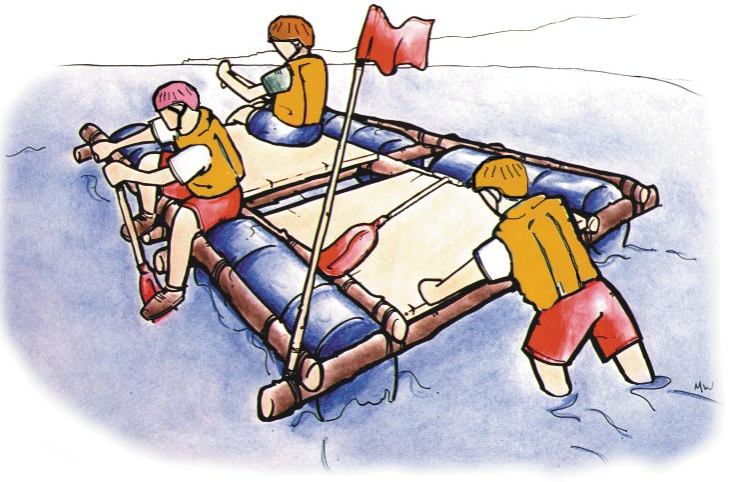
On the Water



Water safety

Activity on water is always great fun, however care needs to be taken at all times to prevent injury. Open water, such as lakes, rivers and sea can be be very inviting but first and foremost you need to be able to swim. If you don't know how to swim then join a swimming class and learn. For most boating activities, it is advisable that you can swim a distance of at least 50 metres, and stay afloat for 2 minutes without the aid of a buoyancy aid.

Always make sure you wear a life-jacket or buoyancy aid as appropriate on all water based activities, even if the water is shallow.

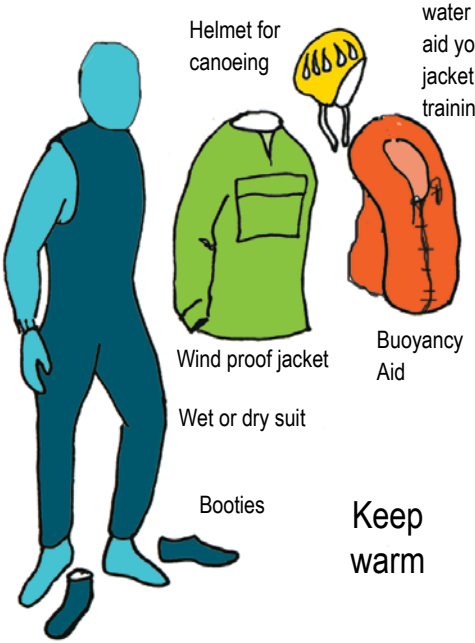
Water activities require a level of skill. The pages of this chapter are only an introduction to the many possibilities. In all cases special training will be required. All Scouts should also consult the boating guidelines for best practice and behaviour on the water.

Buddy system

In all Scouting water activities we use the Buddy system for safety. Each Scout is asked to team up with another Scout while taking part. Your job as a Buddy is to look out for your partner and he/she has to look out for you. If you are a Patrol Leader you will have the additional responsibility of looking out for all the members of your Patrol. From time to time the activity leader will call for 'Buddies'. At the signal you should find your Buddy - who should be close by, and hold his/her hand out of the water so that you can be clearly seen. Once everyone is checked you can resume your enjoyment.

Its a simple idea that everyone can understand, a simple idea that can save a life.

Open water is always cold. Water is a heat conductor and will draw heat away from your body very quickly. Wind chill also plays a big part in the cooling down process. For this reason it is advisable to wear the right clothing when taking part in water activities. Along with your buoyancy aid you will need to wear a wind proof jacket, a tee shirt or light fleece and old training shoes with warm dry clothes available to change into after the activity.



Keep warm

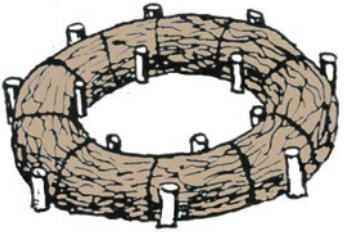
If you are visiting an outdoor pursuit centre, they will probably provide you with specialist equipment such as wet suits, bootees and helmets if white water canoeing.

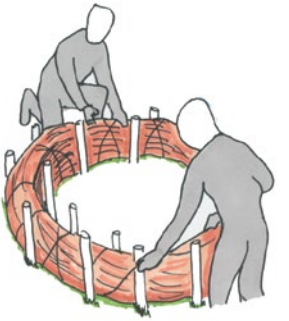
You will get wet, but be careful not to get cold. If you feel you are getting too cold or are shivering, tell a Leader. Work the Buddy system and keep an eye on each other.

Rafts

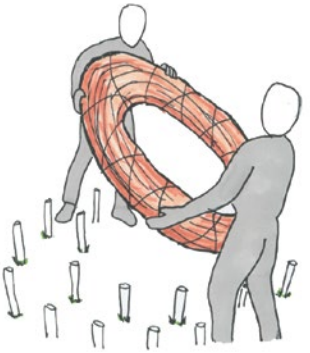
Bush raft.

This raft is easy to make once you know the procedure.





First place a number of stakes in the ground and then pile light twigs and branches between the stakes, to make a doughnut shape. When the shape is complete weave sisal or rope around the pile to keep it together.

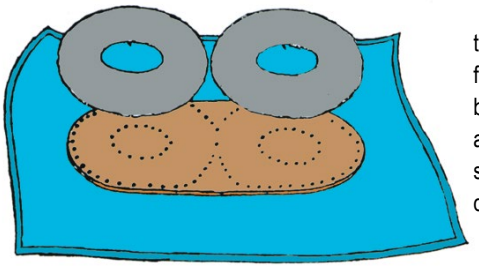


Lift the 'doughnut' pile from its frame and place in the middle of a plastic sheet or tarp. Fold over and tie the sheeting to the pile core. Your raft is now ready for use.

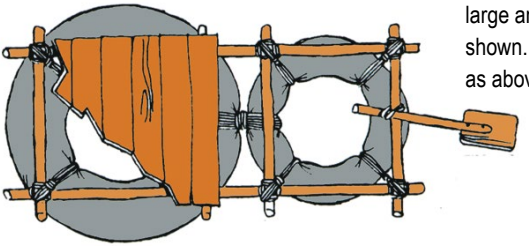
Be aware that the base of the raft is only a layer of plastic and will puncture easily. Use only on calm water such as lakes, slow moving rivers and canals.

