

COXING MANUAL

Document updated for the 2024 Season

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PRACTICE PREPARATION

- Get a cox box, tool kit, headset, and radio from the equipment cage in the boathouse annex.
- Turn on cox box to make sure it works and is charged.
- Turn on radio to make sure it works and is set to channel 73.
- Early and late in the season, when it's dark during some or all of practice, make sure your boat has working bow (solid red/green) and stern (solid white) lights.
- Remove any cheese blocks, lifts, or racked sculling boats out of the path the shell you are taking down would travel so there is a clear exit.
- If using a bungee cord to tie a seat down, be sure to grab one from its bag and tie the seat down as appropriate.

MOVING THE BOAT TO THE DOCK

- Speak in a loud voice with a confident tone all the rowers need to be able to hear your commands.
- Give the command and then follow it with a 2-part "and [whatever the move is]." Example: "Hands on; ready to go up and out of the rack – and up." "Ready to split to shoulders – and split."
- Walk the boat out of the house. Say clear of riggers on racked boats. Make sure the stern clears the boathouse bay door before the rowers swing the bow of the boat towards the river.
- If direction needs to be changed on the dock, have each rower one by one turn around while "up and overhead" from stern or bow, then walk the boat forward. Never have rowers walk backwards.
- Use the middle ramp to the dock. Call "Up and over heads – and up," then walk it slowly down the ramp, following along at the stern. Ensure that rowers bunch up on the ends so the ramp can be cleared. This is always preferable to having rowers drop off towards the middle.
- Once on the dock, walk the boat as far down river as possible to make room for other launching and/or docking crews. Call "Toes to the edge. Ready to roll – and down." Stand at the stern and ensure that the skeg doesn't hit the dock.

ON THE DOCK & LAUNCHING

- Have ports get oars, starboards open oarlocks.
- Plug in your cox box and make sure the mic/wiring works by asking if the rower at the opposite end can hear you, and do a radio check with your Coach on channel 73.
- Make sure that bow and stern caps are closed.
- Ask the rowers to count down from bow when ready- in a stern-loaded shell, or from stern in a bow-loaded shell.
- Call for "port oars out, one foot in, and down." Have rowers hold the dock for the cox to get in. After the cox is in, rowers tie in and ask for another "count down from bow when ready." Then call to "lean away ... and shove." Rowers *must* be doing each action together.
- Ask bow to pry the boat away from the dock and have bow pair take a few strokes to clear the boat away from the dock.



- Launching should take place quickly, yet safely with a target of 1-2 minutes max to get off the dock
- Take boat to the farthest point downstream AND do not overlap bow/stern of other boats
- 3 eights can fit on the downstream 2/3 of the dock
- If there are equipment issues and boats are waiting to launch, pull your boat up and allow other crews to launch
- Allow space for scullers, if present, on upstream portion of the dock near Ramp 3



Aerial View of a Boat

Figure B -



Figure E - Cross Section of a Seat







Figure G – Oarlock

TIPS for setting Swivel Height

Three measurements to be considered:

Height of the swivel relative to the water Height of the swivel relative to the seat Height of the seat to bottom of the shoe heel

There are two basic considerations in setting the height of the swivel:

The taller the crew, the higher the swivel.

The larger the shell in relation to the crew the lower the swivel.



Measurement - Swivel to water

- With rower(s) in boat, level the boat forward, aft and side to side
- Measure from the highest point of the horizontal edge of the swivel to the water
- This is your swivel to water measurement
- If you take the swivel to seat measurement from the swivel to water measurement gives you your seat to water measurement, normally 9-10 cms.

Figure H - Tips for setting swivel height

ON THE WATER

Getting the Boat Moving

- Unless told otherwise (for drills, etc.), sit at the finish with blades squared and buried. Have rowers move to the finish with blades flat on the water, then say "blades squared and buried." Do not give the "ready to row – and row" command until all blades are squared and buried, and the boat is set.
- Important things to remember when you're at the rudder:
 - The boat steers from the rear
 - You're moving on a frictionless surface

Rudder Steering

- Stern-coxed 4s/8s: Push the steering cable in the direction you want to go: right to move starboard, left to move port.
- Bow loader Vespoli side-mounted tiller handle: Push the steering handle forward to steer starboard, pull it towards you to steer to port.
- Bow loader Sykes with center tiller: Push the tiller left (port) to steer to starboard, and right (starboard) to steer to port.
- Center your rudder before you've achieved your point, otherwise you will end up over-steering.

