

ARA Coxing/Steering Certificate Level 1 Resources





Coxing equipment; checklist

A Lifejacket	
In "front-loader" boats coxswains must wear manually operated gas	
inflation life jackets.	
Lifejackets should be checked regularly to make sure that they are	
complete and have been serviced.	
A charged and functioning voice amplification system	
Sufficient and correct layers of clothing for the conditions; warm,	
waterproof, windproof, not Wellington boots	
Hat for cold weather, or hat for sunny weather	
Sunglasses	
Tools; 10mm, 13mm, screwdriver, tape measure	
An outing plan	
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A coxing outing



Getting Afloat

1. Read the water! In which direction would you normally set off? Are there any conditions when this rule might change?

Always place the boat on the water with the bows pointing towards the wind/stream/tide, whichever is the stronger. Here are some ways in which you could tell which way the stream is flowing

• Look at it

- Debris
- Water swirling round obstacles
- Direction in which moored boats are pointing
- Watch the effect of conditions on other crews boating
- Observe any marked consistent differences in speed of crews in opposite directions
- 2. Keep the boat level during launching, i.e., the waterside riggers should not be submerged.
- 3. Ensure that the boat is not fouled by the bank/stage or by underwater obstructions pay particular attention to the fin/rudder.
- 4. Position yourself halfway along the boat to have maximum control and a good view of the boat and crew
- 5. Cox the side nearest the landing to lock their oars in place, and then to hold the riggers of the boat to provide balance whilst the people furthest from the landing get in
- 6. Cox those on the side furthest from the landing to lock their oars into the swivels before the near side people get in.
- 7. Check that the riggers are not resting on the stage and do not take any weight as the boat settles with the weight of the crew.
- 8. Having got the crew to check that all locking nuts are tight, decide whether to adjust stretchers by the bank or out on the water; this will be determined by conditions
- 9. You, the cox, should be the last person to get into the boat

During the Outing

When coxing, you are in command of the boat at all times.

You must take appropriate action in the case of an emergency without delay or hesitation to ensure the safety of the crew and others.

The crew must obey the cox!

Slowing the boat to a stop

Taking the run off

If one side drags their oars on the water, then this will help to slow the boat down and to steer it around to that side



An emergency stop

Crew members should be taught how to perform an emergency stop, following, the slap, bury and turn procedure.

Working with a coach

When being coached, you should work with the coach, allowing them sufficient opportunity to speak to the crew and coach them during the outing. The coach should in turn, allow you sufficient opportunities to talk to your crew, to instruct them, and to provide them feedback.

<u>You</u> should take charge of ensuring the safety of the crew and take responsibility for their position on the water, and the crew should follow <u>your</u> instructions.

Brace yourself!

The boat will surge forwards during the drive phase of the stroke. Try to minimise any body movement in the boat by a rhythmical bracing against this surge and get yourself as comfortable and relaxed as possible. This will help to prevent any uncomfortable forwards or backwards movement, and prevent injury to your back!

Keep a good lookout!

Familiarise yourself with the water, navigable hazards, circulation pattern and advice regarding other users. Plan course corrections on your waterway well in advance. Rowing boats respond slowly to rudder control. Keep a good lookout ahead for known and unknown hazards and other users so you can take avoiding actions early.

Coxes have been known to collide head on with quite large objects such as moored boats, buoys and moving barges as a result of either one or both parties not keeping an adequate lookout. It is good practice to lean out of the boat periodically and on either side of the boat in the drive phase to improve your field of view and check for approaching hazards

Landing

- 1. At the end of the outing when approaching the land you must ensure that the boat is travelling against the wind/stream/tide (whichever is stronger) in order to have the maximum manoeuvrability.
- 2. Learn to judge your speed appropriately for the conditions and gauge your speed when in different boats. Too much speed and you risk hitting the landing stage, overshooting and possible damaging the equipment and crew. It is easier to increase your speed than to slow down, so it is better to err on the side of going slower than a bit too fast! Slow the boat down well in advance by combinations of reducing pressure, using less slide/rowing at fixed seat, or just getting some of the crew to row whilst others sit the boat.
- 3. When you are learning how to land the boat it is a good idea to have a coach or someone else on the bank who can assist you with the final approach, to pull the boat in when the boat is within an oar's length of the landing stage, and to hold the boat while you get out followed by the crew.



