



**coastal
rowing**

**world
rowing®**

1st edition, July 2020

foreword

Coastal rowing is the mountain biking of rowing. It is a discipline that is growing around the world.

The rowing skills needed to have fun and be safe out on the water are useful for more than just sport, they are essential life skills for all coastal communities.

They are traditional skills, and many have been forgotten since the outboard engine became more widespread in the 1970s. The team at World Rowing have created this guide, so together we can teach the next generation to be confident and competent on the sea.

I want to thank the coaches and rowers who provided their time and knowledge to support this booklet.

The earth's surface is 71 per cent water, so let's open this enormous field of play up to everyone, from small islands to huge urban harbours.

Get out on the water and enjoy the waves.



Guin Batten

Chair of the FISA Rowing For All Commission

The World Rowing Federation, FISA (from the French, Fédération Internationale des Sociétés d'Aviron) is the governing body of the sport of rowing. It is empowered by its 155 member National Rowing Federations, the National Olympic Committees and the International Olympic Committee to govern the sport of rowing.

FISA sets the rules and regulations for the practice of the sport, in all its forms including elite, para-rowing, coastal, masters and aspects of indoor rowing. The Federation works on coaching education and other matters relating to the sport and its development.





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pictured: CMix2x racing at the World Rowing Beach Sprint Championships, Shenzhen CHN

1.0. introduction

coastal rowing racing is one of the fastest growing disciplines in the sport of rowing, with activity now in all continents of the world.



what is coastal rowing?

Coastal rowing takes place on open water, typically on the sea or on large lakes. There are many different types of boats that race on the sea. The official World Rowing discipline was first codified in France and is now a global discipline.

Coastal rowing is defined by a set of measurements and regulations that boats and rowers need to comply with when they want to race. These can be found in the FISA Rules of Racing www.worldrowing.com

There are three pathways: beach sprint, endurance and touring (sometimes called challenge or raid rowing).

The beach sprint format started as a result of the emergence of the beach games competitions. The first event was in Italy in 2015 at the Mediterranean Beach Games.

Since then the beach sprint format has been in Beach Games events across the world including Asia, Africa and the Americas. The first global event was the 2019 World Rowing Beach Sprint Finals in Shenzhen, China. The 2026 Youth Olympic Games in Senegal will have the beach sprint format.

The endurance format is older and started in France in the late 80s. The first World Rowing Coastal Championships was held in Cannes, France in 2007 and is run annually. The Championships have been held around the world including Lima, Hong Kong, Victoria and on Lake Geneva.

Clubs and tour companies run 1,000s of tours around the world each year using coastal boats. The World Rowing Tour runs each year for about 60 people and often uses coastal boats.



pictured: 2x: double

beach sprint format:

- Is a run, row, run combination over a 250m out and back buoyed course.
- It uses a time trial and knock-out progression system.
- Races last between 2:30-3:30 minutes.
- Venue is on swimming beaches with small waves (less than 1m).
- Successful rowers need running and rowing speed, agility, turning power, directional awareness and wave handling skills.

endurance format:

- Is a 4-6km course around a variable number of turning points.
- Starts and finishes can be either on the water or a beach depending on the location.
- Each race has 10-20 boats, which can mean there is interference at the first turning mark.
- Races take between 20-40 minutes.
- Successful rowers need good watership skills, endurance fitness, navigating skills and race tactics.

tour format:

- Is a longer duration (can be multiple days and has stops along the route).
- Can be either a race or a challenge.
- Crews are often accompanied by support boats or land support.
- Successful rowers have ultra endurance, good navigation and watership skills.



pictured: 1x: solo

1.1. coastal boats

There are three types of boats: the solo scull (C1x), the double scull (C2x) and the coxed quad scull (C4x+).

All the boats are sculling boats, meaning that rowers have two oars each. Males and females compete in all three boat classes and in mixed crews.

The boats are designed to row safely in big offshore waves; they are highly manoeuvrable and can be launched on and off sandy swimming beaches.

solo: 1 rower

max length: 6,00m (19ft 8in)

minimum width: 0.75m (2ft 5in)

minimum weight: 35kg (77lbs 2oz)

coastal Events: CW1x, CM1x

double: 2 rowers

max length: 7.50m (24ft 7in)

minimum width: 1.0m (3ft 3in)

minimum weight: 60kg (132lbs 4oz)

coastal Events: CW2x, CM2x, CMix2x

quad: 4 rowers with cox

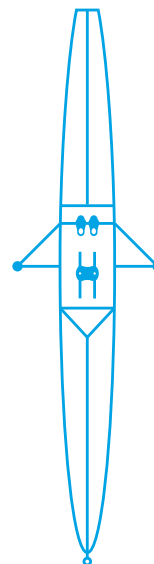
max length: 10.70m (35ft 1in)

minimum width: 1.3m (4ft 3in)

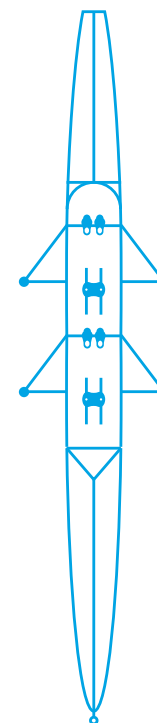
minimum weight: 130kg (286lbs 8oz)

coastal Events: CW4x+, CM4x+

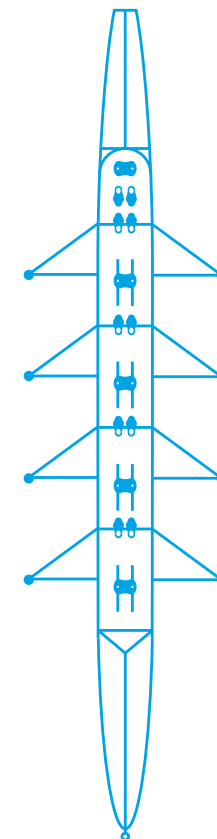
solo: 1x



double: 2x

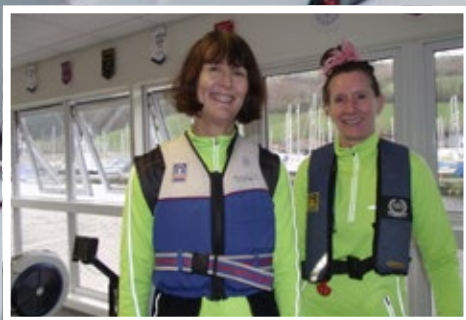


quad: 4x+



2.0. preparing to go afloat

pictured: safety kit on a boat



*pictured insert: buoyancy aid (left),
life jacket (right)*



2.1. safety

rowers', crew captains and coaches obligations

Rowing is by its nature an unpredictable sport and therefore inherently involves an element of risk. Rowers, coaches and officials all have a 'duty of care' to themselves and others to take all reasonable action to reduce the risks.

As a coach or a crew captain, there are expectations placed on you, by the national federation, the club, an event organiser, the rowers and their families. Everyone is an important part of the risk management process for rowing.

Coastal rowers and coxes are expected to*:

- Follow the local maritime rules.
- Wear or have within easy reach appropriate lifejackets (cox to wear).
- Know what to do if swamped, capsized or in need of a tow.

According to international maritime law, all sea-going vessels should have one person responsible for safety and navigation. In coastal rowing this person is called the 'crew captain' and is often the most experienced crew member.

The crew captain is expected to*:

- **Before the outing:** assess the risk and ability of the crew for the conditions, do the boat safety checks and complete the sign-out process.
- **During the outing:** monitor conditions and make decisions on safety, ensure the crew respects all navigation and safety rules.
- **After the outing:** complete the sign-in process.

As a coach your role is to oversee, teach and instill these in your rowers and coxes.

* For more details see the [World Rowing Rule Book](#)

2.2. managing a water session

When going out on the water follow some simple steps to keep the session fun and safe.

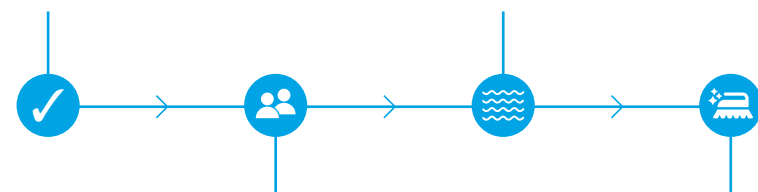
These come under four headings: **Planning, Pre-Launching, On Water and Post Landing.**

1. planning

- Which rowers
- What equipment
- Risk assessment
- Float plan
- Coach session plan

3. on water

- Launching
- Warm-up and drills
- Training and coaching work
- Landing



2. pre-launching

- Dynamic risk assessment
- Safety checks
- Briefing
- Sign-out
- Take boat and oars to water

4. post landing

- Sign-in
- Wash the boat and replace safety equipment
- De-brief
- Report any damage

2.3. planning

- **Rowers:** list your rowers. Make sure you know their skill level, health condition and if they have done a swim test. Collect emergency contact details for all rowers and parents' permission for Junior rowers.
- **Equipment:** check what boats, blades and coach boat you can use.
- **Risk assessment:** refer to the generic risk assessment (the club will typically have one for your normal training locations). If it is a new location, undertake a generic risk assessment and make a record of it.
- **Float plan:** develop a float plan. This will have the route, time period, expected weather, tides and currents, marine traffic notices, emergency shelters and contacts and the sign-out/in method.
- **Coach plan:** design the warm-up, the physical training and the technical elements the rowers will work on.

rowers' experience

Take account of the rowers' 'watership' and technical confidence and competence.

Rowers should be able to swim at least 50m comfortably, put their head under water without panicking and be able to float for at least two minutes. If they cannot, a Personal Flotation Device (PFD) is essential. All rowers should be trained to deal with a capsize, a re-entry and man overboard. These can be taught at a swimming pool.

A detailed look at the three key rescue drills can be found in [Coaches Toolkit section on page 52](#).



what's in the float plan

- What route are you going to take. This might be a GPS route, compass bearings or line of sight.
- How long you expect to be on the water and your estimated return time.
- What is the weather forecast. The wind, swell, waves, visibility etc.
- The tide times and speed and direction of currents. Assess the risks of shallows, rips, tidal overfalls, wind over tide conditions etc.
- Consider other water users and any marine traffic. Check if there are any 'notice to mariners' issued by the authorities.
- Name your emergency shelters (Plan B) and contact details of who to call for help.
- How you will sign-out/in.

navigation hazards

On the sea there are a number of hazards that coastal coaches need to understand.

Here is a list of potential dangers to explore:

- Shipping lanes/anchorages/firing ranges
- Shallows/sand banks/reefs
- Headlands/rocks/wrecks
- Strong tidal currents (2kt+), tidal overfalls, tidal races, tidal bores.
- Refracted waves off harbour walls/wind over tide waves.
- Dumping shore breaks and rip currents on beaches

Tip: Put a marine chart on the notice board showing all the navigational hazards and add any 'no go' zones. Some clubs put tide tables up and other important safety information.

pictured: example of a marine chart with 'NO GO ZONE' shown





COLREGs – rules of the road

COLREG stand for [International Regulations for Preventing Collisions at Sea](#) and is a set of rules that all vessels on the sea should follow.

The simple explanation is:

- Every vessel must maintain at all times a look out – big vessels can't see very small rowing boats.
- Recreational boats should respect commercial vessels, especially if they are restricted in their ability to manoeuvre.
- Pass red to red/port to port.
- Keep to green/starboard.
- Overtaking vessel must keep clear (same as the World Rowing Coastal Rules).

buoys and marks

There are buoys and marks* on the sea which show navigation channels and features like rocks and wrecks. It is worth learning the lateral (channel) and cardinal marks in your area, as they can be helpful in describing your location. Many marks have numbers or names.

* [IALA Buoyage System](#) – International Association of Marine Aids to Navigation and Lighthouse Authorities. There are two systems. REGION A – used in Africa, most of Asia, Australia, Europe and India. REGION B – used in North, Central and South America, Japan, Korea and the Philippines.