Using Rowers to Steer

 Assuming the boats are port-rigged (stroke is a port): use starboard rowers to move the bow to port (left) and port rowers to move the bow to starboard (right). • Making a counterclockwise turn across river: use bow and 3 to row, stroke and 6 to back, arms and back only, alternating turns. When the boat is perpendicular to shore, have 4 or 6 rowers paddle across. Weigh enough, check to port and then use bow/3 and 8/6 to finish the turn.

Stopping the Boat/Keeping it in Place

- "Let it run" A call for rowers to pause at the finish with blades feathered and off the water. The boat runs until the coxswain gives the command "blades down" and/or "hold water." Unless instructed otherwise by a coach for a specific purpose, we use this command to stop the boat during practices.
- "Weigh enough" A call for rowers to stop rowing and sit at the finish with blades on the water. The boat runs until is stops on its own, or the coxswain gives the command "check it down."
- "Check it down" A call for all rowers to square their blades while the boat is moving, to slow down or stop the boat. The call can be modified to "check it on port," or "bow pair check it down." Use this in case of emergency to stop immediately to avoid danger.
- "Hold Water" When sitting in a current or wind, a call for rowers to square their blade in the water to try to maintain a point or position.



Figure I - Rudder Steering in a Sykes



Figure J - Angular Velocity Diagram

Rotating Through the 6s



Figure K - Rotating Through the Six's

TRAFFIC PATTERN & SAFETY

Bridges

- Use the arches to the right of center. Center arches are for motorized traffic.
- Don't stop under bridges. Strong current can push boats into bridge spans. Always row through the bridge about 200m (20 strokes) before you weigh enough. This keeps you clear of the bridge and gives some room for other boat traffic to pass.

General

- Stay to the right (starboard) on the river, keeping the center of the river (aka the channel) clear for powerboat traffic.
- Be aware of sandbars. They accumulate along the shore at overflow outlets. Some are bouyed, but others are not. Look for birds "standing on the water." There is also a very large sandbar in the center of the river that is the length of the entire dock plus an additional 50m downstream.

- Look out for debris in the water, and slow down when debris is present. Large sticks, logs, and other debris can get caught on oars and riggers, and knock off skegs if they are run over.
- Keep your head on a swivel at all times, keeping an eye out for boat traffic behind, next to, and in front of you. Communicate with your stroke (or bowman in a bow-loader) and ask him/her to let you know if boats are approaching from the stern and which side they will pass on.

Boat Handling

- It takes time to stop, turn and steer a boat. Pay attention to how quickly (or slowly) a boat responds, making sure to allow plenty of room between your boat and other boats or obstacles on the river.
- Bigger boats have the right of way. Singles and doubles give way to 4s and 8s. 4s give way to 8s. 8s give way to powerboats. Rule of thumb: the least maneuverable boat has the right of way.

COXING COMMANDS

These general commands are sufficient for any standard practice. Finding your "coxing voice" takes time, but should eventually include changes in tone and volume to match the intensity of the work. The hardest part can be learning to motivate crews. That comes with practice, lots of time with your crews, and understanding the goals of the workout or race strategy. Motivational commands are unique to each coxswain and crew.

Adjust the ratio (or Ratio Shift): Used to correct either a rush or sluggishness on the recovery. The ratio compares the time spent pulling the blade through the water to the slide speed of the recovery.

Arms/Hands across: Reach your arms across the hull and grab on to both sides.

Back it: Row backwards. Sit at the finish and place the blade in the water. Row arms and body. At the "catch," release the blade and reset at the finish.

Catch/finish together: A reminder to the crew to align their catch/finish times.

Check it down: Drag the blades on/in the water to slow and/or stop the boat from moving forward or backward. Having only one side check their blades results in a turn to that side.

Down and away: Push the hands down at the finish to give the blade more height off the water.