Getting out of the boat

- 1. You should be the first out of the boat and should then hold the boat level by one of the riggers close to the centre of the boat, preferably in the bow half of the boat.
- 2. Command the rowers nearest the landing to get out first and hold the boat. The oars of the offside crew members should then be removed and their gates fastened. The offside crew members can then get out of the boat, then the nearside crew can remove their oars and fasten their gates.
- 3. You should position yourself so that you can see that all of the crew are lifting correctly, this will normally involve standing midway along the boat, a few paces back from the boat. The boat should be lifted from the water using good lifting technique, ensuring that the riggers are not submerged.
- 4. Light boats can be lifted first to waists and then swung above heads in unison by the crew. Where the boat can be safely lowered, you can then command the crew to split to sides and lower the boat to shoulder level. It may be appropriate to carefully step backwards away from the slippery water's edge before swinging the boat above heads and manoeuvering it.
- 5. Heavy boats can be lifted to waists, and then half the crew can, one at a time, cross around to the other side of the boat and take hold of the upright boat. The boat can then be rotated before being lifted to shoulder level.
- 6. The boat should be turned and placed on trestles away from the launching area, so as not to obstruct other crews coming in to land.

Checking the boat

You should help to inspect the boat for any damage whilst the crew are collecting their oars and washing the boat.

Putting the boat away

When the boat is being put away you must ensure correct lifting technique and ensure that the boat and blades are put away safely without damaging them or other equipment.

Charging the coxing amplifier

As a cox, you should make sure that the amplifier for the speaker system is connected to recharge for the next outing.

Debriefing after the outing

You have an important role in discussing the outing with the coach and crew. Your comments, and observations are essential in maximizing the improvement of the crew and should be respected.



Safe lifting technique



Ensure correct lifting technique when getting the boat to and from the water!

Correct lifting technique is like correct rowing technique, as good posture is important. It should be taught to all for lifting boats, and equipment such as coaching launches.

When lifting, make sure that you have a firm base of support on even ground, and that there is nothing slippery underfoot.

Bend your knees to reach down to lift, and keep your back straight. When lifting use your legs to raise the weight of the boat up from the ground and down to the floor or rack, not your back!

Boats that are sometimes used by novices may be heavy, in which case it may be appropriate to get additional help from people other than the crew to lift and carry the boat.

You may be able to get some members of the crew on the opposite side of the boat before you lift it from a rack, which can help when lifting.

A boat lifted from a high rack

- △ Make sure that you have a strong base of support on which to stand if you need to gain extra height to reach the boat
- △ Can you roll a small boat such as a pair or double down to shoulders?
- △ Can a larger boat be passed above heads and carried out of the boathouse upside down at shoulder level, with crew members on both sides?
- △ Many boathouses may not be wide enough to carry the boat out level and you may have to carry the boat out at a quarter turn or half turn





Seek advice on the best way to manoeuvre the boat out of the boat house or from where it is stored.

If it is stored on a rack, is there sufficient room to take the boat out without catching the riggers of the boat above or the hull of the boat below?

You may have to put a wedge under the saxboard of the boat above to tilt the boat and allow more clearance underneath its riggers. You should remove the wedges to put the boat back on the level when your boat is out, and then replace them when returning your boat to the rack and take them out again afterwards.

Racks that slide in and out are available, which makes getting a boat out from a rack under other boats much easier

Wheeled trolleys can be used for boats stored under the lowest racks of a boathouse

Some boats may be too heavy to carry and require launching from a wheeled trolley or trailer



Carrying a boat

You can carry a boat at waist level by holding onto the saxboard, at shoulder level, where you can hold on to the boat and rest the saxboard on your shoulder, or above heads.











Swinging a boat above heads together



Having lifted the boat step back from the edge together



Listening to the cox's commands



"Swinging above heads on 1...1"



"....2...."
Then split to sides to carry the boat



at shoulders or waists

"3....."



Advantages and disadvantages of stern vs bowloaders.