2.4. pre-launching

last minute actions before getting on the water

There are five action points just before launching:

- **Dynamic risk assessment:** do this just before, especially if the conditions have changed since your planning. Things like: - the weather is worse than forecast, one of your more experienced rowers can't make the session, you don't have access to the coach boat etc.
- **Safety checks:** the people and boat safety checks. It can be a list on the club notice board or a laminated sheet. It may include a radio check.
- **Briefing:** an explanation of what the plan is to the whole group. How long you expect to be out. What conditions to expect. What work will happen in the outing. What to do if things go wrong.
- **Sign out:** follow the clubs signing out procedure. This might be writing in a log-book, texting an 'accountable person' on shore or radioing the harbour master.
- **Take boat to water:** safety push or carry the boat to the water's edge.

dynamic risk assessment

It is the real time evaluation you take as a coach to ensure your crews are happy and safe. There are a wide range of risks and controls to consider. From the sea and weather conditions, to breakages and fatigue. To help guide you there is a dynamic risk assessment checklist and template in the [Coaches Toolkit section on page 52](#).

safety checks

Your safety checks depend on what you are planning to do. A beach sprint boat will have less safety items onboard compared to a tour boat, but the safety check is just as important. Refer to the three photos on the following pages to see examples of safety checks for the three formats.

signing out

There are a range of systems for signing out, but they all have the same key information. What type of boat you are in? The number of people? Where you are going? When you plan to be back?

Here are some examples:

- **Sign-out sheet:** a book in the club house where you write down the information and sign back in when you return.
- **Responsible person on shore:** a person onshore who will raise the alarm if you fail to return on time.
- **Digital phone app:** an app that you input your trip details in. If you over run your return time a named contact is automatically alerted. <https://www.safetrxapp.com/>

safety boat

If you are using a safety boat it should have a radio or mobile phone in a waterproof bag, flares, a paddle, survival blanket, kill cord, bailer, throw line, sharp knife, megaphone and a first aid kit aboard. Driver and passengers should all wear PFDs.

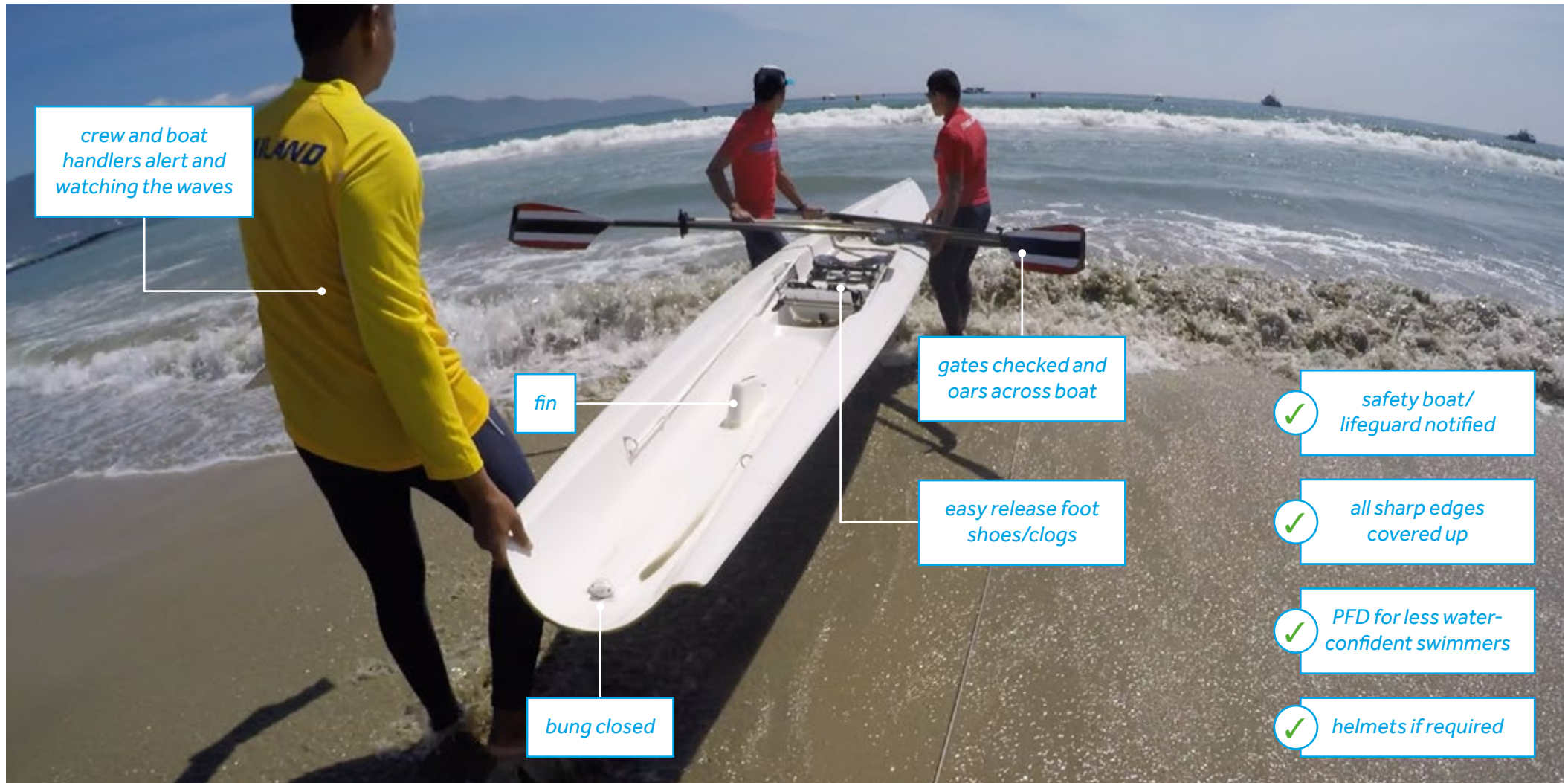
Keep a small collection of nuts and bolts with you. These kind of things are the most frequent losses from boats and quickest to replace if you have a collection of replacements.

You will also need some tools: the basics are a 10mm and a 13mm spanner, an allen key, a tape measure, a set of pliers, a flat-headed and a cross-headed screwdriver. As you progress you will want to add some specialist tools such as a pitch gauge and a height stick.

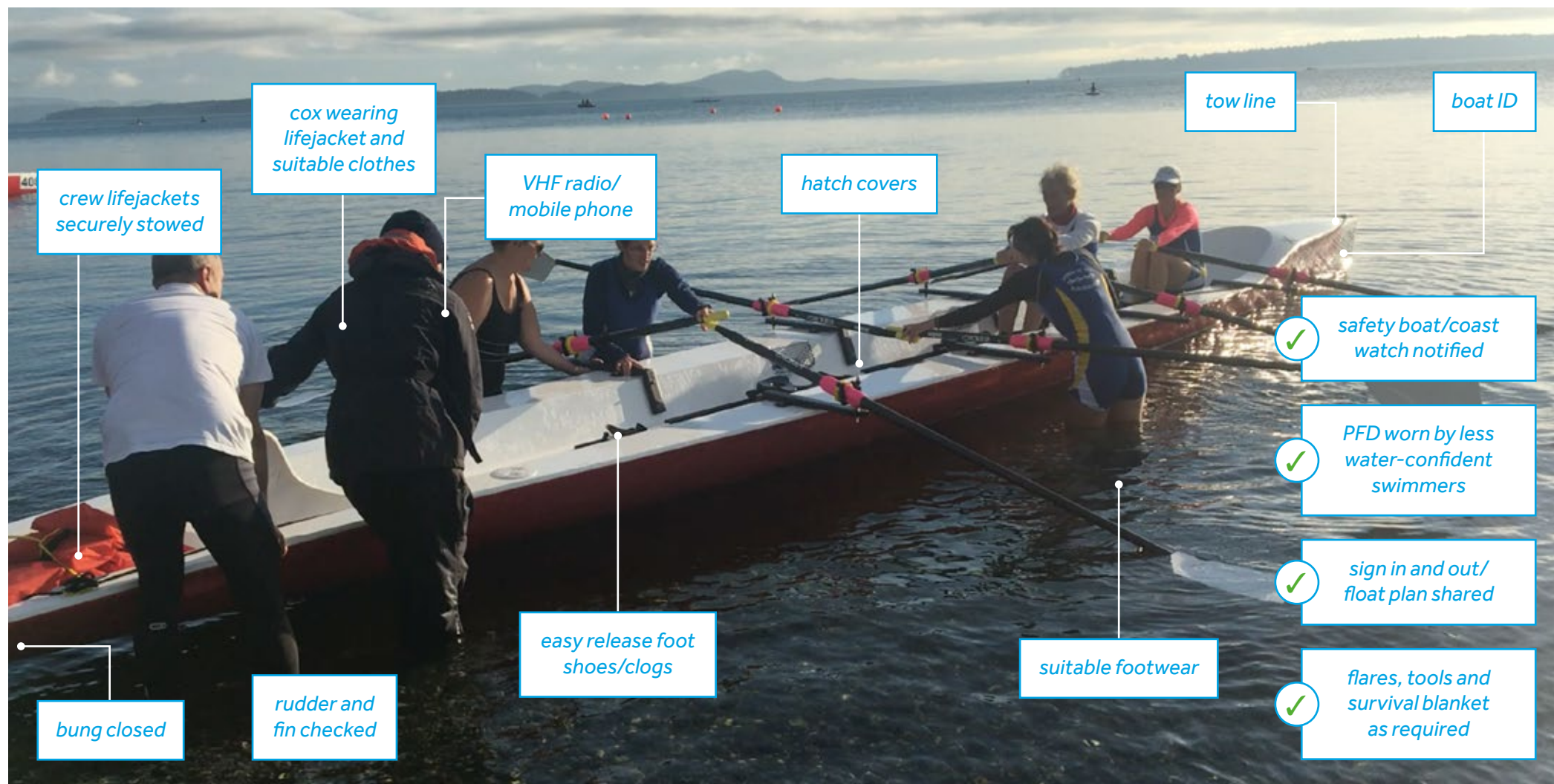
calling for help

Every member of the crew needs to know how to call for help. When close to or on the beach it is single arm raised and waving. When out at sea this may be done using flares or calling MAYDAY on channel 16 on a marine radio. Every boat should carry a minimum of two means of calling for help. A single mobile phone on it own is not enough.

