

BAIR ISLAND AQUATIC CENTER

SCULLING MANUAL

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Boat Handling

Equipment handling is a much-overlooked aspect of rowing. Often in teaching we are in a hurry, skip steps, or simply forget.

Proper boat handling taught below has been adopted from a rich history of successful disciplined rowing programs. Much of these techniques have been popularly abandoned in favor, generally, of not teaching anything and letting the rowers figure it out on their own.. There are other valid methods of boat handling, but it is important that the club adopts a consistent, safe approach.

Boat handling methods I suggest may seem like overkill for certain boats. Some modern equipment is pretty durable, and it would seem could accommodate rougher treatment, such as being set down on the ground or dock and pushed into the water, or for easily undoing the oarlocks. Even so, I urge us all to stay with methods of boat handling that can transfer easily from rowing craft to rowing craft, and treat each boat as if it were a precious 1930 restored wood single.

There are alternate methods discussed for people who have injury or lack the full strength to employ the best method.

We are creatures of habit, and I'd hate to see you meet a friend who offers you a chance to scull their 1968 Staempfli single, a very expensive single to repair, then you step through the hull getting into it.

Launching a Single Scull

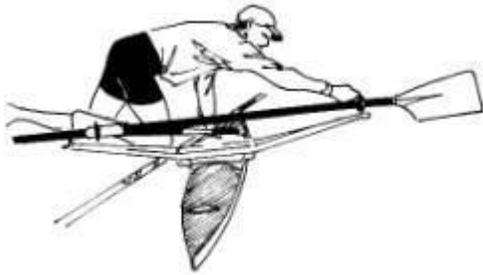
1. Log in with time/boat ID/sculler's name
2. Take sculls to dock, set sculls together blade edge down on dock in middle of dock, where you are going to launch your shell. Carry sculls with blades in front of you with the oars parallel to the ground. The boat yard can get crowded, and this keeps the harder, sharper edges of oars from being bumped into equipment, or other people.
3. The first shell launched on a dock should be launched from the end of the dock so as to leave room closest to tarmac for the next boat. This is a courtesy so that there is room for more shells to launch.
4. Put out slings if none out. I believe a set of slings should be set up anytime someone is on the water; it is a quick indication to others that a member is out on the water.

5. Lift boat from rack, tilt outside rigger down so inside doesn't drag on hull below.
6. Watch above rigger. Do not scrape the hull of the boat below.
7. If removing boat from bottom racks, use set of slings to help change grip, i.e., set it on slings, spin, then lift again. This is called staging, and someone with strength may not have to do so. Always stage the Aeros.
8. For two people carrying a single, grab boat at least 2 ft. from bow and stern, each watches the length of the boat when removing from rack. Bow person watches stern, stern watches bow.
9. Carry two-person boat sideways in the crook of your arm, deck facing you with riggers at about 1 and 5 o'clock position. This is consistent with how a pair/double should be carried. This gives full vision of where you are walking and of objects/people near at hand, and keeps the boat weight a bit lower on the body making for better balance. The arm is under the boat, not over the top, gives a secure grip. It also leaves more room to avoid riggers in the aisles. Older shells with stringers and canvas decks are safely carried in this method. One of the rowers can adjust closer to the middle of the boat to take more of the boat weight if the other rower needs some help.

Carrying the boats at BIAC on the shoulders at the same position relative to the stern and bow is acceptable, particularly for shorter people, but is less effective.

8. When carrying boat by yourself, carry over head, or on your head and slightly tilt the boat as you negotiate between racks. Another fine option is to carry it in the crook of your arm, with hand on the hull, and seat resting on shoulder. If you are unable to lift a boat up over your head, stage the boat to slings, carry the boat at your waist across the gunwhales walking very carefully (popularly called the clumsy walk) to the dock.
9. On dock, toe the edge of the dock. Put boat in water so it doesn't drag on dock, bend knees and lower boat. For difficult-to-handle boat or in a breeze, put stern end in water first so you have a three-point balance, and slide out into the water along your body, then place parallel to dock. The stern plug should be secured for this latter method. This method is best employed for Aero launching, even if sculler is capable of launching other shells normally.
10. Take off shoes. (Shoes track sand and dirt into boat.)
11. Close ports, plugs. If it is dark or will become dark while you row, put bow and stern lights on your boat. Club Bow lights are available if the individual has a light fail. They insert into a clip on the bow.
12. Dockside oar goes in oarlock blade edge down all the way to button in oarlock.
13. Waterside oarlock is opened by stepping in the middle of the center strip, putting inside hand on dockside rigger and reaching out to waterside oarlock. Never step or even set feet upon bottom of the boat unless it is specifically designed for it. Water side oar remains shipped so oar handle is on dock until you are ready to get in boat. This prevents oar from drifting.
14. Fasten locks before getting in boat.
15. Foot center strip, dockside hand on boat, outside hand on both scull grips, and lift slightly to steady the boat. Stand in boat balanced, then sit into seat with grace. Do not touch dock with your hand until seated.