Stern loaders

Advantages	Disadvantages
You can see what the rowers' bodies and oars are doing in front of you	Rowers bodies cause a large blind spot in your view of what is ahead, so you must keep a good lookout well in advance
	The hulls of some boats are very narrow and it may be difficult to sit comfortably



Bow loaders

Advantages	Disadvantages
Allow a clear view of the course ahead	You can't see what the rowers are doing so it is difficult to give technical feedback
You are lower in the boat, which can contribute to a lower centre of gravity for the whole boat	You are lying next to the hull and can get wet from any water in the boat
	The position can be cramped
	Your head and neck can be in an uncomfortable position





Coxing Commands

Taking the boat from the rack and out of the boat house:

Turking tire beat i	
Hands on!	Position the rowers in the most suitable position for the boat and
bow side under!	the rack. You may need additional hands if the boat is heavy or
Are you ready?	difficult
(pause) lift!	With novice rowers, ensure that they know which position in the
	boat they will be sitting in!
	Position yourself to see all of the boat and ensure that it is lifted,
	not dragged off the rack. Check that the boat is clear of other
	equipment
Half-turn!	Ensure that the riggers are manouevered to clear other craft, that
Level!	the crew is in step and the boat balanced, so that the exit from
	boathouse is safe.

Turning boat over:

Port side riggers coming up and over	
turn!	

Putting boat on water:

Bow side holding, stroke side going	Duck under quickly and hold something
under	substantial i.e. the shoulder of the boat
	not the slide
Feel for the edge	(of the raft with your toes!).
Keeping outside riggers clear of water -	Ensure the boat is lifted well out, and that
lower!	the fin and rudder are clear.

Launching:

Stroke side oars in!	Get the crew on the side nearest the
	bank to put their oars in
Stroke side holding	The crew nearest the bank should then
	hold the boat
Bow side getting in. Hands across. One	Whilst the other side get in by placing
foot in together!	their hands on either saxboard, with the
	same weight on each arm, and the foot
	nearest the boat onto frontstops.
Bow side oars in!	Having sat down the crew in the boat
	boat put their oars in the swivels.
Strokeside getting in	The rest of the crew get in, whilst the
	cox continues to hold the boat.
Number off when ready	Give the crew time to check and adjust
	and you can check that the cox box is
	working
One hand on the stage, pushing	When the crew are ready, you can get
Off, go!	into the boat, check the water is clear
	and push off.

Moving Out and Paddling off:

2 & 4 paddle on, go!	Use whichever crew members are needed
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	to move the boat away from the bank
Easy all,,,,drop	Check the water is clear again and the
	boat is pointing straight in the direction
	you want to go, and you are in the right
	place on the river.
Whole crew come forward, paddling	Pause to ensure they are ready
light, are you ready?	
Go	Start rowing and move smoothly away.

Stopping (normal):

Otopping (normal).	
Next stroke, easy all	Call the "Easy" as the spoon goes in -
	"All" as they are extracted.
Drop	The rowers lower their spoons onto the
	water.

EMERGENCY STOP!!!

Hold her all!	The spoons are feathered and slapped on
	water.
Hold her hard!!!	The spoons are slapped, buried and held,
	then reversed in water.

Varying the pressure:

Building up to firm pressure in 3	May be called over a number of strokes
Next stroke	
Go	

Turning round:

Turn starboard side pulling on port side	Or other way round depending on stream.
backing down alternately	
Are you ready / go!	Boat to remain level.
Easy all!	When boat turned.

Manoeuvring

The needs will vary according to water and wind conditions

Starboard side	
Or TWO / BOW	
Back it down	
Two strokes / continuous paddling	
Are you ready /	
Go!	

Manoeuvring (sideways):
To be used with strong cross-wind on stakeboats or when getting boated

To be used with strong cross-wind on stakeboats of when getting boated	
3 row with 2's oar	3 reaches round to take 2's handle which
	2 pushes forward for him. 3 then takes
	short strokes, pushing the water away
	from the hull and moving the boat to
	starboard side. The remaining crew
	members keep the boat level.



Rowing in rough conditions or wash:

Next stroke	
Feather high	Open up the circles tapping down lower
Go!	with the outside hand prior to feathering
	to clear wash.

Landing

Port (starboard) side	Steer at an angle to stage. Come in
	upstream/up-wind dependant upon
	relative strengths.
Feather high	Use outside oars to steer/hold or avoiding
	obstructions on water surface.

Getting out:

_ coming can	
Port (starboard) side out	Side with oars ashore get out first and
	then hold the boat for the rest of the crew
	to disembark. Remaining athletes undo
	their gates whilst still in the boat.
	Remove their oars and redo the gates.
Starboard (port) side	Remaining crew step out.

