

Nairn Coastal Rowing Club

Cox's Handbook



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1 Introduction

The aim of this handbook is to provide information for anyone wanting to become a cox with Nairn Coastal Rowing Club. It details the approved pathway to becoming a cox, a list of the skills that you are expected to be both competent and confident with and information to help develop those skills.

The cox in a rowing skiff is a responsible position to be in and requires knowledge of tides, weather, seamanship, rowing techniques and good personal interaction with the crew. Whilst you don't necessarily need to be a rower to be able to cox, it definitely helps to have a good understanding of how to row and what you might be asking of the crew.

Coxing the skiffs is something to be encouraged for all club members as it helps us to get more people out rowing, which is one of the aims of our club.

2 Pathway to being a club cox

- Buddy cox in a variety of conditions and with different coxes to help gain the necessary skills and confidence.
- Attend the Cox Training Course.
- Ensure you are competent and confident with all of the Cox Competencies.
- When you are ready, arrange a row with one of the lead coxes for a review. Then, assuming that this is satisfactory:
- Cox a few rows with a more experienced cox either in the skiff with you but giving you full control, or, preferably, in the other skiff on the same session. 'A few' rows might be 2 or 3, or it might be 5 or 6, depending on the individual.
- Continue to develop your skills and experience by coxing in different conditions and by learning from other coxes. As always, only cox in conditions that are within your capabilities and that of the crews that you are coxing.

3 Cox Competencies

Nairn Coastal Rowing Club Cox Competencies	
Radio Know how to use the radio to:-	do a radio check
	speak with another skiff and shore using recommended protocols.
	call the coastguard (channel 16)
	send a DSC distress signal (automatic Mayday)
	send a Mayday call
Other emergencies	Be able to manage an emergency situation such as a rower falling ill, including how to call for help.
Tides	Know how to find the state of the tide using apps, tide tables etc
	Know the difference between Spring tide and Neap tide.
	Be familiar with how sea conditions and rowing conditions can change with tidal height
	Be familiar with different tidal flows in our rowing area eg in the old bar lagoon
	Know how the height of the tide can affect where breaking waves can occur over sandbars.
Weather	Be familiar with at least one way of getting a weather forecast for the Nairn area, for example the Met Office.
	Understand how the weather will affect rowing conditions, particularly the direction and strength of the winds.
Sea State	Know how to judge the prevailing sea state, taking into account the direction and height of any swell, wind formed waves, white horses and tidal state, and how this affects rowing conditions

Nairn Coastal Rowing Club Cox Competencies	
Judgement of conditions for rowing	Take account of the wind, tide, any swell and the resultant sea state, the state of the river with regard to high flow, any debris from recent high rainfall or strong winds, together with knowledge of crew competency to judge whether it is safe to launch the skiff and if so whether to stay in the river or go out to sea.
	If going out to sea, know where it is safe to row for the prevailing conditions, ie which direction, avoiding possible breaking waves over sandbars etc
Launching and recovering the skiff	Be able to direct the crew to launch the skiff from the slipway.
	Be able to competently manoeuvre the skiff around the harbour, out into the river and back.
	Be able to competently manoeuvre the skiff to tie up alongside a pontoon and the slipway.
	Be able to direct the crew to safely recover the skiff from the slipway.
Taking care of the crew and yourself.	Be able to make the row enjoyable, safe and comfortable, taking account of weather conditions and the ability of the crew.
	It is desirable, but not necessary, that the cox can run a coached session to a greater or lesser extent, ie be able to critique technique, know how to rectify poor technique, how to give, for example, an appropriate interval session, endurance session or whatever might be appropriate for the crew and/or conditions.

4 Information for Coxes

4.1 Radios

4.1.1 Normal Operation

- The cox should know how to use the radio for normal use and in case of emergency.
- Be able to configure the radio to the correct channel (currently channel 8) set the volume and squelch levels and know how to Lock/Unlock the radio, check the level of battery charge and do a radio check before using it in the boat.
- Press to Talk, Release to Listen
- Say the name of the boat/person you want to talk to first followed by who you are. 'Over' means you've stopped speaking and are awaiting a reply. Out means you've finished talking and aren't expecting a reply.