Inner tube raft

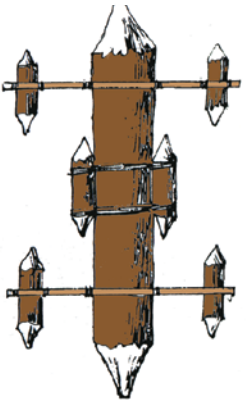
The inner tube raft is an ideal one person raft. You will need two large inner tubes, a plastic sheet or tarpaulin and a base board made of construction grade ply-wood. Cut out the base board as shown, and drill a number of threading holes in



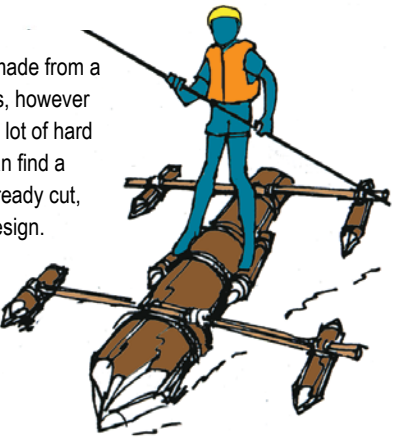
the base so that the tubes can be firmly attached to it. Now cover the base and the tubes with the sheeting and tie it off. If you have a plastic sheet with eyelets then this can be done easily.



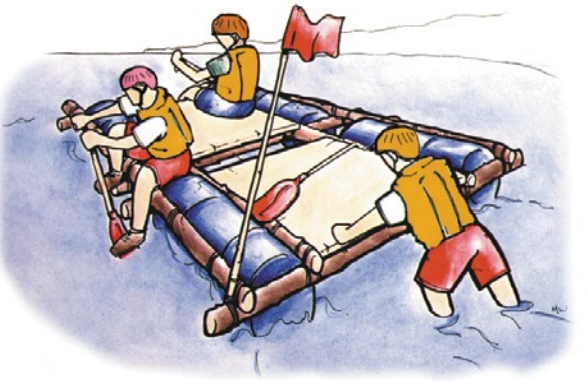
A similar raft can be made with a large and a small inner tube as shown. Either make a baseboard as above or construct a frame to hold the inner tubes together.



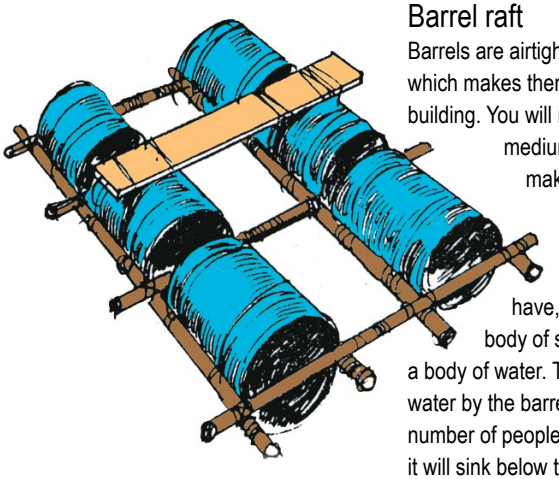
A raft can be made from a number of logs, however it will involve a lot of hard work. If you can find a suitable log already cut, then try this design.



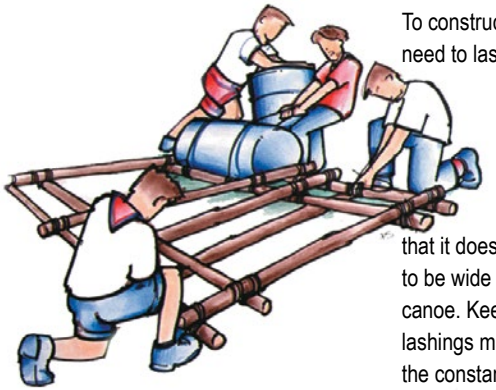
Rafts cont.



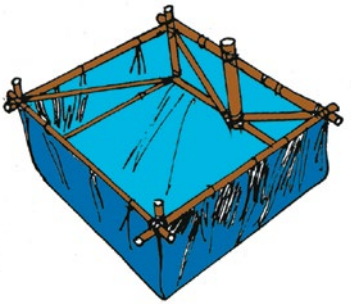
Barrel raft



Barrels are airtight and almost unsinkable which makes them ideal material for raft building. You will need a number of medium sized barrels to make a decent raft hat will hold a number of people. Look at the barrels you have, and think of them as a body of space that will displace a body of water. The total displacement of water by the barrels needs to match the number of people on the raft, otherwise it will sink below the water. In simple language you need a lot of barrels to hold a Patrol on a raft.

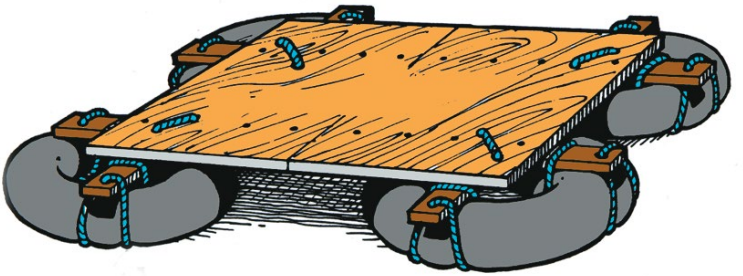


To construct a workable raft, you will need to lash the barrels to a frame. This will keep the barrels stable and allow you to travel through the water under paddle or sail power. The frame also needs to be balanced so that it does not topple over. Design the raft to be wide rather than streamlined like a canoe. Keep an eye on the lashings. The lashings may loosen due to being wet and the constant twisting of the frame in the water, so check them regularly.

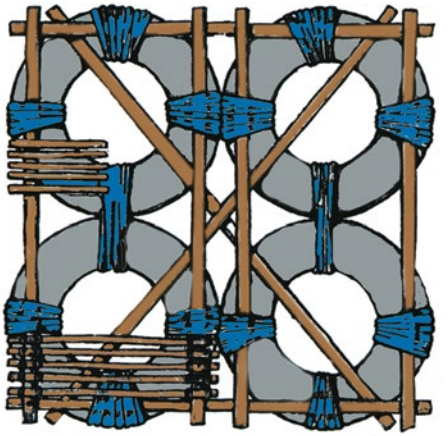


Plastic sheet raft

A plastic sheet is ideal for raft making. We have already shown designs using inner tubes and branch 'doughnuts' which use a plastic sheet or tarpaulin. This design is a simple box created with light poles and covered with plastic sheeting.

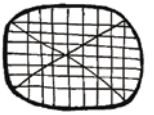


Inner tubes - truck wheel size are great for making rafts. This raft will support up to three or four young people. The tubes provide the buoyancy for the raft but they are unstable without a frame. A simple frame can be constructed as shown with standard 4 X 2 timber and plywood sheeting held together with rope. Alternatively you can use the more traditional method of construction using light pioneering poles. The top frame is only shown in part so that the frame design can be clearly seen. When constructing a raft it is most important to have a stable and secure frame that will not loosen and fall apart with use.

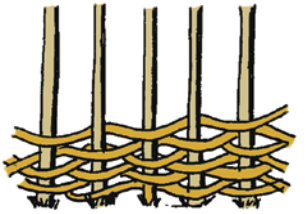


The Coracle

The coracle is a traditional water craft used for centuries by rivermen fishing salmon. It was particularly popular on the Boyne. It is an excellent and fun filled activity for Scouts and its backwoods element certainly makes it a scouting skill worth possessing. They can be simply built in one day or a more permanent craft in two.



Start by collecting 32 hazel or ash rods from croppings approx. 25 mm thick across their length. The rods need to be about 2.5 metres long. Place rods evenly in the ground in a rough oval shape 2 metres long by 1.5 metres wide (traditional size 6' X 4').

