

the good **COXSWAIN**

STEERING THE BOAT



the good **COXSWAIN** 2

STEERING THE BOAT



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*"Believe me, my friend,
there is nothing,
absolutely nothing,
half so much worth
doing as simply messing
about in boats"*

THE WIND IN THE WILLOWS
- KENNETH GRAHAME



the good COXSWAIN 2

2.1 INTRODUCTION

If the shortest distance between two points is a straight line, then the longest distance between two points is a very bad coxswain.

Ricocheting between one steering crisis and the next, **the bad coxswain is a danger to himself and others**. If a rudder could leave skid marks then the surfaces of our rivers and lakes would be polluted by the crisscross of aggressive rudder-users. Thankfully, with some small amount of instruction and time the good coxswain will steer the straight and narrow course from hazard creator to race winner.

A good coxswain must be able to steer.

Why? The answer may appear obvious but let's spell it out –

A COXSWAIN WHO CANNOT STEER CANNOT:



Provide the crew with a safe working environment

Bridges, riverbanks, other water users, buoys, are all likely to cause serious harm if contact is made with a rowing boat and its crew, no matter the speed.



Enable the crew to work without interruption (stopping)

Each time a crew collides with structures or other water-users, or has to make major corrections to direction, the crew is required to stop rowing.



Minimise the amount of unnecessary rowing a crew must do

A straight line means less strokes, a crooked course means more strokes.

**Help improve the development of stroke technique**

Each time a boat veers from course and needs correction the boat becomes unsteady and the rowers may lose balance and concentration.

**Develop the confidence and trust of the crew**

A crew cannot see ahead, they are completely reliant upon the eyes of the coxswain – if those eyes do not see or the voice cannot warn, or the rudder does not respond to danger... they cannot trust.

**Avoid race disqualification**

Interference with competing crews by veering into other lanes often leads to protests, fines and crew withdrawal.

It is hard to believe that steering could have so many far reaching ramifications - bad steering as well as good. How much better or worse can a crew be due to the coxswains steering ability? Achieving steering proficiency can sometimes be a long and arduous process and unfortunately it is not always about steering straight lines. It is also about the how, when, where and why a boat must be steered. We will address each of these.

To begin, the **coxswain's tools of trade** when steering are:

(a) the rudder and **(b) the use of oars by crew members.**

Minor and gentle course deviations can be addressed with the rudder. Quicker, more immediate deviations are often addressed by varying oar pressure in the water. Both of these means are often used simultaneously when sharper and more urgent deviations are needed. These will be discussed in detail but let's first look at the rudder.

2.2 THE RUDDER

The rudder, it would seem, is a very rudimentary instrument – you turn it and the boat turns. But are you able to answer the following questions:



What kind of boat / rudder do I have?



How do I control the rudder?



Why would I use the rudder?



What happens to the boat when the rudder is used?



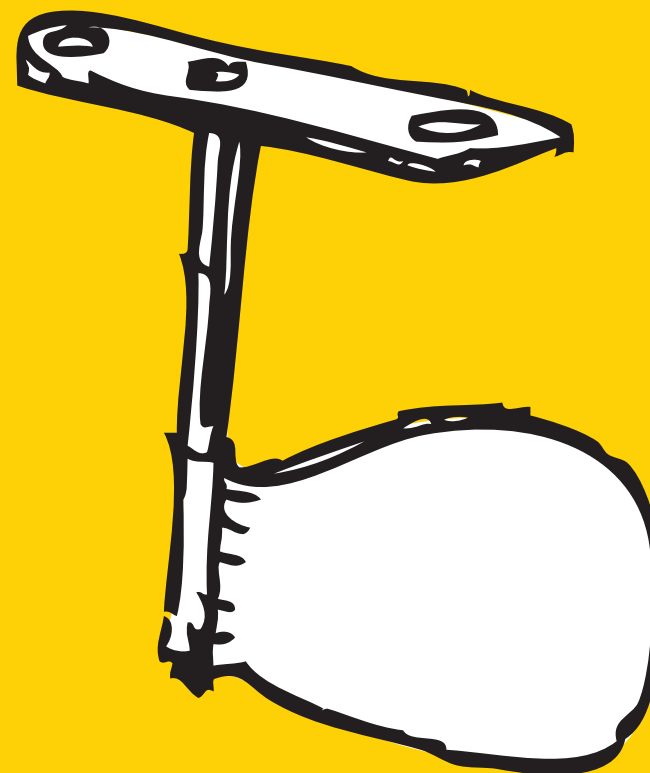
How much rudder is too much rudder?



When do I use the rudder during a rowing stroke?



When will the rudder not work?



WHAT KIND OF RUDDER DO I HAVE?

Rudders vary in size, placement and shape.

