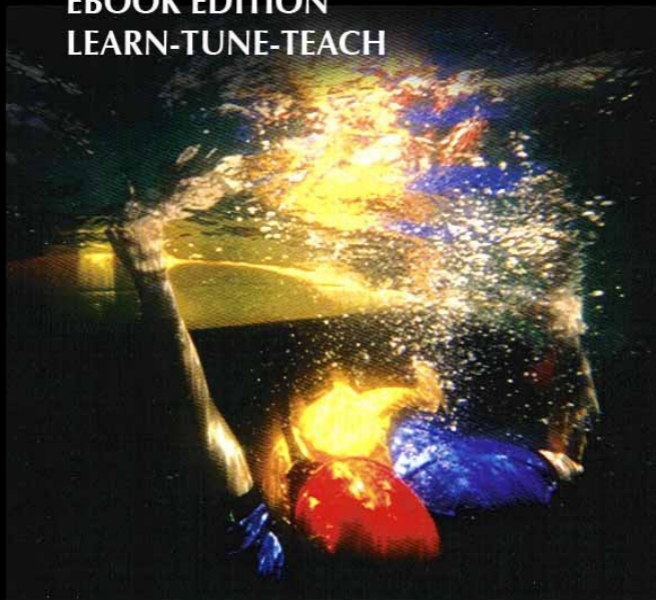


The Kayak Roll

EBOOK EDITION
LEARN-TUNE-TEACH



THE KAYAK ROLL BOOK

How to learn, tune, and teach it!

By Kent Ford

Based on the Bestselling Instructional Video with Phil DeRiemer, Mary DeRiemer, and Dan Crandall

5 minutes of video instruction provided online, free of course.

Whatever your ability, the kayak roll is the fastest way to improve your kayaking skills. You'll notice better control and confidence, and have more fun on the water, guaranteed! These simple explanations of dozens of exercises make learning easy!

1. 50 drills, tips and hints for easier rolling.
 2. The ideal roll for sea kayaks, river kayaks, and surf kayaks.
 3. Free access to online roll video and instruction is included.
- Unlock the secrets of proper technique
 - Roll more reliably, make the move everytime
 - Learn precision, protect your shoulders
 - Tune-up and fine tune a shaky roll
 - Teach with tips designed to help a friend
 - Develop balance for dynamic strokes and control

The Kayak Roll Book

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Lets Roll!

The Twisting Sweep

Your kayaking will improve most rapidly, and you will have more fun, if you have the confidence that your roll is reliable. A successful roll requires the correct performance of a few simple body motions. With proper technique, rolling a kayak is effortless.



The motions of rolling are very counter-intuitive, and you've probably never had to learn anything upside down in the water!



Fluid roll video examples:

www.performancevideo.com/rollbook

This book teaches a sweet version of the roll most paddlers use, using a step by step system sure to have you learning quickly. We emphasize a fluid economy of motion, an effortless roll and a roll that keeps your body in a protected position. Years of experience teaching has proven that this roll

works very well. The technique works as a tune-up to a shaky roll, and it provides new paddlers with a safe roll, similar to the one experienced boaters rely on. Most instructors refer to this roll as a “twisting sweep roll.”

It is a very safe and protected roll, because your torso stays near the surface and moves smoothly to an upright position. This roll protects your shoulder from injury by keeping your working arm in front of your torso and by utilizing the large and powerful knee and torso muscles to right the boat. Because this roll is smooth, quick, and fluid, it works well in a variety of conditions from huge surf in the ocean, to seriously steep whitewater. This roll works for many different body types, from the young and gumby-like, to those who are stiff, and not as flexible as they used to be.

Some other rolls (such as the C-to-C) require a wind-up that can be a challenge in a deep wide boat. But this roll technique starts the boat rotation immediately, so it excels with any boat design.





Other excellent rolling styles and teaching progressions exist, so if you know one, set it aside while you learn this roll. With an open mind you will be best able to learn this easy version of the kayak roll. In time, you'll build on this foundation to incorporate your personal style. You'll find this roll to be adaptable so you can finish at 90 degrees to the boat, or scull forward to finish over the front deck.

The easiest version of the sweep roll has a unique finish position that is gentle on the body and reliable. It's a style that is easily learned, and easy to tune up, for any body type and in any boat. A roll is just easy, effortless—there's nothing to it. You don't need strength or power to make it happen. You don't need an explosion of energy to make it work. The best roll is a smooth, fluid continuous motion. It's all about finesse, it's all about technique. It is a mental game of keeping your body relaxed and getting it to go through the correct range of motion. That is what brings the boat up, and allows you to get on the surface.

Hint: Underwater comfort, best displayed by a slow and controlled wet exit, is a pre-requisite to rolling. Your wet exits should include 3 taps on the bottom of the boat (to slow the rush and notify your friends), a slow and controlled movement along the cockpit rim to find the sprayskirt rip cord, and pushing back and clear of the boat before summersaulting out and to the surface.

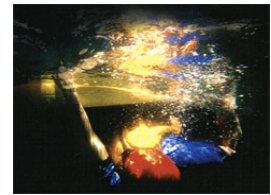


Overhead view video examples:

www.performancevideo.com/rollbook

From the set up, it is a fluid motion which rolls the boat to the finish position. If you want to think of steps, it starts with the setup, into the synchronized torso twist and boat rotation, into the finish position. It might look like the paddle is doing the work, but that just isn't so. In fact the more force that is applied to the paddle blade, the less likely you will develop a reliable roll. Instead, use knee and torso motion to roll the boat upright. Let's examine that knee and torso action in detail first. This is fundamental to what rolls the boat!

The Hip Snap



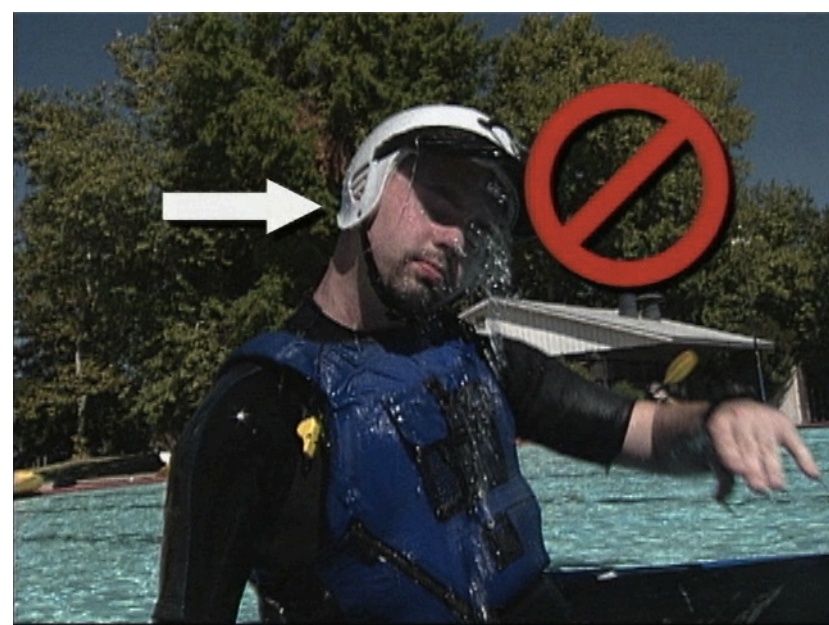
Hipsnap video instruction:

www.performancevideo.com/rollbook



“What allows me to roll this boat upright is my connection at the knees. And an efficient roll uses one knee at a time. If I raise my head, it results in pulling on the wrong knee, which brings the boat back over on top of me. This is the knee that I want to use to right the boat. In order to do that, I have to leave my head down so that I can pull that knee up. This is what allows me to roll the boat.” (His right knee brings the boat rightside up. Activating his left knee would bring the boat upside down.)