Even it out: Both sides pull with even pressure

Every other under: Every other person move to the other side of the boat, either to have everyone on the same side, or half the people on one side and half on the other. (Used when taking a boat off of a waist-high rack).

Feather: Roll the blades to the feather position.

Hands on: Grab onto the boat gunwales and prepare to move it.

Hit it: A command for someone to row with pressure - just arms, or arms and body – to align or position the boat better.

Hold water: Continuously check it down.

Heads up: Pay attention, something to watch out for is near you. This should always be used when someone may not see your shell coming at them such as when leaving the boathouse.

In Two: The interval between the prep call and the com- mand execution call. On the water it's a count for two strokes, for example: "Bow pair, add in in two. One (first stroke catch), two (second stroke catch), bow pair in (on the third stroke)."

Lean Away: Lean in the opposite direction (usually away from the dock or from the side on which someone has

caught a crab) to allow more room for the necessary ac- tion to occur.

Let it run: Rowers pause at the finish with blades off the water, allowing the boat to glide (run) through the water.

Oars across: Run the oars out so they rest on the water – must be done before getting into the boat at the dock!

Oars to the gunwales: Push the oar handle down so it touches the sides of the boat

Paddle: Row at low pressure and 14spm.

Roll (it up): Two meanings: 1. When out of the water, roll the boat from the waist position to the over the heads position or vice versa. 2. When on the water, roll the blade to the square position.

Set it up: Balance the boat by making small adjustments to handle heights or applying slight pressure with one's feet – never shift body weight or lean to one side!

Square: Make the blade perpendicular to the water.

Toes to the edge: Put your toes to the edge of the dock so the boat can be rolled directly into the water

Up And Over (your) Heads: To lift the boat to over the heads position.

Up/Down to Shoulders (waist, ankles, etc.): To lift the boat so that the gunwales of the boat rest on or near the shoulder (waist, ankles, etc.).

Tap it: A command for someone to row gently - just arms, or arms and body – to align or position the boat better.

Weigh/way enough: Stop whatever you are doing such as rowing, a drill, etc. and put the blades on the water.

1000m COURSE



DOCKING



Continue to turn boat. Use rudder and if needed. arms and body tap from 7.

Just before dock, have 8 check lightly to bring boat parallel to dock.

Your aim is mostly downstream, and angle of approach is less than 15 degrees.

and pressure from 7 if needed. Use quick arms & body tap from bow if needed to bring bow towards dock.

30 degrees angle of approach.

7, lighter from stroke. Add bow seat if needed. Keep 45 degree approach

As the boat slows and pivots, 2 seat might need to take a stroke to aim upstream of

Sit easy.

2 seat take a stroke.

Stern pair sit ready;

row light and low

dock 2.

GET POINT STOP & LOOK SLOW DOWN Weigh enough!

Check to starboard. Align bow to end of marina when stopped. Check to starboard

pivots boat around marina. Skipping this step leads to overrunning the dock.

Bow 4 out.

Stern 4 light and low.

You must slow down to assess the turn and assess dock traffic.

MOVING THE BOAT TO THE BOATHOUSE

- Speak in a loud voice with a confident tone all the rowers need to be able to hear your commands.
- Stand at the stern and call "Hands on. Ready to lift. Up and • over heads - and up." Stay with the stern and keep the boat overheads until all rowers are at the top of the ramp, then call "Split to shoulders - and split." Rowers should split to the opposite side of their rigger.
- Rinse down the boat using either the hose, or the • bucket of soapy water at the bay door.

- All boats go into the boathouse and onto the racks stern-first.
- Once the boat is racked, have ports wipe it down and have starboards put away oars.
- Put knee pads over the ends of the riggers/oarlocks to protect hulls of boats that are moved in/out of the racks above/below.

END OF PRACTICE CHECKLIST

- Put cox box in the storage unit in the cage, shut off and plug in to charge.
- Put radio in the cradle in the cage, shut off and plug in to charge.
- Return the tool kit and headset to the bin in the cage.

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• Put bow light and stern light to charge and put their ties away – if applicable. If a bungee cord was used to tie a seat down, be sure to remove the cord and place the cord back in the cage.