Lifting out:

Hands on!	Toes on the edge.
Are you ready?	One hand in and one under the hull.
Lift	Hold something solid i.e. shoulder.
Hold her port (starboard) side	Move quickly and get opposite riggers.
Under starboard (port) side	





Steering and manouevering; a guide for coxes and steerspersons

How the rudder works

Rudders act to turn the boat through a combination of lift and drag forces through deflection of the water as it moves under the boat. Rudders are often quite small in comparison to the size of the boat. This means that rudder corrections for course change have only a small effect but also the boat will continue to turn for a short period after the rudder is returned to neutral. You will therefore have to plan your course well in advance. A series of small corrections with each drive phase of the stroke will be more effective than attempting one large correction!

If the boat isn't moving through the water the rudder doesn't work!!

Steering will slow the boat down

- Moving the rudder from its straight alignment causes rudder deflection drag, this will slow the boat slightly.
- When the rudder is applied it moves the stern of the boat round.
- The boat will act as if skidding i.e. it will move forward at an angle to the direction of motion, which will also slow the boat.
- The action of the rudder has little effect on the bows and this action results in an apparent delay before the boat steers.
- The longer the boat, the longer is this apparent delay.
- A steering effect on the boat will continue after the rudder has been returned to the straight position
- As the boat turns, water will pile up on one side of it; which can upset the balance.
- If the rudder is turned too much its turning effect can be lessened at it can act like a flat plate being dragged through the water.

When to steer

Should the rudder be applied when the oars are in the water, when they are out of the water or all the time?

The art of good steering is to upset the rhythm as little as possible.

The bigger the rudder the easier it turns the boat and the more it upsets the balance.

The faster the boat moves the more effective the rudder becomes.

If the rudder is applied when the spoons are out of the water, it acts efficiently but will upset the balance.

If the rudder is applied with the spoons in the water it is less efficient but will also upset the balance less.

Since any balance upset will affect the rhythm and efficiency of the crew, the rudder should only be used when the spoons are in the water.



Steering hints

- Use the rudder as little as possible.
- Apply the rudder at the catch and take it off at the finish, i.e., apply the rudder in a series of squeezes. The rudder should be straight when the spoons are out of the water.
- Try to anticipate the steering so that the rudder can be used little and often, rather than late and/or continuously.
- Apply the rudder gradually when starting a turn, and more when the turn has begun
- Aim at a distant object so that corrections can be kept as small as possible.
- The boat will roll to the outside of the turn and a good cox will warn the crew about this.
- Applying the rudder too quickly too soon, or too much, can cause it to "stall" in the water; the boat will drag the rudder through the water and it will have little turning effect.

Steering in windy conditions

In conditions of a cross-wind (side-wind) keep the bows of the boat pointed slightly into the wind. Although "crabbing", i.e. skidding, the boat will nonetheless move forwards in a straight line.

Using the current to steer

- Going upstream
- Going downstream

How do you manoeuvre the boat to avoid it filling up with wash from other boats?

Putting the boat side on to the wash will make it rise up on the wave, pointing the bows through a wave will cause the wave to run down the length of the boat and fill it up with water.

Manoeuvering the boat

Key points; BE AWARE OF RISKS WHEN TURNING

- If turning near bridges always do so downstream. If you turn upstream of a bridge you risk being swept onto it.
- Always turn well upstream of any bridges or weirs

Stopping!

The emergency stop

The sequence of the emergency stop is slap, bury and turn.

- 1. Slap the back of the blades on the water
- 2. Lift your hands to let the blade bury in the water
- 3. Turn the blade so that the driving face is facing towards the bow as if backing down

You should have practiced emergency stops in whichever boat type you are in.



Turning (Spinning) the boat.

You can turn the boat around in a number of ways

- Individual crew members of pairs rowing/backing down whilst the others sit the boat
- One side rowing only (this will require a wide turning circle of the boat to get all the way round)
- One side backing down only (see above)
- Alternately rowing/backing down
- Spinning in synch on the chop (chop turns)
- Rocking and chopping; rocking the boat from side to side and chopping at the same time.

Using the same type of turn may not always be appropriate; for example, with a novice crew, it may be more appropriate for some to sit and balance the boat whilst the others do the turning manoeuvre. It may be wise in poor conditions to have the extra stability of crew members sitting the boat.