It is the same story in the water. In rolling the boat effectively what we’re trying to do is to use one knee and its contact to the boat to lift the edge of the boat up to the surface and right the boat. Our instincts tell us to lift our head. That engages the wrong knee which in fact pulls the boat further upside down.



Lifting the head is a common symptom of a failed roll.

Lifting the head while going for air means that the knees are not working to roll the boat. The correct head position assists the rolling knee in righting the boat. The foundation of a roll is understanding how to bring the boat underneath you. The key is doing this with very little support from the paddle or pressure on your hands.

This book will walk you through a set of drills that help you learn an effortless roll. You'll start by doing boat rotations (known to paddlers as 'the hip snap') before doing anything with the paddle.

To simplify your learning process, we'll start by isolating the upper and lower body actions that roll the boat. This drill is the first step of relaxing and learning the effective yet counter-intuitive motions that roll the boat. The ideal is to practice with an instructor to give the instant feedback so you develop correct muscle memory. But in a pinch, an experienced and observant friend can help too.



Learning boat rotations video:

www.performancevideo.com/rollbook

Your instructor will say something like this: “I want you to stack your hands on mine, with no pressure. Now I want you to come over and just put your ear on your hand like taking a nap. And then let the boat come over on top.... Now use your knee that’s under water to rotate the boat up. Keep your head on your hands and keep your face wet, don’t lift it up...just use the knee in the water, roll or rotate the boat up. Bring the boat back over on top of you. One more time”

Look at the next two photos, and consider what makes the boat roll up:



- The head presses down into the water.
- The right side of the torso contracts.
- The right knee/thigh lifts up.
- The right hip finishes the movement (sliding the boat towards the instructor or side of pool).
- All these motions happen at the same time to fluidly bring the boat upright. Collectively this is the hip snap.



Tip: When I roll, I think of trying to slam my hip over to my working blade. This slides the boat under my body, which after all is the goal of the roll.





You can also learn and practice boat rotations on the bow of a friends boat.



Poolside drills: www.performancevideo.com/rollbook

It is not preferable, but you can also learn the same motion on the side of a pool. Another option is using a pool kickboard, floating cushion, or pfd for support while practicing the hip snap. If you must practice with any of these options, imagine that your fingertips are resting on eggs that will break if you push too hard. Keep one shoulder or your face in the water, so you avoid lifting your torso and head. Be precise, because only perfect practice makes

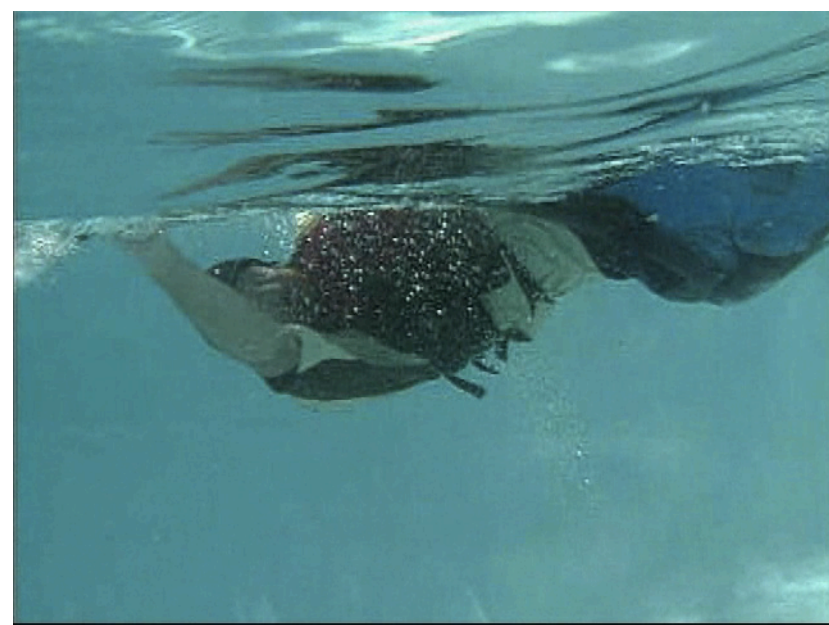
perfect.

TIP: To keep from using too much force on your hands, keep one shoulder in the water while you practice, rotating the boat upside down, then rightside up. Then the next step of boat rotation practice is centering over the boat by sitting up slowly while keeping the head down. Sitting up too quickly develops bad habits.

The advantage of working with an instructor is the instructor can feel how much pressure you puts on his hands. Pressure indicates the wrong body motion. Once the mechanics of the hip snap are ingrained, the next step is re-centering the body over the boat. Recenter by lifting your hip and taking your hands across the spray skirt as you settle upright.

To isolate the boat rotation and to simplify the learning process, we have been teaching you boat rotations with the body at 90 degrees to the boat. Next we will show you how moving the body generates leverage to roll the boat.





DRILL: You can grab a friend and try this yourself! Sit on the floor, and have your friend hold your knee down. From the starting position, take your torso and have it extend out perpendicular to the boat. By doing that, it's pretty easy to see that builds a lot of tension in the knee. It is that linkage that causes the boat to roll upright. Just moving your body out generates a lot of force in the knee, ultimately you use that to roll the boat.

In this twisting sweep roll technique, you start righting the boat as soon as you leave the starting position. Your natural body tension links your shoulders to the knee. So when you move your body out along the surface; the boat is going to start to roll. The boat rotation comes from activating the correct knee. Combining that with the correct torso motion provides the basis for a quality roll.

Next we'll study how to use these components to move the blade throughout the roll:

- Learning the set-up position
- And the finish position
- Learning the initial direction of movement
- Sweeping with no pressure twisting to the perfect finish
- then putting it together, gradually going deeper into the water

Setup, Sweep, Finish!

Once you are relaxed underwater, and can do fluid boat rotations with very little pressure on your hands, you are ready to start with a paddle. We'll introduce a number of exercises in logical progression to develop the muscle memory required to make a roll.

You will start in the set up, and once upside down activate the torso rotation and knee action by sweeping your torso and the blade to the finish position. This motion rotates the boat underneath you.

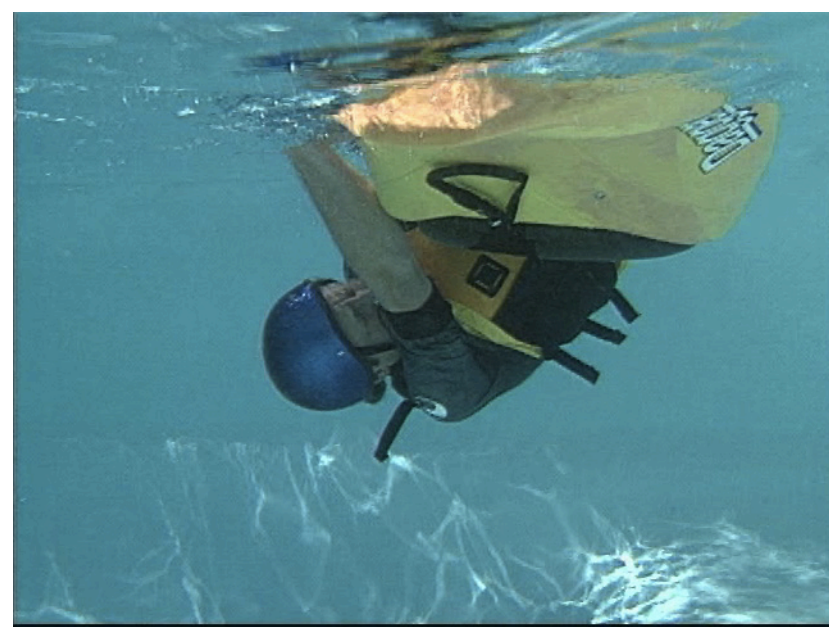
A quality set-up is the foundation for the roll. The purpose of the set up is to orient and protect you, and get your body and paddle in position ready to roll the boat. An experienced kayaker is going to be able to roll on either side. But to begin, it is easier to learn one side well. We'll start with the right blade forward.