16. Lean boat out so dockside scull and rigger is off dock, and walk the boat along the dock until clear, do not touch dock with rigger or oar while walking. The boat will tend to drift away, so it's a bit of a coordination issue to keep the boat close to dock while at the same time leaning away. It's perfectly acceptable to lean boat away and give a hard shove with the hand, continuing to lean away, but the floats have a lot of give on the shove, so it's difficult to clear the oars from the dock unless you have a helpful current or breeze.
17. Adjust your foot settings and other settings on the water and not on the dock. This is suggested if there is other boat traffic waiting to dock or other traffic waiting to launch.



This is popular and inferior method for outboard oarlock. Scullers DO NOT CRAWL. Scullers are proud!

COURSE

1. Right hand rule on the course, when in doubt, move to your starboard. The right hand follows the shoreline outbound from the dock to the main harbor until Pete's turn. At Pete's turn, make a straight line toward green 21 channel marker. From green 21, cut an angle to the 3 post piling at the ship wharf. Row the 400m parallel to ship wharf, then follow green poles going out. When you come to where you will turn around, turn your boat 90 degrees (watching for crews coming to stern).
2. Be aware of boats launching and docking at Stanford dock and High School beach.

Rowing

The basics of rowing are covered in detail in other documents and is not covered here. The very basics of sculling are taught in the beginning lesson.

1. Hands: With thumbs on the end, left on top of right hand at the cross over, and left hand slightly aft of the right (right hand tucked behind left). On the drive, the wrist is flat and the fingers hook well over the handle at the second knuckle, do not grip. Imagine hanging from a pullup bar at length best describes the hands during the drive. To feather, the hand briefly grasps the handle and the wrists drop, then releasing grip on the handle such that the collar falls into flat position on it's own. The hand opens up with a dropped wrist and fingers riding on top. The fingers do not shift or slide at all upon the grips. In this position on the recovery, the palms of the hands are between the full handle and the scullers body such that any knocking of the blade will keep sculler less likely to have to grip tightly to control. To feather square, briefly squeeze and begin the feather, again allowing the collar to seat itself in lock. Thus the gripping of hand on handle is just enough to begin the feather, and

not enough to complete, the momentum of the beginning feathering motion is enough. Light grip on the handles makes for comfortable and quick learning.

2. Body on recovery Without going into the detail that can be accomplished elsewhere, the sculler should clear hands past knees on recovery so as to have room and make no collision. The left should lead from the body first with the right immediately trailing. As sculler gains length, make sure the arms spread outside the knees, not between.
3. Body on drive, there is long disagreement and differences in how the body is applied best on the drive. What's important for the beginner is that the pull isn't initiated too early such that the legs are ineffective. Drive the legs first and connect back and arms.

Backing: Blade should be square and backward. Push with hands and body at most, no slide, recover ON the water. To recover on the water, force the blade to be feathered backwards from the normal seat of the oar when it sits in lock, i.e., stern edge should be forced higher than the bow edge on recovery so the blade doesn't dive. Generally do not use legs, but legs are available if needed for power.

The blades are recovered on the water so as to exert the most exact control in direction since backing is usually done for accuracy, not speed. Since the skeg is on the stern, the boat is very squirrely in direction going backward, so trying to scull off the water is more difficult, and even light touches with the blade on water will turn the boat.

Hold Water: The most common method of holding water -- pushing the blade into the water by lifting the handle -- is inferior and wrong.

