2012

Sea Scouting

Sailing

Sailing Handbook

Version 5.0

(for 2008 revision of Small Boat Sailing Scheme)

Diarmuid Ó Briain

April 2013

This page is intentionally blank

Table of Contents

Table of Contents 3
National Water Activities Centre (NWAC) 5
A Taste of Sailing 8
Introduction 8
Clothing & Equipment 9
Sailing Techniques and Manoeuvres 10
Capsize Recovery 12
Start Sailing 16
Introduction 16
Clothing & Equipment 17
Rigging 19
Ropework 22
Launching & Recovery 25
Sailing Techniques and Manoeuvres 26
Capsize Recovery 28
Sailing Knowledge 29
Coastal Knowledge 33
Weather 34
Safety 36
Basic Skills 42
Introduction 42
Clothing & Equipment 43
Rigging 45
Ropework 47
Launching and Recovery 48
Sailing Techniques & Manoeuvres. 49
Capsize Recovery 58
Sailing Knowledge 59
Coastal Knowledge 63
Weather 65
Safety 68
Improving Skills 72
Introduction 72
Rigging 73
Tuning 74

Boathandling 75
Capsize Recovery 76
Boat Speed 77
Weather 78
Coastal Knowledge 79
Sailing Knowledge 79
Lelievlet 82
History 82
Design 83
Rowing 83
Rigging 84
B.P. 18 86
Sailing Charge Certificates 89
Sailing Log Book 94

National Water Activities Centre (NWAC)

The National Water Activity Centre (NWAC) of Scouting Ireland is situated 20 Km from Limerick City on the shores of Lough Derg which is just 3 Km from the village of Killaloe. The site is bounded on one side by an extensive forest with panoramic views of counties Clare and Tipperary. On the other side we have Lough Derg which is one of Ireland's most picturesque lakes leading up to the north to the villages of Mountshannon, Garrykennedy, Terryglass and Portumna.

The Centre is run by a trained group of volunteers and the training of staff is provided by the Irish Sailing Association (ISA).

The centre is the ideal location to explore water activities with your Section. The centre can provide canoeing, sailing, rafting and fun water based activities where your Section can explore the water with the comfort and security of trained staff. If you are experienced in water activities then the centre is an ideal base to explore the beauty of Lough Derg.

Killaloe is one of Ireland's most attractive villages with many places of historical interest as well as excellent outdoor sporting facilities. Killaloe was also the home of Brian Boru, High King of Ireland in 1102, when it was the Capital of Ireland.

The centre is tasked with providing members of Scouting Ireland with access to Water Activities training. Training provided at the centre includes Sailing in small dinghy's like the Topper Topaz, Taz and Laser Pico as well as sailing and rowing is small crewed Dutch Lelievlet vessels. The centre also has lake based canoe/kayak introduction training.

This page is intentionally blank

A Taste of Sailing

A Taste of Sailing

Introduction

Aim

The aim of this brief introductory course is to give you a positive introduction to the thrill of sailing.

Experience

No prior experience or knowledge is required. Where time allows, this course may be linked straight into Start Sailing which is the next course you should complete.

Duration

½ - 2 days.

Type of Boats

This course may be completed in any type of sailing dinghy, small keel boat or catamaran. Your certificate will show what type of boat you used.

Assessment

Assessment is continuous throughout the course.

Clothing & Equipment

- Describe why you should wear a Personal Floatation Device.

Personal Buoyancy

Wear a Personal Floatation Device (PFD)/Lifejacket - It's the LAW! It is covered under the Pleasure craft (Personal Flotation Devices and Operation)(safety) Regulations 2005 - Lifejacket Regulations.

There must be suitable PFDs for everyone on board any pleasure craft.

A suitable PFD must be worn in the following situations;

- By anyone on board an open craft that is under 7 meters in length.
- By anyone on deck on a craft that is under 7 meters length.
- By anyone under the age of 16 on board an open craft or on deck of any other type of craft.
- By anyone being towed in another craft or on any other device (skis, donuts etc.).
- By anyone on a personal watercraft (jet ski).

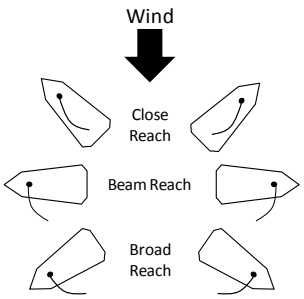
Except when;

- Tied up alongside or made fast to an anchor, marina, pier or mooring.
- Immediately prior to, during and after swimming from a craft that is not moving through the water.
- Putting on, wearing or taking off diving equipment on a craft that is not moving through the water.

Sailing Techniques and Manoeuvres

- Identify which direction the wind is blowing from.
- As both helm and crew,
    - Reach across the wind.
    - Stop the boat.
    - Turn the boat through the wind (Tack).
    - Help balance the boat.
    - Raise and lower the dagger or centreboard and rudder.

Reaching



When the boat is travelling approximately perpendicular to the wind, this is called reaching. A 'close' reach is somewhat toward the wind, and 'broad' reach is a little bit away from the wind. A 'beam' reach is with the wind precisely at a right angle to the boat. For most modern sailboats, reaching is the fastest way to travel. Different boats have different performance characteristics, on some boats, the beam reach is the fastest point of sail while on others, a broad reach is faster.

Fetching / Close Reach

This is any upwind angle between the wind and a Beam Reach. 'Fetch' (or 'fetching') is a synonym in many English-speaking countries for a close reach. When the boat is brought as close to the wind as possible to the wind without the sail 'luffing' (Luff of the sail flapping) is called 'close hauled' or 'beating' (beating to weather).

Reaching / Beam Reach

This is a course steered at right angles to the wind. This is a precise point of sail. Sails are put out at roughly 45 degrees. This is also called 'reaching'.

Broad Reach

The wind is coming from behind the boat at an angle. This represents a range of wind angles between Beam Reach and Running Downwind. The sails are eased out away from the boat, but not as much as on a run or dead run (downwind run).

Port and Starboard

Port is the left hand side of the boat facing forwards.

Starboard is the right hand side of the boat facing forwards.