Eg.

- "Dulsie, Dulsie, Dulsie, this is Esther, over".
- "Esther, this is Dulsie, go ahead, over".
- "Dulsie, we're heading back to the harbour because it looks like the wind is picking up, over".

- “Esther, understood. You’re heading back to the harbour. We’ll return also, Dulsie out”

It’s important to keep chat to a minimum as the radio system is public and anyone with a VHF radio can be listening. It’s also good practice to repeat back what you think you’ve heard in case you’ve misheard or misunderstood what was being said.

4.1.2 Using the radio for emergencies.

For life threatening situations use the automated calling system followed up with a Mayday call on channel 16.

- Switch to CHANNEL 16
- Press and hold transmit button and say:
- **MAYDAY, MAYDAY, MAYDAY**
- **This is DULSIE, DULSIE, DULSIE**
- Mayday, St Ayles Rowing Skiff Dulsie
- My position is (eg) 2km west of Nairn Harbour approximately 500m off shore

- We are (eg) capsized, five persons in the water. (Eg) we have one person with suspected heart attack. We require immediate assistance. There are five persons on board.
- **OVER.** Wait for a response.
If no response then repeat.

4.2 Tides

Our rows are normally scheduled for approximately 1 or 2 hours before high tide. This is because we almost always use the slipway to launch the boat so we need high water to launch the boat, row in the river to reach the sea and also to recover the boat afterwards. As a general rule we can comfortably launch and row within a window of two hours before and after high tide.

The tide changes between high and low every six and a bit hours. The level of the tide varies each day and follows an approximately four weekly cycle. The spring tides coincide with either a full moon or a new moon (no moon) and give the highest high tides and lowest low tides. The neap tides coincide approximately with the half-moons between full and new moons and give the lowest high tides and the highest low tides. The times of the tides also depend on whereabouts in the country you are. Fortunately, all of this is very predictable, and there are many ways of finding out when, and how high or low the tides are. The most convenient are probably the many apps that are available. When using these apps it's important that your location is input correctly. Different apps use slightly different reference locations within the Moray Firth and may give slightly different heights and times, but in reality, any reference

location within the Moray Firth is adequate for our purposes, it doesn't need to be specifically Nairn.

Apart from being able or not to launch the boats from the slipway, the biggest effect the tides have on our rowing is the height of the water above the sea bed around the river mouth and above the various sandbars off our shore. The height of the tide combined with any swell can result in breaking waves in many areas, which can be very dangerous. The most noticeable of these is the sandbar that extends westwards from the established dunes at the Old Bar in a line parallel to the shore. Conditions can change rapidly and it is an area to be avoided when there is any significant swell. It should also be noted that the sandbars are constantly shifting, particularly after stormy weather so what was once ok might not be again and vice versa.

The tidal flow is also something to be considered. When the tide is coming in there a general flow of water into the Moray Firth towards Inverness. Luckily, because this is a big body of water, the speed of the flow is fairly low and is only ever a maximum of approximately one knot (around 2kph). Of more importance to us is the flow in and out of the Old Bar lagoon, which is more significant and may need to be considered. During a rising tide the water flows into the lagoon and during an ebbing tide the water flows out. The tidal flow off the west

beach is also opposite to what might be expected. As an incoming tide hits the Fort George headland it swirls around in a huge eddy resulting in a tidal flow east back to Nairn.

4.3 Weather

As a cox you need to know what the weather was like before the row, what it will be during the row and what it might be after the row (forecasts can change quickly). The main things to consider are the wind, the temperature and any precipitation.

It's important to have a good idea of what the wind has been like during the previous day or so because it can affect the sea state and therefore the rowing conditions. For example, if there have been strong northerly or particularly north easterly winds in the previous two or three days, there is likely to be a big swell from the northeast. This in itself might not be a problem, depending on the height and period of the swell. The cox needs to be able to judge whether the swell is within their, and the crew's capabilities.