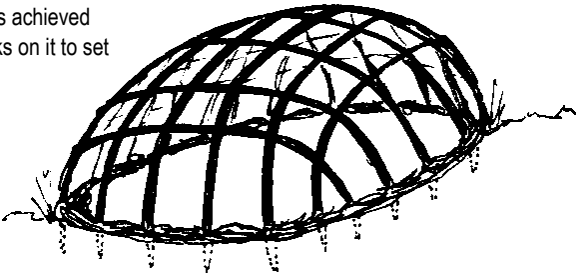


The idea is to create a basket shape approx. 50 cms high. Bend the rods over from the long side first and tie together as shown

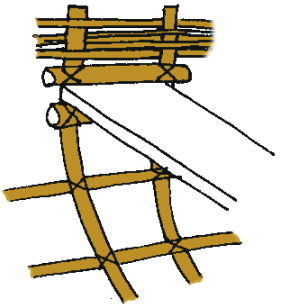
Do not trim the rods until the basket is created as minor adjustments may be necessary to get the correct shape. Work slowly and with care to avoid rods cracking.

An interlacing binding is woven around the base of the frame approx. 100 mm deep using light rods or willow withies.

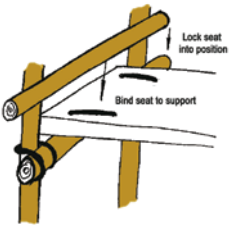
When basket shape is achieved place planks and rocks on it to set the frame in shape overnight.

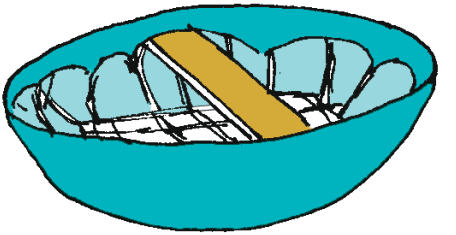


When the rods have been cut, trim and smooth the edges to prevent them puncturing your covering.



The seat is fixed in the middle of the coracle. Bind the edge of the seat to the frame.





Remove the coracle frame from the ground and trim the edges. Cover the frame with plastic sheeting and you're ready to go.

Photograph from the 1890's showing traditional Welsh coracle, built using ash lathes to form the basket, and covered in cowhide.

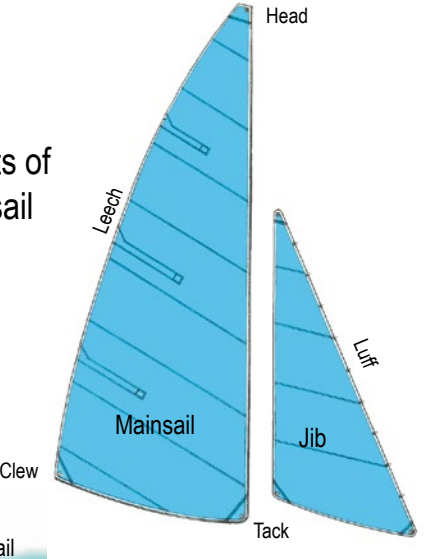
Paddling a coracle

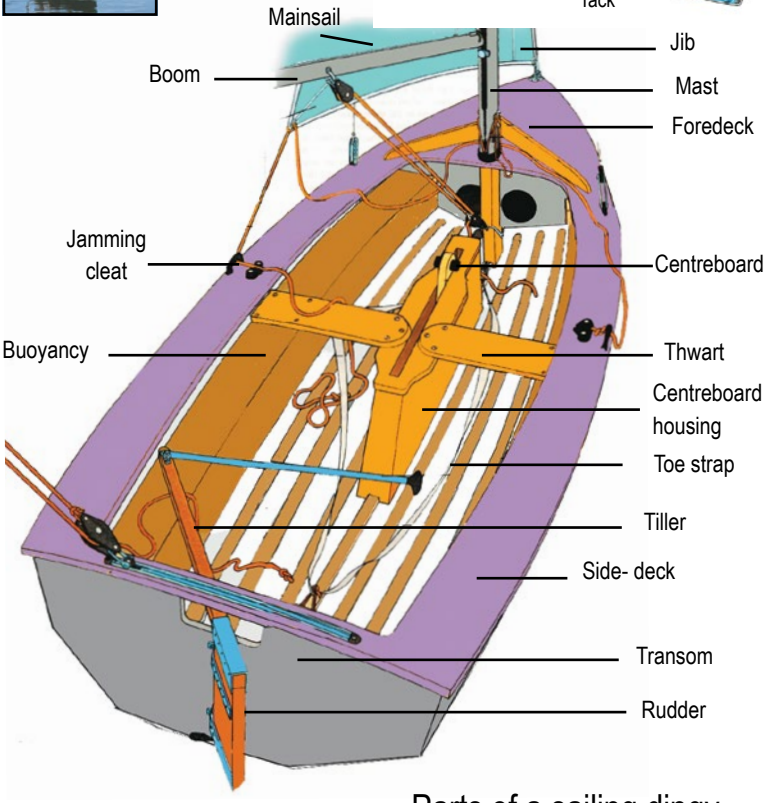
The coracle is paddled by leaning over the front end of the boat and moving the paddle in an 'S' movement.
This may seem odd at first but it is the traditional method of paddling the craft.

A single handled paddle is used. It can be a modern type, or constructed as shown. It is 2 metres in length.