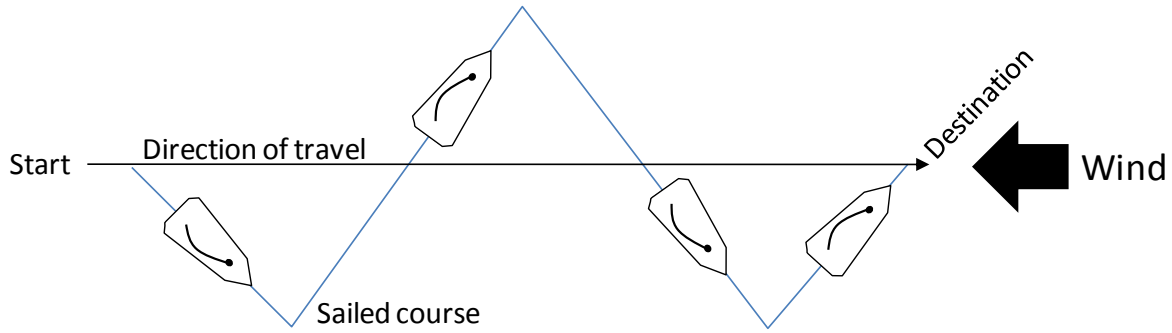
Fore, bow and aft

Fore and bow indicate the front of the boat while aft is the rear of the boat.

Lying to

Completely release the sheets allowing the sails to flap freely, let the tiller go and you will find that the boat will come to rest and sitting quietly in the water, almost at right angles to the wind. This is called Lying-to or Hove-to' position.

Tacking



Sailing on the wind a sailboat can make a course of approximately 45° away from the wind direction, as the figure shows. By sailing in a succession of such ‘close reach’ courses as in the diagram. This is called tacking. The boat is on the starboard tack when the wind is blowing from the right or starboard side, and to be on a port tack when the wind is blowing from the left or port side. Turning the boat through the wind to change the direction is called ‘tacking’.

Tacking Procedure

When the Helmsman wants to Tack across the wind he/she checks for other boats in the area and once clear calls the command '***Ready About***' to allow the crew to check the sheets. When ready the crew call '***Ready***' and the Helmsman calls '***Tacking***'. As the boom comes across the boat the Helmsman calls '***Lee Ho***' when the crew duck under the boom, the crew pull the jib sheet that brings the jib to the other side and the Helmsman brings the rudder to the central position.

Capsize Recovery

- Explain why it is important to stay with a capsized or inverted boat.

Capsize drill

In the event of a capsize it is vital that you stay with the boat. Should you leave the boat the rescue craft can easily see your capsized boat and will come to your aid, however should you have left the boat it will make it quite difficult for the rescuers to find you.

This page is intentionally blank

This page is intentionally blank

Start Sailing

Start Sailing

Introduction

Aim

By the end of this course you will be sailing in light wind conditions with assistance from your instructor.

Previous experience / knowledge required

You should be able to demonstrate the skills and knowledge included in Taste of Sailing.

Duration

2 - 10 days.

Types of Boats

This course may be completed in any type of sailing dinghy, small keelboat or catamaran. Your certificate will show what type of boat you used.

Assessment

Assessment is continuous throughout the course. However, your instructor may also choose to use a formal practical assessment of boat handling skills and a short written paper or oral interview in assessing your level of background knowledge.

Clothing & Equipment

- Describe what sort of clothing you might wear while afloat.
- Identify the following:
    - the different types of Personal Floatation Device (PFD) you might use when sailing.
    - which PFD is most appropriate for you to use.
    - when you should wear your PFD.
- Put on and adjust your own PFD.

Clothing

The right clothing is so important, too little protection from wind and spray will quickly put you off the sport, while too many unnecessary layers will slow your movements and make you clumsy.

Even at the height of the summer, the wind and spray will soon cool you down afloat. The right combination of jeans and sweater, topped off by a waterproof layer, will keep you comfortable.

The lightweight one-piece waterproof suit is really great for sailing. Choose a size, which allows you to move freely, without being too loose.

Wetsuits work by trapping a thin layer of water between the neoprene and your skin, which your body then warms up to a comfortable temperature. To work effectively, the wetsuit must be a good, snug fit. If you are buying, take time to choose one which does fit well or it won't work properly. In colder conditions it is sensible to wear a windproof jacket or a one-piece suit over your wetsuit, in order to reduce wind chill.

Soft-soled footwear is essential, old runners or neoprene booties.

Remember also that about a third of body heat loss is through the head, so wear a warm hat or balaclava.

On a warm sunny day all this advice may seem totally out of place, and all you'll want is a tee-shirt and shorts, but it won't take much cold salt water spray to remind you that it is advice born of experience.

Personal Buoyancy

This was described in the Taste of Sailing section, but the message is so important I will repeat it.

Wear a Personal Floatation Device (PFD)/Lifejacket - It's the LAW! It is covered under the Pleasure craft (Personal Flotation Devices and Operation)(safety) Regulations 2005 - Lifejacket Regulations.

There must be suitable PFDs for everyone on board any pleasure craft.

A suitable PFD must be worn in the following situations;

- By anyone on board an open craft that is under 7 meters in length.
- By anyone on deck on a craft that is under 7 meters length.
- By anyone under the age of 16 on board an open craft or on deck of any other type of craft.
- By anyone being towed in another craft or on any other device (skis, donuts etc.).
- By anyone on a personal watercraft (jet ski).

Except when;

- Tied up alongside or made fast to an anchor, marina, pier or mooring.
- Immediately prior to, during and after swimming from a craft that is not moving through the water.
- Putting on, wearing or taking off diving equipment on a craft that is not moving through the water.

