

British Canoeing Awarding Body Bell Boat Helm Handbook



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The Bell Boat is a twin-hulled open canoe seating up to 12 paddlers, including the helm. It is a standard class boat. Bell Boating is a rewarding and enjoyable paddlesport activity that can be used in outdoor education, expeditions and competition.

The Bell Boat Helm Award is aimed at teachers, coaches, youth leaders and others who wish to use Bell Boats to introduce paddlers to, and develop them for, paddlesport on sheltered water. The Bell Boat Helm Award permits the award holder to take responsibility for the crew and the boat and is relevant for use throughout the year within the guidelines and conditions attached to the award. The main priorities of the helm for themselves and their crew are safety and enjoyment.



Helm Qualifications and Ratios

Personal ability and experience

Helms need to be clear about their own personal limitations in assessing water and environmental conditions. Under normal circumstances, Bell Boating would take place as part of a club/school activity and would be part of the general safety policy of the site and the organising body.

Newly qualified Helms, with no previous paddlesport experience, would normally follow an action plan established during the Bell Boat Helm course, which would involve them in running their first few sessions under the guidance of an experienced British Canoeing Coach with Bell Boat Helm experience.

Suggested qualified Bell Boat Helm ratios

An unqualified leader should not normally be in charge of a Bell Boat unless acting with permission from an experienced British Canoeing Bell Boat Helm and is operating within the safety policy for the given venue.

- A newly qualified British Canoeing Bell Boat Helm can only be responsible for helming one Bell Boat in very sheltered waters
- An experienced British Canoeing Bell Boat Helm, being deployed by a British Canoeing Coach or Leader can supervise one other Bell Boat where competent leaders helm
- A British Canoeing Coach or Leader with considerable Bell Boat experience can supervise up to three Bell Boats where competent leaders helm. This coach must be afloat with the group in another Bell Boat

Areas of Operation

Very Sheltered Water

Quiet canals with easy bankside access and egress; small lakes, which are not large enough, and do not have difficult landing areas for problems to occur if there is a sudden change in conditions; gentle, slow moving rivers. The definition implies weather conditions that are not in themselves likely to cause problems. At any point, the Bell Boat should not be more than 50 metres from the bank.

Sheltered Water

Ungraded sections of slow moving rivers where the group could paddle upstream against the flow (not involving the shooting of, or playing on, weirs or running rapids). Areas of open water (e.g. lakes and lochs) where the Bell Boat is no more than 200 metres offshore and wind strength that does not exceed Beaufort force 3, avoiding being swept/blown out of the safe working area. Slow moving estuaries (less than 0.5 Knots)

Note: that the definitions imply normal conditions and care is advised when water and air temperatures are low.

The Bell Boat Helm

To many people, the ability to steer the boat in a straight line may appear to be the only skill necessary. It is essential that potential Bell Boat Helms see their responsibilities extending beyond this. A good Helm has the opportunity to inspire young people to see what paddlesport has to offer and to lead them to the next stepping-stone in their progression. They also have a multitude of teaching opportunities outside paddling, ranging from teamwork, personal and social education, environmental education, geography, science, maths, adventure and competition.

Helm's Safety Responsibility

The Bell Boat is inherently a very safe form of paddlesport, the craft is stable and generally placid water environments have few hazards. Nevertheless, the Bell Boat Helm has a "duty of care" to their crew. Therefore, serious consideration to safety is essential.

Helm's Equipment

Depending on the group, time of year and conditions will determine what equipment is carried whilst helming the Bell Boat.

As a minimum it is suggested that the Helm carries:

- Mobile phone
- First Aid Kit (Bell Boat Helms must hold at least a valid one day First Aid Award)
- Warm spare clothing

Risk Assessment

In the appendices is an example risk assessment that will suffice in most circumstances. The Bell Boat Helm award does not necessarily provide new Helms with sufficient experience or technical expertise to make a complete Risk Assessment of every site or situation. However, new Helms would normally be running their paddling session at a venue where there will already be safety in place. Bell Boat Helms should therefore make themselves aware of any existing safety guidelines prior to the session. Before venturing on to new paddling sites, it is suggested that new Helms gain the assistance of an experienced British Canoeing Coach with local knowledge to confirm safety provision.