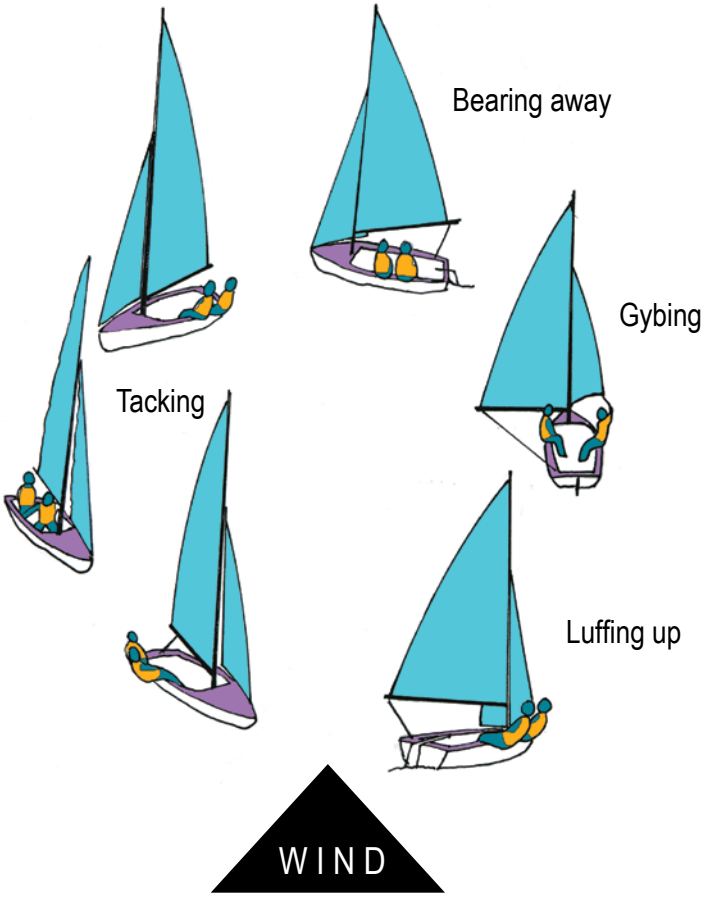
Sailing

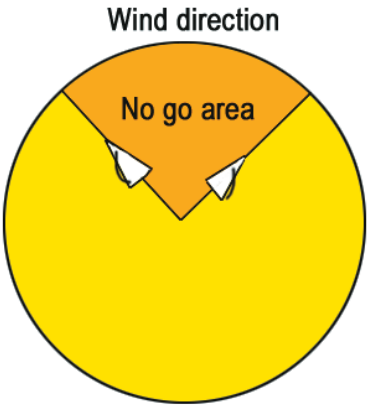
Parts of a sail





Parts of a sailing dingy

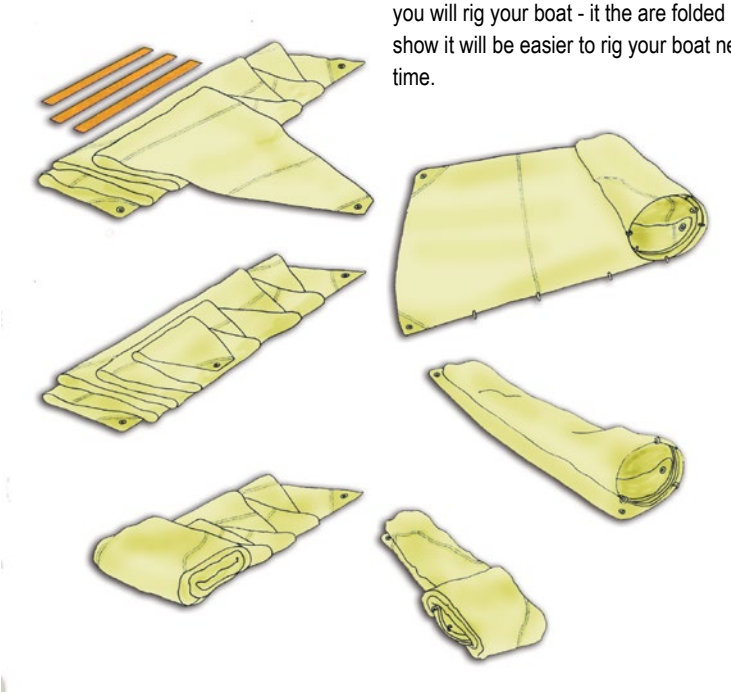




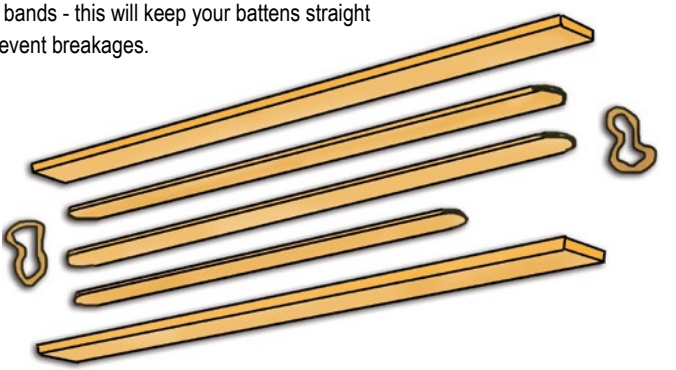
Learning to 'read the wind', and adjust the sails accordingly, so that you can travel to a desired destination, requires practice. A sailboat can use wind from any direction to take the sailor where he/she wants to go, but there is an area directly into the wind that sailors call the 'no go zone'. In order to travel into this zone it is necessary to travel at 45 degrees to the direction of the wind. This is known as ' tacking'. Progress is made by a zigzag route.

Folding a sail

Sails should be taken off the rigging and folded carefully after each adventure on the water. Keep in mind the next time you will rig your boat - it the are folded as show it will be easier to rig your boat next time.

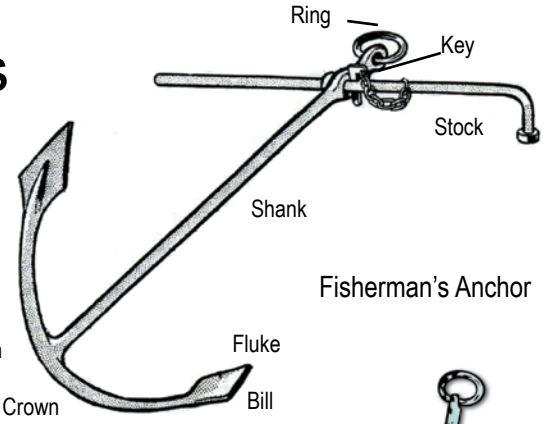


The wooden batten within the sails should be removed and kept together and secured using elastic bands - this will keep your battens straight and prevent breakages.



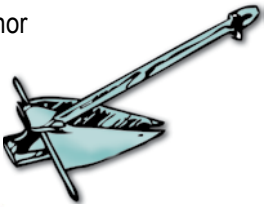
Anchors

When anchoring a vessel it is important to lay out the correct amount of cable (anchor rope), five times the depth of water present or expected. For three metres of water you will need fifteen metres of cable.

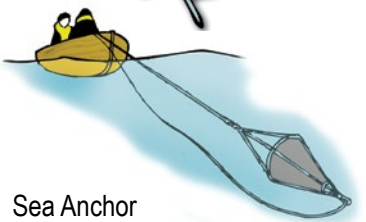


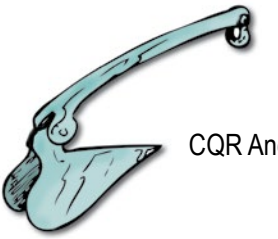
Fisherman's Anchor

Danfort Anchor



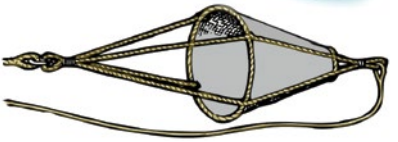
Folding Grapnel Anchor



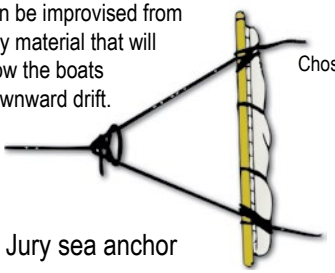


CQR Anchor

Sea Anchor



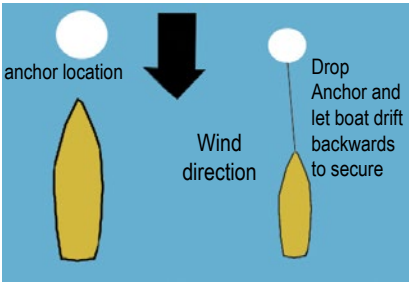
The sea anchor is not an anchor. It is a device to keep a boat lying head to wind in bad weather and will reduce downward drift. If you do not have a sea anchor aboard a jury sea anchor can be improvised from any material that will slow the boats downward drift.