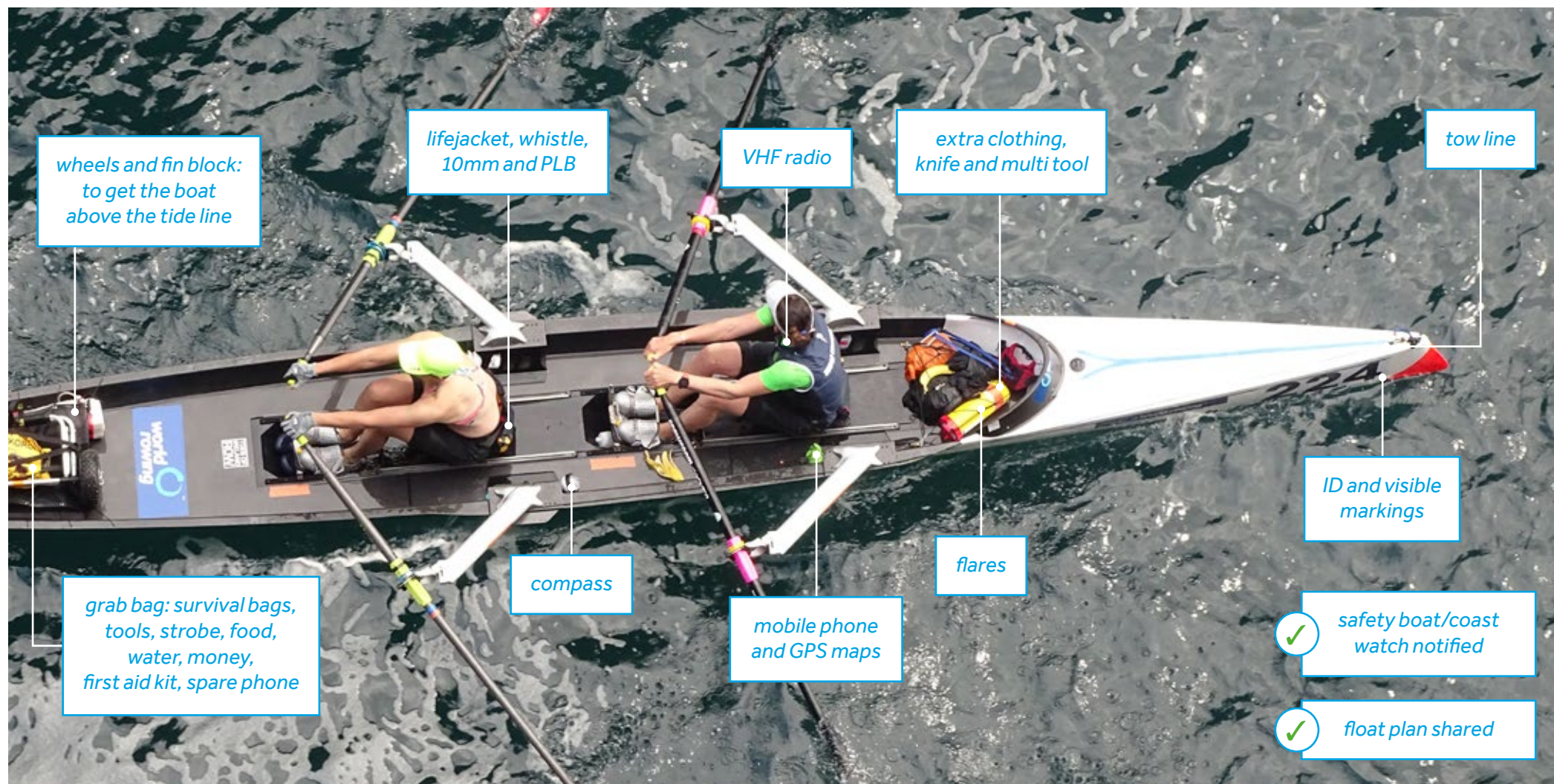
safety equipment/check: beach sprint racing



safety equipment: endurance racing and training



safety equipment: touring



3.0. on the water

teach your rowers to get in safely. you may like to demonstrate this before they try it. in their earlier attempts have someone steady the boat.

3.1. getting into the boat

beach launch

When launching off an open beach select the zone with the smallest waves and time your entry in the lulls between wave sets.

- B01.** Put the blades into the gates, adjust foot stretchers and stow water bottles.
- B02.** The crew captain checks everyone is ready and explains the launch.
- B03.** Take the boat to the water.
- B04.** In big waves keep the bows pointing into the waves. A few boat handlers are very helpful in deep shelving beaches.
- B05.** Rowers stand by their seats with their outside hand holding both handles.
- B06.** Bow in a double or bow pair in a quad, then step, slide or climb into the boat first.
- B07.** Rest of the crew enter the boat.
- B08.** Immediately bow or bow pair start rowing. They may be needing to steer at this time too.

B09. Cox puts the rudder in while the boat is moving.

B10. Once safely clear of the wave break, stop to put your feet in the shoes.

slipway launch

On the land adjust the footstretcher so that the thumbs are a fist and a bit apart when sitting at back stops.

S01. Put the blades into the gates and draw the handles across the boat.

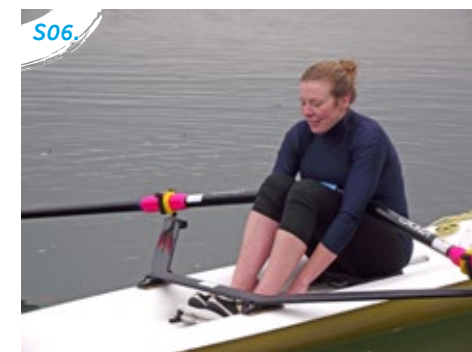
S02. Launch the boat.

S03. Stand alongside the position you are going to sit in.

S04. Hold both blade handles and press down on the rigger nearest to you with the other. Slide the seat out of the way and place the foot nearest the boat into the footwell.

S05. Sit down and bring in the other foot.

S06. Put your feet in the shoes.



3.2. holding the blades

*in sculling, there is overlap of the hands.
conventionally one rows with the left hand
over and in front of the right.*

In sculling, the thumbs provide the contact to roll the blade from square to feather by turning the handle with the fingers. Use the thumb by circling it on the end of the handle, one way to feather and the other to square. Excessive movement of the wrist should be avoided, wrists remain flat.



If the sculler has the handle too much in the palm of the hand, the wrist is often arched; too much in the fingers and the sculler cannot control the blade. Control should come by pressing the blade out against the gate using the thumb. If the handle is too small or large then the sculler will also grip too hard.

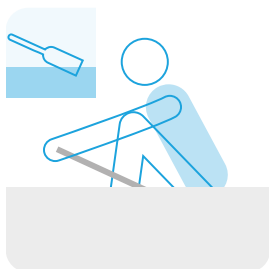
In rough water it is important to keep the spoons covered. This will often mean that the handles do not stay level and may also mean that the leading hand is the right hand rather than the left for some strokes. It may also mean that the handle is deeper into the palm of the hand to maintain control.

3.3. technique

the mechanics of the stroke are the same as for olympic-style flat water rowing. the summary is reproduced here for reference.

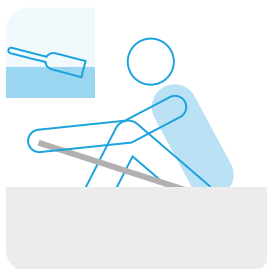
the catch and drive

This is a description of the basics.



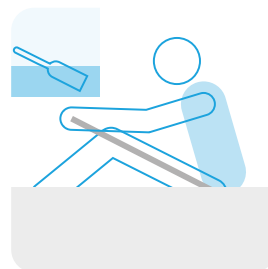
01. entry/catch

Raise only hands. Oar enters water before the leg drive begins.



02. drive 1

No change in body position. The body weight is off the seat. Work done by legs.



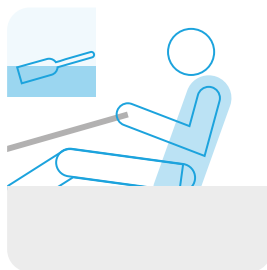
03. drive 2

Upper body gradually takes over from leg drive. Body starts to open up in a natural way. Arms stay straight.



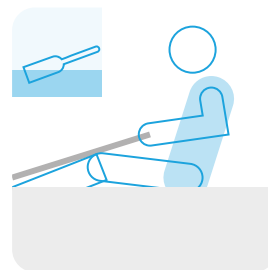
04. drive 3

Legs almost finished. The upper body continues to swing. The arms begin.



05. drive 4

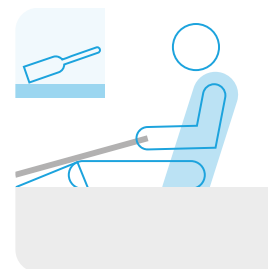
End of the layback. Arms move quickly and strongly into the body.



06. finish/release

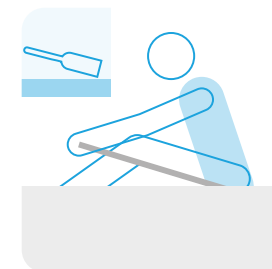
Forearms and hands move oar-handles around in a circular and continuous manner.

the extraction and recovery



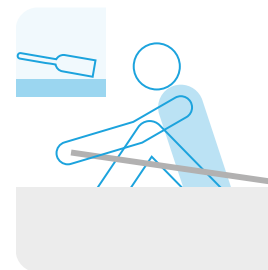
07. recovery 1

Hands move away from body at a constant speed.



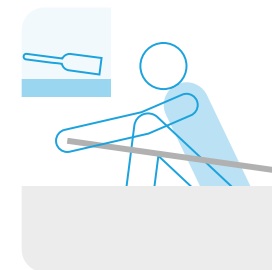
08. recovery 2

At the beginning of sliding, hands are past the knees before the slide begins. Arms are straight. Body lean early.



09. recovery 3

At half slide upper body has finished reaching forward.



10. before entry

Last part of the slide. All body movement has finished and concentration is on a quick catch.

3.4. working the water

coastal rowers adapt their technique to match the shifting energy of the water. as the waves surge and stall, coastal rowers must feel the changes and take advantage when they can. this is called 'working the water'.

There are a few basic techniques to master:

- **Into the waves:** rowing into waves is generally just hard work. The skill is to be as efficient as possible and keep the speed as consistent as you can. Avoid crashing off the top of big waves. Bow should try their best to keep good technique in the waves. The crew needs to learn to adapt their stroke length and rate as the boat speed changes.
- **Side on to the waves:** side waves can be uncomfortable. It is important to watch out for waves that risk breaking over the boat. When you see these coming, steer into the wave to allow it to break over the bow quarter and run through the boat. There is no one particular skill for rowing in side waves, as each boat design is different. But the common skill is to remain loose and relaxed through your body for a more stable boat. You may also find you need to modify your stroke

length and power from one side of the boat to the other.

- **Down the waves:** down wave rowing (aka surfing) is the most skillful and the most fun! Learn how to 'feel' the 'surge- stall-surge' of the sets as they pass under the hull. Catching the wave can be done with a well timed power 'draw' on the blades at the end of the stroke. Once on the wave the skills is to keep the boat straight and to hold the wave speed, so the hull does not over run the wave or stall off it.

Beginners should learn how to get off a surfing wave, using the shafts of their blades to kill the boat speed. This is particularly important when surfing in shallow water or approaching a beach, when there is risk of bow 'upending'. As a crews improves they will learn to use less and less energy and be able to 'catch' even the smallest wave.

catching green/unbroken waves



a: Crew feels suck down before release.

b: Crew reacts to match the boat speed to the wave speed – stern is lifted. Feel for the surge. Stroke rate will lift.

c: Crew working to stay at 90° and in front of face of wave.

tips for surfing on beach waves

In a controlled surf the wave is at the stern and the boat is running flat.



In out-of-control surfing the wave is overtaking the boat, it starts to lift the stern and the bows dive. This is called bow upending.




SAFETY: The crew should use shafts to stall the speed of the boat and let the wave pass. They should come into the beach between waves.

3.5. skills and drills

these exercises can also be used in doubles and quads. here the skill requirement is to carry out the exercises in perfect unison.

A crew that can work and move together is more efficient in boat propulsion than a crew that is improving its blade timing.

Boat manoeuvres like turning and backing down should also be taught. They can be incorporated into games, such as those presented in the [OVEP rowing scheme](#) 

In this section you will find specific skills and drills which will help improve the rowing capabilities of learners.



emergency stop

01. Slap Emergency Stop.
02. Bury Emergency Stop.
03. Turn Emergency Stop.

The learner stops rowing, puts the blade flat on the water, pushes it into the water flat and when the boat speed has reduced, turns the blade square.

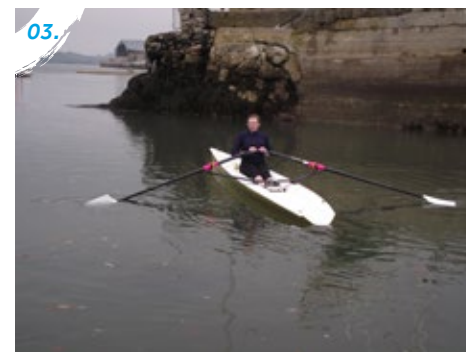


spin turning

This can be taught in stages.

01. Spin 1: at front stops, right blade feathers and left blade is used to row on.
02. Spin 2: sculler has returned to the back stop position.
03. Spin 3: backing with the right hand.
04. Spin 4: sliding forward and continuing to back with the right hand. Left blade is feathered.

Early learners should practice alternately backing with one hand and rowing with the other, keeping their seat at the backstops. Whilst one blade is working the other should be feathered on the water.



Later learners can introduce a body lean, rocking back to row on and pushing forward from the hips to back down. The feathered blade should run over the water surface so that the handles stay together and again one blade should be feathered while the other is working.