Preparing for the Bell Boat Session

There are a number of ways of organising a session. These are:

1. Trailer your own Bell Boat down to a suitable site
2. Use your own Bell Boat already located at a site
3. Use someone else's Bell Boat already prepared for the water

The easiest option is that you turn up and the Bell Boat is ready for use. For other situations, try to park and unload the boat as close as possible to the water.

Assembling and Checking the Boat

- Ensure that you have the assembly spanner kit
- Assemble as close to the water as possible and on a fairly flat surface
- Check that the bolts are in position and ensure that the rubber seals are fitted between the two hulls (flat end of the craft)
- Check that there are ropes (painters) on the stern and bow of the boat
- Assemble the boat, checking that all nuts and bolts are tight
- Empty any surplus water from a boat if it has been standing on the water
- Attach the steering oar to the boat at the back end. Use a rope if you wish to tie to the posts.

Launching the Bell Boat

Before launching, make sure that the Bell Boat has a long enough rope attached to the stern end, making sure that weight of the boat is distributed evenly between the whole crew before lifting and that the crew use correct lifting techniques (slide or lift the boat into the water keeping a hold on the securing rope).

Note: Pay attention to correct lifting techniques at all times.

- Check the boat for leaks
- Ensure that the boat is secured via the ropes at the bow and the stern, to the jetty or other fixed object ashore.

Participants

Ideally, all the participants should be water confident. Whilst all participants, including the Helm, must be wearing well fitted buoyancy aids, incidents and accidents can happen and an awareness of less confident crew members is useful.

- Medical conditions: Be aware of any medical conditions that the participants may have such as asthma, epilepsy, diabetes, heart conditions or pierced eardrums.
- Experience: Find out if any of the participants have ever paddled canoes before and enlist the aid of this experience during the session.

The Bell Boat Helm needs to be aware of the distance that the participants will be able to paddle. This will be affected by age, size, experience, fitness, wind and river flow, etc. Discussing with an experienced British Canoeing Bell Boat Helm is recommended.

Loading the Boat and Casting Off

Setting up the crew

It is important to load the boat in a particular way in order to make it travel most efficiently. Bell Boats need to be balanced correctly by placing the crew in pairs according to their size and weight and not who they want to sit beside/opposite.

One basis is to place the smallest and lightest paddlers at the front, progressing to the largest in the middle and the small again at the back of the boat.

Alternatively, it may be the most vigorous and active that are needed at the front to lead the crew. An extra consideration is the experience of the group. If some of them have paddled before, it may be wise to place them at the front of the boat, as they will be easier for the other paddlers to follow. It may also be possible to use these paddlers when manoeuvring the boat.

Different situations will lend themselves to different crew arrangements. For example, children from the crew should be given the opportunity to steer the boat, provided the Helm is sure it is safe to do so (no weirs, hazards or other water users nearby).

All paddlers must have a seat and (except when changing around), must sit down (or kneel if racing).

Loading

Load the boat from the front, both sides in tandem, balancing the two sides of the boat as you load. Make sure that the paddlers step onto the hull, the seats or the walkway. All loading should be done gently and without rushing.

You will see how effective your loading of the boat has been by checking the trim by looking at the waterline. There should be an even amount of the boat sides visible at the front and back. If the boat is not balanced, change the seating arrangements. This will be particularly important if there are adults in the crew.

Bell boats can accommodate up to 12 children of primary school age according to the size, age and the capacity of your Bell Boat. No more than 8 adults or adult sized paddlers should be in a crew.

Casting off

Once the crew has been briefed, the Helm should be ready to move the boat away from the shore. The best method is to use someone ashore to push the boat gently out.

If no one is available, cast off the ropes and use the nearest paddlers to hold the boat to the mooring if possible and, when ready, push the boat gently out using their paddles as instructed by the Helm.

Steering using the helm

On the water, one of the primary functions of the Helm is to steer the boat in a safe and efficient manner. This is achieved by using the Helm's paddle (oar).