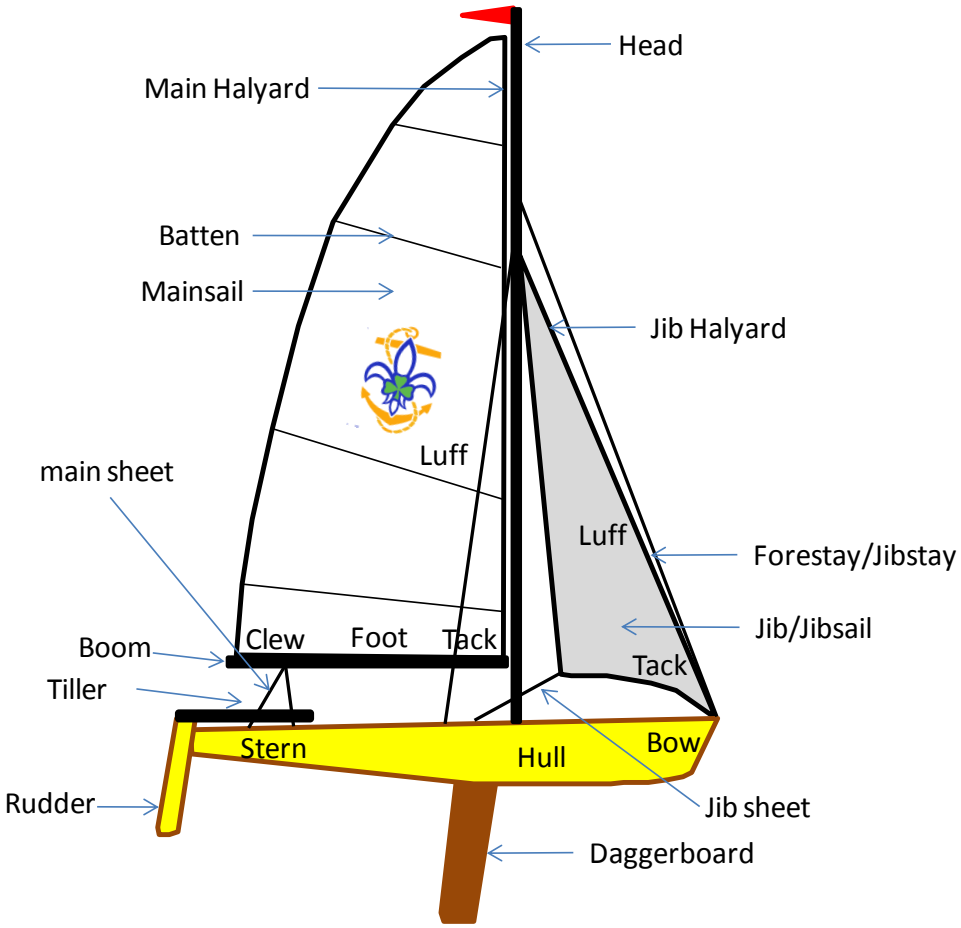
Rigging

- Position your boat head to wind.
- Identify the main parts of the boat, rigging & sails.
- Assist with rigging your boat.

Head to wind for rigging

When a sail is flapping, it is producing no driving force. To stop this you let the sails flap by letting the sheets out. If the boat is pointing away from the wind, the standing rigging may prevent the sails from going right out, so you must turn the boat more towards the direction of the wind.

Parts of the boat



Hull

The main part or body of the boat is the Hull, to which everything else is attached. It is usually made of glass-reinforced plastic (grp), wood or iron, although some boats are made of polyethylene, epoxy resins, fibreglass, carbon and Kevlar fibres.

Spars

On sailing craft the spars are the Mast and Boom. They are usually made of wood, aluminium and more recently on racing yachts from carbon fibre.

Rigging

The Mast is normally left standing and is supported by three or more wires, known collectively as the Standing Rigging or Shrouds. The wire to the front of the boat is the Forestay and the wires to the sides are the shrouds. The metal adjusters used to connect the wires to the boat are called Bottle screws or Turn Buckles and the strongpoint to which they are attached are Chain-plates. When short lengths of rope are used instead of bottle screws, they are called Lanyards.

Fixed / Moving Keel

A Centerboard, Daggerboard or Keel is housed in the middle of the boat. When sailing, it is lowered to prevent the hull slipping sideways through the water.

Transom

This is the surface that forms the stern of a vessel.

Rudder

The Rudder attached to the transom at the back (stern) of the boat and is controlled by a Tiller. It is used to steer the boat. Boats that use a tiller to steer usually have a Tiller Extension bar attached to the forward section of the tiller which enables the helmsman to steer from an outboard or hiking position.

Pintles and Gudgeons

Pintles and Gudgeons comprise the hinging mechanism on outboard-mounted Rudders. Pintles always incorporate a Pin, Gudgeons always have a hole for a Pin, either may be attached to the rudder or to the Transom. In standard configuration, Pintles are attached to the Rudder, and Gudgeons are attached to the Transom.

Sails

Most sails are the tall white triangular shaped material usually attached to a mast about the centre of the boat. The sides and corners of each sail have their own names. Sails are usually made of Terylene Dacron Kevlar or Mylar and are specially designed and cut by a sailmaker to create the required shape for a desired wind range.

Sail Controls

Sails are pulled into place by halyards, the main sail is raised to the top of the mast by the main halyard and the jib by the jib halyard. The sail is pulled out along the boom by the Outhaul. The boom is held in place by the Kicking Strap known also as a kicker or vang to prevent its natural tendency to rise and take tension from the sail. On some boats a Cunningham is used at the tack of the main sail as a downhaul to tension the luff of the sail. All these ropes are known collectively as the Running Rigging.

Ropework

- Tie the following knots and describe when to use them:
  - A figure of eight knot.
  - A round turn and two half hitches.
- Secure a rope using common types of cleat.
- Coil a rope and to throw one end of a rope.
- Keelboat sailors will be able to use a sheet winch.

Ropework Terms

- A **knot** is generally made in one end of one rope.
- A **bend** joins two different ropes together.
- A **hitch** secures a rope to another object, i.e. a ring or post.
- A **bight** is simply a loop in a rope.
- The free and running part of a rope is the **end.**
- The **standing part** is the main part of the rope.

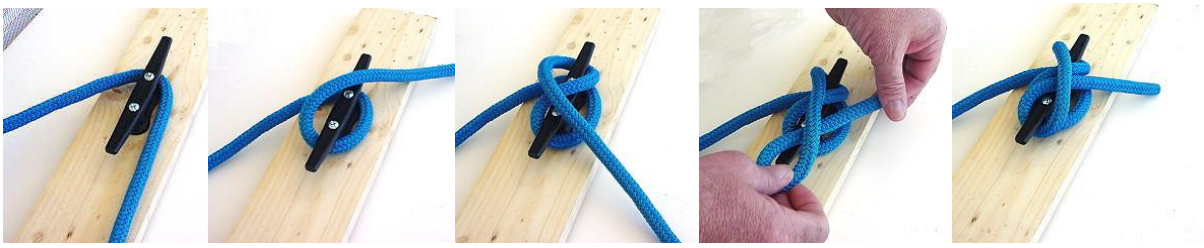
Figure-of-eight knot

The Figure of Eight provides a quick and convenient stopper knot to prevent a line sliding out of sight, e.g., up inside the mast. Its virtue is that, even after it has been jammed tightly against a block, it doesn't bind; it can be undone easily.

Round turn and two half-hitches

The name comes from a categorisation of the knot: a round turn wraps the rope around an object (this might seem like two wraps, but it is one complete encirclement of the object), and two half hitches, which are the two little half-knots used to secure the end.

Securing a rope to a cleat



A cleat is a device attaching a rope. The traditional design is attached to a flat surface and features two 'horns' extending parallel to the deck.

Cleat Hitch

When securing a rope to a cleat, first take a complete turn around the cleat before making two or three crisscross turns over the horns of the cleat. If you are securing a rope which is going to be in position for some time, and which does not have to be let go in a hurry, you can finish with a half-hitch. If not, simply take another complete turn round the cleat.