The very last stage is to turn the boat alternately backing and rowing using full slide. The learner backs down with one hand while sliding forwards. Having arrived at front stops the blade is feathered, the other is squared and the learner rows a one-handed stroke. The cycle continues until the boat has completed its turn.

slaps

01. Learner sits in the safe position.
02. Learner presses both handles down into the lap then releases so that the blades drop back on to the water surface. Repeat.

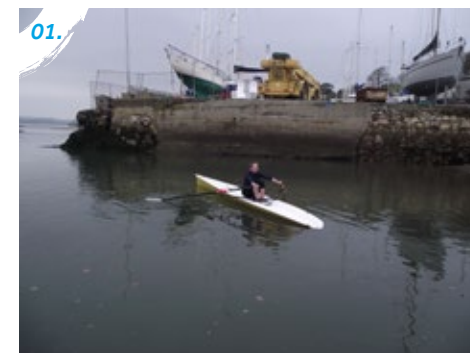
Good for balance and hand position.



chops

01. Learner sits at the front stops. Back should be straight, shoulders should be relaxed.
02. Dip the blades in and out of the water by moving the hands up and down. After some practice the learner should be able to make small hand movements to get the blade in and out and not wet much of the oar.

Good for fine tuning the hand movements at the catch.



hand circling

- 01. Learner sits in the safe position.
- 02. Holding the handles, the hands are rolled around one another.

As the learner gets better, the circles should get smaller so that the hands remain close together.

Good for hand positioning and therefore boat balance.

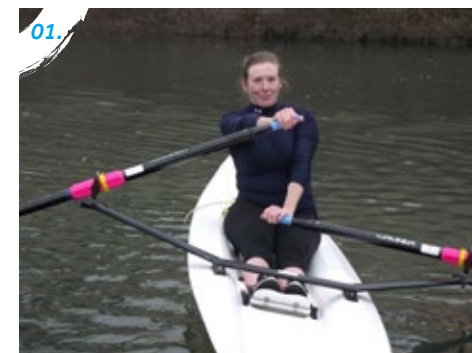


rock the boat

- 01. Learner starts at the safe position.
- 02. Raise one hand and lower the other alternately to tip the boat from side to side.

As the learner gets more confident, he or she should push hands away and slide forward. Here the boat will rock over more. The biggest tips are at front stops and they are called rigger dips, because the tip of the rigger will get wet.

Both these exercises are *good for confidence and balance.*



legs only rowing

01. Learner sits at the catch with blades flat on the water. Make sure the learner has a strong back position. Square blades into the water and drive legs using 5cm of the slide.
02. The learner should use the legs only and remain rocked forward at the hips and arms straight.

As the rower improves allow more slide, but maintain a legs-only stroke.

Good for teaching drive sequence.

[Body Mechanics](#) ▶



square blade paddling

01. This is difficult for beginners, but worth the effort.

A good exercise for lots of reasons, particularly *extraction*. Teaches a good tap down when practiced over waves!

Start by asking for a few square blade strokes without much slide, later adding more repetitions and more slide.

[Men's Square Blade Paddling](#) ▶



wide turns and buoy turns

01. From stationary, row full length strokes using the left blade. The right blade is feathered and skims along the top of the water. Do one complete 180° turn. Switch hands and turn the other way. This is called a wide turn or U turn.
02. Repeat the same turn, but this time start the turn while the boat is moving.
03. Repeat the above, but make the turning circle tighter by burying the shaft of the inside oar in the water. As the rower goes faster the inside hand will need to be locked into the body of the rower.
04. Drop a small plastic buoy for the boat to turn around. Add progression for more able students by timing them and asking them to beat their fastest time and asking them to try tighter turns.
05. Once the rowers have mastered the basics, build progression by doing the drill in crew boats and at full speed. Encourage experimentation and creativity in your rowers. Recording and showing a video will help to give feedback.



The crew are doing a classic racing turn. The inside blade is reversed squared, the wrist is dropped and the hand is locked against the body. The outside blade is rowing on.

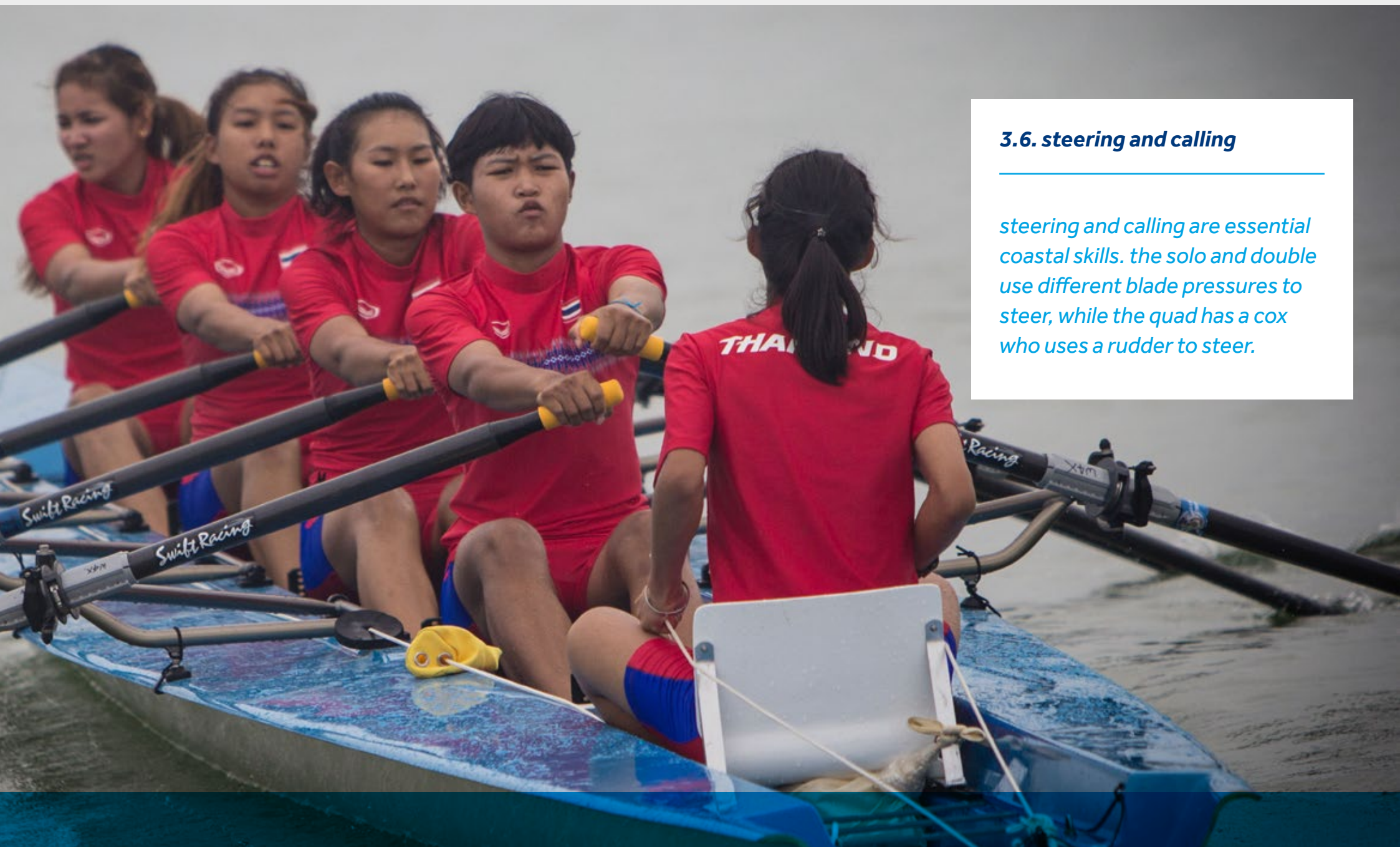
Notice that the stroke person is taking most of the turning force on his inside blade while the bow is focusing on rowing the bows around. This is because the main pivot of the turn is centred on the fin.

hand coordination

Once your rowers have learnt to row leading with their left hand. It will quickly become important to build their hand coordination skills so they can row in rough water. A good way to learn is to practice these drills:

01. Row left hand lead, with the right hand touching the elbow of left arm in the recovery.
02. Row right hand lead.
03. Row with alternate strokes with left hand lead then right hand lead.
04. Row right hand lead, with the left hand touching the elbow of right arm in the recovery.

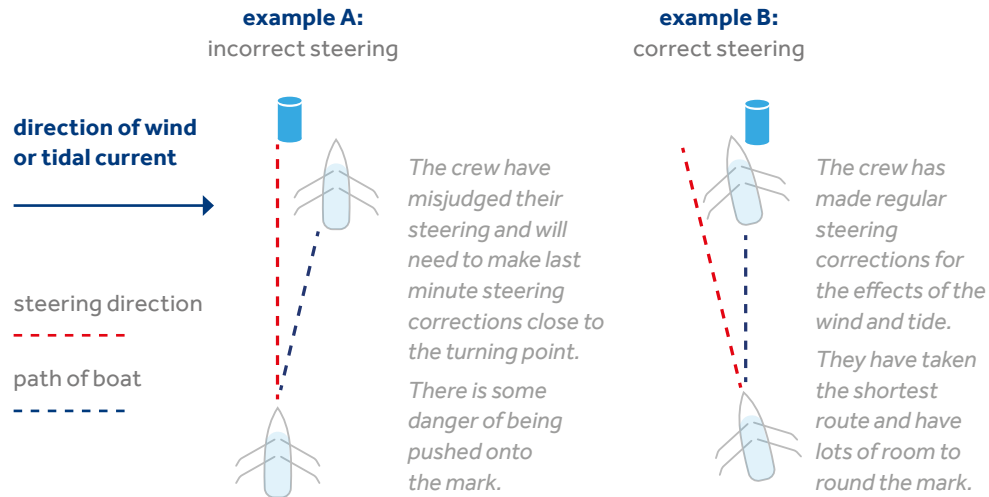




3.6. steering and calling

steering and calling are essential coastal skills. the solo and double use different blade pressures to steer, while the quad has a cox who uses a rudder to steer.

steering adjustments for wind and tide



Learning to steer on open water is an important skill to master. Sometimes a turning point is difficult to see, and it is helpful to use other guides like land features, GPS, compass bearings or back markers.

Side winds or waves also affect the steering line and the steerer may need to adjust to avoid being pushed below the turning point. Tidal currents can also affect steering.

They are more difficult to see. Experienced steerers will always look at the way water passes by a navigation buoy, as this can often show the direction of tidal currents.

When heading to a mark or rounding a buoy it is important to make corrections early. Last minute corrections can mean being swept onto the mark or collisions with other crews.

In the solo and double when surfing waves, holding a straight line becomes more difficult the faster the boat goes. A good crew will spend a lot of focus on steering the boat straight, making early asymmetrical adjustments from one side of the boat to the other. A mixture of shorter and longer strokes, increasing and decreasing the power or sharpening and slowing the catch. In deep waves, good steering will prevent a broach. A broach is when the stern goes faster than the bows and the boat ends up sideways in the wave. The quad doesn't have this issue as it has a rudder, which gains more turning power as the boat speed picks up.

At certain times you will have to steer the boat in a direction which means that waves will hit the side of the boat. Steer up into bigger waves to counteract the swamping and then down the wave again when you reach the crest. Always warn the crew if a swamping wave is approaching. This will allow them to prepare for the impact.

some coxing tips

When rowers stop rowing, the quad will still be moving and until it comes to a stop, it can be steered with the rudder. When it stops you cannot steer it with the rudder and must use the blades. The cox is a skilful part of a crew and needs to be encouraged and coached to improve, just like the rowers.

calling

Clear communication in a crew boat will mean better coordination between the rowers and speed up the time it takes for a boat to do something. Like launching, turning or doing technical drills. Some common commands can be found in the [Coaches Toolkit section on page 52](#).

4.0. equipment and rigging

rigging is the process whereby equipment is adjusted to best suit a particular rower. the aim is to allow each rower to be as effective and comfortable as possible.



Most people need some face-to-face help when they first attempt to rig a boat. The adjustments are not complicated but they are small and sometimes difficult to convey on paper. The following is an outline which will allow the novice to practice the measurements and adjustments.