Tip: Noseplugs will help you feel comfortable underwater during the learning process. Some people find a swim mask useful for getting their bearings and comfort underwater in a kayak.



Video of the setup: www.performancevideo.com/rollbook

Set the paddle alongside the boat, front blade flat. To get there you modify the tuck- rather than tucking straight forward- take your face and try to tuck to the thigh. Get your hands down in the water so that the paddle shaft is as parallel to the surface as possible, and when you go upside down the blade will be on the surface.



Set up to the thigh rather than forward!

Upside down, it will take a little extra effort to curl your body up into this set-up position. This will feel a bit like doing a situp to pull your head and torso up to the outside of the setup thigh. It is better to set up to the side than tucking straight forward. This keeps your body near the surface so it will be easy to use your torso in the roll. The blade has to be on the water before the boat can roll, so once you have the entire paddle in the air, place the front blade on the water.

Tip: Don't tuck straight forward for the setup since that makes it more difficult to get your hands and blade into position above the surface and will keep your torso from initiating the motion in the correct direction out away from the boat.

A light grip is important. Hold the paddle very lightly in both hands and wiggle your fingers... A tight grip translates tension to the rest of your body making you more likely to pull the blade down, which will hurt your roll. Instead, think of a gentle grip, like holding the shaft between thumb and forefinger. You should be feeling your forearm against the side of the boat.

Tip for a bomproof roll: When you are upside down, no matter what the conditions are, you should always feel those same spots on your forearm coming against the side of the boat in your set up. This will get your

paddle and body up near the surface where you want them. Being under water can be disorienting, so learn to find the set-up position no matter how you flip.

SETUP CHECKLIST:

- Setup with your head tucked to outside your thigh
- Your forearms on the side of the boat
- The blade flat on the surface
- Your hands loose



The Setup.

To review, the set-up starts with your head to the side, with your forearms against the boat. The blade is floating on the water. Loosen up your fingers and feel cool air on them before you start the sweep. Be patient. The setup is the foundation for a roll that works, so perform it exactly!

Finish Position



Finish position explained:

www.performancevideo.com/rollbook





Check out this finish position. Torso twisted around, looking down the shaft, with your back hand curled up to your shoulder, and the elbow jutting forward.

The finish position is your target as you come out of the water. To help you develop a smooth and resistance free rolling motion, this roll utilizes an exaggerated blade angle in the finish position. Your knuckles should be curled back to the shoulder with your elbow forward. As you are learning, you'll find it handy to use this finish position as a check point, to be sure you have used the correct form.

Tip: If the powerface of the blade is facing rearward as you finish, then you have pressure on the blade. BAD. Better is to finish with the blade angle flat or exaggerated so the powerface faces forward!

Here are the key points of the finish position:

- Your torso twisted around.
- Looking down the shaft.
- Hands loose.
- Knuckles curled back to shoulder and elbows jugged forward to exaggerate the blade angle.
- Hands centered on the body.

- Visualize your finish position.
- **Tip: If you finish rolls with your hands off center (over to one side of the boat), you'll be off balance. Re-center your body by sliding the blade in, so your hands are evenly above your sprayskirt. You can also lift your hip on the rolling side. Taking a stroke will help you re-center. Once your roll is reliable, you'll learn to quickly react... to get re-balanced and on your way.**



DRILL: Close your eyes. Now go to that finish position. As you're coming out of the water, be thinking about your chin coming towards your shoulder. Keep your face wet as long as possible. Watch the blade throughout your torso twist until you can try to see the rear of your boat. Finish with your hands nice and loose.

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## Shoulder Injury Prevention

The finish position described in this book will help you avoid a painful shoulder dislocation. A shoulder dislocation is painful, requires a tough rehab, and keeps you from having fun boating. Shoulder injury is caused by the instinctive action of lifting of the head, while pulling down and back on

the paddle when rolling or bracing. The shoulder is weakest when abducted, extended, and externally rotated, ie in the hitchhiking position. In this position the shoulder is most vulnerable to muscle tears or shoulder dislocation.



*The bad position, exposing the shoulder to potential injury!*

To keep the shoulder safe from dislocation, keep the elbows at least slightly bent and in front of the torso during the roll. If you want the blade further back, twist your torso to get the blade behind you. A light grip is helpful too. These are the strategies you use during the roll.

At the beginning of the roll your shoulder is well protected since your elbow is in front of your chest. To keep your shoulder safe throughout the roll, twist your torso and watch the blade. To protect your shoulder, you have to twist and watch the blade. Any shoulder pain is an indicator that something is wrong!

**Tip: a full set of shoulder strengthening exercises can be found in the Kayakers Playbook ebook.**

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The Sweep

Now let's study the sweep motion that links the set-up to the finish position. The roll is fluid and effortless. The motion involves several components. Next we will review each in detail:

- Relaxed hands and arms throughout sweep
- Starting movement in the correct direction
- Engaging only the correct knee
- Twisting the torso to move the blade
- Twist the back hand back to shed resistance on the blade
- Holding shaft lightly

Effortless rolls are done with the blade angle neutral throughout the roll. With your hands loose on the shaft, think of letting the paddle blade float across the surface of the water. A climbing blade angle causes many paddlers to muscle their rolls, finishing with a lot of pressure on the blade. This leads to a failed roll or a less desirable and exposed finish. Resistance on the blade causes you to lift your head, which dis-engages the rolling knee. Too tight a grip can also lead to the blade diving, if the wrist and torso steer the blade towards the bottom. Remember, effortless rolls are done with a gentle grip so the blade angle can stay neutral throughout the roll.



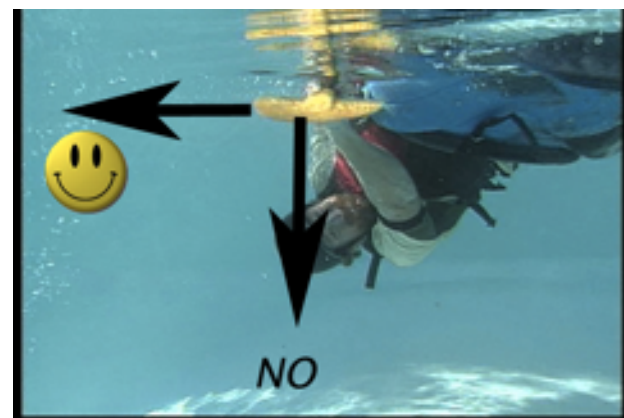
Whipped cream- the flat and neutral blade video:

www.performancevideo.com/rollbook

Visualize this: in the ultimate roll, your paddle skims just under the surface. The blade is just skimming on the surface like it's slicing through whipped cream. No resistance, no pressure, no climbing blade angle, no nothing!

Starting movement in the correct direction

When you are upside down, the normal tendency is to pull down. But underwater, that results in the paddle going to the bottom and you feel a lot of resistance on the blade. This illusion of support kills the roll. Instead, use your torso to sweep the blade away in a wide arc.