Any wind at the time of the row can cause problems with wind generated waves, which can make rowing difficult. The wind direction should be considered when choosing where to row; generally, we would prefer to row into the wind on the outward leg so we know it will be easier to get home and we don't go too far because it felt easy going downwind. A

strong southerly wind may make for enticing sea conditions because it will be fairly flat, but it would potentially make rowing on the river back to the harbour very difficult.

Also, what is the weather forecast to be after the row? Bad weather could come in early and cause problems for you. Keep a good lookout for approaching weather whilst out.

4.4 Sea State and River State

The weather at the time of the row and over the previous few days, together with the state of the tide, all come together to determine what is known as the sea state. Sea state is a term used to describe the general condition of the sea's surface and is determined by two key factors, wind waves and swell. Wind waves are created by the wind blowing over the surface of the sea. They are generally of shorter wavelength and higher frequency (ie smaller and more frequent) than swell waves. Swell waves are waves that have travelled from a distant storm or weather system and generally have a longer wavelength and lower frequency. They create powerful surf when they come ashore or break over a sand bank. Nairn is on a coastline that is roughly west to east with another coastline to the north. This means that, generally, any swell waves will be as a result of weather in the North Sea and will

approach Nairn roughly from a north-easterly direction. Wind generated waves will result from winds ranging from westerlies, through northerlies to easterlies. Any wind coming from the landward side of Nairn will have only a small effect on the sea state. It is important to recognise the difference between these two types of waves and how they can affect rowing. Swell waves on their own are not necessarily a problem. They can be present even when there is no wind and, depending on their height, can be fine to row in. The issue comes when they are large enough to make conditions at the river mouth too dangerous or cause breaking waves over shallower areas. Wind waves on their own, or especially when combined with swell waves, can make rowing very difficult, particularly because it is also likely to be windy. Generally, the sea state is a combination of the two types of waves. As a general rule, any white horses (breaking waves) out at sea can be a sign that conditions will not be suitable for rowing. This needs to be looked at together with conditions at the river mouth to decide whether to go out or not.

Another thing to consider is the state of the river. Recent heavy rain could mean that the flow in the river is higher than normal and with the added danger of debris in it. The flow changes with the state of the tide,

being a bit less at high tide. River levels can be checked on the SEPA website.

4.5 Judgement of Conditions for Rowing

- One of the main responsibilities and decisions to be made is whether the row should go ahead or not and if so, should you stay in the river or go out to sea. If going out to sea, where is safe to go and where isn't. The decision is not only based on the prevailing conditions from the weather and tides but also on who the crew consists of on that particular row. Conditions might be fine for one crew to go out in but definitely not for another crew. It's always good to get the crew involved in this decision as, ultimately, it's them that are rowing.
- The harbour and river are the first places to look. Is the flow in the river too strong or full of debris? Is the harbour ice free (any ice can cause damage to the boats and oars)? Is the wind too strong or too gusty to row back up the river?
- Look at conditions in the river mouth. If it looks too bad then can a river row still go ahead?

- Next look at the conditions out at sea. How big is the swell? Are there any breaking waves? What is the wind direction and strength?
- If you've decided that conditions are OK to go out to sea you need to decide where to go. Generally, it's better to start off rowing into any wind. This means that you don't have any nasty surprises when you turn round and discover that the wind was a lot stronger than you thought. It's also preferable to row into a swell rather than across it. The worst conditions are likely to be encountered when the wind is from the north or north east. It might still be possible to row into the wind and swell to the yellow buoy and back, taking care on the turns when rowing across the swell.
- If conditions allow then rowing west towards the leisure centre holds no real dangers apart from some rocks just off shore near the leisure centre. Just keep far enough off shore. Heading east towards the Old Bar can hold more dangers, particularly from breaking waves over the ever-shifting sand bars that protrude out from the dunes. The sea is now so shallow there that even with a moderate swell it is a place that is best avoided. Luckily, it's easy to spot areas of breaking waves as you approach the area. The conditions can change quickly however, so if you go into the

lagoon you need to be aware that when you come out the conditions may have changed.