Chop turns may be a good exercise for coordination and balance but may take longer than alternate rowing/backing down, and the boat may drift during this time towards a hazard.

Other manoeuvering skills using the crew that coxes should be trained in include;

- **Taking the run off;** If one side drags their oars on the water, then this will help to slow the boat down and to steer it around to that side. Both sides dragging their oars will slow the boat
- Backing down
- **Reversing to a point;** this is an essential skill for backing onto a stakeboat. You can pick a point such as a buoy or a point on a landing stage and practice reversing the boat towards this point and holding the boat in position.
- **Passing an oar handle forwards** to row sideways; sometimes called "scratching" where for example, bow passes their handle to 2 so that their blade is parallel to the side of the boat and used to manoeuvre
- Holding a position in the current learning to maintain a position in different conditions is and important skill to avoid other craft and to hold steady e.g. in preparation for a race start or when marshalling.
- Using the current to steer learning what effect the stream has when rowing with or against it when steering helps to anticipate its effect on your route.
- The ferry glide; involves angling the boat at about 30 degrees to the current and rowing sufficiently to maintain position backwards and forwards, whilst progressing across the river. This can be useful when approaching a jetty.
- The reverse ferry glide; involves pointing the stern at about 30 degrees to the current and backing down to cross the river in the same manner. The ferry glide and reverse ferry glide can be useful when approaching a jetty or to hold position in the stream.

Manoeuvering in windy conditions

You should always launch the boat with the boat pointing into the strongest force, be that wind, stream or tide.



When manoeuvering, a side wind may blow the boat towards or away from the landing. You should account for this when launching, to avoid the boat being blown out of reach or being blown onto the landing stage or rocks and damaged. When landing too, you may have to account for the effect of wind, when judging your speed and approach.

When turning, always make sure that the wind/stream helps turn the boat rather than having to work against it.

Guidelines on steering when rowing or sculling

Steering a single

Make sure that you look over **both** shoulders for upcoming crews or obstacles. Even on familiar water you need to maintain a good lookout to avoid colliding with unexpected obstacles such as moored boats that may have appeared and overhanging branches.

Steering a pair.

In a pair the overall length and outboard length of the blades are longer. This will mean that you can exert quite a lot of leverage from either position to aid in the turning of the boat.

In a pair, you will also have to give yourself a bit more room in a narrow lane or waterway to avoid hitting obstacles.

A pair has a rudder to help you turn the boat. You should make small movements and then return the rudder to the straight position. Steering just when the blades are in the water can upset the balance less than steering when the blades are out of the water.

Pay attention that your foot isn't turning unintentionally at points in the stroke, and affecting your steering

Steering a double

In a double both scullers can vary the pressure on either side of the boat to steer the boat.

A double may be going faster than a pair, and so you may approach obstacles at greater speed, and will have to start thinking about steering more in advance

Steering a coxless quad or four

Coxless fours and quads are faster moving boats and you will have to anticipate steering well in advance, and look round suitably often to account for the fact that you are travelling faster.

A coxless quad is the fastest of the coxless boats, and you will approach obstacles much faster than in a pair or a double and so will have to start thinking about your positioning on the water and your steering well in advance.

The steering foot in a coxless four can usually be set up in any of the positions



Steering from bow

Steering from bow can give you a less obstructed view of what is ahead of you, which may be advantageous on river courses with bends

Steering from stroke

Steering from stroke can allow you a less obstructed view of what is behind you. On a straight line buoyed course this might help you to steer in a straighter line down the course.





Coxing/Steering; Attaching to a stakeboat

What's a stakeboat?

A stakeboat is a boat, or pontoon that is used to hold the stern of each boat at the start of a side by side race.

Getting attached to the stakeboat

The aim is to place the stern of the boat at the end of the stakeboat, so that the boat is pointed in the right direction and then to maintain this position.

Approaching stakeboat starts

The crew should be attached 2 minutes before the start time



This picture illustrates how, when attached to a stakeboat, one member of the crew can pass the handle of their oar forward.

