but the most serious studies come from the Journal of Sport Science.

Postscript

Rolling is not as hard a skill to master as many people think. Using a clear progression to coach it speeds up the process greatly. Applying good observation by the coach to detect faults and then selecting corrective exercises is the way forward to developing an intuitive roll.

The final stage is to progressively stress proof your roll in colder, rougher water. This can be a life long game. What this means in real terms for our club is that paddlers must be encouraged to move straight to cold water rolling when the pool session ends. In most seasons there is a long gap between a novice paddler acquiring a basic pool roll and then reproducing it in cold water. After two to three weeks the skill retention level will be halved. After one month it will have mostly gone. This has happened fairly often in the club and this is the reason we produce only a few good rollers each season. These are hardy souls who take up the challenge and start rolling early and after every evening paddle. If we do not encourage this then the all pool training is a waste of time. What this means for learner rollers is the fact that the swimming pool is only the start!

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