The paddle performs the function of a rudder.

Place the paddle inbetween the two posts at the back of the boat, which acts as a restraining guide for the Helm's paddle and sits comfortably on one side of the boat. You may find it preferable to tie the oar to the posts.

When learning to steer, it is easier to keep the paddle in the water all of the time. The blade should be at 55–65 degrees to the horizontal and trailing lightly through the water as the Bell Boat moves along, with the face of the paddle/oar blade vertical.

When the Bell Boat is travelling, moving the oar from side to side will steer the boat. Remember the boat will steer to the side where the blade is.

When setting off, look along the length of the boat and line the head up with a distant object as a reference point.

Keep the boat on course by watching the head for movement to right or left in relation to your reference point. The best way for new Helms to develop a feel for steering is by simple trial and error.

React early but do not overreact, a light pressure is usually enough to keep the boat on line. If the boat veers badly to one side, stop, line up the boat and start again.

Keep the boat running as straight as possible by applying the steering strokes quickly and effectively as soon as the boat begins to go off line. The longer you leave it, the harder it is to correct.

Be very aware of side winds, waves or wakes from other boats, as these will cause the boat to turn into them. Anticipate these by looking around you, watching other boats, or flag movement. Try and face into a wind or current. Being broadside on will increase the amount of effect wind and current will have. When manoeuvring, row the oar to add effect to the steering.



Approaching shore & disembarking

Once the session has finished, the Bell Boat Helm should bring the boat and its crew safely back to shore. This should be done with care as a lot of damage can be done to boats when they collide with piers or jetties.

Approach with minimum speed and be aware of the wind as this may blow the boat off line. It is best to try to approach the landing stage upwind and against the current, rather than be blown onto its corner and out of control.

When close to the landing stage, make sure that the paddlers move their hands inside the cockpit to avoid them being caught between the boat and the quayside.

Once the boat is stationary at the landing stage and tied up front and back, the paddlers should help hold the boat steady whilst pairs get out from the front as instructed by the Helm. Paddlers should take care not to stand on the sides of the boat or to jump onto the quay.

Check that all of the crew is accounted for.

Ending your paddling session: taking the Bell Boat out of the water, dismantling and loading

Your boat may stay on the water, tied up, or chained and locked according to local conditions.

If you need to remove the boat from the water, you will need enough people to help and a place where the boat can slide onto the shore or be only lifted a small way. It is easiest to get the boat out of the water front first, once the prow is on land and then slide the whole boat out.

It is very difficult and can be dangerous to try to lift the whole boat up out of the water at once.

It is also possible to dismantle the boat into two halves on the water, temporarily plugging the boat whole in one half while it is on the water.

The Bell Boat should be put on trailer upside down, with the middle section first, as far as the steering posts. You should then tie the boat with cross ropes, front and back, and tie from the trailer to the seats in a couple of places to stop the boat sliding. Make sure you check the trailer tailboard is tightly fastened in all four places.

Occasionally, the fixing bolts will become stiff, perhaps there will be some grit or metal swarf on the threads. Unfasten them and tighten them with some oil to loosen off and free the nut.

Post Session Hygiene

Once the session is over and kit is returned and put away, the crew should wash their hands. This is particularly essential before eating, see Appendix 2 for further information about Weil's disease.

Paddling the Bell Boat

Whilst still ashore or tied up to the side, it is useful to get the crew to practise the paddling stroke.

The paddle is a single bladed paddle. To grip the paddle, simply place one hand down the shaft near the blade according to comfort (known as the lower hand) and the palm of the other hand on the top of the T bar (known as the top hand).

The top hand is the one nearest the middle walkway of the boat. The bottom hand should have the thumb under the shaft and knuckles on top.

Forward Paddling

Paddlers should be taught that the essence of the stroke is to drive the paddle downwards into the water using the top hand and lever the boat past this paddle.