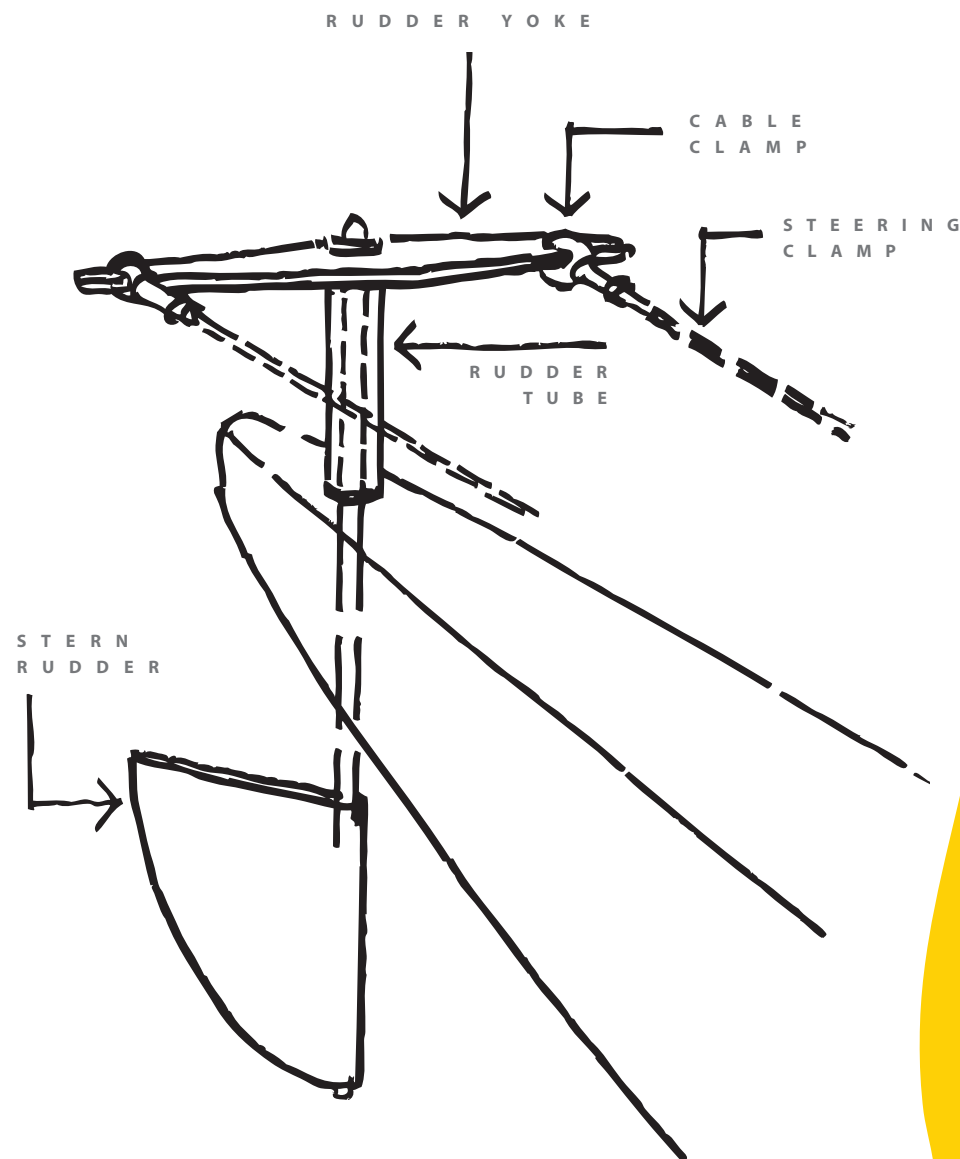
An **older, heavier boat** will often have a **larger rudder** that is more **difficult to turn and is less responsive** to a coxswain's efforts. The older rudders, fitted to the very stern of the boat, are often manipulated by loose string made of natural fibres. They can be loose, slack strings that the coxswain needs to hold taut to get the best response. The coxswain will normally be situated in the stern of the boat.

Thankfully, there are very few of these dinosaurs still remaining but if your club still has one, then remember: keep your rudder strings from dragging in the water, don't expect the boat to change direction quickly, check that the strings have not frayed and be prepared to use a little bit of muscle.

Training boats (tubs) of a more recent vintage may share some of these same characteristics. They are less heavy but heavy nevertheless. They can be cumbersome boats but have a small rudder manipulated by toggles (small handling points) attached via synthetic cord or rope. The boats, with such rudders, will need a longer response time during turning. This is primarily because of the boat's weight and how much surface area is in the water contributing to resistance – the rudder has to work harder.

More recent models of boat that are made of lightweight materials also have lighter, **smaller rudders** that can be **more responsive** to gentle urging from the coxswain. They often have strong, tensioned wires that can be manipulated with ease by a steering arm (if the coxswain is lying in the bow of the boat facing away from the rowers) or evenly placed toggles either side of the coxswain's seat in the stern (i.e. coxswain facing the rowers). The rudder is either at the very end of the boat (stern) or immediately behind the fin (skeg) on the hull beneath the stern canvas.

Straight line rowing in a lightweight boat does not require a large rudder. The boat will be very responsive to the rudder. However, **if the boat is heavier or the course sharply winding a larger rudder is appropriate.**



Each year in our women's eight we often have to call on our "caddy", come coxswain, to pull from her bag the most appropriate rudder for a particular course. She knows that in a winding "Head" race she is not going to get around some of those corners with our usual rudder. She goes for a bigger rudder and leaves the small "racing" rudder in the toolbox.

Cindy Delaware,
Coach

If I want to turn left, I push my left hand forward.
If I want to turn right, I push my right hand forward.
If I don't want to turn at all, I make sure they are even.

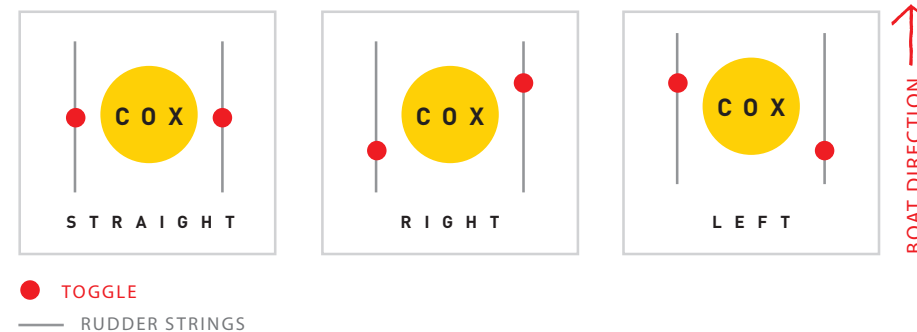
I have found that it is easier to know if the rudder is straight, if I put electrical tape (or permanent marker) on the side of the boat where I put my hands and where the point is that the rudder is straight and the toggles are even. Then I have a point that I know is absolute straight to measure off. It saves turning around to check exactly where the rudder is.

Sophie Lewis, Coxswain

A small boat's rudder will always have a greater and more immediate effect than a large boat's rudder. **The bigger the boat the greater the effort required to change direction with the rudder.** This of course changes when the boat is moving at greater speed. You will find that the rudder is more effectual when the boat is going fast. An eight's rudder will have less influence than that of a pair but if that same eight is going at top speed, and the pair is moving slowly, then the eight will change direction more quickly.

HOW DO I CONTROL THE RUDDER?

The rudder is manipulated by "**rudder strings**". These are connected to the rudder and run from the rudder to the coxswain's seat. If you are steering the boat from the stern (looking down the boat at your rowers) you will more than likely have a toggled rudder string for ease of pushing and pulling. Toggles are often small plastic balls through which the string passes (if you do not have these then marking the string would be helpful). They are fixed in place equidistant from the rudder on either side of the coxswain's seat. They are excellent indicators of the rudders positioning and enable the coxswain to grip more easily and comfortably the rudder string.