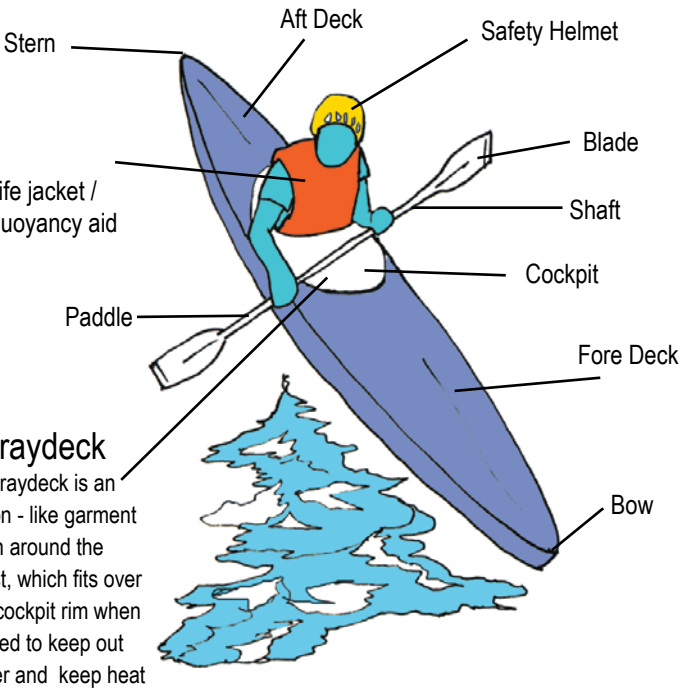
Jury sea anchor

How to anchor

- Tie the rope to the anchor and boat.
- Before letting the anchor go, make sure the vessel is moving astern.
- Pay the rope out slowly as the vessel drifts backwards to avoid 'fouling' the anchor.



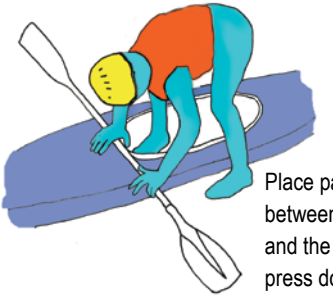
Canoeing



Spraydeck

A spraydeck is an apron - like garment worn around the waist, which fits over the cockpit rim when seated to keep out water and keep heat in.

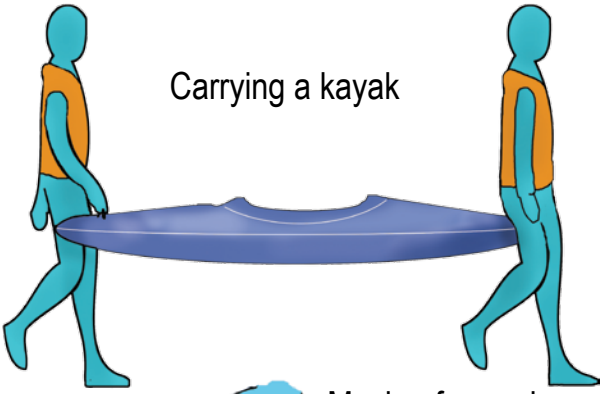
Getting in and out of a kayak



Place paddle between the bank and the kayak and press down for support.

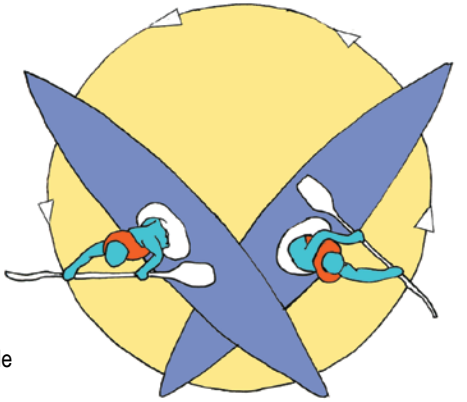
Ease yourself slowly into the kayak

Carrying a kayak



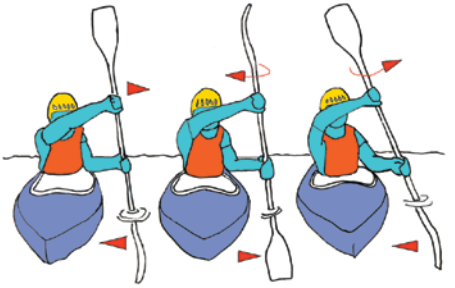
Moving forward

To paddle, lean forward, place the blade into the water and pull on the paddle. The blades of the paddle are offset to each other so the paddle needs to be twisted slightly for each stroke. Try to maintain an even balanced movement to travel in a straight line.



Sweep stroke

The sweep stroke is a technique which allows you to move your kayak about a set point. It is completed by using a wide sweeping stroke with the paddle.



Draw Stroke

The draw stroke can be used to move the canoe towards the bank or around an obstacle. The paddle is kept in the water throughout the stroke.

Low Brace Stroke

Brace strokes are used to prevent a kayak from capsizing. The low brace is used like an outrigger. The high brace is used in rough water.

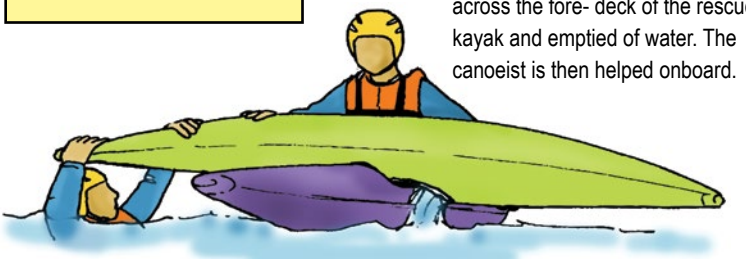
High Brace Stroke

In case of capsize.

- Take the spray deck off
- Push out of canoe
- Surface and keep hold of canoe
- Swim canoe and paddle to the shore
- Empty canoe

X - Rescue

The capsized kayak is pulled across the fore- deck of the rescue kayak and emptied of water. The canoeist is then helped onboard.

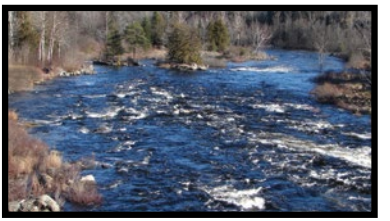


H - Rescue

Rescue team kayaks are positioned across each end of the kayak forming a H. The kayak is emptied and canoeists helped onboard.

Grades of Water

Grade I Easy - moving water



Grade 2 Moderate - the water is faster and rapids are more frequent; rocks, waves and small stoppers are found but always with an obvious channel.