It is likely that many different people will be using the same boat. The following is an average rig for this situation and should be used as a start point for rowers in the height range 5 feet 4 inches (162cm) to 6 feet 3 inches (192cm).

span: 158-160cm

This is the distance at each seat position between the middle of the bottom of the two pins.

It is vital to check that each pin is the same distance from the middle of the boat. First measure across the boat noting down the distance from one side to the other level with the pins. Divide that measurement by two. Next measure from the side of the boat to the pin. Add the two numbers together. Each total should be the same throughout the boat (*images 01-03*).



image references:

01. Tape measure across pins.

02. Tape measure across the boat.

03. Tape measure side of boat to pin.

04. Measuring swivel pitch: zero the pitch gauge.

05. Pitch gauge and pin.

06. Measuring work height.

07. Stretcher height.

08. Stretcher placement.

09. Adjusting stretcher angle.

10. As a general rule the angle should be 42-45 degrees from horizontal.

11. Adjustable footstretcher.

12. Non-adjustable footstretcher.

13. Boat adjustments.

14. Measuring macon.

15. Measuring inboard.

16. Measuring cleaver.

17. Adjusting blade length.

18. Changing inboard/outboard.

19. Use a clam to make a quick or temporary change to the inboard/outboard.

20. The clam sits against the outer face of the collar.

swivel pitch: 3-5 degrees

All the pitch should come from the swivel and its inserts. This means that the pin itself should be 90 degrees to the horizontal in all planes. There are times when having the pins angled slightly out (leaning away from the mid line of the boat) can be helpful to the rower but the simplest set up is with a fully upright pin. Level the boat, clamp it into position and check it is level with a spirit level. If the pins are not fully upright you may need to lever them back into position. To check the pins you need to remove the swivel and use your pitch gauge on the metal pin beneath.

Use the inserts. Always use the same insert top and bottom and across the whole boat. To attain 4 degrees of pitch on the swivel use the 4+4 inserts (marked on the top face of the plastic insert).

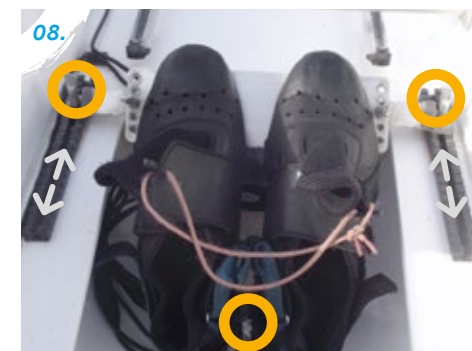
For 5 degrees of pitch use the 5+3 insert like this: 5+3 at the top of the swivel (5 nearest to the pin) 3+5 at the bottom of the swivel (3 nearest to the pin).

Now check the pitch. Pitch gauges come in many different forms. A downloaded spirit level app will do the job if a more conventional gauge is not available.

Firstly on a horizontal part of the boat (level with the water surface when the boat is afloat) zero your pitch gauge or app. The level surface of the boat is often in the footwell or along the keel because decking can be built with a slope. Turn the swivel until it is parallel to the side of the boat. Put the gauge hard against the working face of the swivel (the back, next to the pin). For a 4+4 insert on an upright pin the reading should be 4 degrees (*images 04 and 05*).

work height: 18-20cm

Use a height stick placed across the boat level with the swivels. The bottom edge should touch both sides of the boat and the far upper end should rest inside the gate. Work height is measured as the distance between a low part of the seat and the bottom corner of the gate (bottom edge of the upper arm of the height stick) in a vertical line down to the downward curve of the seat (*image 06*).



other boat adjustments

feet height

Some boat shoes have adjustable heels which can be moved up or down (*image 07*).

Feet too high: rower may be unable to get shins vertical at the catch and may not be able to rock over from the hips easily.

Feet too low: rower may not be able to control their slide into front stops, arriving too fast or travelling too far so that they are over-compressed (shins beyond the vertical and knee tips beyond ankles).

Start by setting the heel on the middle set of holes and adjust gradually to suit your rowers so that each can arrive into the catch position comfortably and under control.

stretcher position

(*Image 08*) The simplest way to measure the stretcher placement is to count the notches along the mounting bracket, starting from the bow end.

To change the placement loosen all nuts which secure the footplate to the boat. These are at either side and often there is a third between the heels. Move the stretcher

towards the bow to increase the finish angle and to the stern to increase catch angle. It is important that the rower is set up to row a comfortable stroke. Adjust the footstretcher placement until your rower looks like the picture 06 shown on page 37 when they are sitting at backstops.

stretcher angle

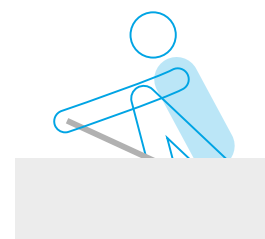
(*Image 09*) The rower should be able to get his/her heels down on to the plate below the shoes as the drive phase proceeds. This is related to ankle flexibility. The stiffer the ankle, the more shallow the footplate should be to accommodate the rower.

Some footplates are adjustable. If the underneath of your footstretcher looks like the one in the picture, it is adjustable. Loosen the two screws circled and retighten with the adjuster pulled out to make the stretcher angle more shallow (*image 10*). As a general rule the angle should be 42-45 degrees from horizontal.

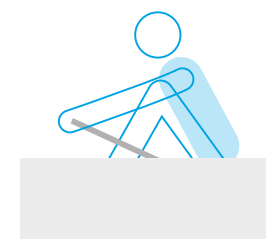
(*Image 11*) With this type of footstretcher the angle but not the height can be altered.

(*Image 12*) With the second type the angle nor the height can be altered.

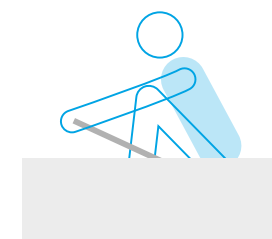
(*Image 13*) Boat adjustments.



over-compressed

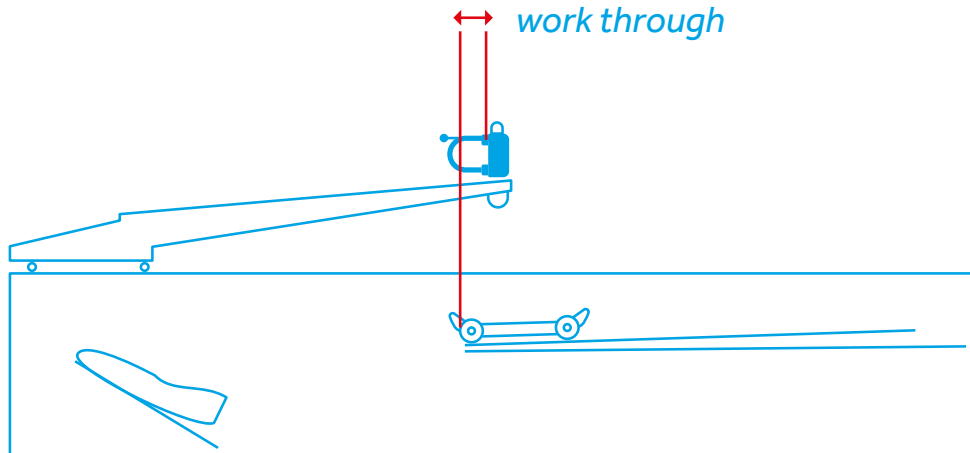


under-compressed



just right: shin is vertical

pictured: work through



work through

This is determined by footstretcher position and runner placement. Set in the range plus 5cm to minus 5cm, work through is zero when the front wheels of the seat are level

with the working face of the swivels at the front of the runners. The aim is to minimise the boat pitching in the water as the rowers slide fore and aft because pitch slows the boat. In the picture above the seat has run past the working face of the gate, the work through is therefore positive.

blade adjustments

measuring and adjusting blades:

Measuring macon (*image 14*). This shape is known as a macon. Macons are longer than hatchets to achieve the same work at the blade tip.

Outboard measurement: hook the tape measure over the spoon tip at the mid point. Run the tape along the shaft to the outboard edge of the collar.

Measuring inboard (*image 15*). The inboard measurement includes the thickness of the collar and should include the rounded end of the handle.

Ideally macon blades should be 296-298cm long for coastal rowing. Set the inboard between 87-90cm.

Measuring cleaver (*image 16*). This shape is known as a hatchet, big blade or cleaver. Outboard measurement: The tape measure should run along the mid line of the shaft to the outboard edge of the collar and should be hooked over the far edge of the spoon in line with the shaft, as shown in this picture.



Adjusting blade length (*image 17*).
The length of some blades can be changed. Some makes, like the one shown in the picture, have screws on the shaft. Loosen these carefully (not too much), tap gently to loosen if the adjustment is frozen and pull the handle out to lengthen or push in to shorten.

Another type has a screw in the domed handle end with which to lengthen or shorten the blade. There is a retaining collar to loosen on this type. Some blades have wooden handles. These are not adjustable for length.

Changing inboard/outboard (*image 18*).
Loosen the collar by unscrewing it at the side. Move it along the grooved sleeve, being careful to reseat the collar into the grooves of the sleeve before retightening.

Move the collar towards the handle to reduce the inboard. With blades adjustable for length, making them longer increases the inboard unless the collar is moved to compensate.

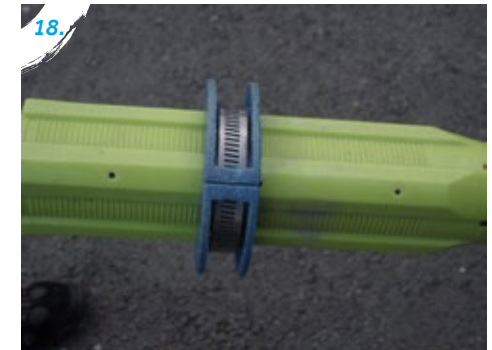
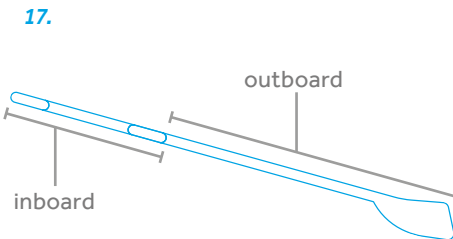
Ideally hatchet blades should be 286-289cm long for coastal rowing. Set the inboard between 86-88cm.

Short people should use short blades. Taller people use longer blades with longer inboards.

Use a clam to make a quick or temporary change to the inboard/outboard (*image 19*).

This will increase the inboard and decrease the outboard by the same amount and make the rowing feel easier.

The clam sits against the outer face of the collar (*image 20*).



coastal gearing

The gearing for coastal and classic rowing is very similar, despite the fact the coastal boats are wider and shorter. There are two main reasons for this. In rough water the stroke tends to be less accurate and so the actual gearing is less. The speed of coastal boats when going down wind or surfing can be faster than classic boats. The crew will need enough gearing to allow for steering strokes at these high speeds to avoid broaching or simply to keep on the wave.

Some say coastal rowers are like mountain bikers and need lots of different gears. While classic rowers are more like track cyclists and only really use one fixed gear, as their speed is very consistent over the duration of their race. Coastal rowers adjust their gearing by frequently changing their stroke length and rate, as the boat speed varies.

standard rigs

In many coastal clubs the masters, men, women and juniors may all share the same boats, this means that each club tends to have a standard rig.

FISA have a standard rig for the pool boats at races, where multiple crews are using

the same boat. The boats are set to a standard rig and crews are not allowed to make changes to the rig. Other than the distance of the foot stretcher and adjusting their blades.

Individual set-ups for crews is best done on the blades, by adjusting the length overall, the in-board and the out-board. Teams preparing for races are encouraged to train on the standard rig and to bring their own oars to regattas.

coastal racing standard rig:

		Tolerance
Span	158cm	± 1cm
Gate height	18cm or max	
Heigh difference	Bowside 1cm lower	± 0.5cm
Stern pitch	5°	± 1°
Lateral pitch	0.5-1.0°	± 0.5°
Stretcher angle	42° (flatter than 45°)	± 2°

Recommended (Hatchet)
Length oar: 286-289cm
Inboard: 86-88cm



pictured: a coach is measuring and adjusting the blade at the WRCC

5.0. training

this is a suggestion on how you might start your beginner training.