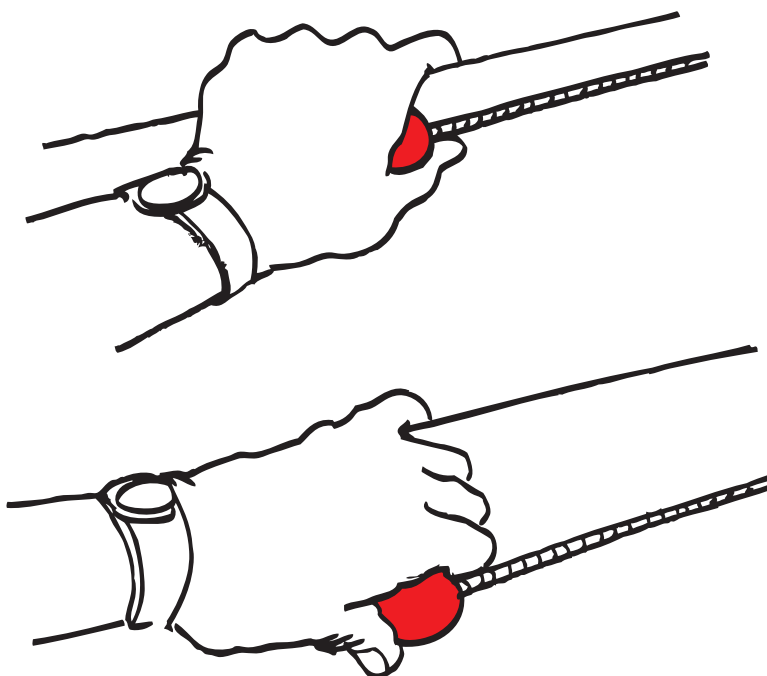


When the rudder is straight, the toggles (or your markings) will be exactly the same distance from the rudder and sit exactly opposite each other with the coxswain in-between. When the rudder is to turn left, the toggles will be uneven (i.e. the left toggle will be further forward than the right toggle). **The further forward one toggle is pushed the greater the rudder use.**

Boats that are steered from the bow, with all rowers behind the coxswain, usually have a steering arm by which to manipulate a rudder. These boats are called **bow steered** or bow loaded boats. The steering arm is usually connected to a wire that moves through a pulley system that travels the length of the boat to the rudder in the stern. It is a simple matter of pushing the arm in the direction the coxswain wishes to **travel**. It requires very little force and the strings (wire) will always be appropriately taut. **Push left to turn left, push right to turn right.** *(Be sure to check that you are not working with a boat that has crossed rudder strings; the opposite would therefore be true i.e. they form an 'x' over the stern canvas).*

Pushing the rudder strings will always be preferable to pulling, as pulling can often be a harsher and jerkier movement resulting in the boat's balance being upset.

Once again you may wish to place a mark on the boat that lines up with a strictly straight steering arm just to make sure you are aligned with your rudder. When rowing and the rudder is not in use, it should always be aligned straight (neutral).



When holding the toggles or rudder strings – remain relaxed.

Do not hold the strings so taut that the muscles in your hands, arms and shoulders become tired from the effort – some slackness in the rudder string is acceptable and even desirable. The same can be said for the side of the boat (or gunwales [pronounced gunnels]), do not hold tight. Keep your hands on top of the gunwales with the rudder strings / toggles between your thumb and index finger and slide them forward and back as need be, along the side of the boat. **Keep the feeling in your hands – you must be responsive to changes in the boat.** Ultimately, you are steering with your fingers not your hands, making rudder use smooth.

As has already been indicated, **a push of one toggle forward will draw the other toggle back without a need for pulling.** It is therefore possible to steer with just the one hand if you must use one of your hands to operate equipment etc. The option, although not preferred by coaches, is available for one-handed operation of the rudder.



WHY WOULD I USE THE RUDDER?

The answer to this question is not, "Because it is there". Be very clear, it is preferable not to use the rudder. The rudder is only used when you have limited choice.

The natural and preferred positioning of a rudder is straight.

In ideal circumstances all courses would be straight and all boats would automatically follow them. Unfortunately, courses are subject to the dictates of weather and geography, and rowers are subject to the dictates of human nature and physiology. Needless to say, boats do not always operate as they are required by law or design, either. Therefore, the coxswain uses the rudder to combat all of these variables.



'Why use the rudder?'



Weather - The boat will not travel in a straight line if it is being buffeted from the side by strong waves and wind. The rudder is used to counter this influence. The good coxswain holds his boat into the wind to negate the wind's influence. The boat will not travel in a straight line if the coxswain uses his rudder to seek shelter from the wind along a windward bank of the waterway.



Geography - The boat will not travel in a straight line if tide is an influence on the waterway. An ebbing tide will draw a boat from its strict course. The good coxswain is aware of this and adjusts his rudder accordingly. The boat will not travel in a straight line if the course being followed is defined by the land that dictates its perimeters (*e.g. - a winding river*). A good coxswain would use his rudder to stay well clear of rocky outcrops.



Human Nature - The boat will not travel in a straight line if a crewmember is not applying himself as much as his fellow crewmembers. Some rowers "go missing" for whatever reason and it results in one side of the boat pulling more weight (or earlier weight) than the other - the boat thus changing course. The good coxswain will correct this temporary imbalance by adjusting his rudder to steer back to the true course (*and remind the offending rower of his responsibilities*). The boat will not travel in a straight line if a crewmember is late or early into the water relative to other crew members.



Physiology - The boat will not travel in a straight line if a crewmember is stronger, bigger or fitter than another. Crews sometimes have to cater for these variations. The stronger rower will alter the course at the start of the race, the fitter rower at the end of the race - be ready for it. The good coxswain is aware of this and uses the rudder to counter the expected surge to one side of the boat.



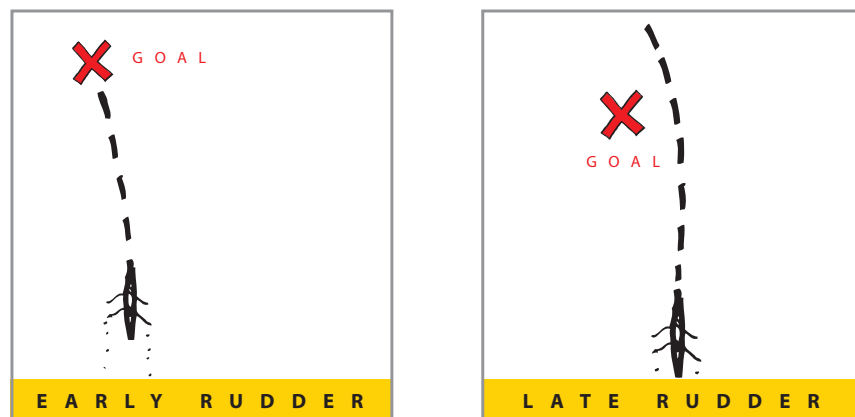
Law - The boat will not travel in a straight line if that line runs counter to water traffic rules or regulations. Coxswains with boats, like drivers with cars, need traffic rules. The good coxswain knows these rules and uses his rudder to move to the correct side of the waterway or to the correct side of crews approaching from the other direction (*Stay right*).