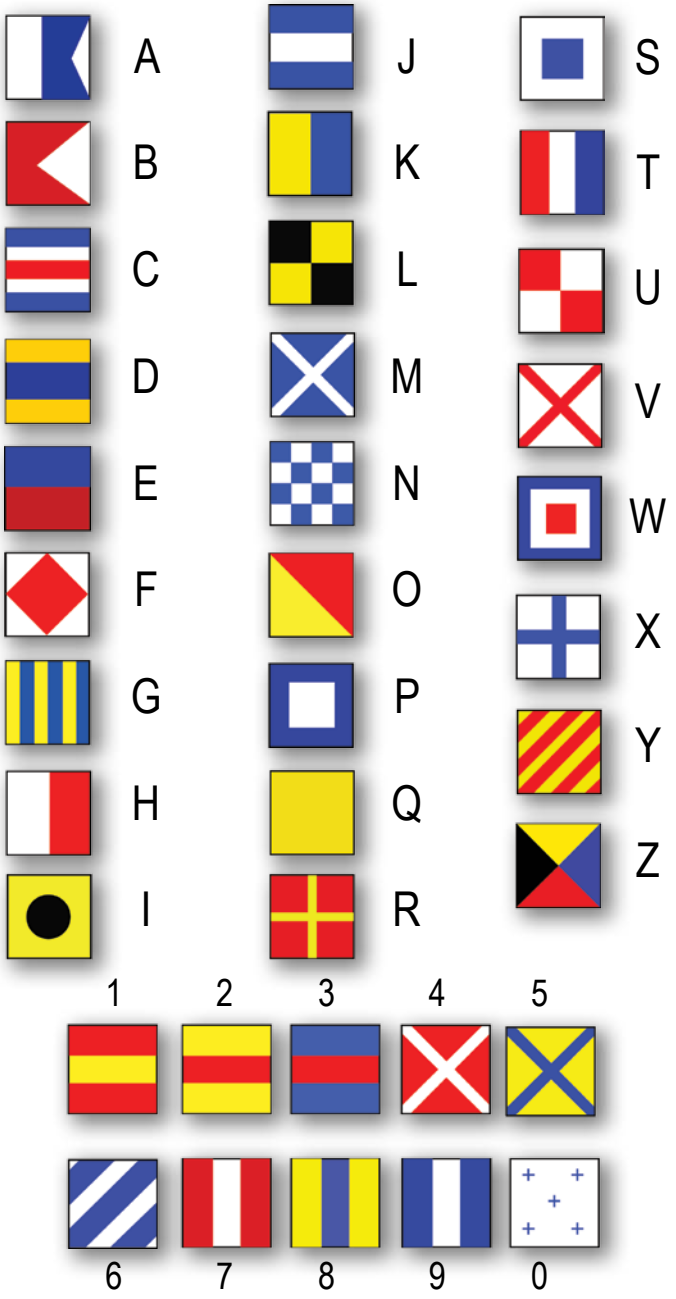
Grade 3 Harder - the pace quickens with fairly big waves, and stoppers which are quite capable of holding a boat firmly.

Grade 4 Difficult - long stretches of heavy rapids and falls with irregular waves and often powerful holding stoppers.

Grade 5 Extremely difficult - longer rapids, large drops with very big waves, dangerous stoppers and rocks to negotiate. This is a challenge to any canoeist

Grade 6 Limit of navigation - a line down exists - just. There is always a real risk to life. Most of the time, they are too dangerous to canoe.

Signal Flags



Beaufort wind scale

Force 0 - calm mirror smooth smoke rises vertically.

Force 1 - Light air - ripple on water - smoke moves

Force 2 - Light breeze - very small waves - Leaves rustle

Force 3 - Gentle breeze- crests on small waves - Leaves and twigs move, flag extended.

Force 4 - Moderate breeze - small wave with some white horses - small branches move

Force 5 - Fresh breeze - Moderate waves with many white horses - small trees begin to sway

Force 6 - Strong breeze - Large waves with white foam - large branches move.

Force 7 - Near gale - Sea heaps up with white foam - whole trees move, difficult to walk.

Force 8 - Gale - Sea very rough and disturbed - twigs break off and very difficult to walk.

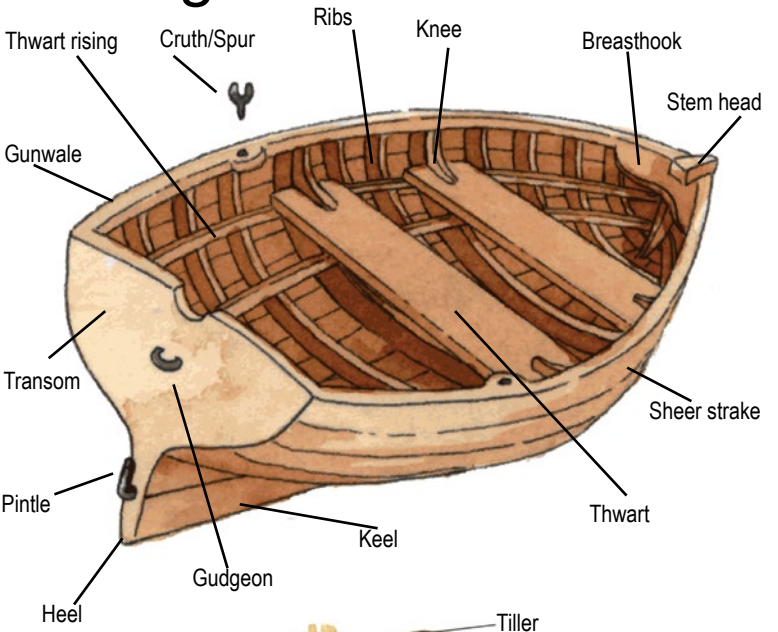
Force 9 - Strong gale - High waves and dense foam - minor structural damage may occur

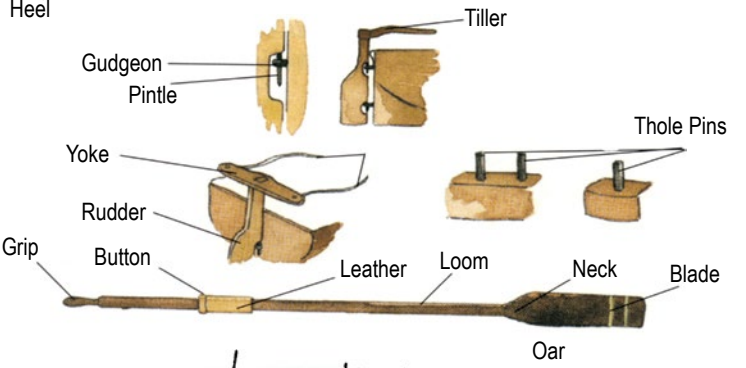
Force 10 - Storm - very high waves, heavy rolling sea - trees uprooted, structural damage likely.

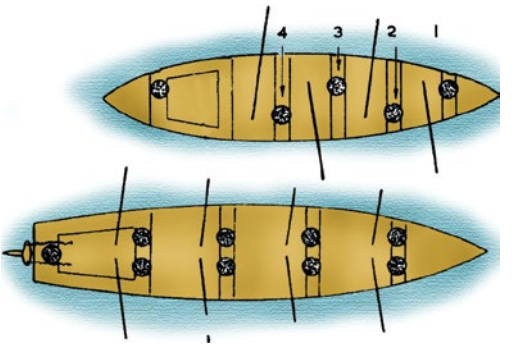
Force 11 - Violent storm - Exceptionally high waves - widespread damage to structures

Force 12 - Hurricane - Huge waves, filled with foam and spray - severe structural damage to buildings.