Start in the correct direction, leading with your torso.

Get your whole body moving to move the blade, because the torso movement will activate the knee to roll the boat. Think about your body and the paddle and your arms as all one unit. Think about the front arm moving the blade out just under the surface. Lift your chin up so you can look out towards your paddle blade. Your torso movement will build up pressure in the knee, providing the energy for rolling the boat. Think of the blade floating on the surface in the set-up, then slicing through the water to the finish.

Drill: Without trying to right the boat, you can practice a false sweep, only going out 2 feet from the boat. Return to the setup position, then follow through with the entire motion. This exercise is rehearsal to move the torso in the correct direction, while you keep the paddle gliding lightly near the surface.

Humor Break: The redneck says “I know how to roll a kayak thang... you’ve gotta do just three things... One, you gotta reach out real far for leverage. Two, you gotta pull

down real hard. And three, you gotta lift your head quick to git upright.” Of course, as we have seen, that is wrong on all counts. And that is what makes the roll so intriguing... it is a counterintuitive motion to learn.

Using the correct knee to roll the boat

As you move away from the set up position, it is important to apply pressure only to the rolling knee. Extending the torso out starts the pressure in the rolling knee, then twisting the torso finishes the boat rotation.

If both knees are pressuring the thigh braces, it can be very difficult, if not impossible to roll the kayak. One possible solution is to drop your non rolling knee out of the thigh brace a bit (like 1/2 inch). This helps insure that only the correct knee is activating the kayak.

Twisting torso to move the blade





“Twisting the torso to move the blade engages the knee that rolls the boat. Lets take a closer look. Go to the perfect finish position. What I’d like you to do now is leaving this hand as your pivot point I want you to twist forward and bring the blade towards your foot. You see how the shaft is moving only because your body’s twisting? Twist again. Twist to the perfect finish position and twist. Feel the twist.”





This twisting motion moves your body and blade to the finish while you maintain pressure on the rolling knee. This initial extension out away from the boat activates the rolling knee then the twisting action continues the boats rotating to rightside up.

Shed the resistance

Keep your back arm as a pivot while you jut your elbow forward and roll your knuckles back to the shoulder. Rolling your knuckles back is an important step, because it controls the blade angle.



Video instruction of how to shed the resistance:

www.performancevideo.com/rollbook

“Pressure and resistance on the sweeping blade blade make it impossible to do an effortless roll. In an ideal roll you never feel resistance because you start moving the back hand toward the shoulder right away. But if for any reason you sense resistance, just dump it, shed the resistance, and that’s the back arm that does that. This is really important.”

Drill: Rightside up, you can practice moving the back hand from your lap to the knuckles back, elbow forward finish position. Don't forget the twist.

So ... the back arm is critical because it keeps the blade neutral across the water. The back arm takes a smooth continuous motion from setup to the finish position. The sweep moves the blade gently, as if its floating on the surface, from the set-up, to the finish position. Your relaxed hands and arms start the blade movement out along the surface. This builds the pressure on the rolling knee. Twisting your torso moves the blade to finish. Keep the blade neutral. Synchronize the setup, sweep, and finish position. When you do you will be rolling consistently.

Putting it all together

The basic steps to learning the roll include

- Doing boat rotations
- Practicing the set-up position
- And the perfect finish
- Learning the direction of movement
- Twisting at waist to the perfect finish
- then putting it together, gradually going deeper into the water.

Drill: Gradually going deeper into the water requires a friendly instructor to lower you into the water. You will start from the finish position, sweeping forward into the setup as you are lowered into the water. Then you will have muscle memory to go for a roll. You can think of this as the roll in slow motion.

Bombproofing the roll

We recommend you work on one side until it is very reliable, then learn your other side using the same progression. Your goal is to develop the correct muscle memory. Work on your roll no more than 20 minutes at a time. Finish a session on a perfect roll or drill. It is normal to back up a few steps to reinforce correct muscle memory. If you get three in a row wrong, stop. A day off often helps your muscles ingrain the memory and timing. Don't be discouraged, every person learns the motion at their own rate.

To develop a bombproof roll, practice! Start by rolling in calm water and take it to slightly more challenging conditions. When that feels reliable, then try flipping and rolling with your blade helped by mild current. You can practice turbulence by changing set-up sides under water, flipping with one hand on the shaft, and sprinting before you flip. Or you can have a friend provide turbulence, by shaking your boat upside down! You never flip in the setup position, so to get a combat roll practice finding the setup from a variety of flips.

The quality of your roll is a direct reflection of your setup. Always go to the proper set-up position. Many rolls fail when paddlers omit that step. Be calm, have a mental checklist, and a mantra of any key items that make your roll succeed.

What is your calming Mantra? Try: "I like it down here, I think I will sweep through to finish position now"

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## **Outfitting**

You can roll almost any boat, but snug outfitting makes it much easier. Without quality outfitting a boat becomes almost impossible to roll. Think about how you connect to the boat. We refer to the knee as doing the work, but really it is the inside of your thigh, against the brace. You should be able to press your thigh against the brace by pressing on your toes. When your

toes relax off their support, this should allow the knee to drop slightly, so it barely touches the brace. Typically your legs will be splayed; heels together, your toes will be wide. If your knee slides at all in the boat, you may need additional outfitting. Most boats will require customized padding to keep your knee in position and to make rolling easier. Padding by your hips can keep you from flopping around.

**Tip: If you are loose in the boat, you will be tempted to hang on with both knees, which makes boat rotations impossible and rolling much more difficult.**



**Tip: If your knee and thigh is slipping at all learning the roll will be much more difficult.**

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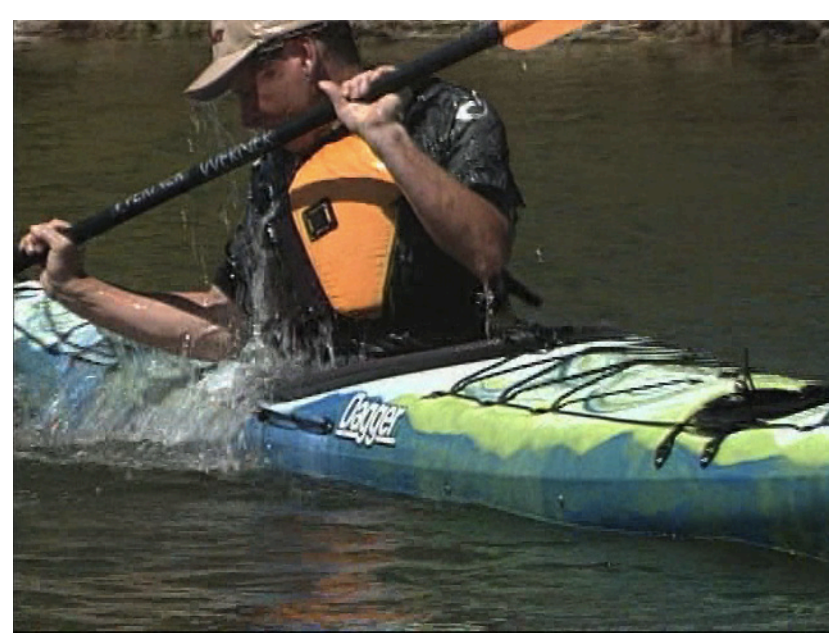
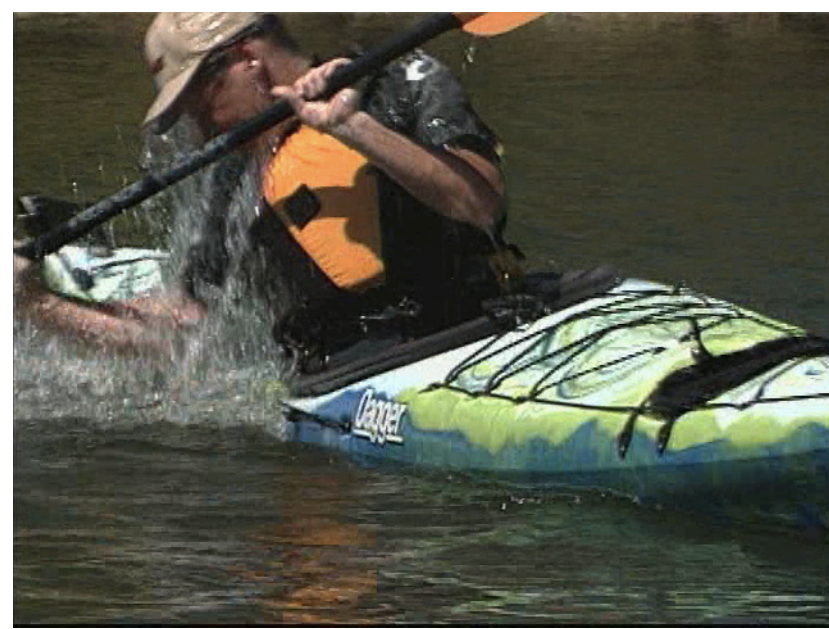
Rolling a Sea Kayak