Coiling a rope

- Coiling rope and line is an important part of keeping an active work area clean and clear of trip and snag hazards. Especially on boats, where ropes and lines are used in almost every aspect of sailing and boating, a line must be properly coiled not only for use easy but also to preserve its strength and integrity.
- Clear the lines of twists and knots. Take the line in your hand and stand above a clear and clean surface. Feed the rope or line from one hand to the other. With the second hand, throw the line to the ground as you feed it to make sure there are no knots and to rid the line or rope of any kinks and twists.
- Loop the rope. Hold one arm up and bend your elbow to 90 degrees. Place the end of the rope in one hand. Then start wrapping the rope around your arm, placing it on top of your open hand and then down around your elbow and back up again. Continue to do so until you are near the end of the rope. Make sure that the rope stays nicely spread out and even as you go.
- Wrap the end around the loop. Once you have wrapped about 90 percent of the rope around your arm, remove the looped rope from your arm and hold it with one hand. Take the leftover 10 percent and wrap that piece around the looped rope so it forms a neck. Take about two or three rounds around the loops so that the looped rope takes the shape of a bowling pin. Make sure you still have a decent length of rope left.
- Take a bight. Take the last piece of leftover rope and grab it in the middle. Pull the middle of the leftover into the hole between the "neck" (the wraps around the loop) and the top of the rope. The result should be a small loop that sticks out on top of the coil.
- Finish it off. Here, you can either feed the very end of the rope up through the bight you just created (that is sticking out on top of the whole coil) or you can wrap the bight around the coil. To do the latter, make the top loop a bit larger and then spread it over the head of the coil until it comes to rest around the neck of the rope. Then tighten it off.

Sheet Wench

A sheet wench does not apply to the boats used at the NWAC. It is a mechanical device that is used to pull in (wind up) or let out (wind out) or otherwise adjust the 'tension' of a rope or wire rope (also called 'cable' or 'wire cable'). In its simplest form it consists of a spool and attached hand crank.

Launching & Recovery

- Dinghy and catamaran sailors will be able to do the following:
    - Secure a boat on a trolley and safely move it around while on shore.
- With assistance:
    - Launch your boat and sail away from shore.
    - Sail back to shore and recover your boat.
- Keelboat sailors will be able to secure their boat alongside and to a mooring.

Moving and launching a boat with a trolley

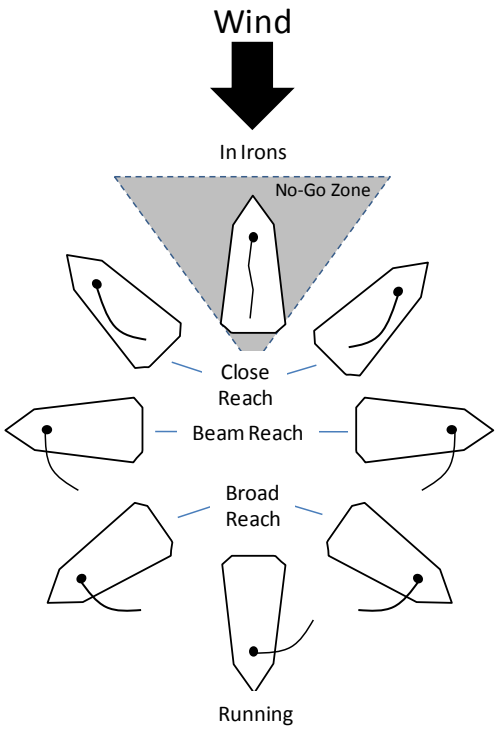
Remember most damage occurs to boats whilst ashore rather than on the water, so the take notice of the following:

- Never step or jump into a boat on dry land. The pressure of your foot in the bottom of the boat not supported by water may be enough to make a hole.
- When moving a boat on a trolley, make sure that you tie the bow down to the trolley handle with the bowline and, if the rudder has been fitted, make sure that the rudder blade has been pulled up and secured.
- As you wheel the boat about on its trolley, watch out for the overhang of the stern when manoeuvring in crowded dinghy parks or other tight spaces. Always check your route to ensure there are no overhead power cables below or near mast height.
- When launching the boat from a trolley, immerse the trolley deep enough so that the boat will float off. Make sure that the trolley is parked out of other people's way and above the high water mark.
- When you return and are recovering the boat, immerse the trolley deep into the water and pull the dinghy over it by the painter. Do not drag the boat onto the trolley or you may damage its bottom.
- If you Beach a dinghy for a short break, carry it clear of the water, so that wave action won't grind the hull against the sand or stones. If you are leaving the boat, carry it well above the high water mark, don't drag it up the beach. Try to support the hull with something that will not damage it. Old tyres or shaped wooden chocks are ideal. Whenever you leave a boat for any length of time, cover it to protect it and the interior from the weather.

Sailing Techniques and Manoeuvres

- Paddle or row a boat in a straight line.
- As both helm and as crew, with assistance:
  - Reach across the wind.
  - Sail up wind.
  - Sail down wind.
  - Tack the boat.
  - Gybe the boat.
  - Get the boat out of irons Stop the boat.

Points of Sail



This is the term used to describe a boat's course in relation to the wind direction.

There is a distinction between the port tack and the starboard tack. If the wind is coming from anywhere on the port side, the boat is on port tack. Likewise if the wind is coming from the starboard side, the boat is on starboard tack. Except when head to wind, a boat will be on either port or starboard tack while on any point of sail.

No-Go Zone

When the boat is pointed too close to the wind for the sails to generate any power. The sails will be luffing ('flapping') in the breeze and making noise, like a flag.

The size of the no-go zone will differ based on the performance characteristics of the particular boat.

If a boat is tacking and turning into the wind with sufficient speed to complete the tack, when the boat is facing into the wind, the tacking boat is 'luffing' but, due to forward speed, is still turning under control.

If the boat attempts to tack with a slow initial speed, or otherwise stops forward motion while heading into the wind, the sailboat is said to be 'in irons'. Since there is no speed (no water flow past the rudder) there is no normal control of the direction of the boat, and it tends to drift directly backwards.

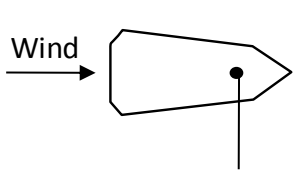
Close Hauled

A boat is sailing close hauled when its sails are trimmed in tightly and it is sailing as close to the wind as it can without entering the No-Go Zone. This point of sail lets the boat travel diagonally upwind. This is a precise point of sail. However, the exact angle relative to the wind direction varies from boat to boat. A boat is considered to be 'pinching' if the helmsman tries to sail above an efficient close-hauled course and the sails begin to luff slightly.

Getting the boat out of 'Irons'

To get the boat out of 'Irons', you can use the jib or forward most sail if you have one, it can be backed (tightened and pushed out) on the side that is the desired tack until the boat is at a sufficient angle to the wind for sailing, and/or the rudder can be turned to the side that is the desired tack and held until the boat is at the correct angle to the wind and resumes forward motion. Without a jibsail you can push the boom and the tiller away from you and the boat will slowly start sailing backwards and will turn away from the wind. You can then pull the tiller and the mainsheet to you and you're underway.