Rowing

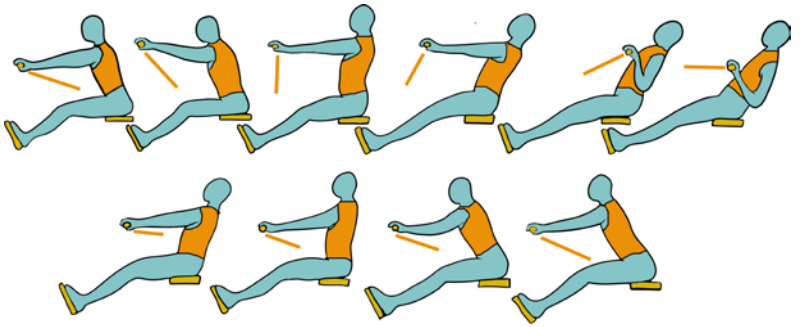






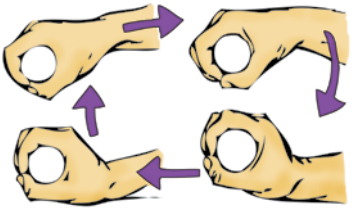
Skiff style

Paired oars



The rowing stroke

Hand and wrist rotation during rowing stroke



Getting into a boat from a jetty

Get in carefully, stepping from the jetty or steps, hold the gunwale of the boat to keep it steady and step into the centre of the boat - never stand on the gunwale or the thwarts (seats) of a small boat

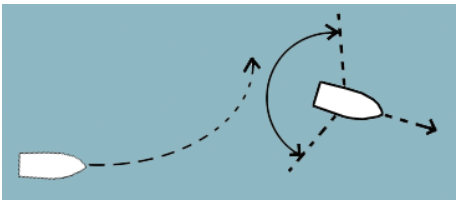
Person Overboard

If a person falls overboard and need to re-enter the boat this is done via the stern of the boat over the transom. This will keep the boat steady during the recovery and allow those on board to help.

The equipment required for a small boat going out for a half day's activity in normal boating waters is:-
2 oars, spurs or paddles
Bailers
Anchor and rope
Bow and stern lines (painters)
Tow-line
Small fire extinguisher
Fenders
Lifejackets or Buoyancy aids

The additional equipment required in a small boat for a day's activity:-
Horn or whistle
White light (torch)
Compass and chart
Lifebuoy or heaving line
Distress flares
First aid kit
Means of summoning help

Rules of the road at sea



When two boats meet

When two boats are approaching each other one has the right of way and it is called the ‘stand on’ boat. The other boat is called the ‘give way’ boat. The give way boat must make an early and obvious manoeuvre so there can be no confusion.

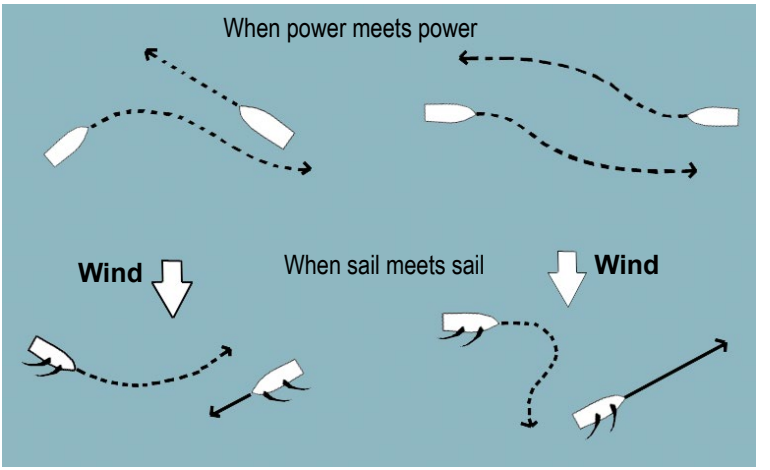
The give way boat must pass astern of (behind) the stand on boat, while the stand on boat maintains the same course and speed.

Every boat that is overtaking must give way. You are overtaking a boat if you are are approaching it anywhere within 67 degree either side of the stern. (back)

When power meets power

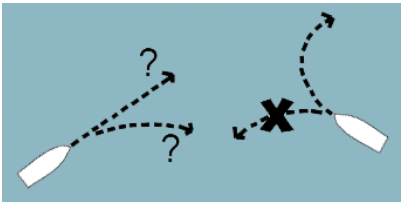
You must give way to another boat on your starboard (right)

If you meet head on, both boats must turn to starboard (right)



When the wind is coming from different sides, the boat with the wind on the port (left) side has to give way.

If both boats have the wind on the same side the windward (upwind) boat has to give way.



When things go wrong

If the give way boat does not appear to be giving way, the stand on boat must take action. The stand on boat should turn to starboard (right). If it turned to port it could turn in to the path of the give way boat.

Buoyage

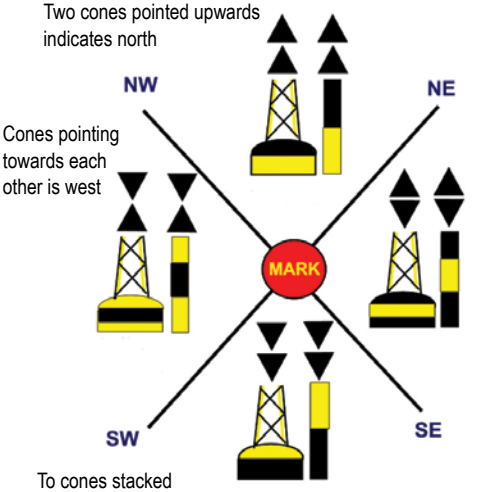
Port
Light: Red Flashes

Direction of Buoyage

Starboard
Light: Green flashes

Safe Water
Light: White - every 10 seconds

Two cones pointed upwards indicates north



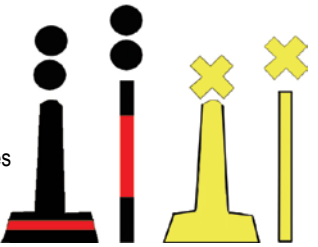
Cones pointing towards each other is west

Cones in a diamond shape indicates east

To cones stacked pointing downwards - south

A cardinal mark is a sea mark (a buoy or other floating or fixed structure) used to indicate the position of a hazard and the direction of safe water.

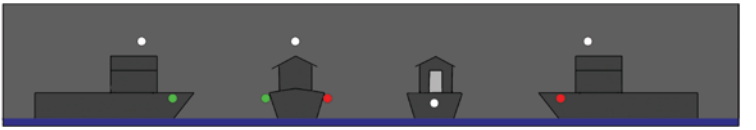
Cardinal marks indicate the direction of safety as a cardinal (compass) direction (north, east, south or west) relative to the mark.