- Of course, for many of our rows the conditions are benign and there are not too many decisions to be made.

4.6 Launching and recovering

Part of the cox's responsibilities is to oversee the safe launching and recovery of the skiffs. Most of the club members are familiar with the procedures involved and just get with it. However, the cox still needs to make sure that this goes smoothly and safely and take the lead when the crew are new or unfamiliar with the process. It's not the intention here to give a detailed procedure of how this should be done, mainly because everyone has their own views on the best way to do it, and as long as it's done safely for the crew and for the boat and equipment then it's up to the cox to do it as they see fit with the crew they have.

Manoeuvring in and out of the harbour into the river is something that needs to be practiced. Make sure you give clear, precise instructions and be ready to stop the boat at any time. Remember that sometimes it might be beneficial to use the canoe paddles for close manoeuvring.

Take account of any wind when approaching the slipway, it's always better to approach too slowly than too quickly.

4.7 Taking care of yourself and the crew

The cox is the person responsible for where to row goes and what you do on the row. You need to be able to make the row enjoyable, safe and comfortable for everyone. Look for signs that the crew aren't getting too hot, too cold or too tired and that they're having an enjoyable row. Make sure you keep talking to them, stop for breaks when needed, stop for people to adjust clothing or have a drink. It's good to have some kind of structure to the row even if this is just to have a steady row. Ask the crew what they what to do and make sure everyone knows what your plans are. It's important that you stay warm and comfortable too. It's always possible to swap over who's in the cox's seat so you can have a row to warm up if necessary. In fact, getting other members of the crew to take a turn at coxing should be encouraged, but remember that you're still in charge of the boat.

The cox is the only one who can see everyone rowing and you should be confident enough to tell people to keep in time for example. If the crew is not rowing well together it can impact on everyone enjoyment.

With experience, you'll be able to help people improve their rowing by pointing out any poor technique. However, it's important to always do this in a positive way.

Appendix 1 Logbook

The idea of the logbook is to keep a record of how often you've coxed, together with the prevailing conditions, any learning points, and any issues encountered.

Date	Conditions (tide, sea state, river state, weather etc)	Comments (route, issues, lessons learnt)

Date	Conditions (tide, sea state, river state, weather etc)	Comments (route, issues, lessons learnt)

Date	Conditions (tide, sea state, river state, weather etc)	Comments (route, issues, lessons learnt)

Appendix 2 Communication and Commands

Communicating with the crew is an essential part of being the cox as you need them to do what you're asking of them. The commands set out below are by no means the only ones you can use; most coxes will have slight variations and some circumstances may need other commands. However, these are the basic commands that most people are used to.

- Keep communicating with the stroke – the stroke sets the timing not the cox. The cox can ask for a change but the stroke sets it.
- Keep the crew aware of what's you're doing and how they're doing.
- Be assertive, you tell the crew what you want them to do, not let them decide when to start rowing, turn etc.
- Be clear and loud so all crew can hear. You could use hand signals for turns as well as voice command.
- Come forwards, get ready to row, row. Don't give the command to row if it's obvious someone isn't ready!
- Easy oars (easy all) – stop rowing.
- If you only want one side to do something, say the side first, eg port side easy, starboard side easy

- Hold water – everyone puts their oars in the water to stop the boat moving.
- Tell the crew what intensity you want them to row at. You could use half power, quarter power, full power, normal rowing or light rowing, or use a scale of 1 to 10 where 1 is very light and 10 is full gas. Make sure the crew understand what you want; this is particularly important whilst manoeuvring in the river and harbour.
- Port turn, port stops rowing - starboard turn, starboard stops rowing. Explain to the crew before the turn if they're inexperienced.
- Backwater - row backwards.
- Port normal rowing, starboard backwater will spin the boat quickly.

Appendix 3 What a typical session looks like for the cox.