5.1. learning the basics

- Swim and float test every rower before allowing them on to the water. If on a beach, conduct a beach orientation and rescue briefing.
- First lessons on safe lifting and launching. Teach basic terminology.
- Build the understanding of the local sea features, the navigation channels and the role of the crew captain.
- Progress to getting in and out, also simple manoeuvres (backing down, turning, stopping). Keep boats on a tether until rowers have mastered these simple skills.
- Teach capsize and re-entry drills as soon as possible, make sure this includes man overboard. Include lessons on using a tow line.
- Teach good technique using the rowing machine (ergometer) and teach small groups in boats.
- Teach coxes as well as crew if coaching a quad.
- Continue water work with skill drills and games, these help refine good technique.
- Build the crews understanding of the local wave conditions and start to teach 'working the water' skills. Teach how to catch and get off a wave.
- Teach how to warm up and warm down effectively.
- Commence fitness training with cross training activities like running, cycling or swimming.
- Rowing-specific fitness training should start on the ergometer, later in the boat when the skill levels have improved (this could be weeks or even months after the first steps).
- Introduce race-specific drills e.g. boat entry/exit, racing turns, starts and navigation.
- Use calm water at first. Gradually introduce more demanding conditions as the rowers gain in skill and confidence.



5.2. learning to race

The true test of a coastal rower's technique is rough water. The skill to adapt the basic rowing technique to different types of wave and boat speeds, is called 'working the water'. The basic principles are to keep the body relaxed and to create as much room for your blades by tapping down at the finish and moving them away from your body at the end of the stroke. Most coastal rowers tend to have a minimum rate of 22spm, and a slightly smaller ratio between the drive phase and the recovery phase.

race techniques and tactics

There are two global racing formats: beach sprint and endurance. Both test rowers' speed, turning point power, steering accuracy and the ability to 'work the water'. In the beach sprint and depending on the venue for endurance, the transition time between the land and the sea also matters.

beach sprint technique

The key technical elements for beach sprint can be divided into 5 sections.

- a. **Boat entry:** a run, followed by a clean placement of feet, seat and hands into the boat, followed by an accurate first stroke.

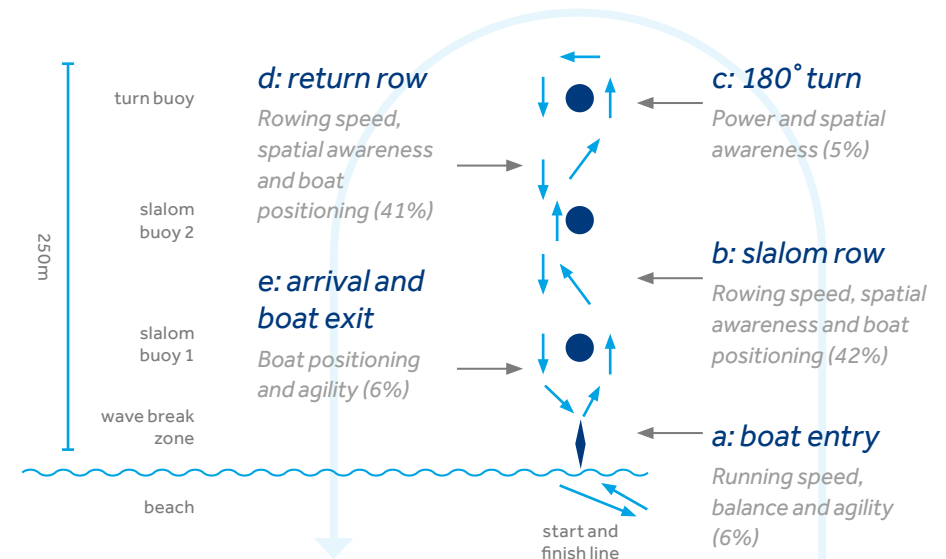
- b. **Slalom row:** here the crew will use their sprint rowing speed and accurate boat placement to navigate the 2 slalom buoys in the shortest distance and fastest time possible.
- c. **180° turn:** the crew will make use of the boat speed into the turn by shafting and then reverse squaring their inside blade, while rowing on their outside blade.
- d. **Return row:** on the return row the 85m to the first slalom buoy requires 'spatial awareness' to get right as there are few reference points to navigate off. The crew may catch a wave all the way in or feel the 'suck down' in the trough. If they are on the same wave as their opposition the race is still open.
- e. **Arrival and boat exit:** as the crew approaches the beach they hopefully will have picked up a wave and be rating in the high 40s. The crew should be coached to keep the speed up as they approach the beach or to know when to drop back off a risky wave. As the bows touch the sand the runner will sprint up to the finish line. While the remaining crew and boat handlers manage the boat in the waves. See laying training buoys on page 45 for some guidance on set up a training course.

boat handlers

The crew is supported by 2 boat handlers. They are important part of a team and should be at training sessions and receive coaching in how to get better. These should include aspects like checking and preparing the boat after lane selection, handling the boat during the start, steering the crew, how to receive the arriving boat and guiding

the runner at the finish. Boat handlers should be familiar with beach features (like rips, dumping waves, local wildlife and how to call for help), know how to lift the boat safely and have done the swim test. If they are not confident swimmers they should wear a PFD.

coaches phases in beach sprint



* See www.worldrowing.com for the format Rules.

sprint boat entry C1x Note entry side oar is parallel to boat



01. Pivot leg placement



02. Pivot body around pivot leg and step into boat



03. Entry leg placement in middle of boat



04. Sit and grasp handles

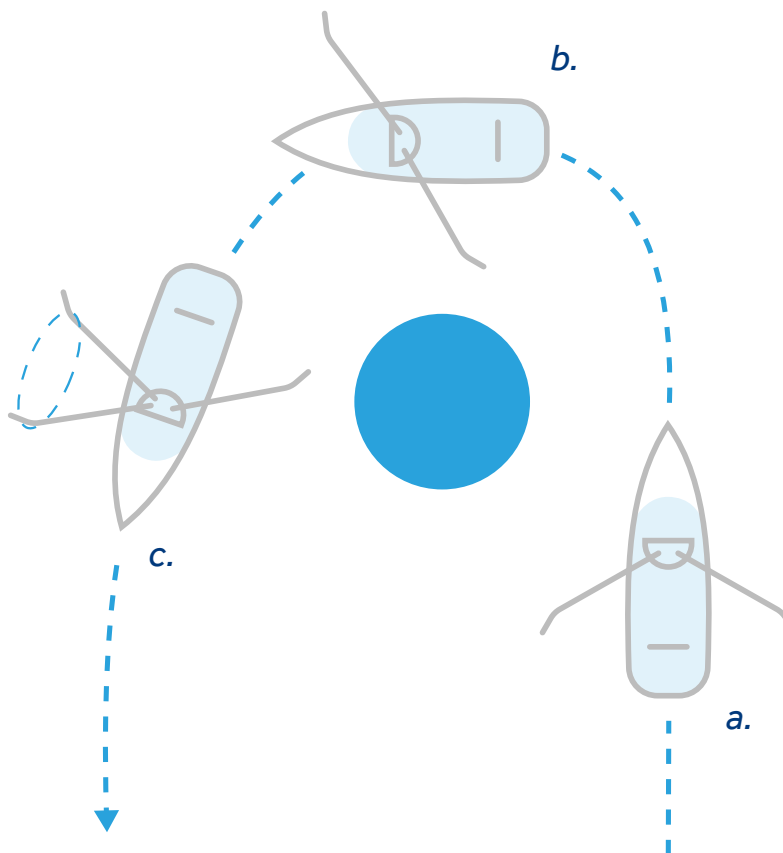


05. Row

beach 180° racing turn: solo

- a. Approach close to the buoy – when the bows are in line with the buoy – SHAFT hard on stoke side with handle supported on chest
- b. Row hard on bow side focusing the power in the first half of the stroke where there is the greatest turning moment. As required bring stroke side oar onto a reverse square – try to keep the blade close to the stern to improve the turning moment
- c. As soon as the boat comes out of the turn start to accelerate the boat to top speed and make any final steering adjustments. Accurate steering is critical in this 85m, until the first slalom buoy becomes a reference.

Hint: Use a back marker.



sprint boat exit C1x



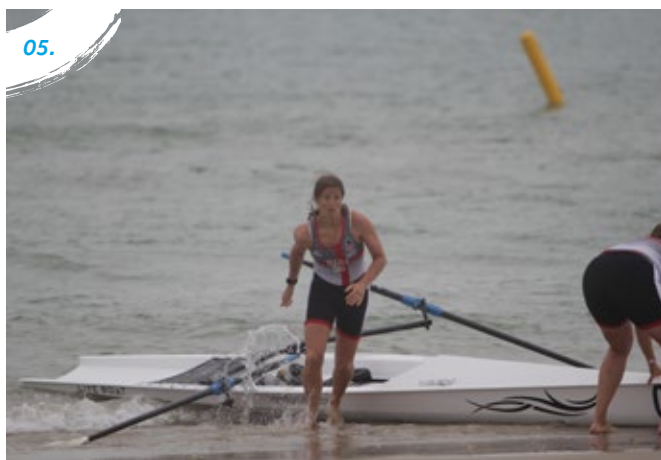
01. Bows touch the sand boat slows – feet are freed



02. Legs swing around 90° – pivot on seat



03. Foot plant, with weight transfer onto feet



04. Final 90° twist and acceleration into running.

endurance racing technique

In the endurance format, the crew race 4-6km thus technical and physical skills are crucial. As a coach spend time teaching the crews to recognize when and how to adapt their rowing style to different conditions.

In a strong headwind, bow waves or negative tide currents the crews need to use their skill to minimize the slowdown. In tailwind, stern waves or positive tides currents the

boat speed accelerates thus the rowing style/technique should change.

The start is either a mass beach start or mass water start. There is typically an advantage in getting into the lead group. The water tends to be cleaner and the potential for multi-boat collisions is less. Avoiding collisions with other boats at the first few turning point is important. Learn

how to use the wind and tide to position your boat to your advantage. See the diagram for an example.

The basic interference rules* say the crew being overtaken shall keep clear of the boat it is overtaking and the crew being overtaken shall maintain its racing line. It is worth noting in coastal rowing the fastest route is not always straight and it is common for blades to touch.