Design - The boat will not travel in a straight line if it is not maintained in good repair (*e.g. - bent fins, detached rudders*).

Some rowing clubs allow deterioration of their boats. It is important to know if the boat you are using is one of these – are there parts missing or is the boat in bad repair? A good coxswain uses his rudder if the fin (skeg) is bent and makes the boat veer to one side. The good coxswain uses his rudder if the boat is unaligned, twisted or no longer rigid leading to uneven movement in the water. Of course, the very good coxswain is aware of this before getting on the water and tries to address these problems through his coach.

WHAT HAPPENS TO THE BOAT WHEN THE RUDDER IS USED?



If the boat is not moving the rudder can have no effect. The boat must be moving in order to allow water flow over the rudder. It is the diversion of this water flow that ultimately allows the rudder to function. In the process of turning the rudder to one side the coxswain is diverting the water to one side, creating resistance on the face of the rudder. Although this surface is relatively small compared to the larger surface of the boat's hull it can, and does, have a major influence on the boat's course through the water – by small progressions. The influence is not immediate.



Don't expect your boat to respond immediately to a rudder turn.

The coxswain sitting in the coxswain seat will ask the 'question' of his boat with the rudder strings, the boat will give a delayed 'answer'. The good coxswain knows that three or four strokes are necessary to receive the full answer.

Consider an eight oared boat: a nineteen metre vessel with the combined weight of eight large athletes. To retard and divert enough of its forward movement with a rudder's surface area requires a sustained force. Also realise that the rudder diverts the stern of the boat – it is the stern that moves first, then the bow must follow this lead – it can take time.

It is important to note that this is not just true of changing course but reverting to original course. After the rudder has been used and is returned to the straight line position the boat will take a stroke or two to return to a straight path. The boat will continue on the revised course for a few moments after the rudder has stopped being used.

Of course, **the faster a boat is travelling the greater the influence of the rudder.** The increased force on the rudder has increased the responsiveness of the boat – it will take less time to answer the rudder's 'question'.

A coxswain that must negotiate a bend or travel in a sweeping arc should be aware that applying the rudder in these circumstances will result in the boat tilting toward the outside of this curved course. **The sharper the bend, the greater the curvature, the greater the lean will be on the boat.** If a boat is taking a sharp left hand bend (stroke side/port), then the boat will fall to the right hand side (bow side / starboard). Any use of the rudder can upset the balance of the boat.

The more the rudder is used the greater the drag on the boat's forward movement. That is why in answering the question "Why should I use the rudder?" the answer should never be, "Because it's there." You use it out of necessity. **To use it under any other circumstances is to slow your boat and make life difficult for your rowers.**



HOW MUCH RUDDER IS TOO MUCH RUDDER?

It is very tempting for the novice coxswain to overuse the rudder – to “over steer”.

A boat will not respond immediately to the rudder. But then again, nor do novice coxswains respond in time to the boat needing to be turned. This is at the heart of the problem – too much rudder is often the result of these two factors. Pulling harder on the rudder strings will not make the boat respond more quickly. Waiting too long to use the rudder strings will not help either.

When I first started coxing, I thought I was a great coxswain because I kept using the rudder. The rowers had their oars, that they used all the time and I had my rudder that I used all the time. It just seemed like that was what you did. If the boat didn't turn straight away, I would pull the rudder harder. Then when the boat went too far, I would pull it harder the other way – it was a full time job. I was the boss and I was going to make the boat do as it was told! I thought that the harder I pulled the better I was at my job.

Meredith Treadwell, Coxswain

A coxswain must ask “How do I go about using less rudder?” Many of the answers have already been included in this booklet but the bottom line is: **think ahead, be patient and concentrate.**

If a coxswain knows a diversion from course is necessary then he must prepare in advance. It is not acceptable to wait until there is no other option than to take immediate and dramatic action. That immediate and dramatic action usually means a very hard and exaggerated application of the rudder. The rudder responds more favourably to gentle and firm persuasion, not a violent, knee-jerk reaction.

Knowing that the boat will not respond immediately, you must plan ahead. Always start steering into a turn before you are at the point where it is necessary. **Think four or five strokes ahead – begin to apply the rudder anticipating an eventual response** – be patient. Before exiting a turn anticipate its conclusion and return the rudder to its neutral position, before it is necessary. If you are not concentrating, you will only respond when absolutely necessary and the rudder will get over used.



The rudder need not be used continuously either (unless the reasons outlined on page 15 apply). If the rudder is being used all of the time it may mean that the cox is not fighting external elements or influences but his own rudder use – the continuous battle between bow side and stroke side; first one way then the other. If the coxswain does not anticipate the boat's response he will use rudder that moves him past his ideal course then use the equivalent amount of rudder to correct it too far the other way.

WHEN DO I USE THE RUDDER DURING THE ROWING STROKE?

The short answer to this question is: when it is least likely to cause disturbance to boat and crew.

The boat and its rowers are most likely to be disturbed when there is instability. Rudder use can add to the boat's instability, as has already been indicated. Therefore, if we can accept that disturbance is inevitable, how do we lessen the amount of disturbance?

Firstly, a boat is more stable when oars are in the water. Therefore, the application of rudder would best be applied when the boat is at its most stable. Conversely, the boat is least stable when oars are out of the water. This is the least preferred time to apply the rudder.

Secondly, a boat is more responsive to rudder the faster it travels. Therefore, the application of rudder is best applied when the boat is moving at its greatest speed. Conversely, the boat is least responsive to the rudder when it is at its slowest in the water. This is the least preferred time to apply the rudder.

These two points, of greatest speed and greatest stability, overlap during the drive phase (when the oar is moving through the water) of the rowing stroke. It would be a simple conclusion to draw that this would be the most appropriate time to steer i.e. oars in - rudder turn, oars out - neutral rudder, oars in - rudder turn, oars out... etc.

