

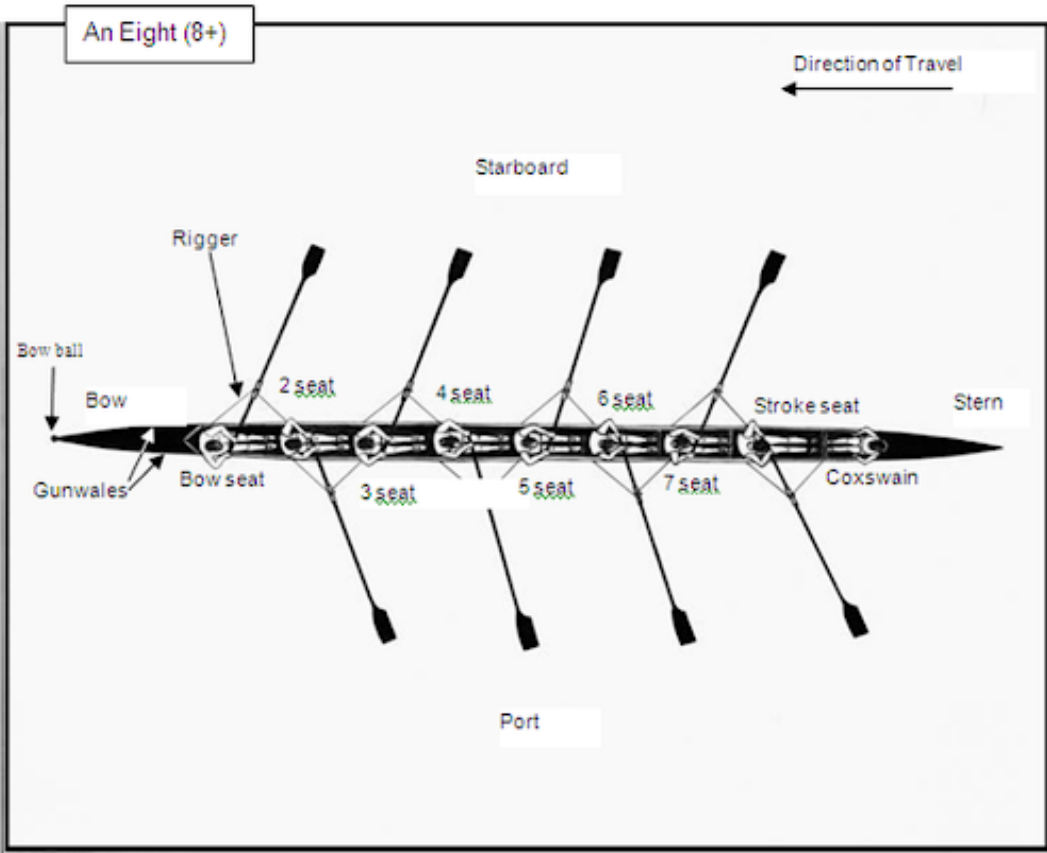


Rowing Terminology

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Rowers:

- **Port:** oar is to the rower's right. Port seats are usually even numbers.
- **Starboard:** oar is to the rower's left. Starboard seats are usually odd numbers.
- **Bow:** person in the number 1 seat near the bow of the boat
- **Stroke:** person in the number 8 seat near the stern of the boat
- **Coxswain (coxie):** the non-rower who controls the boat direction. May be either in the stern or the bow depending on the boat.



Rowing Events: Can be categorized by men's, women's, mixed, lightweight, open, and master's classes.

- **Sweep** events include (2-, 4+, 8+) where each rower uses one oar.
- **Sculling** events include (1x, 2x, 4x) where each rower uses two oars.

A majority of high school events will involve sweep rowing.



The Course:

There are typically six lanes on the race course. *If there are more than six entries for an event, heats will be held to determine finalists.*



The Race:

- **The Start:** Crews are expected to be at their starting stations two minutes before the scheduled time of the race. Once the boats are locked on, the judge at the start will supervise the alignment process. When all the crews are even, the Starter will poll the crews by calling their name. After polling, the Starter raises a flag and says "ATTENTION". After a clear pause, the Starter drops the flag quickly while simultaneously saying 'GO.' In windy conditions, the Starter may dispense with polling and use a Quick Start by simply saying "ATTENTION" and, if no crew responds, immediately raises the flag and gives the starting commands.
- **False Start:** Crews can be assessed a warning for a false start, for being late to the start or for traffic rules violations established for the course.
 - A crew which receives two warnings in the same race is eliminated from the event.
 - If a crew breaks equipment in the first 100 meters of the race, it can stop rowing and signal the umpire who will stop the race. The crew will not be penalized. *Broken equipment does not include a crab or jumped slide.*
- **Launch:** Once the race begins, the Umpire or Referee follows in a motorboat, also called a launch.