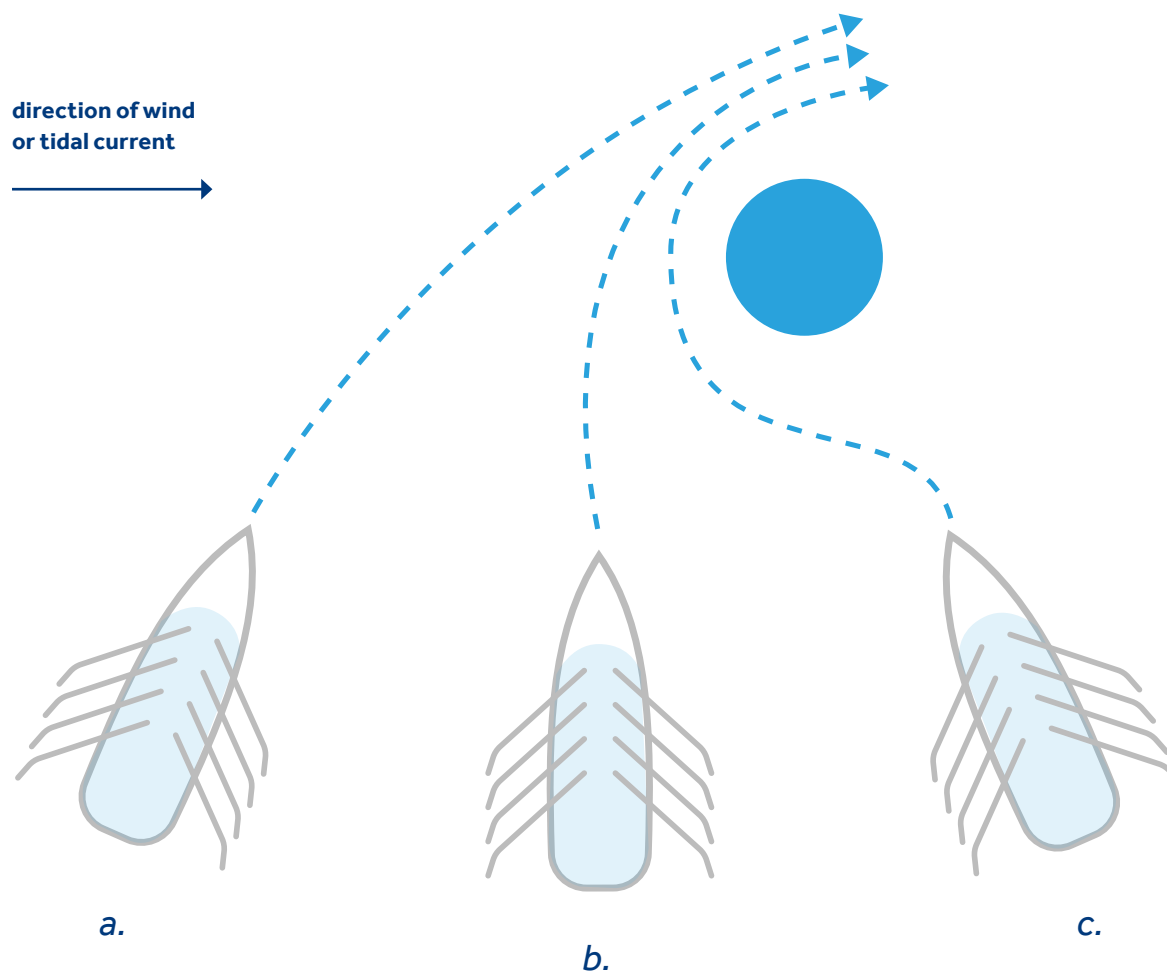
In endurance races, the course can be complex to navigate. It takes time and practice to become good at spotting distant turning points amongst the waves and visual 'clutter' of the shore. Build the skills of your rowers by setting training courses with different challenges and shapes. See the diagram on advice on laying buoys for training.

* See worldrowing.com for the rules.



keeping clear at a turn point

- a. This crew is in the most dominant position. It has the most options and the smallest risk of a time penalty or a crash. It will also be travelling fastest into the turn
- b. This crew has the fastest line. Is at risk from a penalty or a crash from at best one side at worst both
- c. This crew has misjudged the impact of the wind/tide on their steering and is forced to make a last minute correction. This is a high risk position and the crew should slow/stop to avoid a collision or penalty with boat B or A.



laying training buoys

here are some simple examples of turning marks and ways to measure distance on the water



beach sprint (1-5m depth)

- Cigar buoy with 15kg deadweight in pocket
- 10mm elastic rope (1-5m)
- 10-15kg deadweight (concrete bucket)
- Shackles



endurance (+2m depth)

- Large buoy with hanging deadweight 5kg
- Rope 2-3x the depth
- Anchor + chain
- Spinner for safety
- Shackles



measuring distance

- Beach sprint – use a laser rangefinder (see golf or shooting) as GPS is not accurate enough
- Endurance – use a GPS or a marine chartbucket

5.3. annual training

writing an annual training programme is a specialist area and beyond the scope of this booklet. as a coach you will need help with this if you have not written such a programme before.



the general principles are that the programme needs to provide:

- Progressive overload: a gradual increase in the volume and intensity of training.
- A focus on the goal activity. In early weeks the goal might be to improve skills, later to build endurance fitness, later still strength and last race skills.
- Continuous and regular training to maximise gains.
- Planned recovery between sessions.
- A means of measuring progress.
- A plan which uses phases. Within each phase there should be a menu of activities which will enhance the aerobic (endurance) and anaerobic (sprint) capabilities of your rowers. The phases alternate light, medium and heavy training weeks.

Both beach sprint (60-80%) and endurance (+95%) require a high level of endurance (aerobic) fitness. It is important to spend a high proportion of early training working in this less intense zone. For beginners, this would start with 20-30 sessions paddles

once the basic skills are in place. This would build gradually to 70-90 minutes sessions over a period of months.

Beach sprint also requires anaerobic training (40-20%), which would include power training, lactate tolerance and repeat sprint training. The beach sprint race is made up of 12% running, boat entry and exit, 83% rowing and 5% turning.

Hard sessions should be followed by light sessions to aid recovery or even a day off. Shorter sprint rows will be included in the training using the same progressive principle.

When designing a programme, build in transitions and turns related to the race format you are training for. Spend time on the technical aspects of starts, turns, on working the water and surfing waves.

Always be aware of stresses and strains in your rowers' lives as these can affect the quantity of sessions and the quality of their rowing.



6.0. boathouse

a boathouse could be as simple as an adapted shipping container near the water.



The smallest size boathouses are only suitable for storing spares and oars. The 12m container is the most useful, and with the correct adaptations, can be used to house a wide range of equipment including doubles and singles.

The container will need a solid level base to rest on. It may need some airflow if the atmosphere is humid, and a padlock or some protective fencing around it to secure the equipment.

Inside boats can be racked by securing thick metal gallows brackets to the outer wall.

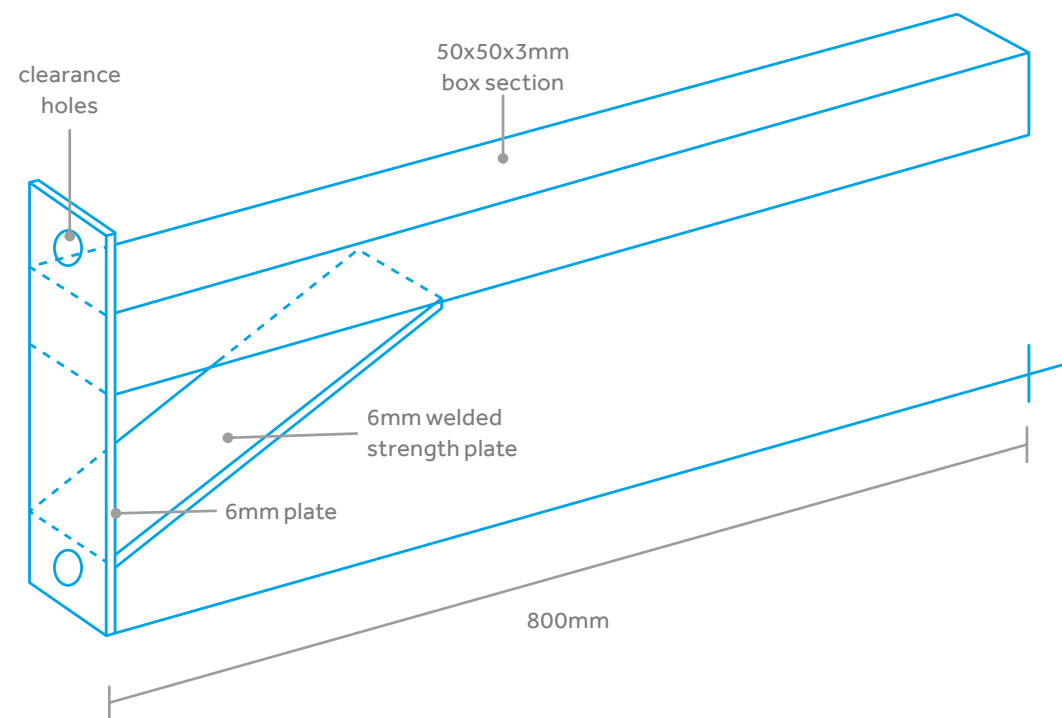
The diagram shows a bracket for a single. The horizontal box section needs to be at least 1000mm long for a double without the riggers on.



Boats must be racked in ways which are safe for the rowers and the boats so that neither are damaged. This means sufficient space for lifting and manoeuvring out to the water and a wide vertical gap between racks. Racking for oars is advisable and a space to store throw lines, spares, tools and first aid kit.

Containers can be very dark at the back and some battery powered lighting is useful.

A notice board can be attached to the door and used to display a map of the water, first aid technique, emergency telephone numbers and other local safety information.



6.1. coastal rowing boat hangar: suggested dimensions

container

Length: 12.19m (outside), 12.00m (inside)

Width: 2.45m (outside), 2.30m (inside)

Height: 2.60m (outside), 2.36m (inside)

boat measurements: 2CX

Length: 7.50m

Width: 0.92m with folding rigger
1.60m with fixed rigger

Height: 0.50m

Other: 1.35m distance between fin/stern boat

boat measurements: 1CX

Length: 6.00m

Width: 1.60m with fixed rigger

Height: 0.40m

Other: 1.25m distance between fin/stern boat

goals for boathouse in container:

Make it easy to get
heavy boats in and out;

Move the boats with
enough people to
make lifting easy;

Store as many boats
as you can safely.

pictured: boathouse American Samoa



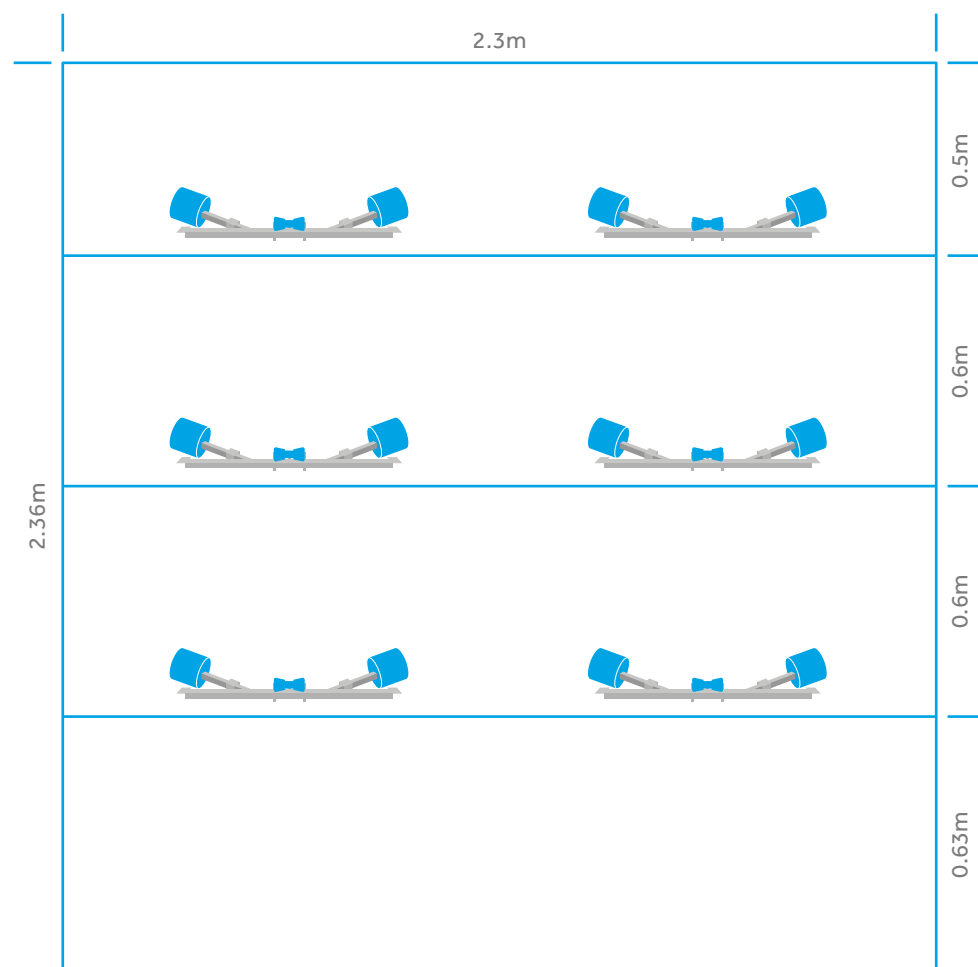


fig.1

There are many different designs for fitting boats into container boathouses. A good solution is suggested here (fig.1). The container is divided into floors and increases the number of stored boats by using wheeled carriages.