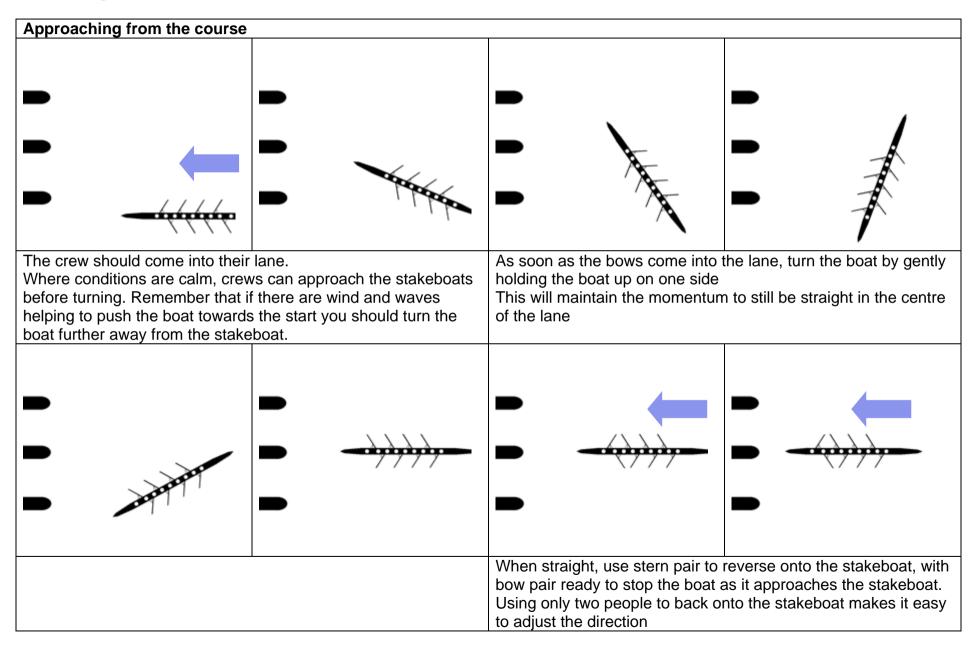
The person infront then uses the oar to row the boat sideways.

This is sometimes known as "scratching"

The crew should know how to do this technique as it is important for maintaining your position when attached to a stakeboat, particularly in conditions where there is some stream, or a crosswind.

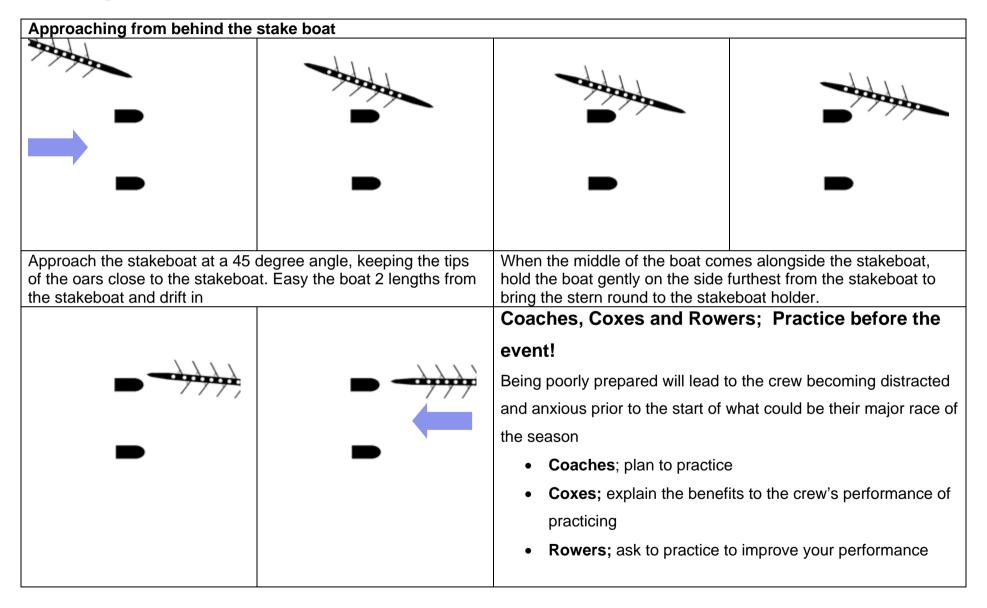


Attaching to a stakeboat





Attaching to a stakeboat





Further possible scenarios

With Tailwind and/or with stream start

- Approaching from the course;
- You can approach the start more closely before turning as the wind/stream will tend to push you away from the stakeboat
- You may need to use the whole crew to reverse to within one length of the stake boat, and then use stern pair to manoeuvre as above.
- · Approaching from behind the stakeboat
- Easy the boat 2-3 lengths before the stakeboat and then continue as above; The wind/stream will tend to push you towards and then away from the stakeboat more quickly than you may expect. As the middle of the boat passes the stakeboat, you may have to hold the boat harder than normal