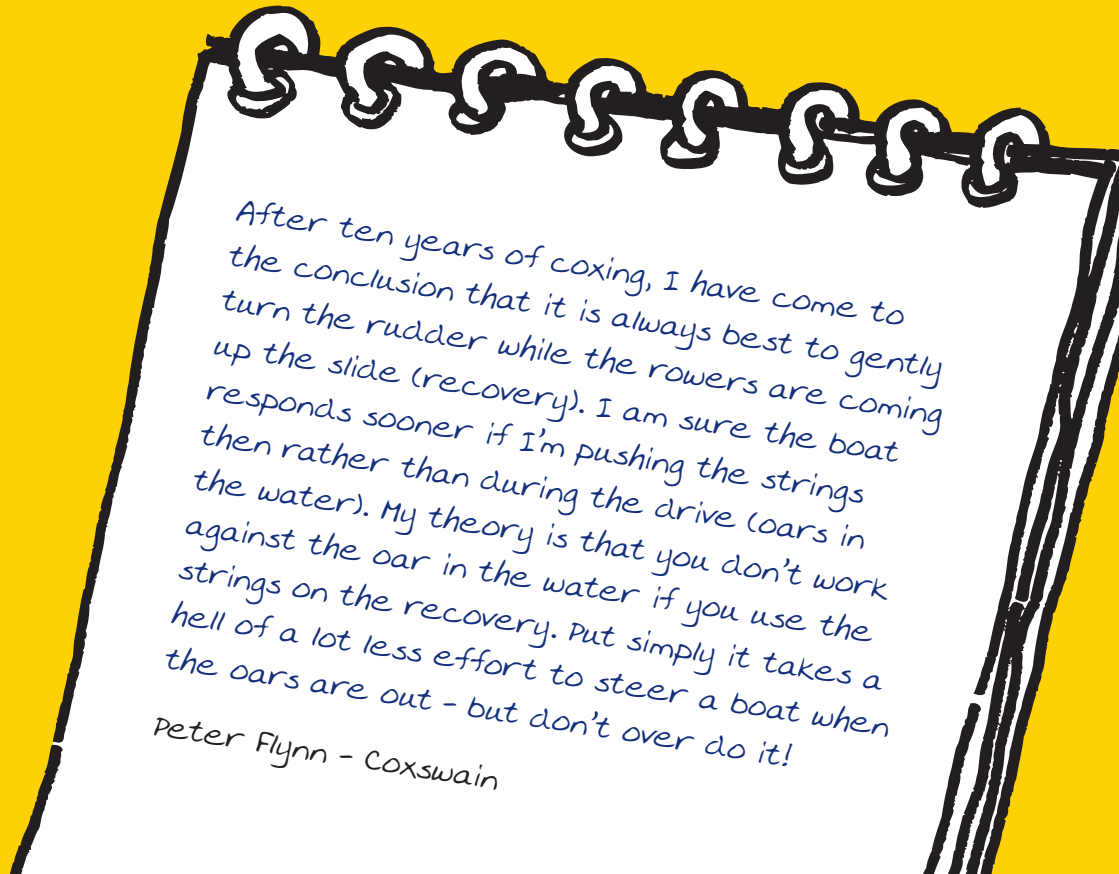
However, this backward and forward motion of the rudder has its own disturbing influences, especially if it is a strong jerking movement of the rudder. **Remember, there can be too much of a good thing.** An on/off application is fine if it is not excessive and continuous. It certainly would not be used for urgent or sharp turns - as it would take too much time in its application.

For novice coxswains it would be more effective, convenient and achievable if the rudder was used during a turn all of the time. This would be with the proviso that it is a gentle and firm application of the rudder well in advance of the necessary turn. The coxswain who cannot look ahead and plan a turn would not be able to do this effectively. It would not be in the best interest of the crew to have sharp aggressive turning for the duration of the boat's turn.

Also, the novice crew will require a great deal of attention from the coxswain; the rhythm and timing of the rudder turn for the coxswain would be a complication best avoided by maintaining a constant pressure on the rudder until the turn is complete. A rudder action every half-stroke just adds complication at a very rudimentary level.

Coxswains, with experience will take all of these factors into account when deciding the best time to apply the rudder. Small turns of the rudder will make small difference and the more experienced the crew the better they will be able to handle these small deviations (lower or raise hands). The more experienced coxswain will not be phased by an on/off rudder application. It is the technique of choice for many elite coxswains.

The bottom line is still - cause the least disturbance possible.



After ten years of coxing, I have come to the conclusion that it is always best to gently turn the rudder while the rowers are coming up the slide (recovery). I am sure the boat responds sooner if I'm pushing the strings then rather than during the drive (oars in the water). My theory is that you don't work against the oar in the water if you use the strings on the recovery. Put simply it takes a hell of a lot less effort to steer a boat when the oars are out - but don't over do it!

Peter Flynn - Coxswain

WHEN WILL THE RUDDER NOT WORK?

- ✗ **When the forces against the boat are greater than the force the rudder can apply** (eg. high winds, very strong current, high waves, major wash or with an excessively strong rower(s) on one side (do not go out in extreme weather)).
- ✗ **When the boat is stationary.**
- ✗ **When the boat is moving backward** (make sure you keep your rudder lines tight, do not allow the rudder to turn and risk breakage if the boat is moving backward).
- ✗ **When the rudder strings have been allowed to fray and break.**
- ✗ **When the rudder has not been fixed firmly into position and checked regularly.**
- ✗ **When weed, rubbish or some other floating matter becomes entangled in the rudder.**
- ✗ **When the coxswain fails to use the rudder strings through inattentiveness.**
- ✗ **When applied too late** (especially after an accident!)



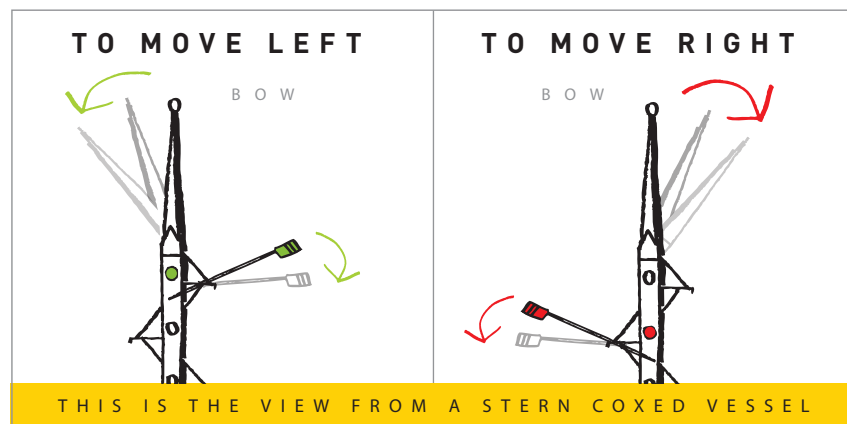
2.3 USING THE OAR

Sometimes a rudder is not enough; this is especially true when:

- ➔ The boat is stationary
- ➔ A sharper, quicker turn is required
- ➔ Stopping the boat
- ➔ A boat must turn around

THE STATIONARY BOAT

The rudder cannot operate without the movement of the boat through the water. Therefore, other means must be found to use the water to change the direction in which the boat is facing. The oar can be moved to create its own resistance in the water. **The coxswain need only select the appropriate rower(s) and ask that they use their oar to change the direction of the boat by rowing.** Coxswains do this every day while on the water.