It is possible to have four floors in a container boathouse. This is achieved by fixing in three sets of wooden cross beams to the long sides of the container using strong bolts to support a chipboard floor on top of each set (fig.1).

- Put each boat on to a set of wheels. These can be made from shopping trolleys. The wheels need to support the boat at each end of the saxboard.
- Use the top three floors for singles and doubles leaving the bottom for heavy quads (fig.2).

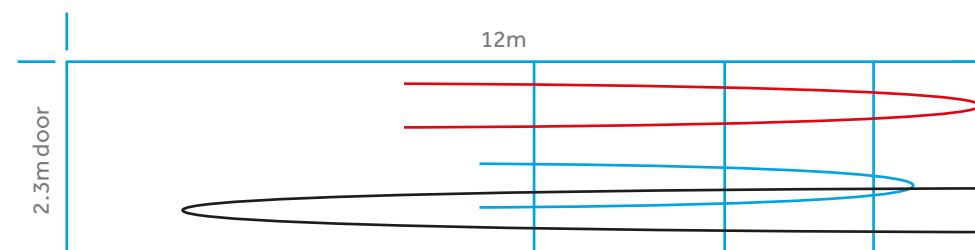


fig.2

in this example (fig.2):

- A rower can slide out a boat with a second rower lifting the far end as it emerges.
- Up to seven boats can be stored with six doubles or singles above a quad.
- There is room on the floor to store oars and other equipment.
- Rowers should be aware that lifting and carrying can damage equipment unless done correctly. They should be careful to avoid hitting riggers and fins because this can cause damage.

7.0. coaches toolkit

*some useful checklists, templates
and guides to help you.*



7.1. rescue drills

there are three rescue drills you want your crews to practice each year

the swim and float drill

For your beginners use a swimming pool with a lifeguard if you can. In rowing kit swim 50m, and keep their head above water unassisted for 3 minutes.

Immerse the head below the water, float for at least two minutes after putting on a lifejacket in the water. This drill is particularly beneficial for clubs that row on cold water as it will help rowers to cope with the cold-water shock. Less confident swimmers should wear PFDs. When running this session make sure you have a good ratio of coaches & lifeguards to rowers. If operating in moving and cloudy water, take extra caution. Consider using a buddy look out system and swimming along the shoreline.

capsize and re-entry drill

Have throw lines and dry clothes available if you are outdoors, or if either the air or the water is likely to be cool.

By getting your learners to practice in a safe environment you are making them able to cope

in open water. They will be more confident because they will know what to expect.

Practice in a solo boat. It is the easiest boat to tip over and also the easiest to get upright again. The skills that you teach can be used in bigger boats.

Here's how to do it:

[Capsize and recovery drill](#) ▶

[Safety capsizing](#) ▶

This basic drill can be performed in stages. Firstly without blades in the gates and feet on top of the shoes (the boat will need to be held steady). Next with feet in the shoes. Only when the learner is confident are blades put in the gates and the full drill practiced.

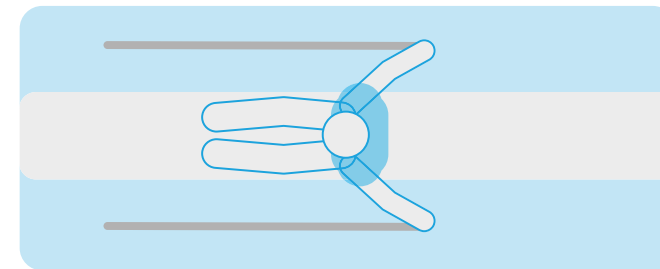
There are two re-entry methods, a belly slide up the stern or over the side. Both methods require the rower to keep their body weight low and a final twist into the rowing position.

It is important to teach them how to re-enter the boat and get rowing again.

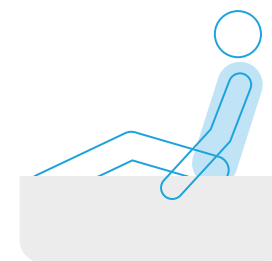
In cold climates this is a key rescue skill. Waiting to be rescued should always be a last resort. There is a risk that the boat may drift away from shore and further into danger. Capsized rowing boats are low in the water and hard for the rescue services to spot.

If you are not able to re-enter the boat, pull yourself onto the upturned hull to reduce the risk of hypothermia. A capsizer should only leave the boat if it is drifting into danger (e.g. if it is within a breaking wave line. In this case the rower could choose to push away from the boat to avoid being hit by the hull).

capsize practice



Push the handles behind you. Let go.



Anchor your hands on something solid. Lean over the side of the boat.



When you are upside down, release your feet from the shoes. Come up next to the overturned boat.



Push the riggers on your side down with your foot, whilst pulling the other side over and towards you.

Should someone fall out of a quad then a man overboard rescue is appropriate.

man overboard drill

- Crew stops rowing.
- Nominated crew member takes command to spot the man overboard and guide the crew back to the rower in the water by using commands to back down, turn or row on.
- Rower in the water is directed to the stern and helped to re-enter the boat there

to minimise tipping. An unconscious rower may be hauled over the side of a counterbalanced boat. To counterbalance one or two rowers, shift their weight away from the rower in the water towards the other side of the boat. Rocking the boat helps extract the rower from the water.

In a real capsized, coaches should not go into the water to rescue, you may become in need of a rescue yourself if you do!

towing

Instructors should learn how to throw and coil a line and keep one close by when they are teaching. If you haven't got a throw line at your boathouse find a rope 15-20 metres long.

When setting up a tow line, tie the tow line to the cleat on the bows. When towing a quad it is helpful to keep the cox in the boat

and slowly tow the boat to safety. Empty quads have a habit of not holding a straight line, the cox can keep the quad straight using the rudder.

In most cases the solo and double can be rescued by being placed on the top of the safety boat, rather than needing to be towed.



7.2. commands

coxes and callers should deliver commands which the entire crew can hear. this will involve speaking clearly and slowly as well as sufficient in volume to reach the bow rower. if this is not possible, then a rower in the middle of the boat should be instructed to repeat the commands.



some commonly used commands:

- 'Hands On': The coxswain is in charge of the crew when lifting the boat from its rack or trolley and this is the command to get everybody ready with their 'hands on' the boat.
- 'Number Off when Ready': This is used when the crew is in the boat and has pushed away from the shore or pontoon and are confirming they are ready to row. It is usual for each crew member to shout out the number of their seat, in order, starting with the bow seat which is number one. If someone is not ready then they will not shout their number.
- 'Go': A command only ever takes effect when the cox shouts 'go' to make sure that the whole crew acts together, e.g. 'hands on, are you ready, lift, go'.
- 'Are you ready': Used to make sure everybody is ready for the command which follows.
- 'Back down': Used to reverse the boat.
- 'From backstops': This is the command for a stationary crew to get ready to row. It makes sure that everyone starts in the same position, which is with the legs down flat and the handles at the body.



To get the crew to row the cox might say 'Whole crew, back stops, are you ready, paddling light, go'.

- 'Wind down/slow down': The order to slow the rate and ease off on the rowing pressure.

- 'Easy oar' means stop rowing. A good way for the cox to use this would be 'next stroke, easy oar' in time with the rowing so that the crew stop all together.
- 'Hold it up' means do an emergency stop and is used if the boat or crew are in danger of collision or accident.

more advanced:

When preparing to surf a wave the cox or caller will need to tell the crew to expect a change of rowing rate. This could be 'get ready to go with stroke' or 'wave coming, go with it'. The crew will harden up just before the bottom of the 'pull down' to catch the wave and then the stroke will build the rate as the boat accelerates.

7.3. dynamic risk assessment checklist

This checklist can guide a coach as part of an assessment of live risks during or just before going on the water. It should be used to support a club's generic risk assessment for the training location.

hazards:

water state		
01	swell/waves	<input type="checkbox"/>
02	water quality	<input type="checkbox"/>
03	wind direction	<input type="checkbox"/>
04	wind strength	<input type="checkbox"/>
05	depth of water	<input type="checkbox"/>
06	tidal current	<input type="checkbox"/>
07	other	<input type="checkbox"/>

wave break		
08	wave type (spilling/dumping)	<input type="checkbox"/>
09	wave break height	<input type="checkbox"/>
10	waves frequency	<input type="checkbox"/>
11	shape of beach	<input type="checkbox"/>
12	risk of bow piercing beach (up ending)	<input type="checkbox"/>
13	rip current	<input type="checkbox"/>
14	other	<input type="checkbox"/>

beach state		
15	beach condition	<input type="checkbox"/>
16	slope of beach	<input type="checkbox"/>
17	headlands, groynes etc.	<input type="checkbox"/>
18	seaweed/debris	<input type="checkbox"/>
19	rocks, pebbles, sand	<input type="checkbox"/>
20	other	<input type="checkbox"/>

weather conditions		
21	wind speed	<input type="checkbox"/>
22	visibility/available light	<input type="checkbox"/>
23	sun exposure heat/cold	<input type="checkbox"/>

other risk factors		
24	marine traffic/other water users	<input type="checkbox"/>
25	number of rowing boats	<input type="checkbox"/>
26	length of planned session	<input type="checkbox"/>
27	distance of from shore/nearest shelter	<input type="checkbox"/>
28	age, health and fitness of rowers	<input type="checkbox"/>

controls:

rowing boat		
01	suitability/condition of boat	<input type="checkbox"/>
02	suitable clothing	<input type="checkbox"/>
03	pfd/life jackets	<input type="checkbox"/>
04	tow line	<input type="checkbox"/>
05	grab bag (>1km)	<input type="checkbox"/>
06	radio & phone (>400m)	<input type="checkbox"/>
07	extra floatation (>1km)	<input type="checkbox"/>
08	fluids & snacks (>400m)	<input type="checkbox"/>
09	personal locator device/gps	<input type="checkbox"/>

safety		
10	lifeguard on duty (beach)	<input type="checkbox"/>
11	coach trained & first aid kit	<input type="checkbox"/>
12	specific safety/first aid cover	<input type="checkbox"/>
13	float plan shared (>400m)	<input type="checkbox"/>
14	safety boat & throw line	<input type="checkbox"/>
15	communication (radio, phone)	<input type="checkbox"/>
16	access to emergency services	<input type="checkbox"/>
17	shelters along route (>400m)	<input type="checkbox"/>

rower capability		
18	rowing skill level	<input type="checkbox"/>
19	experience in surf/beach	<input type="checkbox"/>
20	experience in harbour water	<input type="checkbox"/>
21	experience offshore (>1km)	<input type="checkbox"/>
22	support for specific needs	<input type="checkbox"/>
23	all completed swim test	<input type="checkbox"/>
24	beach familiarization	<input type="checkbox"/>

other factors		
25	safety briefing	<input type="checkbox"/>
26	crew captain appointed	<input type="checkbox"/>
27	equipment safety check	<input type="checkbox"/>
28	membership/entry form	<input type="checkbox"/>
29	signing out complete	<input type="checkbox"/>
30	welfare system in place	<input type="checkbox"/>

7.4. dynamic risk assessment template

date & time:	coaches/crew captain:
venue:	safety/lifeguard:

nature of water session:	
boats:	
rowers (numbers & group/experience):	

high tide:		forecast wind speed:	
low tide:		forecast wind direction:	
sunrise/sunset:		swell/wave ht:	
water/air quality:		temp (air/water):	

additional action required:

(beyond generic club/venue risk assessment and controls)

	hazard	additional controls	risk (L-M-H)
01			
02			
03			
04			

low	risk is low – no extra controls required – proceed with caution
medium	risk is medium – take action extra controls needed
high	risk is high – stop until hazards are reduced

checks and briefings			
float plan complete & shared (>400m)	<input type="checkbox"/>	beach familiarization complete	<input type="checkbox"/>
boat checks complete	<input type="checkbox"/>	session briefing complete	<input type="checkbox"/>
safety equipment checks complete	<input type="checkbox"/>	sign out complete	<input type="checkbox"/>
suitable clothing complete	<input type="checkbox"/>	radio/comms check complete	<input type="checkbox"/>

coach/crew captain signature:	
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coastal rowing