One might think that a sea kayak is difficult to roll. Not necessarily! A rudder poses no problems for a roll. And, you can roll with a moderate amount of gear on the deck. Rolls for a long and loaded boat may be slightly slower, so be patient and precise. For stability, load the heaviest gear on the bottom. With a strong roll you can even roll a boat full of water, or re-enter

your boat and then roll!







More tips

We highly recommend you take a beginner class before learning to roll. The course should cover controlling the paddle, safety information, and other important skills like slow and controlled wet exits. Practice until you feel totally comfortable upside down, or else your brain will be too distracted to learn the roll. It is best to start in a warm pool. If you are rolling a lot in cold

water earplugs help prevent long term damage. Your time underwater is much more pleasant if you wear noseplugs. You will want to get accustomed to rolling while wearing a pfd, since it affects your buoyancy, flexibility, and range of motion.

Tip: You will learn the correct motions more rapidly when you are not worried about getting rightside up. That is why it is so valuable to have an instructor or friend helping you...

Diagnostics and Solutions

If this is your first exposure to rolling instruction, you probably have plenty to work on. Get in your boat, do some practice and return later with a fresh muscles and a clear mind. Most people who learn to roll sometimes find themselves teaching- so if you are planning to teach someone, or your roll isn't working well, check out the next section which will help diagnose problems in a roll.

In the ideal world, the progression we have shown you would have you on your way to an effortless roll in very little time. In the real world, the counterintuitive nature of the motion combined with different learning styles can cause problems to arise. An experienced instructor has a big bag of tricks full of solutions to address these problems. In the diagnostics section we'll address common problems and share solutions we've found to be effective.

How to Help Someone Roll

If you are helping someone roll, you have to decide when to support them out of the water. Support helps them relax and hear your instruction. However, it is also important for the student to practice the correct set-up position without assistance.



The boat rotation drill.

When you take on the role of instructor-assistant, you'll find it best to stand behind your student. You can hold their lifejacket with one hand, and use your other hand to adjust or prompt their motions. Don't hold the paddle in such a way that they become accustomed to using it to get rightside up. Instead, whenever possible, show them the correct direction of movement and have them perform it. You want them practicing the muscle memory without pulling down on the blade to get upright (which is the wrong sensation). In helping a flailing student, be careful to not grab their arm in a way that could jeopardize their shoulder. Help keep them from the shoulder danger zone.

To gain confidence, you might first practice doing the 'hand of god', to pull your student upright. You drape over their boat, grab near their hip with one hand, and push on the hull with the other hand.

Warning: When the student has paddle in hand, it becomes a weapon. Stand behind the student on the rolling side for the most protection.

Your student may experience more than one problem, but keep in mind they can focus on only one solution at a time. Your students tend to under perform each motion, so you will find it useful to over-exaggerate the goal.

This strategy will help your student achieve the ideal.

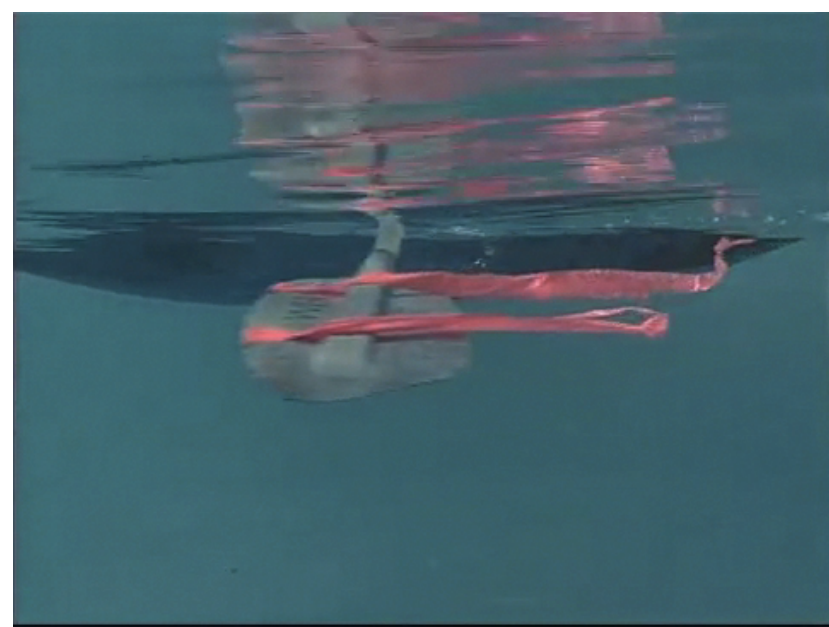
Often a student needs review of a drill previously covered. Frequently that means doing more boat rotations for a reminder of which knee gets activated. When helping someone through any drill, be fanatical about keeping their pressure light and their head down. Perfect practice makes perfect.

Head up

The easiest **not very helpful advice** you can offer someone is that they lifted their head in a failed roll. Most failed rolls end with an effort at lifting the head... so this is a symptom of a problem, but lifting the head is rarely the root issue.

How many times have you seen a paddler lifting their head during a roll attempt and heard someone yell at them “keep your head down”. Lifting the head is usually a symptom of a much different problem: resistance on the blade.

To fix this our goal is to get the student to understand what we mean by resistance. I'll do that by having them take a sweep stroke (the type that would turn the boat). A third of the way into the stroke, I'll have him take his hand up to his shoulder. They feel the sensation of getting resistance, then shedding it. This function is controlled by twisting the paddle over with the back arm, knuckles back elbow forward.



*The blade should be sweeping flat and neutral just under the surface.
Resistance on the blade kills the roll!*

Think of floating the paddle across the water with a neutral blade angle. A climbing blade angle hurts the roll. A climbing blade creates resistance, and leads to pulling down on the blade, pushing on the feet, and leaning way back. What often results is a downward pull in the wrong direction. You can save a roll even up to the last second by dumping resistance.

Rather than dictating a wrist position in the setup, we prefer the student focus on finding the sensation of no resistance throughout the sweep. We teach to control the blade angle with the back hand, because this can give the back hand a specific target. However, controlling with the front hand is also acceptable.