Sailing Downwind



Sailing upwind was described in the Taste of Sailing section. We will look at Sailing Downwind. This is termed Running before the wind. The boat follows the same course that the wind is blowing. The sail is set at approximately 90° angle so power is derived from the push of the wind on the sails.

Gybing

This is the opposite of tacking. It is turning the back of the boat through the wind. Here we turn the stern of the boat through the wind. The boat is gybing when her mainsail and boom crosses the centerline with the wind coming from behind, she then completes the gybe when the mainsail has filled on the new tack. It is important to remember that unlike tacking when the boat passes through the wind, there is always drive in the mainsail when the boat is being gybed. When running before the wind, a slight shift of wind may cause a boat to jibe unintentionally. Such jibing is dangerous because of the speed with which the boom and the foot of the sail sweep uncontrollably across the boat from one side to the other.

Capsize Recovery

- Identify why it is important to stay with a capsized or inverted boat.

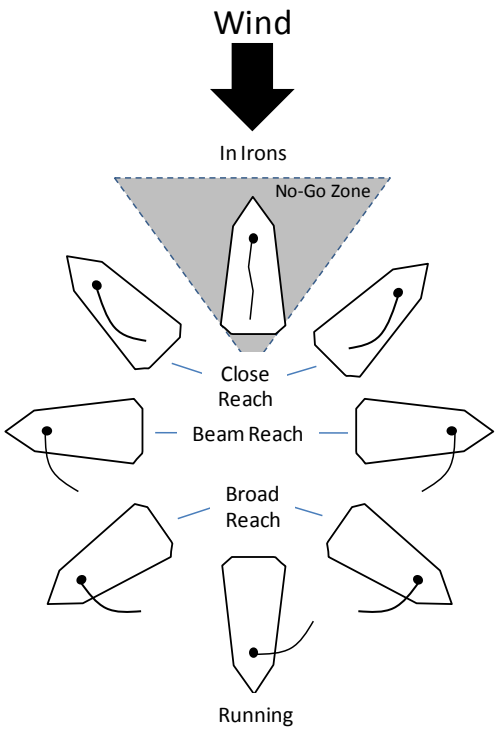
Capsize drill

In the event of a capsize it is vital that you stay with the boat. Should you leave the boat the rescue craft can easily see your capsized boat and will come to your aid, however should you have left the boat it will make it quite difficult for the rescuers to find you.

Sailing Knowledge

- Describe the different points of sailing.
- Take the correct action when boats on different tacks meet.
- Describe how tides and currents can affect a sailor.
- Identify when sailors are required to wear PFDs by law.
- Identify and use common sailing terms.

Points of Sail



This is the term used to describe a boat's course in relation to the wind direction.

There is a distinction between the port tack and the starboard tack. If the wind is coming from anywhere on the port side, the boat is on port tack. Likewise if the wind is coming from the starboard side, the boat is on starboard tack. Except when head to wind, a boat will be on either port or starboard tack while on any point of sail.

Starboard tack

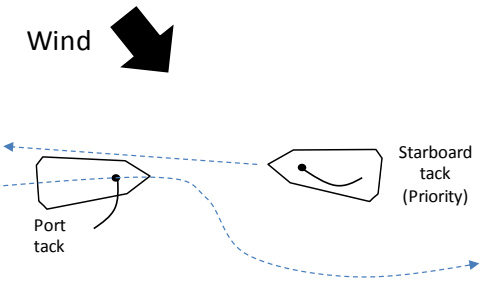
A sailboat sailing on a tack with the wind coming over the starboard side and the boom on the port side of the boat.

Port tack

A sailboat sailing on a tack with the wind coming over the port side and the boom on the starboard side of the boat.

Tack Priority

If two boats under sail are approaching, the one on port tack must give way to the boat on starboard tack.



Tides and Currents

Tides are the cyclic rising and falling of Earth's ocean surface caused by the tidal forces of the Moon and the Sun acting on the oceans. Tides cause changes in the depth of coastal water and coastal inlets which makes prediction of tides important for coastal navigation.

The changing tide produced at a given location is the result of the changing positions of the Moon and Sun relative to the Earth coupled with the effects of Earth. Sea level measured by coastal tide gauges may also be strongly affected by wind.

The difference in height between high and low waters over about a half day varies in a fortnightly cycle. Around new and full moon when the Sun, Moon and Earth form a line, the tidal forces due to the Sun reinforce those of the Moon. The tide's range is then maximum, this is called the spring tide and is derived not from the season of spring but rather from the verb meaning "to jump". When the Moon is at first quarter or third quarter, the Sun and Moon are separated by 90° when viewed from the Earth, and the forces induced by the Sun partially cancel those of the Moon. At these points in the lunar cycle, the tide's range is minimum and this is called the neap tide, or neaps. Spring tides result in high waters that are higher than average, low waters that are lower than average, slack water time that is shorter than average and stronger tidal currents than average. Neaps result in less extreme tidal conditions. There is about a seven day interval between springs and neaps.

A sailor needs to be extremely aware of their behaviour and peculiarities, because it is crucial to decisions they make while in coastal areas. Treat tides with respect, because they can do much damage to your boat. Consider and carefully calculate what the length of the anchor boat should be, so that she is protected from the docks or other yachts. A good indicator as to whether tide is going up or down is the mark on beaches or harbours. If the marks above the water line are dry, it is rising, whereas if the marks above it are yet, the tide is falling.

Currents

A sailor also needs to take currents into consideration. Tides and currents are not directly related, though they might look quite similar. An current is continuous, directed movement of water. Ocean currents are rivers of hot or cold water within the ocean. The currents are generated from the forces acting upon the water like the planet rotation, the wind, the temperature and salinity differences and the gravitation of the moon. The depth contours, the shoreline and other currents influence the current's direction and strength.

Personal Buoyancy

Wear a Personal Floatation Device (PFD)/Lifejacket - It's the LAW! It is covered under the Pleasure craft (Personal Flotation Devices and Operation)(safety) Regulations 2005 - Lifejacket Regulations.

There must be suitable PFDs for everyone on board any pleasure craft.

A suitable PFD must be worn in the following situations;

- By anyone on board an open craft that is under 7 meters in length.
- By anyone on deck on a craft that is under 7 meters length.
- By anyone under the age of 16 on board an open craft or on deck of any other type of craft.
- By anyone being towed in another craft or on any other device (skis, donuts etc.).
- By anyone on a personal watercraft (jet ski).