RACING A SPRINT RACE

- National, collegiate, worlds, and Olympic sprint competitions are 2,000 meters, or approximately 1.25 miles. The racecourse is divided into 6-8 lanes and each 500-meter section is marked with buoys. Masters races are 1,000 meters. Often, Juniors races are 1,500 meters.
- The race begins with all boats aligned at the start in the lanes they've been assigned. Individuals in each lane hold the stern of each boat steady while an official, known as the aligner, ensures that each boat is even with the others and squarely facing the course.
- Each crew is allowed one false start; two means disqualification. If within the first 100 meters there is legitimate equipment breakage (e.g., an oar snaps in

RACING A HEAD RACE

- Head races, which are generally held in the fall, are generally about 2.5-3 miles long and the boats are started in their respective divisions separately generally at 10-second intervals.
- They are usually conducted on a river with an assortment of bridges and turns that can make passing quite interesting.

ROWER EXPECTATIONS

- Rowers should support all of their teammates
- Rowers should at all times follow the direction of their coach and coxswain, unless a rower faces a safety concern.
- Rowers should not talk in the boat unless providing information to the cox (bow and stroke only), answering a question from the coach, or identifying a safety concern.
- Those who violate these expectations may not be boated in future practices at their coach's discretion based on the severity of the infraction.
- Rowers should inspect their seat for proper functionality before every practice. Any issues should be fixed or reported to their Coach and the Operations Director.
- If practice is changed to land practice or a rower is assigned to a land practice, rowers should complete the land practice at ACBA unless other arrangements are made with their coach.
- Rowers should complete all erg homework assigned by their coach. Rowers are encouraged to do this together.
- Rowers should identify any questions or personal concerns about practice to their coach no later than the day prior to practice.

two), the race will be stopped and restarted with repaired equipment.

- The stroke rate (the number of rowing strokes per minute that a crew is taking) is high at the start. Then, the crew will "settle" into the body of the race and drop the rating back. The coach and the way the race is going determine when the crew will sprint.
- Higher stroke rates are not always indicative of speed. A strong, technically talented crew may be able to cover more water faster than a less-capable crew rowing at a high stroke rate.
- Despite the exhaustion of the race, the crew will row for five to 10 minutes afterwards to cool down.
 - The winner is the crew that had the shortest elapsed time between the start and finish lines, with any additional time included for penalties.

- Rowers should mark their attendance no later than noon on Sunday for the week. If they make any changes after this time, they should notify their coach.
- Rowers should show up for all practices that they have marked their attendance for. If a rower cannot attend a practice they've signed up for, they should notify their coach no later than 30 minutes prior to practice.
- If a rower fails to show up or call out of practice, they will have a one on one session with the coach explaining their absence. If this happens three or more times, the rower will meet with the board to explain their absences.
- Rowers should arrive to practice on time.
- If a rower fails to arrive on time, their seat may be given to another rower or left empty, even if the rower arrives prior to the boat launching.
- Rowers should attend all maintenance days and trailering events. If rowers are unable to attend, they should coordinate with the operations director to find another time in which they can support the club.
- The Operations Director should take attendance at all mandatory events. Rowers who do not attend mandatory events will not be boated until they make appropriate arrangements with the Operations Director.

COXSWAIN EXPECTATIONS

- The coxswain's primary responsibility is the safety of the crew.
- All rowers are expected to cox at practice. If rowers are unable to cox, they should address their concerns with their coach and the Programs Director.
- Rowers who skip practice on days they are set to cox will not be boated until they cox.
- Coxswains should arrive at practice on time and check all of their equipment (cox box, radio, lights, rudder, speakers, and repair kit), be confident executing basic coxswain commands, understand the practice plan for the day, and know the standard traffic patterns. Any questions should be addressed on land with the coach.
- Coxswains should immediately identify to the coach any safety concerns that they have.
- Coxswains should keep all of the boats near to each other and near to the coach, unless otherwise directed by the coach.
- Coxswains should communicate with each other to stay close, avoid collisions, and identify hazards in the river.

ROWING TERMS

Backsplash: The water thrown towards the bow at the catch. Too little or no backsplash indicates that an oarsman is rowing his blade into the water. Too much backsplash will slow the boat down and cause a jerking feeling at the catch.

Backstay: Part of a rigger. The angled bar which is closest to the bow. Most backstays are adjustable to change the pitch of the oarlock.