Set up to bombproof the roll

A perfect set-up is required to learn a reliable roll. Failing to get the proper set up can be caused by fear, sensory overload, or simply a surprise flip. The exact body and blade positions are important. Common problems include tucking straight forward, extending forward, a wandering blade, a tight grip, or seeking resistance with blade angle. Figure out and address the root cause.



When you learn, you may want to check the blade orientation by doing a short false sweep to be sure the blade is neutral or by feeling the blade floating before you roll. Ultimately, you learn to recognize the blade orientation by the feel of the shaft. Practice with your eyes closed. This will give you quick and instinctive rolls. When you are upside down in a kayak, figuring out which way is up can be a challenge. Imagine your friends hold a target bar in place near the surface, so you can reach to get the sweeping blade above that bar.

TIP: Think of the paddle floating, only you can pull it down. A mask can help with dis-orientation, but is not necessary. Visualization of the roll is difficult, instead, focus on the correct muscle memory.

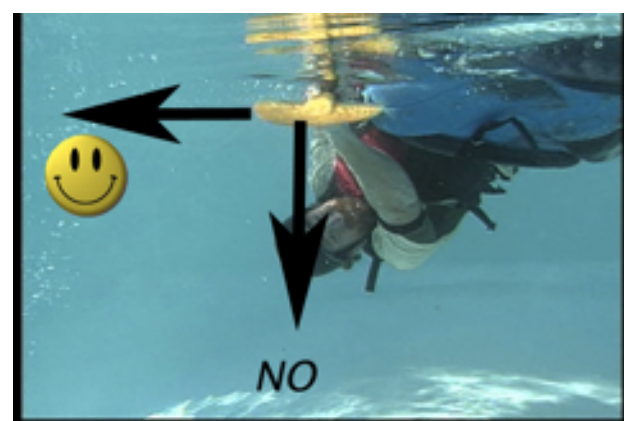
Important Tip: Falling out of the set-up frequently occurs at the point in the progression that the instructor lets go of the student. The set up needs to wrap up to thigh by keeping set-up knee engaged. It is similar to doing a sit-up to the outside of the thigh.

Getting stuck flipping

Occasionally paddlers with a small flexible torso or high float pfd have trouble flipping over. If you do get stuck, move your head from one thigh to

the other thigh to pull the boat over. Another solution is switching your head by going to the other side setup position. This can sometimes happen when you flip yourself so aggressively that your body motion downward leaves the boat hung rightside up. After all, this body motion is the foundation of bracing to stay rightside up.

Mis-direction of blade movement



Mis-direction of blade movement is another common problem.

Quite often, a person's instinct causes them to use only their arms creating a lot of resistance as they pull down on the paddle. We want the student to think about extending out with their shoulder arm and paddle extending out all as one unit.

If your hands have stayed tight on the shaft, that encourages you to seek resistance, and defeats the roll. This tight grip translates through the forearms and into the rest of their body. An instructor can shake the paddle in setup to get them to release that tension, so they are not as likely to pull down or stress their shoulder during the roll.

Punch

Punching puts pressure on the blade, which makes the roll feel strained. We have seen that lifting the head is a symptom of resistance on the blade.

Punching is a common cause of this resistance. Punching can also lead to a sinking front blade.



Don't punch!

Here are some tricks to eliminate the punch and help get the back arm on the correct path to a perfect finish. If the student punches up... an instructor can put a small rock (or a visualized \$100 bill) in the armpit and remind them to hang on to it during the rolling motion.

The same sort of solution can work if they punch forward. Put an imaginary object in the bend of their elbow to clutch on the way to a perfect finish. The proactive solution to punching is for the instructor to touch the back hand and shoulder as a tactile reminder to bring them together as they roll up to the perfect finish. An instructor can use one hand to control their student's back hand, or in desperation twist the shaft at the end as a gentle reminder.

Head Up

As we have shown earlier, raising the head kills the roll and pressures the wrong knee. To fix this an instructor can have them keep their eyes on their leading blade or hand. Another elegant solution is to put a watch on their

wrist, and have them watch the watch.



Eyes on the wrist, aka watching the wristwatch!

A kinesthetic approach is to touch their shoulder and chin and ask for the student to bring them together through the roll. You might also ask them to blow bubbles. Lifting the head can also be caused by punching, resistance on the blade, or lack of rotation. Be sure to address those issues.

No Boat rotation: Knees

Like a good detective, experienced kayak instructors are always looking for clues to help them diagnose a problem. If the boat is not rotating upright at all, chances are it is related to how a student is using their knees. If the paddle sweeps to 2 or 3 o'clock, and suddenly goes to the bottom, the student is now pulling with both knees. Their shoulders have stopped twisting. To fix this glitch in the sweep, have your student aim to finish out their twist, by hitting you (the assisting instructor- standing near the stern) with the blade.

If you see the boat stop rotating, look to see if the torso is still unwinding. Likely you will refer to the twisting drill we did earlier- rightside up, moving

the paddle with nothing but twist. Add special emphasis on pointing the elbow toward the opposite knee. You can also ask the student to imagine the wide arc of a clock, and glide the blade back to 4 o'clock. If he's consistently underdoing it, I'll exaggerate and ask him to go to 5, or even 5:30.

Tip: Each knee is involved at a different time in the roll! You'll use your set-up knee as you curl into proper set-up, then switch your focus to the rolling knee. You can also activate the knee with extra emphasis on the shoulder driving out away from the boat.

Timing Issues

Ideally we want a perfectly synchronized roll. We want the boat to start rolling the moment the sweep starts, so the boat will be up by the time the torso and blade reach the finish position. Let's understand these common timing problems:

If a student's boat stays passive at the start of the sweep, we call this delayed boat rotation. They'll finish the roll near the back deck. Here is a quick cure. Tell the student to engage the rolling knee the moment they think about sweeping the torso. Note, we are not asking them to sweep faster, but to roll the boat sooner.

If the student is sweeping through the right path, but we see that they're consistently finishing up too far back, check when their boat begins to rotate relative to the sweeping of the paddle. You may also see someone's back blade is hitting the side of the boat...they need to roll the boat out of the way sooner. This problem results when the gliding sweep travels faster than the boat can roll. It's the boat underneath you that brings you up, so the sweep needs to keep pace with the fixed pace of the rolling boat. Have the student slow the sweep down, perhaps half as fast as they first did it.

TIP: Advice for a student to try a 2/3 speed attempt at a roll, *WITHOUT TRYING TO GET RIGHTSIDE UP*, will often be the difference and get

them their first elegant roll!

Finished off-balance

If you feel the roll is good, but you are still off balance at the end, shift the paddle and lift your hip. Don't stay in this position for long. Instead sit up, take a forward stroke to re-balance.

Troubleshooting Checklist

(Printable version of this list available at performancevideo.com)

Remember: The head usually comes up first in a failed twisting sweep roll. But it is only sometimes the root cause.

Marker (what you observe): Excess power. Rush.

Mechanism: Climbing blade angle.

Solution: Finish position not exaggerated. Shed the resistance. Try half speed. "Don't try to get upright."

Marker: Paddle dives or gets pulled down (boat goes forward).

Mechanism possibilities: Pulling on paddle. Disorientation.

Solution: False sweeps with instructor hinting correct blade direction. False sweeps to rehearse starting in correct direction. Shed resistance drills.

Offside hand drills (below). A swim mask and noseplugs can help some people with aversion.

Marker: Offside Hand punches.

Mechanism: Loss of linkage between torso and shaft.