- Before – Tide & weather, including a visual assessment at river mouth
- Skiff preparation – delegate to crews the skiff set up checks,
- Persons on Board (Safety) - Everyone to sign-in as per current protocol. Emergency contacts?
- Interactive cox's briefing on conditions, route, content (training/ coaching/ social) – experience/health of crew, buddy coxing?
- Launch, row, retrieval, cleaning, put back in the boat shed – delegate where appropriate
- Debrief, complete Session Log – can delegate (for treasurer)
- Report damage to bosuns

Appendix 4 Technique and how to improve it.

It's very useful as a club if we all know what a good rowing technique should look like. As a cox you can then tell the crew when and what they might need to change in order to achieve that good technique.

An understanding of the principles of rowing is important. When the blade is put into the water and the rower pulls on the oar, the blade doesn't move through the water. Instead, the blade stays in the same position in the water and the boat is levered past it by the rower. Then, when the rower comes to the end of the stroke the blade is lifted out of the water and moved forwards (behind the rower) to start the next stroke. The distance that the boat moves with each stroke will depend on the length of the oar, the gearing ratio of the oar and the distance the rower's hands move from the start of the stroke to the end of the stroke. (The gearing ratio is the ratio of the length of the oar outside of the rowlock over the length of the oar inside of the rowlock. Our oars are currently set up with a gear ratio of either 2.8:1 or 2.6:1 with the lower ratio being what we generally use. A higher ratio will feel 'heavier' than a lower ratio.)

The oars should normally all be set with the same gear ratio and in an ideal world all of the four rowers would pull the oar the same distance from the start of the stroke (the catch) to the end of the stroke (the

release). This means that each rower is moving the boat the same distance through the water. This results in an efficient, balanced boat. (This will rarely be the case, however, due to the crew generally all being different heights and with different lengths of arms etc.) A longer stroke will move the boat further with each stroke than a shorter stroke.

The technique for the stroke is that for the pull, the rower's hands holding the oar, are moving horizontally. Any vertical movement while the blade is in the water, will have the effect of rocking the boat from side to side. At the release, the hands should push the oar down quickly with all four rowers releasing at the same time. Again, if they are at different times then it could result in the boat rocking. The oar should then be pushed away from the body in a controlled manner, again moving horizontally, with the blade as close to the water as possible for the given conditions. The catch should then be taken with the blade moving vertically down into the water followed immediately by the rower pulling on the oar. The arms should be straight for the catch, with the pull coming from the body bending backwards and pressure from the legs pushing on the footplate. Aim for consistent pressure on the oar all through the stroke rather than big bursts of power at the beginning or the end. Only when the upper body has moved all the way back should the arms pull the oar in ready for the release. The hands then move down

and away, the arms straighten again to move the oar horizontally ready for the next catch. Clearly, all four rowers should take the catch at exactly the same time.

To summarise:

- Take the catch by moving the hands up at the furthest forward position and only start to pull when the blade is in the water.
- Pull back with straight arms with the power coming from the legs, glutes and back. Keep the blade just under the water by moving the hands horizontally.
- Lean back, and stay leaning back while the arms bend to bring the oar to the body.
- Just before the oar reaches the body, push the oar down vertically and push it away from the body. The blade should be as close to the surface of the water as possible depending on the prevailing conditions.
- Continue to move the hands forward horizontally and bend forward ready to take the next catch.

The key to good technique in the boat is that all four rowers are doing exactly the same thing at exactly the same time. In practice this is very hard to achieve but there are many things that the cox can help with.

The table below gives some of the common faults or problems that can slow the boat, together with how the cox can help the crew to overcome them.