1. The catch – This is the driving of the paddle into the water at the start of the stroke. This is achieved by reaching forward and extending the lower arm while rotating the body slightly and pushing the paddle-side shoulder forward. The paddle is driven downwards primarily with the top hand and held down with the bottom hand.
2. Try to get the paddlers to think of 'sliding' themselves past the paddle. When the paddle reaches the paddler's seat or hip, and no later, lift the paddle just enough to clear the water and reach out for the next stroke. Remember the whole stroke takes place in front of the body.
3. Recovery – The key is to return the paddle to the catch position as quickly as possible.
4. The shaft of the paddle should remain as near vertical as possible in the stroke, i.e. the top and bottom hands will both need to be out over the water, with the paddler sitting on the outside edge of the seat.
5. The paddlers should be encouraged to maintain the bottom hand low on the shaft, close to the blade.
6. Tired arms will soon cause lazy and inefficient technique so reminding of 4 and 5 would prove useful.
7. Timing is important as a crew, so it will be necessary to practise keeping the strokes together, perhaps using chanting or beating a paddle on the deck.
8. Crew adjustments will be necessary to have a good "model" at the front to follow.
9. The strokes will need to be crew members who can concentrate and have good endurance.

Stopping

To bring the boat to a halt, the paddlers should hold their paddles in the water or for a faster stop all do a reverse stroke – i.e. PUSH the back of the blade against the water to act as a brake.

Reversing

This may be required to manoeuvre the boat and is an important skill – again the crew should PUSH the back of the blade against the water.

Turning and Manoeuvring

The actions of the helm keep a boat basically on a straight line or move the boat in any direction. However, the crew will need to help in manoeuvring the boat in tight situations or to turn round to face the other way.

- One side forward paddling only will turn the boat in an arc forwards
- Reverse paddling on one side will turn the boat in an arc backwards
- A combination of forward paddling on one side and backward paddling on the other will turn the boat on its own axis.
- To move the boat sideways to a landing stage, the paddlers will need to use a draw stroke where the paddler plants the blade of the paddle out at the side of the boat and pulls the boat sideways towards the paddle. This can be used for moving the boat onto a landing stage or by the first two paddlers at the front using the stroke to help turn the boat around.
- The helm can row the steering oar to assist this turning.

Instructions

Keep instructions simple – “IN” or “DOWN” for forward strokes and “PUSH” for reverse strokes will do well. If using the draw strokes, “DRAW RIGHT & DRAW LEFT” are suggested.

“Forward on Left/Backward on Right”, etc. for turning the boat round.

Journeying

The Bell Boat provides an excellent craft for undertaking a journey or expedition on Sheltered Water. Consideration and planning is essential to get the most out of a trip safely, checking new areas for weirs and locks.

Weather conditions

The ability to judge whether it is safe to take the crew out comes mainly from experience and getting to know the local effects of weather. If you are unsure, check with someone who knows the water you are about to paddle on well. Your local River Authority, Canal & River Trust, Lock Keeper can give details of river levels and expected floods and also the Environment agency website.

Local conditions

It is important to know of the rules, regulations and conventions governing the use of the water and conduct whilst on the water.

In terms of other water traffic there are 2 main considerations:

- Boats should travel on the right and pass on the right.
- When crossing the path of another boat you should always cross behind the other craft.

If you are ever in any doubt – **STOP THE BOAT and keep to the side of the river.**

Using Locks

Bell Boats should only be taken through the locks if there is a local agreement to do so. The Helm should ensure that there are enough competent adults on board to be able to position the boat. The crew should be trained in handling the boat before using the locks.

Be aware of other pleasure boats as they approach and leave the locks and, wherever possible, keep the boat clear of these vessels.

- Avoid entering locks with other boats, especially on small rivers and canal locks unless instructed by the lock keeper.
- If you do share a larger lock, follow any other boat in.
- Tie up the boat as instructed by the lock keeper or local regulations.
- Keep the paddlers seated at all times.
- Leave lock gate open/shut according to local regulations.
- Don't forget a lock key.

DO NOT go through locks with other pleasure craft except when under supervision of the lock keeper. The Helm should operate the locks with assistance. It is best to have another adult helping. If children are helping, they must be trained to keep well clear of the edge of the lock and must not run.