It is best to remember when using oars to change direction that:

- ➔ The oar on your left side (**stroke-side/port**), as you face the crew, will move the boat right (**bow-side / starboard**).
- ➔ The oar on your right side (**bow-side/starboard**), as you face the crew, will move the boat left (**stroke-side**).
- ➔ As the oar is drawn through the water toward the rower, the boat will not only move to one side but the boat will also move forward (**to bow end**).

The boat can be moved by varying degrees from centimetres to metres, from 2° through to 180°.

The amount of variance that a coxswain can achieve is dependant upon:

- ➔ The number of rowers asked to use their oars
- ➔ The amount of strength used by the rower(s) in using the oar
- ➔ The number of strokes taken


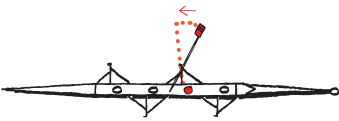

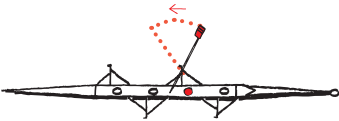

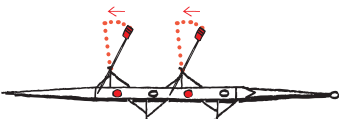

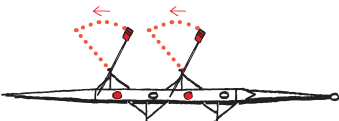

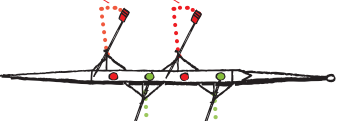

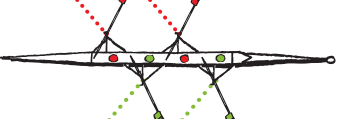
The following example of oar usage to adjust direction is organised from a small change of direction to a large variance in direction. Of course with each stroke taken by the oar there will be some forward movement. Therefore, for each stroke on one side of the boat, there is a forward and sideways movement to the opposite side. If a backward stroke is taken on one side there is a movement backwards and sideways to that side.

From the evidence of this example it is safe for the beginner coxswain to conclude:

- ➔ More strokes = increase in the amount of movement
- ➔ More rowers = decrease in the time taken to make that movement
- ➔ More backward strokes with forward strokes = increased sharpness of movement and a further decrease in the time taken

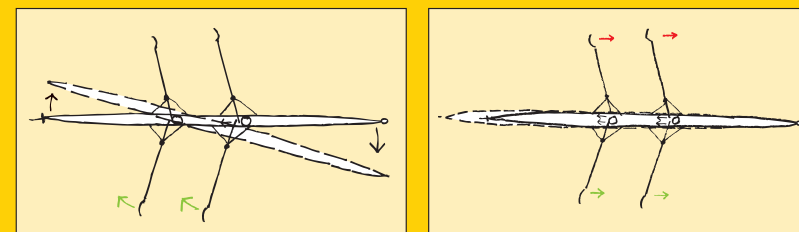


Each of the examples below moves the boat further away from its original position toward the coxswains right hand side (bow-side):

MINIMUM ADJUSTMENT		BOAT DIRECTION →
	One rower to row one light/small stroke "TAP IT AROUND, TWO SEAT" . or One rower to row one light/small backward stroke on the opposite side ("back it, arms only – bow")	
GREATER ADJUSTMENT		
	One rower to row one heavy/large stroke "PULL IT AROUND – TWO SEAT" or One rower to row one heavy/large backward stroke on the opposite side ("back it, full slide – bow")	
SMALL ADJUSTMENT - QUICKLY		
	Two rowers on the same side to row one light/small stroke "TAP IT AROUND – STROKE-SIDE" or Two rowers on the same side to row one light/small backward stroke on the opposite side to above ("back it, arms only – bow-side")	
GREATER ADJUSTMENT - QUICKLY		
	Two rowers on the same side to row one heavy/large stroke "PULL IT AROUND – STROKE-SIDE" or Two rowers on the same side to row one heavy/large backward stroke on the opposite side to above ("back it, full slide – bow side")	
SMALLER, SHARPER ADJUSTMENT - QUICKLY		
	Two rowers to row one light/small stroke AND two rowers to row one light/small backward stroke on the opposite side "TAP IT AROUND – STROKE-SIDE, BACK IT, ARMS ONLY – BOW-SIDE" or Two rowers on the same side to row one light/small stroke AND two rowers to row one heavy/large stroke from the opposite side ("tap it around – stroke-side, back it full slide – bow-side")	
LARGEST, SHARPEST ADJUSTMENT - QUICKEST		
	Two rowers on the same side to row one heavy/large stroke AND two rowers to row one heavy/large stroke from the opposite side "PULL IT AROUND – STROKE-SIDE, BACK IT, FULL SLIDE BOW-SIDE"	

Novice coxswains always make the mistake of underestimating the amount of forward movement that comes with attempts to move a boat in a sideways direction with one side of the boat rowing. That is why the backward movement of the oar (**backing down**) can be useful. Used in combination with the forward movement of the oar (**pull it around**) on the opposite side, backing the oar limits the forward movement and guarantees the boat pivots more sharply.

BACKING IT



THE OAR MOVES IN A FORWARD DIRECTION - IE IN THE OPPOSITE DIRECTION TO A "NORMAL" STROKE. TO INCREASE THE ANGLE OF THE TURN THE COXSWAIN MAY ASK ROWERS ON THE OPPOSITE SIDE TO "PULL AROUND"

Novice coxswains always make the mistake of underestimating the amount of forward movement that comes with attempts to move a boat in a sideways direction with one side of the boat rowing. That is why the backward movement of the oar (**backing down**) can be useful. Used in combination with the forward movement of the oar (**pull it around**) on the opposite side, backing the oar limits the forward movement and guarantees the boat pivots more sharply.



THE SHARP TURN

It is not unheard of for a coxswain to require his boat to turn sharply while rowing. The boat, as we know, can take some time to respond to the rudder and the rudder can only be really effective over a number of strokes, over a period of time. Therefore, when, time, space and circumstances do not allow for a boat to respond to a rudder then the oars can be used.

However, this is usually the case only in time of real urgency when collision may be imminent or time is of the essence. Some prime examples are when a boat, on full rudder, cannot successfully negotiate a bend without striking a bank, or when a crew must hastily turn to catch or avoid another.

Having exhausted the possibilities of the rudder in making a sharp turn the coxswain can ask for his crewmembers to use their oars as a contributing force in the turn. Of course this is while the boat is still moving. The coxswain wants to move the boat to the left and already knows that his rudder will not achieve this quickly enough to avoid unfavourable consequences. Therefore, he has a number of options depending how quickly this needs to be done.