Solution: Offside hand to shoulder. Pinch dollar bill in elbow to eliminate punch forward. Pinch dollar bill in armpit to eliminate punch up. Torso rotation practice lap to finish position. Torso rotation practice linkage. Aim for torso rotation all the way back to the instructor.

Marker: Stall Partway. Depth charge ('kerplunk') after paddle moves one foot from setup.

Mechanism: Using arms to pull up. Initial movement then torso rotation ends.

Solution: Watch the watch to finish. Lock offside hand to shoulder. More drills to rehearse torso rotation.

Marker: Head comes up early.

Mechanism possibilities: Wrong knee engaged. Lifting for Air. No belief.

Solution: Take offside knee out of thigh hook. Check hip snap. Try rolling without “trying” to get upright. (requires assistant.) Swim mask for orientation. Positive reinforcement.

Marker: No attempt. Failed combat rolls.

Mechanism: Rush. No belief.

Solution: Setup, wait for cool air on hands. Mantra.

I am sure you'll have fun practicing this sweet version of the kayak roll.
Learn it, tune it, teach it.

Braces

When the boat gets jostled, the paddler typically is still balancing over the boat. Righting the boat is primarily done with the motion of the torso, knee, and head. Think back to the cutaway boat video... when your head drops down, the correct knee is engaged for righting the boat. This counterintuitive motion is the crux of a successful brace. It may look like the paddle does the work, but really it just provides momentary support while the body does the rest.



Video explanation of braces:

www.performancevideo.com/rollbook

Low Brace to keep from flipping

The low brace is done with the back of the blade and the elbows up over the shaft. To practice, teeter your boat on a dramatic edge, with your body balanced up over the boat. To stabilize, drop your head, engage the knee, and slap the backface on the water. Then the recovery becomes key; slide the paddle shaft across your lap, synchronized with the hip snap. This helps re-center your body over the boat.



Tip: The low brace is taught earlier in places with really cold water, where flips and swims can ruin the fun factor. I did most of my teaching in the southeast where the warm water meant that a swim was no big deal. So we often skipped teaching braces until the paddlers had reliable hip snaps and descent rolls. This was especially true for the high brace, which requires more timing and dexterity than the roll.

High Brace to keep from flipping

The high brace relies on the same timing with the torso when the blade hits the water. In the high brace the elbows are low, and the power face of the blade is facing down. I avoid the advanced sculling brace that is dramatic looking but that puts the shoulder close to the danger zone. Certainly avoid any high braces with a straightish working arm.



Tip: When I am practicing the high brace on flatwater, I try to reach my chin outside my elbow (see above). This insures that my elbow is in front of my body. A low impact way to practice your first high braces is with your boat full of water, nearly sinking. Warm water is nice for this!



The photo above is the bad position, chin inside the elbow, leaving the shoulder in its weak position. Now think about rolls with this guideline. In a roll that protects your shoulder, your elbow/bicep should be in front of your face, certainly not at your ear or behind the ear!

Braces to Play in a Breaking Wave



Here is a high brace, with the blade about to hit the water. A high brace works easily with a forward sweep to move the boat forward.



Here is a low brace. The low brace works well with a backstroke to move the boat backwards. It also can quiet down a bouncing boat. Frequently, people don't use a low brace very effectively. These same strokes serve the same purpose in ocean surfing.

Roll Styles

Twisting Sweep Variations

The roll we have been showing you is best described as a low resistance twisting sweep roll. The emphasis is on twisting the torso and minimizing pressure on the blade. This is a unique version of the sweep roll, and should not be confused with other variations. Equally skilled instructors enjoy endless debates on the relative merits of various rolls. We encourage learning other styles. There are lots of other variations you will see and may want to learn. You have lots of options how to finish a sweep roll. If your timing is well synchronized, you can probably finish at 90 degrees to the boat. Taking the blade a little farther back is fine, as long as its guided with torso twist so your shoulders remain protected. One variation of the roll involves sculling forward at the end of the roll. The extra sculling motion of this roll requires precise blade control. By continuing to the front deck, you get a low protected profile if you don't make it. The only problem with this is that students often don't have much sculling dexterity right-side up, much less upside down.



Video examples of types of rolls:

www.performancevideo.com/rollbook

Sweep to Back Deck roll

The Sweep to Back-Deck is a variation that involves less torso twist. The torso continues in a smooth arc over the back deck on the way to upright posture. Like the no hands roll video below, this strategy allows you to be rolling like a log, with very low profile. This allows the boats rotation to

continue without the glitch that can occur as the torso tries to move from the water into the upright position. This lowers the torso weight, so is especially handy for people with a large and heavy torso or for certain hard to roll boats. Some people teach a roll where you just lean back, reach out, and grab water to pull yourself up. Be cautious, as taking this to the extreme leaves the shoulder and face exposed. The strategy is that this lowers the rolling resistance of the body. This is true, and indeed this can be an easy roll, even a no hands roll! It was first used as a resting position for early Greenland paddlers.

But there are some big problems and safety concerns with this roll, particularly in shallow water. This back deck position removes the larger muscle groups from the rolling action, and focuses the energy onto the smaller and more vulnerable muscles of the shoulder. Should a roll fail, the paddlers face is now exposed. In this position, the ability of the knee to assist the rolling action is greatly reduced. The paddler recovers in an unbalanced position, requiring more time to assume an upright and offensive posture.

Rodeo Roll

A rodeo roll is often called a rodeo back deck roll. Yes, confusingly, two different rolls get called back deck rolls. In the rodeo roll the rolling blade travels over the back deck. This is a great option in deep water. Playboaters use it where they want a fast low profile roll, so they can stay in a whitewater play feature without washing out. Like most rolls it requires careful attention to technique to protect your shoulder and face. While it is currently known as a quick roll to keep playboaters in a hole, its origins are demonstrated in traditional greenland technique.

C to C Roll

A common style of rolling is the C to C. In the C to C you position your

body and paddle 90 degrees to the boat before any righting action begins. The torso is wound up to a “C” shape in the first C, and the hip snap moves the torso into the second C. Many believe this is easier to break into components for teaching. The C to C requires quite a bit of flexibility and a tall torso. It excels for kids. In a wide planing hulled boat it is a challenge to do correctly because of the difficulty of getting the back hand near the center of the bottom of the boat. The deep hull of a sea kayak can also be an obstacle to a textbook C to C.

- Step 1. Set up to side (head to thigh).
- Step 2. Movement from Set up to 1st C Start correct direction like the sweep. Leave setup and roll the torso out to side. (Often overlooked) Lead the torso away with the top shoulder (important for success!) Back hand over butt crack. Thumb dragging on hull. Paddle shaft at 90 degrees to boat before righting action.
- Step 3 1st C to 2nd C (aka the hip snap) Body & knee rotate boat.
- Step 4. Recovery -center paddle over boat, pulling in.

Tip: To move your torso from Setup to 1st C, it can not be just the arms moving the shaft. Instead, your torso has to move from the setup out to the windup. This movement requires using one knee to hold the windup, then the boat rotation requires triggering the other knee!

Many paddlers who learn a textbook C to C roll evolve with time to a different roll, rolling the boat during the sweep with a inefficient use of the blade. By adding a twisting torso and reducing the resistance this can become a much simpler roll. Like any roll, poor form C to C rolls don't work, look sloppy, and leave the paddler exposed.

Which Kayak Roll is Best?

These five kayak rolls have the same principles in common, even though they appear markedly different in nature they are fundamentally the same in many respects. These can all be excellent rolls if there is minimal pressure

on your blade and shoulder and if they work reliably for you!