Table 1 **Common issues and how to help**

Issue	
Rowers out of time at the catch.	<p>This is one of the major causes of the boat not going very well as it can cause all sorts of problems. These can vary from just being a bit annoying through to oars clashing and the boat having to stop. It always causes the boat to be unbalanced.</p> <p>The causes could be rowers not concentrating, looking at their oar rather than the stroke, having their hands too low at the catch (diving down) meaning that there's a delay before the catch, moving back before the blade is in the water or the stroke giving an erratic stroke rate!</p>
Rowers not concentrating	Call out the stroke eg "Row, row, row" but call it in time with the stroke's rhythm.
Rowers looking at their oars	If the rowers are looking at their oars, then it's quite probable that they then get out of time because they're not looking at what the stroke is doing. People may look at their oar because they're unsure of their stroke and what the oar is doing. Try to get them to use feel and sound instead of sight as means of connecting with the rhythm. Get the crew to row with their eyes shut for a minute or so and concentrate on the sounds and feel of the boat to get the catch in

	<p>time. Really feel for the catch by having a strong pull right from the start.</p>
<p>Oars going too deep</p>	<p>When is the oar too deep and does it matter? The blade needs to be covered by the water but only just. Successful rowing is all about all of the crew doing the same thing at the same time. If one oar is going a lot deeper than the rest then it could upset the balance of the boat by rocking it to one side.</p> <p>Try getting the crew to sit with their oars floating on the water then get one side to move their hands down whilst the other side move their hands up. The boat will rock from side to side. If the oars are too deep it also compromises the recovery (getting the oar out of the water) as it will take more movement and hence more time, making catching a crab more likely.</p> <p>A good exercise to do is to get the crew to sit with their oars floating, as above, and very slowly take a stroke, keeping the oar just floating. Get them to look at where the oar handle is in relation to their body or the person in front to get a feel for where it should be. You can get a feel for when the oar is floating whilst taking the stroke. Try some very light rowing whilst concentrating on this.</p>

	<p>Get the crew to feel where the pressure is on their hands from the oar. All of the pressure during the stroke should be at the back of the handle so that the oar comes horizontally towards you. Any pressure on the top or bottom can result on the oar not being at the right height in the water.</p>
<p>Blades moving back before they're in the water. An inefficient catch.</p>	<p>A common fault is that the rower reaches forward to take the catch but starts to move back before the blade is in the water. To get the boat to move as fast as possible each stroke needs to as efficient as possible and there's no point in moving forward only to start moving back again without the oar in the water. Get the crew to think of their hands moving in a long rectangular movement (letterbox) with short vertical movements and long horizontal movements. A good exercise is to pause at the start of each stroke and then make sure that the blade is in the water before there is any backward motion. Try just doing that movement whilst stationary. Get them to over exaggerate the movement by reaching slightly further forward whilst moving the hands up to take the catch.</p>

	<p>Over reaching or diving down with the hands before the catch could also both be causes of this problem.</p>
<p>Rowers not leaning back far enough.</p>	<p>The basis of each stroke is that the blade is put in the water at the start of the stroke and the oar is then pulled back to move the boat through the water. It follows then that the longer the stroke, the further the boat moves with each stroke. The length of the stroke depends on the backward movement of the rower's upper body, and to a small degree in fixed seat rowing, on the knees straightening. The ideal angle of the upper body is probably around 45 degrees. If it's more than this, the movement becomes more vertical than horizontal. Ideally, all of the crew would be the same height and would be leaning back the same distance. however, as everyone is different, to get the same length of stroke from everyone means some may have to lean back more than others.</p> <p>A good exercise is to have a pause at the end of the stroke with the blade out of the water with everyone concentrating on ending the stroke at the same time.</p>

<p>Rowers bringing the body to the oar rather than the oar to the body at the recovery.</p>	<p>This problem can generally be linked to the one above. Here, the rower pulls back and leans back, but before tapping the blade out of the water they use the oar to pull themselves up towards the oar. This leads to a shorter stroke and a sudden jerky movement that can unbalance the boat. It can also make it more difficult to get the oar out of the water as the body can then get in the way.</p> <p>An exercise for this is the same as above, a pause at the end of the stroke, but tell them that all of the power should be at the catch and the middle of the stroke whilst the body is moving back and that the end of the stroke, the arms bending and lifting the blade out, should be very light and they should stay leaning back until the blade is out. This should encourage people to concentrate on the catch and the pull with the body rather than a big pull with the arms right at the end.</p>
<p>Rowers pulling with bent arms.</p>	<p>Again, this is linked to the two sections above and mastering all three will lead to a good stroke. Ideally, the arms should remain straight until the upper body has moved all the way back. A common problem is that the rower pulls back with bent arms. This can lead to the arms getting tired too quickly and possible</p>