- A. Stop rowing, oars rest flat on water, hands partially away from the water.
- B. Shift the grip of the hands forward on the grips, and feather blades exactly flat (rotating slightly backward) so that blade edge catches and drag water. The blade will try to dive, so resist it, by pressing down and keeping shallow. Think of shaving the water.
- C. Depending upon how quickly you need to stop, continue the rotation of the blades backward, very slowly if you are stopping gently, more quickly in an emergency. If the hands are partially away from the body, there is room to absorb to the body on a hard hold.
- D. You are now in backing position and can immediately back.
- E. You can turn the boat sharply and under complete control by employing the same steps above, but just feathering one blade slightly. The boat will lean toward that blade, go WITH the lean of the boat, lower the hands and allow the other blade to come well off the water. By allowing the boat to pitch over, the skeg has less drag on the water while boat turning, allowing a single to come about 90 degrees if need be. An Aero turns much more sharply.

The advantage to this method is that you have far more control of the direction and balance of the boat while stopping. You can hold water on one side to turn your boat under complete control.

A single can be stopped dead in less than a length from full speed using this method.

Steering: Get a bearing on your course BEFORE you start rowing. Line up your bow to where you want to go, then look off the stern and find two points to triangulate, a spot on the water/shore, and a spot directly above that is behind and well above the first mark. This creates a triangle to the stern. As the boat drifts off course, the upper mark will follow the sculler, the lower moves away. Correct to bring those points back in line. Correct by driving harder with one leg (rather than pulling harder on one side).

Glance around often to begin with to look for other traffic, obstacles etc. every six strokes or so. There is a technique for looking about that allows sculler to not break rhythm, but can wait until the sculler has rowed a while.

Method A: as sculler approaches catch, tuck chin down into clavicle giving a peripheral view off one side until the catch. Glance other side on next stroke.

Method B. as sculler finishes, turn whole head employing the body swing to help get around, and get a good view behind while the hands are pushing away, look forward again as body starts forward,

You can employ both methods

Docking and Boat Care

1. Point boat at 45-degree angle to dock, a couple strokes firm, lean out water side to slightly side slip into dock. The pitch and speed depends upon currents and winds and is difficult to learn. Walk boat all the way to end of dock toward tarmac leaving a spot for a single on the outside. This gives a place for someone to launch, or another single coming in to dock on same dock.
2. Check footboard pins for tightness as well as rigger nuts, and free both feet.
3. With outside hand on both grips, lift up slightly to steady the boat, and inside hand on gunwhale, outside foot on center strip, stand straight up in boat, and step inside foot on dock. Stand up first before stepping out. With outer foot still in boat, pull the outboard oar handle on to dock and unlock lock LEAVING OARS IN PLACE.
4. Undo outside lock, similarly to how you unlocked it when you launched.
5. Check for slings, put shoes on, and if you are ready to pick up boat, oars out of boat and onto middle of dock. Don't bother with locks yet.
6. Lift straight out over head.
7. Drain boat of water at dock.
8. Put boat in slings right side up, then turn upside down in slings.

9. To spin: lift boat an inch off slings, spin toward you 3/4 way around, set to slings, then lift to spin the rest of the way. 10. Lay sculls on slings or deck so that handles and collars do not touch the ground, blade edge down. A good method is to place the handles on the slings under the boat. That way, you can rinse both sculls and boat.
11. With boat upside down on sling, rinse top, bottom, inside, and sculls with fresh water. Give the tracks an extra wash.
12. Courtesies: If there is incoming crowd, boat goes into slings, gets rinsed and racked, THEN the oars taken care of, rinsed and put away. Keep docks and slings clear as courtesy to other rowers. If there is no crowd, you can sling boat, then retrieve oars, place handles under boat in the sling support cross, and rinse all together. Always put boat away first, then oars.
13. Check oarlocks are closed, ports and plugs opened, and boat drained of interior water, re-rack boat, bow points south (toward San Jose).
14. Sculls racked in proper location, pushed all the way to stern on the rack with flat spot of boat near riggers planted on rack.
15. Log out time, damage, dangerous situations reported.

Never lean the sculls vertically, if they must be set down, set them on the ground. Gravity – it's the law.

Once a month, each boat should be washed with soap and water, and dried and lubed with WD40 on moving parts. Inspect aluminum parts for corrosion, especially where it contacts steel parts. Corrosion begins as a fine white powder. This inspection should be done before cleaning, and noted. Rigger nuts should be loosed and tightened, footboards loosed and tightened, and seat removed and cleaned.

A spray of silicone on the seat tracks, seat axles, and oarlocks is helpful.