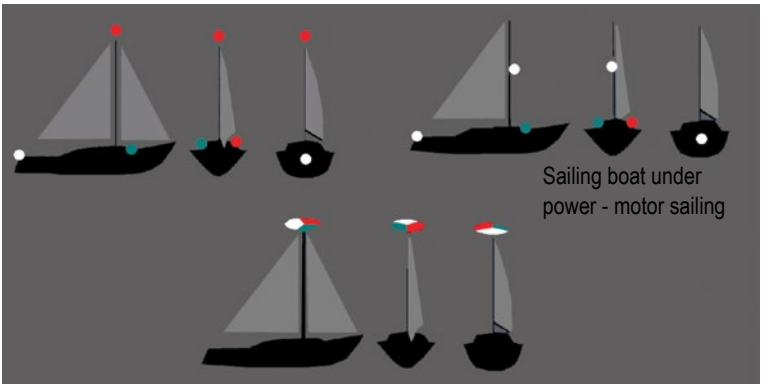
Isolated Danger
Light: White - 2 flashes

Special Marks
Light: Yellow Flashes

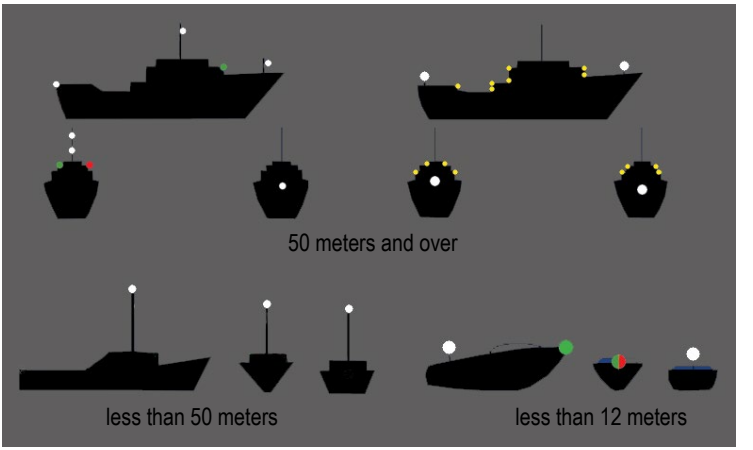
Navigation lights



Power driven vessels of less than 20 meters must display lights as shown green on starboard side , red on port side, white on mast head and stern.



Sailing vessels less than 20 meters long must display lights as shown - white mast and stern light or combination mast top tri-colour light. in place of red and green sidelights and white stern light.



Powered vessels should display lights as shown plus additional outline lights in yellow for vessels more than 50 meters in length.

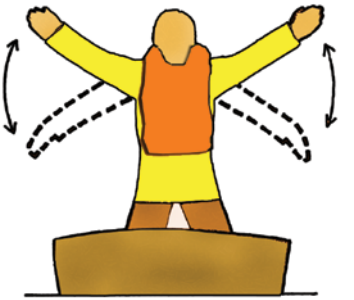
Distress Signals

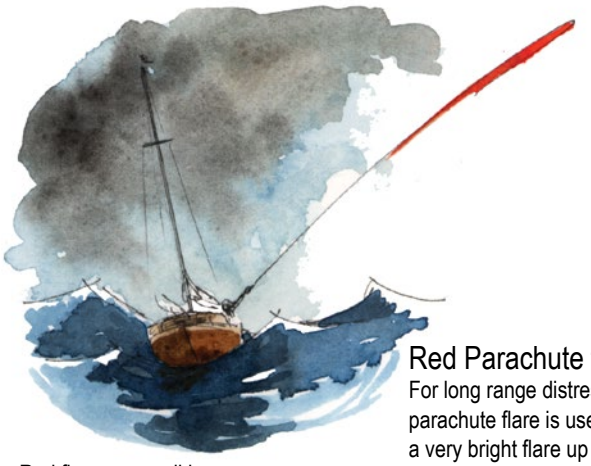
When a vessel is in distress and requires assistance, one or more of the following signals can be used.

- A gun or other explosive signal fired at intervals of about one minute.
- A continuous sounding of SOS by any fog - signalling device.
- Rockets or shells throwing red stars fired one at a time at short intervals.

- A signal made by radio or any other signalling method, consisting of SOS.
- A signal by radio starting with the spoken word - “Mayday”
- International Code flag signal of distress - NC
- A signal consisting of a square flag having above or below it a ball.

- Flames on a vessel - as from a burning tar barrel, oil drum, etc..
- A rocket parachute flare or a hand flare showing a red light.
- A smoke signal giving off orange coloured smoke.
- Slowly raising and lowering arms outstretched to each side.





Red flares are well known as emergency or distress signals. Anyone seeing a flare will assume that help is urgently required. This means of course that flares must not be used thoughtlessly or 'for fun', as the consequences of setting off a flare carelessly will involved many other people such as life boat crews, diversion of vessels and dispatch of rescue services such as helicopter rescue crews.

Hand held red flare

A hand held flare gives a bright red light for 1 minute. It is used within 3 miles of land, or to pinpoint the position of an emergency when help is on the way.

Red Parachute flare

For long range distress signals a parachute flare is used. A rocket projects a very bright flare up to about 1000 feet and this slowly descends on a parachute, burning for about 40 seconds.

Orange smoke flare

Orange smoke is a daylight equivalent of a red flare. A hand-held signal produces a cloud of orange smoke lasting about 40 seconds. A buoyant orange smoke signal is dropped into the water after ignition - it floats and produces a cloud of orange smoke for three minutes.

White flares

White flare are not distress signals - they are used to draw attention to a vessel's position, particularly as a collision warning signal if a vessel on a collision course does not appear to have seen you. White flare are usually only available as hand flare.

Most Scout boating expeditions and open boat cruising will be on inshore waters. Make sure you have the numbers of someone on the shore who can be your immediate contact in case of trouble.

Flares and signal devices

When on an expedition always keep your flares readily available in case of emergency - don't keep them packed in the bottom of a bag or under a pile of equipment. The recommended minimum number and types of flares that should be carried by vessels are as follows:-

Inshore - within 3 miles of the coast
2 Red hand flares
2 Hand orange smoke signals

Coastal - up to 7 miles off the coast
2 Red parachute rockets
2 Red hand flares
2 Hand orange smoke signals

Care of flares

In the boat, store flares in a dry waterproof container or dry bag. Ashore, store them in a dry place, well away from heat or naked flames. Keep an eye on use by date and make sure that flare have current usability. Dispose of old flare properly, as they become unstable as they age.

Swimming

Every Scout should know how to swim. Most Scouts will probably learn to swim through a school programme in the local swimming pool.

Being able to swim open up the possibility to take part in numerous activities which are water related such as sailing, canoeing, and rafting.

As Scouts you will be presented with many challenges which can be water related. In most cases, these challenges will take place on rivers or lakes. These locations are different to swimming pools. The water will be cooler, and there can be currents and obstacles hidden under the water.

Be careful at all times. Always wear a buoyancy aid or life-jacket while taking part in water based activities. Only swim in an area that your Leader has checked out and has declared safe to swim in. Never swim alone. Always operate the buddy system.

It is a good idea for every Scout to learn how to life-save. This can be done in your local swimming pool. Ask your swimming instructor for details of classes in your area.