Against headwind and/or upstream start

- Approaching from the course
- As the wind/stream will tend to push you towards the start, you should begin turning the boat further away from the start
- Also; stern pair may need to manoeuvre more by rowing on, rather than backing down.
- Approaching from behind the stakeboat
- Easy the side furthest from the stakeboat and continue to paddle on the side nearest the stakeboat to counter the wind's effect on the boat speed.

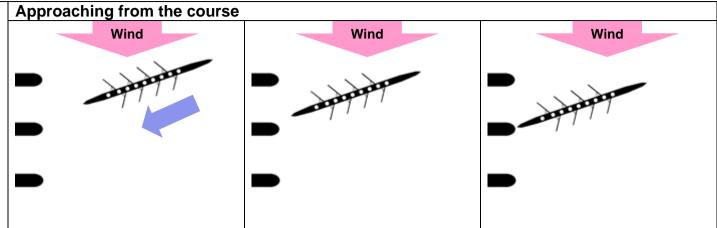
on the stakeboat!



Attaching to a stakeboat in a crosswind

A cross wind will tend to push the boat across the course or away from pointing down the course

Observe previous races and listen to the procedures used by the umpires to align and start the race. Listen to the gaps between the attention and go. This is the time available for the wind to move the bows of the boat. Allow for this when aligning the boat on the start.

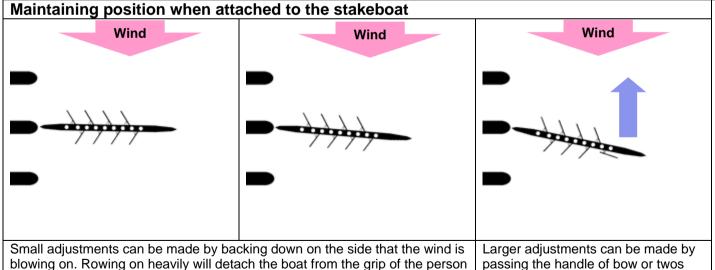


blade forward so that two or three can use the oar to row the boat

sideways

Approach from the windward side, (the side of the stakeboat that the wind is blowing on) so that the wind will help to blow the boat across to the stakeboat

Reverse, aiming for the windward side of the stakeboat Keep the bows pointing into the wind somewhat



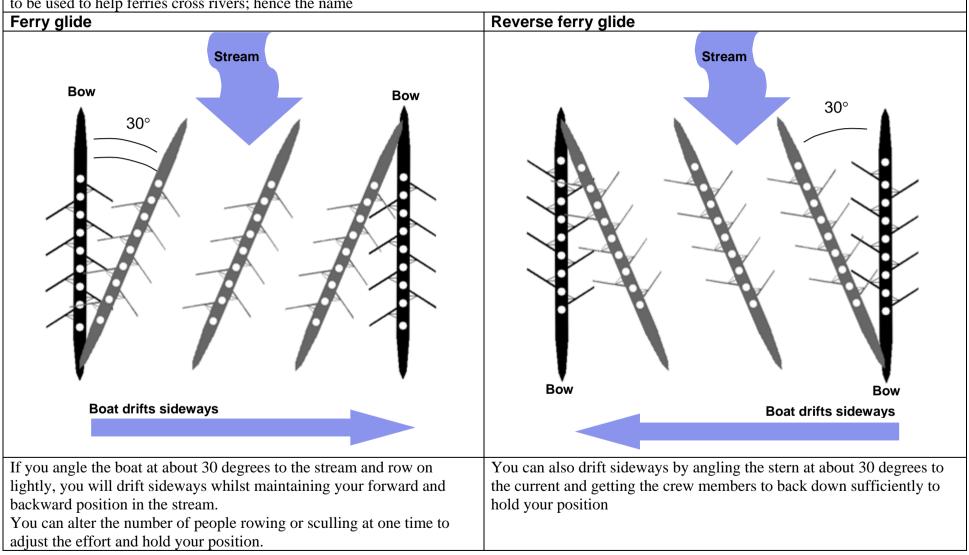
Approaching from behind the stakeboat

- Approach from the windward side
- Leave more room between the tips of the oars and the stakeboat
- Approach straighter and then steer towards the wind at the last moment so that the stern moves onto the stake boat and the bows point into the wind