Firstly, if there is still time and space he may ask some of the rowers on the opposite side (*stroke-side*) of the boat to apply more pressure to the oar (*"full weight stroke"*).



Secondly, if this proves ineffective because there is too little time or space then the coxswain may ask for all the members on the other side of the boat (*stroke-side*) to apply more pressure to the water (*"full weight stroke-side"*).



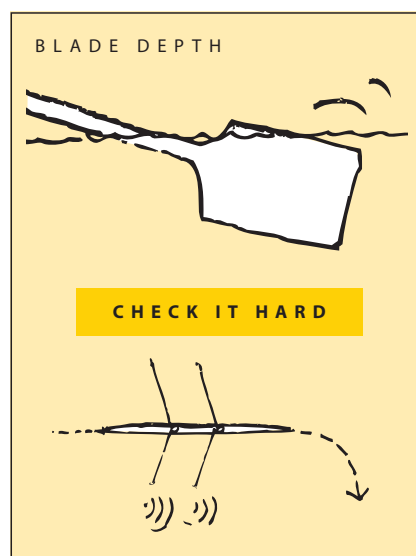
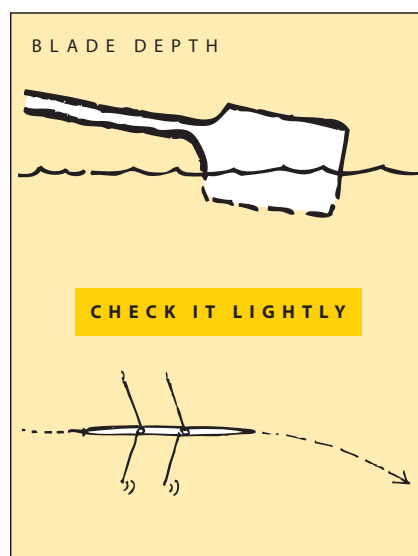
Thirdly, if all the efforts of one side of the boat (*bow-side*) will not avoid unfavourable consequences then the left hand side of the boat (*stroke-side*) can be asked to lessen their effort to magnify the effect of the side pulling more weight (*"lighten off – stroke-side, full weight bow-side"*).



Finally, if all else cannot guarantee the boats safe negotiation of the sharp left hand turn then the rowers on the left hand side can stop rowing all together (*"easy all stroke-side"*) or place their oars in the water and hold them there (*"check it stroke-side"*) while the right hand side of the boat keeps rowing (*"pull it around bow-side"*).

When using the oars to turn while the boat is moving, **each side of the boat can supplement the use of the rudder by pulling less or more weight in the water.** Many of the same commands, as mentioned in the earlier table, can be given but it is important to remember that these later commands are not to be given lightly. Nor should they ever be used as a replacement for effective rudder use.

The extreme of using oars to steer the boat is the application of oars to the water by one side in a holding position. **The crew uses their blades on one side as an anchor point around which the boat can turn (pivot).** The manoeuvre is called **"checking it"** (*"check it hard – stroke-side"*) and the rower asked to do it must stop rowing and hold his oar firmly in the water, not allowing the blade to move, increasing the resistance on the blade. This in turn, shifts the boat's course like a very large rudder. It can be applied with much resistance for large, instant changes in course (*"check it hard"*) or it can be applied gently for smaller variation (*"check it lightly"*). Refer to diagrams on the opposite page.



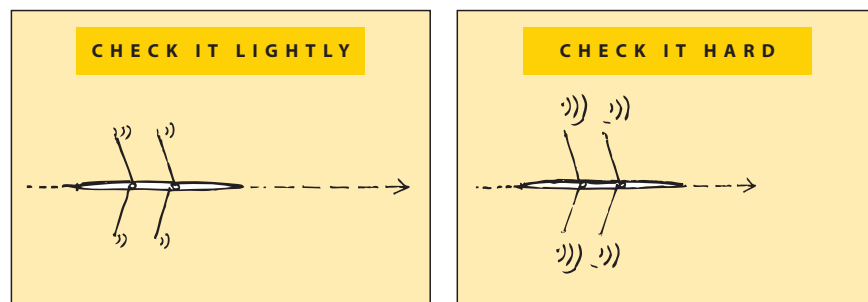
STOPPING THE BOAT

A rudder cannot stop a boat. Coxswains can of course just ask rowers to stop rowing ("easy all") but this will only slow the boat and the boat will continue moving well after the last stroke.

As the novice coxswain becomes more experienced he will become familiar with how long the boat will continue on its course after rowers are asked to stop rowing. If a coxswain does this well, he can let the oars glide above or on top of the water ("let it run") until the boat draws to a gradual stop. If the coxswain does this badly, with poor anticipation, the boat will continue into the object that gave reason for stopping the rowers from rowing – **a rower stopping does not translate to a boat stopped.**

Boats, like motor vehicles, can't just rely on putting the car in neutral and turning the motor off every time they wish to stop. They need brakes.

Oars can perform that function in the rowing boat. An oar/blade partially placed into the water ("check it lightly") will slow the boat gradually. An oar/blade entirely buried beneath the water ("check it hard") will bring the boat to a sudden halt.



Asking a crew to stop quickly and urgently while moving at speed, is the same as 'slamming on the brakes'. It is a very drastic action to take – but often a very necessary one. It slows the forward momentum of the boat and can avoid collisions.

Nevertheless, any burying of oars or "checking it", while a boat is moving at speed, requires the rower to hold the oar against the great force of the forward moving boat. It asks great strength from the rowers that are required to do this. The faster the boat is moving the harder it is to resist this force. The deeper the oar is placed ("check it light" or "check it hard") in the water the more difficult it is to control the force as well. That is why a gentle application ("easy all, check it") should precede the stronger

application ("easy all, check it hard!"). If applied too quickly, at too greater depth and with the boat moving at full speed, the rower can be thrown backwards off the seat or even out of the boat (screeching tyres, burning rubber, loss of control). There are no airbags for coxswains!

TURNING THE BOAT

All of the information included above suggests what is necessary to turn a boat around (through 180°). **Obviously, the coxswain cannot turn a boat with rudder alone unless the turn is a long curving arc on a very large body of water.** Of course the good cox would not do this because it would require the crew to row continuously with the rudder applied and would take a considerable amount of time and energy – much more than most crews have!

Yes, use the oars to turn the boat. Continue as suggested above on page 27 – have one side pulling the other side around while the other side either sits patiently (for a wide turn) or they keep their oars "checked" in the water for a tighter, quicker turn.