The water must be let in and out in a controlled way, ensuring that the flow is not too excessive. Use only one lock paddle and let the lock fill slowly until the paddle is covered. Be ready to quickly close the paddle if needed.

There must be an adult on the boat going through the lock. This adult can control the ropes, pulling in or letting out dependent on whether the lock is filling up or emptying.

Appendix 1: Activities

Basic Jargon

No matter how basic it might seem it is worthwhile checking out the crew's level of experience. For example, does everyone know the following?

- Difference between "Left" and "Right" or "Port" and "Starboard"?
- The names of the strokes you will use?
- The Helm's "command" for each of the strokes used?

Timing

The boat runs most efficiently when the crew are paddling in time. There are a number of ways to help improve the timing.

Develop a chant

- For example... "In together" or "down" to mark the start of the stroke

Sing a song

- For example... "We don't need no fancy shirts, we just paddle till it hurts", etc.

Count strokes

- For example...Count in blocks of 1- 10 strokes

Drum beat

- As part of the stroke get the crew to beat a rhythm either with their hand or their paddle

Concentration

Give each crew member a number and get them to shout out their name whenever the Helm shouts out their number.

Introductory Activities

Once basic strokes and techniques have been introduced, it is usually beneficial to provide a practical exercise or activity to apply them. Using a series of activities or challenges will improve teamwork and cohesion, but they also encourage deeper and better long-term learning of the various skills.

The Bell Boat as a craft is primarily designed for journeying, be it competition usage at Regattas or for voyaging. It is therefore important for Helms to design practice sessions and activities in support of these objectives.

The following activities have been described to provide some basic ideas to help new Helms get started.

1. The Main Voyage

- Aim:** To cover a set distance by paddling to a specific point (and back again).
- How to play:** Identify an objective for the voyage (distance will depend on the age and ability of the crew). Leave the rest to your crew's imagination and paddle the route identified.
- Benefits:** "Voyage" is an evocative word – it can inspire the crew. It encourages paddling a distance in a fun way. Encourages the grooving in of the forward paddling stroke. It can be used as an overall structure to a session.
- Progressions:** Increase the distances paddled as the crew get better. Use it to prepare for a longer trip as part of a longer term objective. Increase the speed over a set distance, etc.

2. Paddling by Numbers

- Aim:** The activity allows the Helm to involve the crew in manoeuvring the boat.
- How to play:** Identify a series of manoeuvres and allocate each a number. Call out the numbers at random as the crew paddles along.

Example 1

1 = RHS only paddle

2 = LHS only paddle

3 = Both sides paddle together

Example 2

1 = Both sides together

2 = LHS forward paddle
RHS reverse paddle

3 = RHS forward paddle
LHS reverse paddle

Example 3

1 = Paddle forward on both sides

2 = Emergency stop

3 = Turn the boat round

- Benefits:** The game can be adjusted to grove in almost any paddling stroke. Random practice promotes better long term learning. It is good fun whilst distances are covered.
- Progressions:** The degree of difficulty can be increased by adding more advanced strokes, splitting the boat up further so each quarter section has a different job or stroke to do. The crew give commands for the Helm.

3. Treasure Hunt

Aim: To improve steering, paddling and navigation.

How to play: Identify on a map the location of some items of "treasure".
Set off from base to collect a list of "treasure" by paddling the quickest route.
Once the items of "treasure" are collected paddle back to base.

Benefits: Collecting the treasure is a powerful incentive to paddle for the crew.
It encourages paddling a distance in a fun way.
Encourages the grooving in of the forward paddling stroke.
It can be used as an overall structure to a session.

Progressions: The game can be run on a single boat as a simple challenge or against the clock or collecting as many items in a given time.
With more than one Bell Boat it could become a mini competition activity.
Use the idea as part of a longer trip.

4. Obstacle course

Aim: To improve manoeuvrability.

How to play: Identify a course with a number of man-made obstacles.
Paddle the course overcoming the obstacles.
Obstacles might include manoeuvring around a tight course, or landing and getting a crew member or the whole crew to get off then get back on again, etc. Paddle to complete the course first then paddle to improve your time.