	<p>elbow problems/injuries. Emphasise relaxing the arms and shoulders during the catch and the drive. Imagine the oar is a heavy bar being picked up off the floor. Would you do that with bent arms?</p>
<p>Arms not pulling back horizontally.</p>	<p>As mentioned above, once the blade is in the water, it should ideally remain at a constant depth. This means that the hands on the oar should move back horizontally. A good exercise for this is to concentrate on the grip on the oar. This should be relaxed to allow the blade to float just below the surface, with all of the force on the oar being towards the rower. Feel where the pressure is on your hands; it should be at the back of the oar.</p>
<p>Diving down at the catch.</p>	<p>As well as the oar moving horizontally during the drive, it should also move horizontally during the recovery as it is moved forward for the next catch. Sometimes the hands start moving down as the rower leans forward. This results in the blade being too high above the water making the next catch more difficult and inefficient. Get the rowers to allow their oars to float on the water whilst making a very gentle stroke, then try to just skim the blade over the surface of the water during a very slow</p>

	recovery (a very calm sea is needed for this!) to see where their hands need to be.
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Appendix 5 Sample training sessions.

Having some kind of aims and structure for the rowing sessions will generally lead to a more enjoyable row. Even our Open Rows should have some technique work in them for everyone to be able to improve. Ask the crew if there's anything they want to improve on, how they're feeling, do they want a long steady endurance row or higher intensity intervals?

A good basic structure for a training row would be:-

- A five minute warm up.
- Some technique work depending on what you've seen during the warmup and who's in the crew etc. Maybe ten minutes or so.
- Long steady, continuous rowing, OR long interval rowing, OR short high intensity rowing intervals. This will depend on the time of year, the weather conditions, whether the session is in the river or out at sea, is there a regatta to train for, who's in the crew?
- A five or ten minute steady cooldown before finishing.

To improve fitness, the training should include sessions of long steady continuous endurance rowing, at a pace that can be sustained up to an hour, sessions of interval training with intervals of maybe a few minutes (5 to 10) and repeated several times with two or three minutes between,

and sessions shorter, high intensity intervals of maybe 1 to 3 minutes at a high intensity. (Remember that a high intensity doesn't necessarily mean a high stroke rate, but stroke rate could also be varied.)

There aren't really any right or wrongs when it comes to choosing how to do an interval session. It's a lot easier for the cox to use time as the basis for the intervals rather than distance. However, be precise with your timings; if you've said that you're going to do 5x 3 minutes hard with 1 minute rest, make sure that that's what you give them!

Below are some sample interval sessions:

1. 5x 3 minutes hard with 1 minute rest between (20 minutes)
2. 15x 1 minute hard with 1 minute very easy between (~30 minutes)
3. A pyramid of 1min, 2, 3, 4, 5, 4, 3, 2, 1 with 1 or 2 minutes rest between, decreasing the intensity as the interval gets longer then increasing again as they get shorter. (~30 minutes)
4. A decreasing set starting with 6 minutes and decreasing down to 1 minute with 1 or 2 minutes between.

You can vary all of the above with different effort times, rest times and number of repeats. Longer efforts, shorter rest times and more repeats usually means less intensity. You can make up your own sessions depending on what the crew want. Mix it up a bit! Make sure you're not

setting too hard a session for whoever is in the boat. Be prepared to change what you're doing and adapt your session to the day.

Interval sessions based on time don't work very well if the session is in the river due to it being a fixed distance. Here it can be best to use the length of a 'lap' as the basis eg hard to the river mouth, easy back, or hard both ways with a turn.