- **White Flag:**
 - If a crew is about to interfere with another crew, the umpire will raise a white flag, call the crew's name, and drop the flag in the direction where the crew should move.
 - If a crew is about to hit a known obstruction (such as a bridge abutment) the Umpire will raise a white flag, call the crew, and yell 'OBSTACLE' or simply 'STOP.'

 - **Red Flag:** If the Umpire needs to stop the entire race, he will ring a bell or sound a horn, wave a red flag and call out 'STOP' if necessary.

 - **Last 500:** The last 500 meters of a race are excruciating. The energy is gone, the muscles are burning and the body is well into oxygen debt. This is where mental discipline comes into play. The athletes continue, straining to synchronize each motion. Rowers also bear the pressure of knowing that each stroke they take affects their teammates.
 - A crew has finished the race when its bow crosses the plane of the finish line.
 - A horn is sounded as each crew finishes the race.
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The Rowing Stroke

- **Oars:**
 - **Blade:** flat outer part of the oar
 - **Handle:** round inner part of the oar
 - **Shaft:** portion of the oar between the blade and the handle
 - **Sleeve:** the green plastic part of the oar that sits in the oarlock (sleeve also may be black, white yellow or pink)
 - **Collar:** the blue ring that prevents the oar from sliding out of the oarlock (collar also may be blue, green black or yellow)
 - **CLAM:** a horseshoe-shaped part that slides over the sleeve to lengthen the handle
 - **Port oar:** used on the port side of the boat. Designated by a red band on the handle
 - **Starboard oar:** used on the starboard side of the boat. Designated by a green band on the handle
 - **Oar color:** a band of plastic tape on the oar shaft used to identify oars that are part of a set
 - **Sweep oars:** see below, *The Oars: Scullers v Sweepers*
 - **Scull oar:** see below, *The Oars: Scullers v Sweepers*

- **Stroke Terms:**

- **Stroke:** complete rowing cycle including drive and recovery
- **Stroke rate:** number of strokes per minute
- **Drive:** oar in the water and pressure applied by the rower to move the boat
- **Recovery:** oar out of the water and return to the catch
- **Catch:** the act of inserting the oar in the water at the end of the recovery
- **Catch (position):** the body position at the end of recovery with the blade in the water before power is applied to the stroke
- **Finish:** the act of extracting the oar from the water at the end of the drive
- **Finish (position):** the body position assumed by the rower just after the oar comes out of the water
- **Hands-away:** the first stage of recovery
- **Body-forward:** the second stage of recover
- **Slide:** the third state of the recovery as the rower moves the seat toward the catch by allowing knees to bend
- **Outside hand:** the hand closest to the end of the handle
- **Inside hand:** the hand closest to the oarlock

- **Rowing Errors:**

- **Crab or Catching a Crab:** the oar gets stuck in the water at the end of the drive and can only be extracted with effort
- **Shooting the Seat:** an error that occurs during the drive when the seat moves toward the bow but the oar handle does not come with it
- **Opening up Early:** an error that occurs when the rower starts leaning back before the leg drive is complete
- **Missing the Catch:** an error that occurs then the rower does not insert the blade cleanly at the catch or may miss getting it in the water altogether

- **Body Position and Motion:**

The entire body is involved in moving the shell through the water. There are four parts to the rowing stroke: **Catch, Drive, Release and Recovery**. They all flow together in a smooth, continuous and powerful movement.

- **Catch:** The rower is coiled forward on a sliding seat with arms outstretched. He raises the oar handle as the blade enters the water.
- **Drive:** Contrary to common thought, legs are the primary muscle group in rowing, not the back or arms. After the leg 'drive', the back swings into a comfortable lay-back position. Then the arms pull into the body.
- **Release:** The hands drop smoothly, the oar comes out of the water and the blade is turned horizontal.
- **Recovery:** The hands lead the body as it swings forward pulling the legs and sliding the seat for the next catch.