Benefits: It can be designed for any stretch of water.
Can be used to improve acceleration.
Tests communication skills.

Progressions: Change the obstacles.



Appendix 2: Weil's disease

Weil's disease is rare but it can be caught by anybody involved in water sports. It is essential for anyone engaged in water sports activities in a position of responsibility to make people aware of Weil's Disease.

What is it?

It is a bacterial infection carried in rats' urine, which contaminates water and wet riverbanks. The bacteria do not survive for long in dry conditions. It can occur in any water, including swift streams and rivers. The likelihood of becoming infected is greater from stagnant water or slow moving waterways, particularly in high water conditions.

How serious is it?

It can be a serious illness requiring hospital treatment and can lead to kidney or liver failure.

How can I catch it?

The bacteria are absorbed through the skin mucous membranes of the mouth and eyes. It gets into the blood stream more easily if you have a minor cut on your skin or feet.

What should I do about it?

If you fall ill with the symptoms after water sports, particularly from 3-19 days following, then see your doctor immediately. The most common symptoms are:

Temperature, an influenza type illness and joint and muscle pains (pains in the calf muscles are often particularly noticeable).

Your doctor

During a routine visit to the doctor advise them that you participate in water sports and give them a copy of this information note. Ask them to make a note in your personal file and advise them of the existence of:

Summary

- Wash or shower as soon as possible after water sports.
- Cover minor scratches on exposed parts of the body with waterproof plaster.
- Use footwear to avoid cutting feet.
- If you have a flu-like illness after water sports, go to your GP early, advise them of your involvement in water sports.

Appendix 3: Beaufort Wind Force Scale

Beaufort wind force scale	Mean wind speed		Limits of wind speed		Wind descriptive terms	Probable wave height in metres at sea <small>Note: Inland waters are likely to be less</small>	Probable maximum wave height in metres at sea <small>Note: Inland waters are likely to be less</small>	Sea state	Sea descriptive terms	Land descriptive terms
	Knots	ms ⁻¹	Knots	ms ⁻¹						
2	5	3	4-6	2-3	Light breeze	0.2	0.3	3	Smooth (wavelets)	Wind felt on face; leaves rustle
3	9	5	7-10	4-5	Gentle breeze	0.6	1.0	3	Slight	Leaves and twigs in constant motion, light flags extended
4	13	7	11-16	6-8	Moderate breeze	1.0	1.5	3-4	Slight-Moderate	Raises dust and loose paper; small branches moved
5	19	10	17-21	9-11	Fresh breeze	2.0	2.5	4	Moderate	Small trees in leaf begin to sway, crested wavelets form on inland waters

Appendix 4: Bell Boat Generic Risk Assessment

Risk / Hazard	Who is affected	Controls in place?	Action needed?
Bumps, knocks scrapes from paddle to body contact	All	Group briefing by Helm/Coach.	
Man overboard especially in open water/windy conditions.	All	Throwline needs considering in these conditions as paddling upwind difficult. Additional staff training needed to consider 180 degree crew shift rather than turning boat.	
Drowning	All	Appropriate buoyancy aids fitted and/or additional safety cover provided.	
Capsize	All	Very unlikely in sheltered water with trained staff.	
Swamping	All	Very unlikely in sheltered water Open water may require presence of additional safety craft.	
Hypothermia	All	Appropriate clothing to be worn	

Acknowledgements

David Train, an engineer from Fladbury, designed and developed the Bell Boat and the Bell Boat Scheme, based on what he saw was a need to get as many young people afloat at one time, as safely as possible. The boat is predominantly aimed at the 8-12 year old market but is also ideal for adults and those with special needs.

We thank him for his guidance in putting this information together.

David has also developed a range of stories for young and old alike, which tell the meaning of the 'Bell' in the Bell Boat and ideas that surround the boat.

This is the essence of the "crew" or team nature of the boat and reference to David Train's "Walter Stories" will enable teachers and leaders to draw much useful educative material from this area.