Except when;

- Tied up alongside or made fast to an anchor, marina, pier or mooring.
- Immediately prior to, during and after swimming from a craft that is not moving through the water.
- Putting on, wearing or taking off diving equipment on a craft that is not moving through the water.

Sailing Terms

Abeam	An angle of 90° to the keel of the boat.
Aft	To the rear or stern of the boat. Comes from old sailing term 'aftercastle'.
Ahead	To the front of the boat. In the direction of the bow.
Amidships	Middle of the boat. Midway between the bow and the stern.
Astern	Backward direction towards the stern.
Bow	Front of boat.
Broaching	When the boats heading suddenly changes towards the wind due to the interaction of the wind and sail for which huller / rudder actions cannot compensate.
Down wind	Broad reach and running courses.
Forward	Towards the bow of the boat.
Leeward	The direction facing away from the wind.
Pinching	To sail as close as possible towards the wind.
Planing	A boat moving that fast, that hardly any part of the hull is under water, gliding.
Quarter	Sides of a vessel that are aft of amidships.
Sailing by the lee	Sailing by the lee is when the wind is coming from the same side of the boat that the sail is on. Sailing by the lee can be dangerous, since if the boat turns farther or if the wind shifts direction, the boat will accidentally jibe when the wind catches the back side of the sail.
Stern	Back of boat.
Sternway	A boat is making sternway when moving backwards under control.
To bear away	To steer a boat away from the wind.
To luff	To steer a boat closer into the wind, especially with the sails flapping.
To weather (Beating)	When a boat is sailing this close to the wind, it is close-hauled or beating (beating to weather).
Windward	In the direction of the wind.

Coastal Knowledge

- Describe how often high and low tides occur and the implications these might have on sailors.

Refer to the previous section on Sailing Knowledge.

Weather

- Describe the implications of the following to a sailor:
  - Onshore and offshore winds
  - High winds.
  - No wind.

The Beaufort scale

This is a measure for describing wind speed based mainly on observed sea conditions. Its full name is the Beaufort wind force scale.

Force	Speed (Km/hr)	Description	Water Condition	Land Condition
0	0	Calm	Flat	Calm, Smoke rises virtically
1	1-6	Light air	Ripples without crests	Wind motion visable in smoke
2	7-11	Light breeze	Small wavelets	Wind felt on exposed skin
3	12-19	Gentle breeze	Large Wavelets	Leaves and small twigs in motion
4	20-29	Moderate breeze	Small waves	Dust and loose paper raised
5	30-39	Fresh breeze	Moderate waves, Foam & spray.	Small trees sway
6	40-50	Strong breeze	Large waves with foam crests and some spray.	Large branches in motion. Whistling heard in overhead wires.
7	51-62	Moderate gale	Sea heaps up and foam begins to streak.	Whole trees in motion. Effort needed to walk against the wind.
8	63-75	Fresh Gale	Moderately high waves with breaking crests forming spindrift. Streaks of foa	Twigs broken from trees. Cars veer on road.
9	76-87	Strong Gale	High waves (6-7 m) with dense foam. Wave crests start to roll over. Considerable spray.	Light structure damage.
10	88-102	Storm	Very high waves. The sea surface is white and there is considerable tumbling. Visibility is reduced.	Trees uprooted. Considerable structural damage.
11	103-119	Violent storm	Exceptionally high waves.	Widespread structural damage.
12	120	Hurricane	Huge waves. Air filled with foam and spray. Sea completely white with driving spray. Visibility greatly reduced.	Considerable and widespread damage to structures.

Conversion rule of thumb

To Beaufort scale = (Wind speed in Knots + 5) / 5

To Wind speed in knots = (Beaufort scale * 5) – 5

Onshore and Offshore Winds

From a weather forecast a sailor's most important information is the wind strength and direction. Until trained at reefing you should stay ashore if the wind is predicted to be above Force 3 and remember those offshore winds can be deceptive.

When the wind is blowing offshore, there will be a patch of flat water close to the beach which may lead you to believe that conditions aren't as strong as forecast. It is only when you get further out that you find the full strength of wind and waves; then you may find it difficult to return. With an onshore wind the most difficult thing is simply getting off the beach.

High Winds

High winds can be dangerous for the inexperienced sailor and if conditions are above Force 3 then you shouldn't really sail in them.

No Wind

Well the question here is quite simple, what is the point in trying to sail with no wind ? Better get your paddles ready.

Safety

- Describe why and how you would leave details on what you are doing with a responsible person ashore.
- Describe how to summon assistance if you need it when on the water.
- Summon assistance for someone else who needs it.
- Keelboat sailors will be able to describe how to safely store and use gas and petrol if carried.

Passage Plan

It is very important that you never take to the water without informing a responsible party of your trip. In fact from a scouting perspective it is mandatory that before setting off, an authorised Scout official or contact person, or local Harbourmaster or Gardaí should be informed. It is advised that a passage plan should also be filed with the Coast Guard, giving details of craft, number of crew, route, destination and ETA. Similarly, return to home port or completion of the cruise should be reported to all the parties informed of the departure. It may be advisable to report progress during the cruise, particularly if changes have to be made in the Cruising plan.

Marine VHF

Marine VHF radio is a great way of keeping in touch with your sailing centre or the Coast Guard. Each area has channels assigned as working channels and these should be used where radios are available. In the case of an emergency the radio should be switched to Channel 16 which is monitored by the Coast Guard. You make a MayDay call like this:

MAYDAY, MAYDAY, MAYDAY, THIS IS Coot, Coot, Coot
MAYDAY Coot
OUR POSITION IS Lushing rocks 52° (degrees) 53” (decimal) 46’ (minutes) North 8° 25” 16’ West
NATURE OF DISTRESS IS boat has taken on water and is in danger of capsizing
AID REQUIRED I require immediate assistance
THERE ARE 4 **PEOPLE ON BOARD**.
THEY ARE OK
OVER

Release the PTT switch and listen for a reply and repeat every 60 seconds until you get an answer.

NOTE: It is a serious offence to make a false MAYDAY call.

Summon Assistance

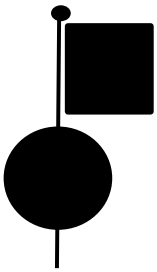
The official list of Distress Signals is given in the International Regulations for the Prevention of Collision at Sea

1. A gun or other explosive signal fired at intervals of about one minute.
2. A continuous sounding of any fog-signalling apparatus (now recommended to use "S0S").
3. Rockets or shells throwing red stars, fired one at a time at short intervals.
4. A signal made by wireless telegraphy (W/T) or by any other signalling method, consisting of S0S in Morse Code.