Footboards should be set so that as you sit in the finish position with legs flat in layback position, the ends of the scull handles are approximately a thumb's-length from your chest, i.e. you can touch your chest by extending your thumbs.

Safety

1. There is a more complete Safety Manual showing Shell re-entry.
2. Log in and out.
3. Be aware of temps and conditions. Use the 100 degree rule: Do not scull by yourself if water temperature +air temperature < 100.
4. If you are not confident of swimming in open bay water, or cold water, please wear flotation.
5. If you should tip over, re-enter from the water, as the mud can be very difficult to walk/stand in; during high tide, it's OK to swim boat to shore and re-enter boat from there.

Water Re-Entry

1. Right boat, put scull handles together with both blades flat on the water perpendicular to boat.
2. Hold both scull handles with one hand, push seat to stern of tracks.
3. With other hand, pull yourself across boat on top of seat, you want to get to a position where you are laying straddled across the boat. Keep hold of those handles, keep oars ON water.
4. Use your non handle hand to push yourself up enough to twist to get your butt on or near the seat and slide a leg across.
5. Make your adjustments to sit back on the seat and feet back in footboards.

Sculling Equipment Usage

BIAC sculling boats and oars are to be used only by members who have been certified or checked out properly. BIAC boats are marked with numbers on the side, and most club equipment has red tape around one or more riggers. There are sculls that correspond to most boats, and currently one set of hatchets that are not specifically reserved for a particular boat.

The oar box is divided in three sections. Please place sculls with concave part of blade facing forward. The sculls are marked by either boat name or number on the shaft. Sculls for the doubles and the hatchets are in the left section, sculls for the singles in the middle, and sculls for the Aeros on the right section. Returning sculls where they belong makes it easier for the next person to find them.



Sculling Certification Guidelines

Before you can launch a boat from BIAC by yourself, you must be certified to handle the boat. This is true for private as well as club-owned boats. Non-certified scullers may row with a certified sculler, or during supervised sessions.

Certification means the sculler understands the standards for safety, boat handling, and traffic patterns. The sculler is responsible for his/her own safety and understands that certification procedures are not the replacement for common sense.

There are methods of boat handling taught by the club that need not be adopted by individuals to gain certification; the member must demonstrate proper care of equipment, and an understanding of dock rules and traffic patterns.

Checklist

Boat Handling/Safety

1. Launching shell
2. Traffic patterns on bay
3. Safety procedures - dumping
4. Safety procedures - collisions
5. Safety procedures - weather, tides
6. Docking
7. Racking, boat care
8. Required logging and damage report

Sculling skills:

1. Proper hands
2. Feathering
3. Simple turns (being able to anchor blade and row other)
4. Backing (recovery on water method)
5. Holding water (3 step method)
 - a. Stop rowing, oars flat on water
 - b. Reverse-feather slightly
 - c. Gradual reverse-feather to backing position
6. Hold water one side
7. Be able to do a circle course on channel
8. Getting back ON course when you find yourself in wrong place

Learn To Scull Sessions

1. If you wish to learn to scull, contact Mike Sullivan at sul@stanford.edu. Pick a date and email me; I'll confirm that I got it. Available times for on-going lessons are Wed. evenings at 6pm, Thurs. mornings at 6am, and some Saturday mornings.
2. Wear comfortable, weather-appropriate athletic clothes (nothing loose-fitting or baggy) and rubbersoled shoes. Choose a close-fitting wool knit jacket or pullover; include a nylon shell if it's cold.
3. Cost is free for the first time, then \$100 for a month. Beginners average 3-4 sessions to become certified to take a boat out on their own.
4. Sessions cover boat handling, nomenclature, and basic sculling skills.

After Certification

1. You may row an Aero as often as you like for the remainder of the month, at your convenience, then decide if you wish to join.
2. Row the prescribed course from dock to the wires and back 20 times, for a total of 100 miles.

3. At this point, you have three choices:

- A. Schedule further instruction on technique and training Wed mornings at 6am. These are drop-in group sessions during which you will row an Aero.
- B. Star rowing the other BIAC singles.
- C. Row a double with other certified members.

The "100 mile" rule is admittedly somewhat arbitrary, but by the end of that distance, beginning scullers have learned to negotiate the primary rowing course and row on the right side while they're going slowly. This is a safety issue. It takes time to row a straight line, see where you're going, and negotiate turns.