The ferry glide

You can use the stream to help you manoeuvre the boat sideways across the river. This can be particularly helpful when manoeuvring, and it used to be used to help ferries cross rivers; hence the name





General points to remember

Respect the dedication of the volunteers on the stakeboat. Their role is to hold the stern of the boat Do not become annoyed with them

Alerting the starter to the fact that the boat is not aligned

Only raise the hand if not ready

If not straight, inform the crew "hand going up" BEFORE raising the hand, so that the rest of the crew is aware what is happening. Once straight, say to the crew "hand going down" BEFORE lowering the hand.

All changes of direction should be done with small strokes to avoid pulling away from the stakeboat The umpires will normally try to help in difficult conditions; follow their instructions

Reversing;

When reversing, keep the rudder lines taut, otherwise the rudder will flip and this will cause problems. The best way of straightening a flipped rudder is to move the boat forwar



British Rowing Technique for Coxes

When you are coxing, you can make full use of all of your senses; as well as what you can see, you can get feedback by listening to the sounds of the stroke and by feeling the movement of the boat underneath you on both the drive and the recovery. If you are coxing in a bow-loader, you will have to use hearing and feeling as you can't see what the rowers are doing behind you.

When you are coxing, what cues can you pick up on to tell whether the rowers in your crew are following some of the key principles set out as Part of British Rowing.

1. What can you see?

Is the boat balanced?

- Look at the level of the saxboards are they horizontal?
- Look at the riggers; are they horizontal?
- Does the level of the boat change throughout the drive or recovery?
- Can you feel changes in your sitting pressure from side to side during parts of the stroke?
- Is *your* body relaxed or tense

Postures of rowers?

- Are the rowers sitting up and looking ahead?
- Can you see individuals leaning away at the finish?
- Are the rowers in the stern that you can see, achieving all their body lean by half slide? Are they in a strong position throughout the drive and the recovery?
- What is their sequencing of movements on the recovery?

Distance per stroke?

- What is the distance travelled between strokes?
- How far does the boat travel in relation to where bow's blade was extracted? Where is the puddle from bow's oar in relation to the stern?
- Look for changes in distance per stroke with increased rate; distance per stroke will decrease somehat with increased rate
- You should look to check that an increase in rate is associated with an increase in boat speed!

Timing at specific points of the stroke?

- Are the blades placed in the water at the same time, or are there differences in timing?
- Are the blades extracted from the water at the same time?

Dynamic timing?

- Is the dynamic timing; the speed and pattern of the movement of the visible outboard length of the oars, the same amongst members of the crew? You can look at the movement speed and height of the looms of the oars on the recovery. Are these consistent?
- Is the pattern of feathering the same?
- Feathering; is water flicked up from the oars; does feathering begin before the blades are extracted square for as long as possible.
- Look at the heights of the blades throughout the stroke (drive and recovery); are these consistent?



2. What can you hear?

Listen to the timing?

- Can you hear one noise or many noises when the blades are placed and extracted?
- Feathering/squaring; listen to any noise that might be made when feathering/squaring as a guide to the timings of when these start/end

Listen to the balance

- Can you hear the blades hitting the water on the recovery?
- What can't you hear? Can you hear other noises around you at different points in the stroke, e.g. the run of the water under the boat.

3. What can you feel?

Feel the balance

- Is the boat balanced?
- Feel the pressure that you are exerting on your posterior; are you sat evenly or are there differences between left and right pressures? Are you leaning to one side?
- Does your body feel relaxed?

Feel the acceleration in the drive and the run in recovery

- Feel the contact between you and the boat.
- Can you feel the boat jerking forward or backward on the recovery? Does this
 suggest a poor control on the recovery and when placing the blade at the catch.
 Can you feel the pattern of acceleration of the rowers towards you on the
 recovery.
- Is the "run" of the boat, the acceleration following extraction and a minimal change at the placement of the blades smooth?