Remember, the boat will continue to move forward on a turn. Always stop your boat and crew ahead of the point where you want to turn; otherwise you will move past this point as you "spin the boat". The backward movement of the blades of one side in the water ("back it down – bow-side") will lessen forward movement in the turning process if you do not wish to precede any further forward.

The larger eight-oared boats often prefer or require a tighter turning circle. If they were turning the boat to the left ("stroke-side") they may alternate between one side moving to back the oar ("stroke-side") and when they have completed a stroke the other side ("bow-side") begins to take a forward stroke. It can best be described as a pushing, pulling motion – one side pushing, the other pulling alternatively. The forces on the boat are very extreme if this is done by both sides at the same time. It is always advisable, especially in the bigger boat, to alternate forward and back efforts. ("Spinning the boat to stroke-side – stroke-side backing, bow-side rowing, set, row.")

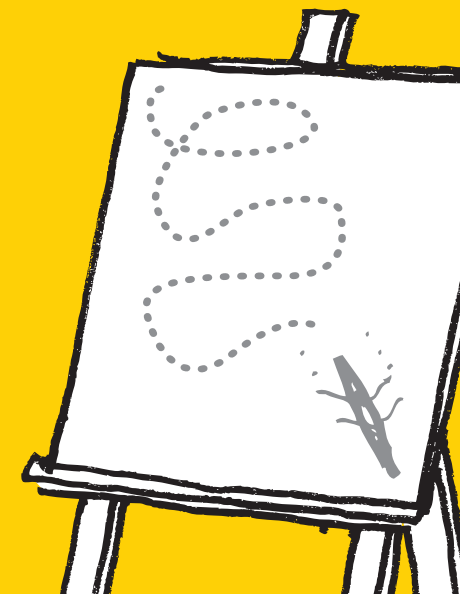
Although this will be addressed in *Booklet 6 - On the Water*, always be careful when turning the boat around that you are not going to block other traffic in either direction. Note that during a turn you will be at 90° to the course, creating the possibility of making the boat a very large "target". Also, be mindful of wind, tide and waves; the boat can drift more (dangerously so) if caught side on to these natural elements.

Always use caution when stopping and turning.



quick glossary

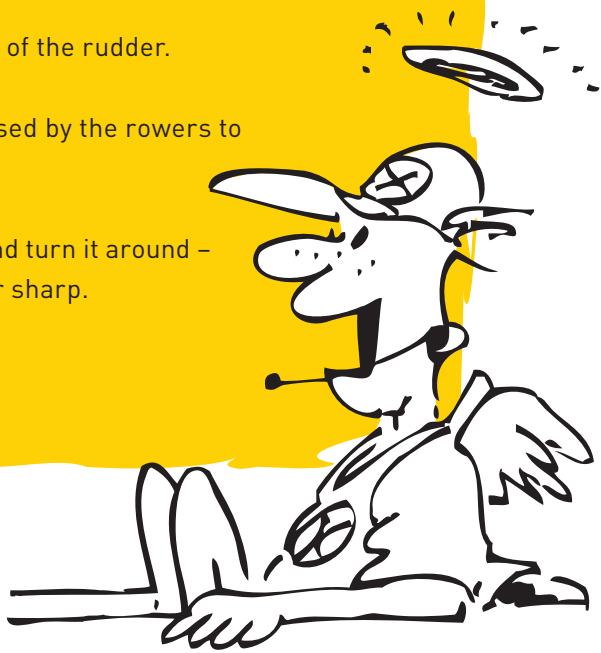
'BACK IT'	Command given by coxswain to rowers to have them move their oar backward through the water to reverse boat direction.	'PULL IT AROUND'	Command given by coxswains to rowers to have them take a full stroke to move the boat from a stationary position to adjust the boat's course.
BALANCE	Stable boat without sideways tilting to either side of the boat.	RUDDER	Part of the boat used to apply resistance in the water thus steering the boat's course.
BOW	Direction to which boat is travelling – front end of the boat .	RUDDER STRINGS	Attached strings, chord, rope, wire to the rudder that are pulled or pushed by the coxswain to move the rudder and change the boat's course.
BOW LOADED	Coxswain's seat is placed in the bow end of the boat.	'SPIN THE BOAT'	A casual term used by coxswains to instruct rowers to turn the boat in its opposite direction.
BOW-SIDE	The right hand side of the boat when facing toward the bow end of the boat.	STERN	The end of the boat to which the rowers face – the back end of the boat.
CANVAS	Upper part of boat between the stern and cox seat, bow and bow seat – was traditionally made of canvas for light weight waterproofing of boat ends.	STRAIGHT	An accurate alignment between the starting point and the intended end point – shortest distance between two points.
'CHECK IT'	Command given by the coxswain to rowers to have them place their oar into the water holding it firmly at a constant depth thus slowing or stopping a moving boat.	STROKE-SIDE	The left hand side of the boat or all rowers whose oars are placed on this side.
'CHECK IT HARD'	Same as 'check it' but with greater urgency and more purpose thus resulting in a quicker stop – especially effective in time of emergency stopping.	'TAP IT'	Command given by the coxswain to the rowers to have them use small strokes (arms only) to adjust the boat's course while stationary.
'CHECK IT LIGHTLY'	'Check it' completed with a partial burial of the blade in the water for a gradual slowing of the boat.	THREE SEAT	The position of a rower in the boat relative to other crew members i.e. three seats from the bow.
'EASY ALL'	Command given by the coxswain to stop the rowers from taking further strokes – the command to stop rowing.	TOGGLES	Small plastic/wooden handles on the coxswain's rudder strings used for better rudder alignment.
FIN / SKEG	Small thin metal plate placed beneath the hull for boat stability and straight course in the water.	TWO SEAT	The position of a rower in the boat relative to other crew members i.e. two seats from the bow.
'LET IT RUN'	Command given by the coxswain after "easy all" to allow the boat to gradually lose speed and come to a stop.		
'LIGHTEN OFF'	Coxswain's command for the rowers to place less effort into their stroke.		
OVERSTEER	A fault of coxswain's that use too much rudder, too often.		



the good COXSWAIN

SO WHAT SHOULD THE GOOD COXSWAIN NOW KNOW FROM READING THIS BOOKLET:

- ✓ Why to steer.
- ✓ What kinds of rudders are available to steer.
- ✓ How to use the rudder and when.
- ✓ Under what circumstances he must use the rudder.
- ✓ When to use the rudder and what happens to the boat when he does.
- ✓ What I can use instead of the rudder.
- ✓ How the oars can be used by the rowers to change boat direction.
- ✓ How to stop the boat and turn it around – slowly, quickly, wide or sharp.



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