- **Oar Blade Coordination:** Timing throughout the stroke is critical. As the blades are brought out of the water, they should move horizontally at the same height, just above the water.
 - **Consistent Speed:** Shells move slowest at the catch, quickest at the release. A good crew times the catch at the right moment to maintain the speed of the shell.
 - **Strokes per Minute:** Stroke rates vary from boat to boat depending on the number of rowers and the size of the athletes. At the start, the stroke rate will be higher – 38 to 44 strokes per minute for an eight, 36 to 40 for a single. The rate will settle down at the middle of the race to 32 to 36 for an eight, 28 to 32 for a single. *Finishing stroke rates can go as high as 46 for Olympic rowers.*
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What is a Coxswain?

A coxswain was originally a servant, or swain, whose job it was to steer a ship's boat, a cockleboat or cocque (from the Old French for canoe). While it appears that a coxswain just sits in the stern of the boat and yells, he or she actually plays an essential role.

The two primary requirements for a coxswain are:

- 1) must be small
- 2) must be loud.

A coxswain also needs to be able to motivate a crew, especially in the last 500 meters of a race when the rowers are exhausted. A coxswain's main function is to keep the boat moving straight because if it can't stay in the lane, it will get disqualified. This is done by making minor corrections to the rudder. Working with the stroke (the rower closest to the stern), the coxswain executes race strategy.

Contrary to popular belief, the coxswain does not yell 'stroke,' while performing his or her function. After a victory, it has always been tradition for rowers to throw the coxswain into the river, although this has not always been to the coxswain's liking.

Coxswain (/ˈkɒksən / KOK-sən) - the "-swain" part is the unstressed syllable, and as in the majority of unstressed syllables in the English language, the vowel is forced into a neutral vowel sound and the "w", being a weak consonant or semi-vowel, is absorbed into this neutral vowel sound. The word "swain" on the other hand, is monosyllabic and therefore can only be pronounced as a stressed syllable, which ensures that its original pronunciation is preserved.

Boats

- **Boat Types**

- **Sweep Boat:** the rower holds one oar
- **Sculling Boat:** the rower holds two oars that are smaller than oars used in sweep boats.
- **Shell:** a name for a boat used for competitive rowing
- **“Eight”:** a shell for 8 rowers and a coxswain
- **“Four”:** a shell for 4 rowers and a coxswain
- **“Single”:** a sculling boat for one person
- **“Double”:** a sculling-rigged boat for two rowers. No coxswain.
- **“Pair”:** a sweep-rigged boat for two persons. No coxswain
- **“Quad”:** a sculling-rigged boat for 4 rowers. No coxswain.

- **Boat parts:**

- **Bow:** the front of the boat. Clearly identified by an attached “bow ball”
- **Stern:** the back end of the boat
- **Starboard:** the left side of the boat from the rower’s perception. It is the right side of the boat if looking from stern toward bow.
- **Port:** the right side of the boat from the rower’s perception. It is the left side of the boat if looking from stern toward bow.
- **Gunnel:** the top edge of the boat
- **Fin:** the triangular thin plastic part that protrudes from the bottom of the boat near the stern. Purpose is to keep the boat going straight.
- **Skeg:** another name for the fin
- **Rudder:** the small moveable part that is located by the fin. Used to steer the boat.
- **Rigging:** the metal apparatus attached to the boat that supports the oar in its oarlock
- **Oarlock:** the U-shaped cradle for the oar at the end of the rigging
- **Gate:** the metal rod with a knob on the end used to secure the oar in the oarlock
- **Stretcher:** the apparatus to which the shoes are attached. It can be adjusted.
- **Strip:** area between the seat tracks where it is safe to stand without risking damage to the boat

- **Shell Composition:**

Today’s rowing shells are made up of several lightweight, yet strong materials including carbon fiber, carbon and fiberglass, and carbon composites. These aerospace materials can be woven, honeycomb or single hull, epoxy and cured at high temperatures to develop their stiffness. Ribs throughout the hull provide additional support and also are made of carbon materials or aluminum alloys. Hulls are designed to handle specific crew weights (light, mid and heavyweight), for maximum speed. Lengths for a coxed four shell

average around 44 feet and range from 110 to 125 pounds, depending on material composition, and 57 feet and 195 to 232 pounds for a coxed eight shell.

The Oars: Scullers vs. Sweepers

People who have two oars in the water are called scullers. People with only one oar are called sweepers. Oars move the boat through the water and act as balancers. Sweep oars – 12-13 feet long – are approximately two feet longer than sculling oars. Scullers use rubber grips – sweep oars have a rubber (some are wood) handle. Oars vary by length and blade type. The basic blade types are called spoons (tulip or macon), seldomly used. Hatchet blades are what we use and are identified as Fat2s, Smoothie2s, Big Blade and Composite.