Body angle: The term for the angle of the torso off perpendicular to the water, both at the finish, and on the recovery.

Bowball: A rubber ball attached to the tip of the bow to protect the boat and others upon impact. Bowballs are required safety equipment.

Bowman (bow seat): The oarsman in the most forward seat in the boat.

Cap: The plastic cover for access holes to the stern and bow hull compartments. Caps must be secured in place during practice to prevent the compartments from filling with water. After practice, caps should be removed to air out the compartments.

Catch: The beginning of a stroke (end of the recovery) when

• At the end of practice, coxswains should ensure that the boat is rinsed with fresh water, the cox box and radio are plugged in, and all equipment is returned to its correct location. Any issues with any equipment should be reported to the coach and Operations Director.

COACH EXPECTATIONS

- At the end of practice, coxswains should ensure that the boat is rinsed with fresh water, the cox box and radio are plugged in, and all equipment is returned to its correct location. Any issues with any equipment should be reported to the coach and Operations Director.
- The Coach's primary responsibility is the safety of the crew. They should never put anyone in an unsafe situation.
- Coaches should provide line ups at least one hour prior to practice, and preferably for the entire week on Sunday evening including practice plans.
- Coaches should manage practice to ensure smooth efficient operations to include practice ending on time.
- Coaches may at their discretion modify line ups or the practice plan at the start of practice, but this should not be a common occurrence.
- Coaches provide the primary enforcement for these expectations. Coaches should notify the Programs Director of any rowers who repeatedly violate these expectations.

the blade enters the water. Body lean is forward with shoulders in front of the hips, legs compressed, and arms outstretched. Opposite of the finish.

Check: A command, as in "Check it down." Drag the blades on/in the water to slow and/or stop the boat from moving forward or backward.

Collar: A plastic fitting around the shaft of the oar, which prevents the oar from sliding through the oarlock. Collars can be adjusted to lengthen or shorten the reach of the blade.

Cox Box: An electronic device that combines a digital stroke rate monitor, stroke count, and elapsed time readout with a headset microphone for voice amplification. The stroke rate is obtained through the use of a magnet on the bottom of the strokeman's seat and a sensor on the deck of the boat beneath the seat.

Crab: A term for a situation in which the blade is not fully squared before being released from the water, or when entering the water. This results is the blade getting stuck in the water, severely slowing down the boat and disrupting the set.

Digging: When the blade is too deep under the surface of the water throughout the drive. Optimally, the blade should be just below the surface - look to make sure the white tape on the oar shaft isn't under water.

Double (2x): A boat with two scullers, each with two oars, and no coxswains.

Drive: The phase of the stroke from the time the blade is placed in the water at the catch until the blade is released at the finish. The drive begins after the blades are buried in the water, and the movement is initiated by the legs pushing against the foot stretcher.

Eight (8+): A shell with eight sweep oarsmen and one coxswain.

Ergometer (erg): A rowing machine used to simulate rowing on land.

Feather: Opposite of square, referring to the rotation of the blade at the release. Feathering is the motion of turning the blade parallel to the water. Feathering is accomplished when the inside hand rolls the oar handle. The outside hand has no impact on feathering except to provide leverage. An incomplete feather will result in wash at the finish and may result in a crab.

Finish: The end of the stroke when the blade is removed from the water. Also the end of a race.

Footstretcher: The parts which attach the shoes to the boat, including the footboard, the adjustable metal bars, and the wingnuts which secure it to the boat.

Forestay: The angled part of a rigger leading from the oarlock towards the stern of the boat where it is bolted onto the hull near that oarsman's feet. A forestay is not part of every rigger as some riggers only have a mainstay and backstay.

Four (4- or 4+): A shell with four sweep oarsmen. The two types of fours are: four with a coxswain (4+) and four without a coxswain (4-).

Gunwale: The edge of the hull.

Hull: The skin of the boat which is in direct contact with the water.

Impeller: Device on the underside of a hull that is used to give speed readings.

Launch: A motorboat used to carry the coach, spare parts, safety equipment, and spare oarsmen.

Lunge: A sudden lean of the upper body into the rigger or stern before the catch. A lunge will not only cause set problems, but can also cause catch timing problems.