5. A signal by radiotelephony (R/T) consisting of the spoken word - "MAYDAY!" as described above.

6. International Code Flag Signal of distress - NC

7. A signal consisting of a square flag having above or below it a ball or anything resembling a ball.

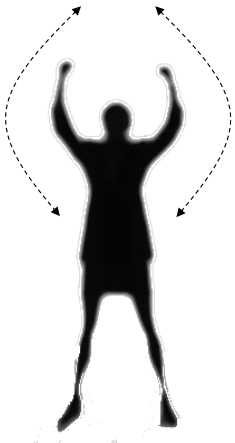


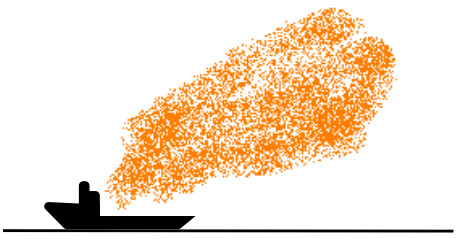
8. Flames on the vessel - as from a burning tar barrel, oil barrel, etc.

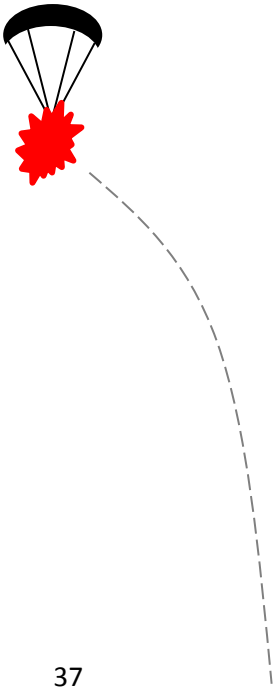
9. A rocket parachute flare or a hand flare showing a red light.

10. A smoke signal giving off a volume of orange coloured smoke.

11. Slowly raising and lowering of arms outstretched to each side.







Flares

Flares have two functions:

- To draw attention.
- To pinpoint position.

Hand-held flares

A hand-held red flare burns very brightly and is highly visible for about 8 km day or night. It burns for about 60 seconds. Generally used at night, in poor visibility or in high wind. A hand-held orange flare burns for about 40 seconds, and is visible for about 3 km. Generally used in daylight, good visibility and light wind. Both are used to guide rescuers to you when in view. A hand-held white flare burns for about 50 seconds.

It is used at night to attract attention to warn off a possible collision. Hand-held flares should be held well clear, at arms length and downwind of yourself or others, in order to avoid injury from burning particles of the flare and sparks.

Cartridge flares

Red, orange and white flares held on a cartridge holder with a pen- type projector used to project each them to a height of 60m and burn for about 5 seconds. Suitable only for inland and close inshore waters. They should be aimed vertically when fired.

Some important things to note when using or handling flares:

- All flares and smoke signals should be stored in a sturdy waterproof container.
- Ensure all aboard know about them and their location.
- Out-of-date flares are unreliable and should be discarded. They usually have a life span of about 3 years.
- Inspect all flares regularly and replace any which are suspect.
- Immediately discard misfired flares and signals.
- Do not use all your flares at once and then sit in the dark with nobody able to find you.

This page is intentionally blank

This page is intentionally blank

Basic Skills

Basic Skills

Introduction

Aim

By the end of this course you will be sailing on your own in light wind conditions without assistance from your instructor.

Experience

You will be expected to be able to demonstrate the skills and knowledge included in the Start Sailing course.

Duration

4 - 10 days.

Type of Boats

This course may be completed in any type of sailing dinghy, small keel boat or catamaran. Your certificate will show what type of boat you used. When this course is completed in single handed boats the sections relating to crew or those marked with an asterisk may be omitted.

Assessment

Assessment is continuous throughout the course. However, your instructor may also choose to use a formal practical assessment of boat handling skills and a short written paper or oral interview in assessing your level of background knowledge.

Clothing & Equipment

- Decide what to wear before you go sailing.
- Equip a sailing boat for use.
- Check that your sailing boat is safe to use.

Clothing

The right clothing is so important, too little protection from wind and spray will quickly put you off the sport, while too many unnecessary layers will slow your movements and make you clumsy.

Even at the height of the summer, the wind and spray will soon cool you down afloat. The right combination of jeans and sweater, topped off by a waterproof layer, will keep you comfortable.

The lightweight one-piece waterproof suit is really great for sailing. Choose a size, which allows you to move freely, without being too loose.

Wetsuits work by trapping a thin layer of water between the neoprene and your skin, which your body then warms up to a comfortable temperature. To work effectively, the wetsuit must be a good, snug fit. If you are buying, take time to choose one which does fit well or it won't work properly. In colder conditions it is sensible to wear a windproof jacket or a one-piece suit over your wetsuit, in order to reduce wind chill.

Soft-soled footwear is essential, old runners or neoprene booties.

Remember also that about a third of body heat loss is through the head, so wear a warm hat or balaclava.

On a warm sunny day all this advice may seem totally out of place, and all you'll want is a tee-shirt and shorts, but it won't take much cold salt water spray to remind you that it is advice born of experience.

Personal Buoyancy

This was described in the Taste of Sailing section, but the message is so important I will repeat it.

Wear a Personal Floatation Device (PFD)/Lifejacket - It's the LAW! It is covered under the Pleasure craft (Personal Flotation Devices and Operation)(safety) Regulations 2005 - Lifejacket Regulations.

There must be suitable PFDs for everyone on board any pleasure craft.

A suitable PFD must be worn in the following situations;

- By anyone on board an open craft that is under 7 meters in length.
- By anyone on deck on a craft that is under 7 meters length.
- By anyone under the age of 16 on board an open craft or on deck of any other type of craft.
- By anyone being towed in another craft or on any other device (skis, donuts etc.).
- By anyone on a personal watercraft (jet ski).

Except when;

- Tied up alongside or made fast to an anchor, marina, pier or mooring.
- Immediately prior to, during and after swimming from a craft that is not moving through the water.
- Putting on, wearing or taking off diving equipment on a craft that is not moving through the water.

Other Equipment

Depending upon the size of the boat you need to consider the following:

- First Aid Kit.
- Oars.
- Oarlocks/Spurs.
- Life ring.
- Bailer.