- C-to-C - Other names include: Hip-Snap Roll, Hip-Flick Roll
- Sweep Roll - Other names include: Twist & Slice Roll or Screw Roll
- Sweep to Back-Deck - Other names include: EJ's Roll, Back-Deck Sweep Roll
- Rodeo Back Deck - Other names include: Squirt Boat Screw-Up Roll
- The Hybrid Roll - Common Hybrid Rolls: Sweep-to-C and C-to-Front Deck

Whatever your body position is in, when you initiate one of the core torso movements, the body is buoyed by the water until the last moment, before the center of gravity is moved over the kayak. The movement of the blade through the water is powered by the movement of the torso, be it C-to-C, Sweep, or Lying Back. This minimizes the use of the arms and keeps the shoulders in a safe position. Advanced concept: Study the path of movement of the body relative to the kayak. The body always starts on one side of the kayak and ends on the other side. Most rolls can be executed from a variety of starting positions and eventually you may want to learn to roll from wherever you are. However, for the beginning paddler, it is wisest to start in the standard Head-to-Thigh set-up position. (Thanks for this section to: Chris Spelius, Expeditions Chile)

TIP: Stress on your shoulders, or any type shoulder pain, is your body telling you that your technique is not correct. Stop before it gets worse. Remember the objective is to come up fast, reliably and in a good paddling position, without any stress on your body. All rolls, when properly executed, should be effortless and elegant. Unless you are having problems, you should use the roll closest to what you first learned. Don't worry about which to do. Many paddlers learn one roll and gradually evolve to the other.

Hand Roll

The trick to doing hand rolls is twofold: a) having a very powerful hip snap and b) figuring out a strategy for getting your torso out of the water as the boat rolls under you. Most kayakers handroll coming up on the back deck (like the example above or below). You can also come up with a furious dog-paddle hand roll that finishes low on the front deck. This version demands an excellent hip snap. Tip: You can learn either with a progression of smaller flotation assists. Start with a pfd, then to a smaller piece of foam, and then graduate to using pingpong paddles. Finally graduate to no assist at all!

There are lots of other rolls you might enjoy, from hand rolls to trick rolls.

Instructor's Checklist

This is one progression that works well for teaching the roll.

Wet exit until the student is comfortable. Start with a distinct five step process:

- Tuck, Tap three times (to slow the rush)
- Hands to cockpit at thighs, slide hands forward along rim to sprayskirt rip cord
- Pull the rip cord forward and up
- Slide hands to along hips, push off boat
- Stay tucked, push further back out of boat, let PDF find the surface

Bow rescue progression with distinct phases:

- Tuck, tap 3 times
- Slide hands to bow and stern *
- Upon contact, bring bow in front to grab "like eating a sandwich" pull head onto bow.
- Keep one shoulder in the water, pause and get a breath. Say thank you to rescuer
- Knee lift rights boat, only then lift head

*A rescuing boats impact directly on the hand or wrist could be a serious injury. To help avoid this potential injury have the arms a few inches from the boat to allow for a glancing blow . Rescuers should aim to slide from the bow into contact with the hand. A bow rescue is a handy way to avoid a swim, but it should only be used in pools and other hazard free learning situations.

Warnings:

- Potential of injury to you (Getting cut by their flailing blade, or muscle strain trying to right heavy person)
- Potential of injury to student (avoid stress on shoulders)
- Dealing with opposite sex
- Prerequisites: Wet exits and bow rescues for underwater comfort

Boat Rotations also known as hip snap, knee lift

METHODS:

Hand of God to enhance their confidence

Students hands in instructor hands (use spare hand to point- activate proper movement)

How to hold them: torso on ribcage under armpit, or pfd

Alternatives: They rest on shoulder, or propped on knee depends on water depth

TO ACCOMPLISH:

Knee lift

Head down, pinch shoulder

Scrunch side

Hip slam into instructor

EXPLAIN

How knee lift works (lift head = wrong knee)

How feet work to brace knee/thigh

Centering over boat (hands, paddle recenter across lap)(Hip lift/slam at end)

Twisting Sweep

- The Set-up position (setup to thigh, blade floats, loose grip)
- The Finish Position (Watching blade, twisted torso, knuckles back/elbows forward, exaggerated blade angle)
- Starting movement in the correct direction (rightside-up drill to show pull down vs sweep out) (Sweep like through whipped cream)

- Sweeping with no pressure (No climbing angle reduces resistance) (Compare sweep stroke with blade shedding resistance) (False sweep before engaging)
- Twisting to the perfect finish (Right-side up, practice moving paddle shaft from the lap to the finish position.)

**Putting it together, student starts in finish position, sweeping reverse to setup (gradually getting lowered deeper into the water) Holding the paddle in such a way that a student becomes accustomed to using it to get upright can be counter-constructive. Rather, show the correct direction of movement and have it performed to satisfaction.

C to C Roll

- Set up (Tuck to side not forward)
- Tuck to first C (Leave setup tuck, roll torso to side, hand over butt crack) (One knee holds the windup, other knee provides boat rotation, 90 to boat)
- First C to Second C body- (knee motion, try not to support paddle, tap boat so they provide motion)
- Recovery (center paddle)

**Rightside up drill shows the correct direction of initial movement.

Printable version available from source: [Kent Ford Performancevideo.com](http://KentFordPerformancevideo.com)

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[Performance Sea Kayaking](#) An entertaining look at the basics of kayak touring. Hot paddling technique, rescues and basic seamanship skills are demonstrated and explained. The basics and beyond. 59 minutes. Kayakers Magazine's Readers Top Pick

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[The Call of the River](#) From vintage footage to in-depth interviews with the sport's eclectic pioneers, this must-see documentary offers a behind-the-scenes look at what inspires kayak and canoe paddlers to answer the call of the river. Produced by Kent Ford, a Whitewater Hall of Fame Inductee, the film featuring more than 100 sources of footage and images spanning 100 years of whitewater history. Whitewater's history has as many twists and turns as the canyons its pioneers explored. Its story is a collage of unexpected influences, from building boats in friends' basements to bribing damkeepers to release water. World champions defect from communist regimes and then utilize military by-products for equipment. Curiosity, ingenuity and outright audacity thrived as paddlers started exploring virgin runs and experimenting with designs and materials to make the sport easier.

About the Authors

[Kent Ford](#) Kent's instructional materials have evolved from a unique background of international whitewater racing and coaching, combined with experience teaching recreational boating to all levels of paddlers. Kent is technical producer of twenty instructional videos and books known worldwide as some of the best in outdoor sports. Kent worked as the public

address announcer at the last five Olympics, and competed in 6 World Championships.

[Mary DeRiemer](#) Renowned for her boating skills, Mary has a unique ability to communicate her passion and technical wizardry to others. Together with her husband Phil, she leads trips in Honduras, Ecuador, and teaches throughout the US for DeRiemer Kayaking. Featured in the instructional video "River Runner's Edge", she is an ACA instructor trainer, 2 time national wildwater champion, and former head instructor at Nantahala Outdoor Center.

[Phil DeRiemer](#) A fifteen year veteran instructor Otter Bar kayak School, Phil is known for his fun, patient, and knowledgeable approach to kayaking. He is widely credited with demystifying rolling instruction and helping unite instructional theory across the US. In addition, Phil is a talented expedition kayaker, with numerous first descents to his credit, including rivers in Nepal, Honduras, Venezuela, Peru, Canada, and Chile.

Don't stop at the roll. Keep up the learning curve!

Thanks for using this workbook! We appreciate your comments, questions, and corrections. Contact

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