Mainstay: The center bar(s) of a rigger.

Oar: Consists of an oar handle, a shaft, and a blade – used to power the boat.

Oarlock: The part which holds an oar in place. Oarlocks have a gate that opens to remove the oar.

Pair: A shell with two sweep oarsmen.

ROWING TERMS, cont.

Port: The term for left (meaning the coxswains left). Also, the term for a sweep oarsman whose blade and rigger are on that side of the boat. Opposite of starboard.

Port-rigged: A boat rigged with the strokeman on port side. Opposite of starboard-rigged.

Puddle: The result of a stroke through the water. A correct stroke should create a whirling puddle with very little wash or waves when the blade is released.

Quad(ruple) (4x): A shell with four scullers in it, 4X. A few training quads have coxswains (4X+).

Rack: The storage place for boats when not in use. The boat should be stored with the bars of the rack directly beneath the ribs of the hull.

Ratio: The relationship between the speed of the drive and the speed of the recovery, usually about 1:3, which means that the length of time spent on the recovery is three times as long as the amount of time spent on the drive.

Ratio Shift: A change in ratio from something like 1:2(drive:recovery) back to 1:3. This requires more power through the drive and slowing down the recovery. This is different than a change in rating.

Reach: The distance an oarsman is able to extend his arm forward at the catch. Also the distance towards the bow an oar can travel at the catch.

Rigger: The metal or carbon fiber bars that extend from the hull at each seat consisting of a backstay, mainstay, and occasionally a forestay. Attached to the riggers are oarlocks, top nuts, and pins.

Rowing the blade in: To begin the leg drive before the blade is completely buried.

Rudder: A small part attached to the bottom of the hull used to turn the boat. Rudders are typically located behind the skeg and may actually be a part of the skeg.

Rush: As a noun- the motion of arriving at the catch too early. As a verb - the act of rushing.

Scull: As a noun (called a "sculling shell" usually) - A boat which has two oars for each oarsman. Also an oar used in such a boat (sculling blades). As a verb - To row in a boat which is a scull.

Set: The balance of a boat. A boat that does not fall to either side is considered balanced or set. Sometimes called "on keel."

Shaft: The long pole that connects the oar handle and the blade.

Single (1x): A one-person shell in which the rower sculls with two oars.

Skeg (aka fin): A triangular or rectangular part attached to the hull near or behind the coxswain, underneath the water. It keeps the boat on a straight course when the rudder is not in use. Bent or missing skegs cause extreme steering difficulties. A skeg is easily damaged by dragging it across something in the water or hitting it on the edge of the dock.

Sky(ing): When a rower drops his hands towards the gunwale on the recovery, sending the blade too high into the air.

Square: When the blade is perpendicular to the water.

Starboard: The term for right (meaning the coxswain's right). Also the term for a sweep oarsman who has his blade on that side. Opposite of port.

Starboard-rigged: A shell with the strokeman's rigger on starboard.

Stern: The farthest point at the back end of a boat (nearest to the coxswain).

Stroke: The motion of rowing, as in "take a stroke."

Stroke (-man, -seat): The rower in the stern most position. He sets the pace to be followed by the crew.

SpeedCoach: An electronic device that combines a digital stroke rate monitor, stroke count, and elapsed time readout. Unlike a cox box, it does not include a headset microphone for voice amplification. This device can only be used in boats with impellers.

StrokeCoach: An electronic device that combines a digital stroke rate monitor, stroke count, and elapsed time readout. This wireless device does not require a seat magnet, making use of an accelerometer.

Stroke rate: The number of strokes rowed per minute. "Rating" and "stroke rate" are used interchangeably.

Swamping: When a boat fills with water due to waves, rain, or a leak.

Sweep: A crew in which each rower has only one blade, versus a scull.

Top nut: The nut on the top of a backstay to hold the oarlock between the mainstay and backstay.

Track: A piece of metal to keep the wheels of a seat following a straight path. Tracks must be kept clean at all times.

Wash: Water stirred up at the finish by the boat as a whole, or by an individual oarsman with a sloppy finish.

Washout: When an oarsman finishes his stroke by pulling the oar handle low into his waist ("dumping"), creating a wash.