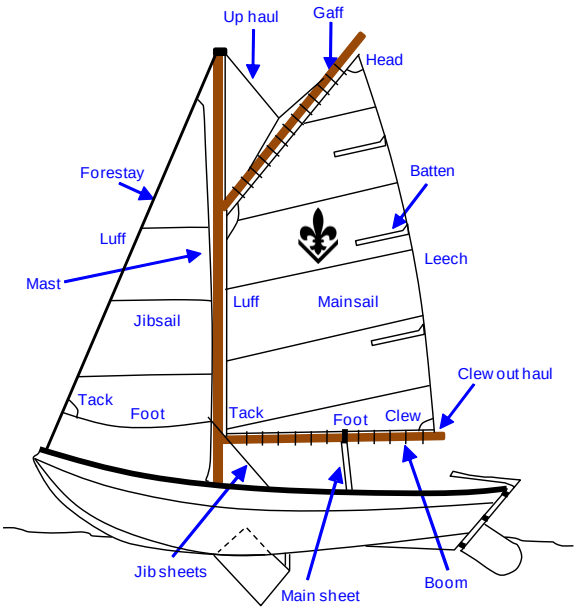
Rigging

- Identify all of the parts of the boat, rigging & sails.
- Rig a boat for use and according to the weather conditions.
- De-rig a boat and secure / care for hull, foils and sails.
- Reef a boat while ashore.
- Keelboat sailors will be able to reef their boat while on a mooring.

Rigging

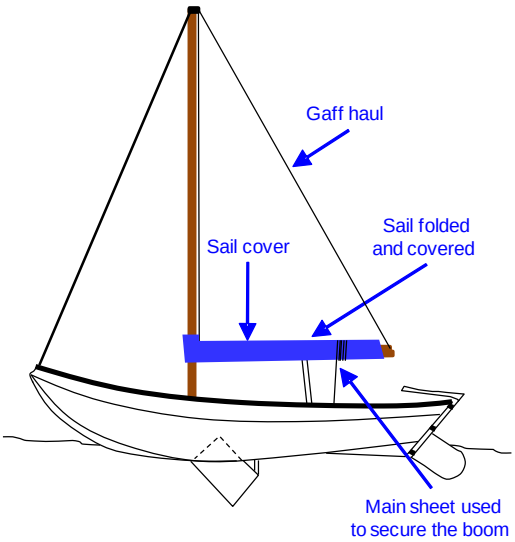
As the Lelievlet is the standard boat of the NWAC we will use it as an example of rigging and de-rigging. Your instructor will demonstrate for other types of sailing boat.

To rig the lelievlet for sailing carry out the following steps:



1. Gather mast, boom, gaff, main sail, jib sail, mainsheet, jib sheet, rudder and related rigging items.
2. Place the mast in the mast housing step, raise with the help of the up hauls and bolt into place (ensure that the mainsail up haul, gaff haul and the up haul for the jib plus the forestay and shrouds are in place first).
3. Attach forestay and shrouds with correct size D-shackle and chain.
4. Attach the boom (with the mainsail) to the mast.
5. Rig the mainsheet to the boom and the deck.
6. Secure the foot and/or clew to the boom. Make sure the mainsheet is released so that the sail won't fill when you raise the sail (ensure you are facing into wind).
7. Raise the gaff and main sail slowly using the up haul and gaff haul, as you do so secure the mainsail to the mast (when raising these you need to balance between the two such that the gaff remains at 45° angle as it rises the main sail.
8. Clip the Jib sail to the forestay and connect the Jib up haul to the head of the jib.
9. Rig the jib sheets to the jib sail and link the port and starboard ends through the jib loops on either side of the boat. Finish with a figure of eight at each end to prevent them from running back out.
10. Place the centre board as required.
11. Rig the rudder. Retract it unless the boat is already in water deep enough to accommodate its length.

Derigging



To derig the lelievlet after sailing carry out the following steps:

1. Lower and unclip the Jib sail. Fold it carefully and wrap the jib sheets around it. Place in the storage bag provided.
2. Lower the main sail with the up and gaff hauls to a position where the boom is more or less perpendicular with the mast and above the tiller handle. Lower the gaff onto the boom and tie the ends together.
3. Fold the main sail neatly on top of the boom/gaff over and back until it is completely folded. (Don not wrap around).
4. Secure the sail in place using the straps provided.
5. Place the sail cover over the sail and boom and secure it in place with the retention strings.

Reefing

Reefing is a sailing manoeuvre intended to reduce the area of a sail on a sailboat, which can improve the ship's stability and reduce the risk of capsizing, broaching, or damaging sails or boat hardware in a strong wind.

There are three common methods of reefing:

- Conventional.
- Roller.
- Jiffy.

The boats in NWAC all use a form of roller reefing. In the case of the Topper Topaz Taz and Laser Pico this is a matter of wrapping the sail around the mast whereas on the Lelievlet the mainsail is wrapped around the boom.

Ropework

- Tie the following knots and describe when to use them:
  - A bowline.
  - A clove hitch.

Bowline

The Bowline makes a reasonably secure loop in the end of a piece of rope. It has many uses, e.g., to fasten a mooring line to a ring or a post. Under load, it does not slip or bind. With no load it can be untied easily. It's principle shortcoming is that it cannot be tied, or untied, when there is a load on the standing end. It should therefore be avoided when, for example, a mooring line may have to be released under load. Two bowlines can be linked together to join two ropes.

Clove Hitch

The clove hitch consists of two identical half hitches made around an object. It can be used as a binding knot however as it is not very secure in that role it is not recommended.

Launching and Recovery

- Launch your boat and sail away from shore.
- Sail back to shore and recover your boat.
- Keelboat sailors will be able to identify different methods of launching a keelboat and describe how to launch a keelboat from a trailer using a slipway.

Moving and launching a boat with a trolley

Remember most damage occurs to boats whilst ashore rather than on the water, so the take notice of the following:

- Never step or jump into a boat on dry land. The pressure of your foot in the bottom of the boat not supported by water may be enough to make a hole.
- When moving a boat on a trolley, make sure that you tie the bow down to the trolley handle with the bowline and, if the rudder has been fitted, make sure that the rudder blade has been pulled up and secured.
- As you wheel the boat about on its trolley, watch out for the overhang of the stern when manoeuvring in crowded dinghy parks or other tight spaces. Always check your route to ensure there are no overhead power cables below or near mast height.
- When launching the boat from a trolley, immerse the trolley deep enough so that the boat will float off. Make sure that the trolley is parked out of other people's way and above the high water mark.
- When you return and are recovering the boat, immerse the trolley deep into the water and pull the dinghy over it by the painter. Do not drag the boat onto the trolley or you may damage its bottom.
- If you Beach a dinghy for a short break, carry it clear of the water, so that wave action won't grind the hull against the sand or stones. If you are leaving the boat, carry it well above the high water mark, don't drag it up the beach. Try to support the hull with something that will not damage it. Old tyres or shaped wooden chocks are ideal. Whenever you leave a boat for any length of time, cover it to protect it and the interior from the weather.

Sailing Techniques & Manoeuvres.

- Paddle or row a boat around a triangular course and come alongside.
- As both helm and crew, in light winds:
    - Leave and return to a beach or slipway in the prevailing wind direction.
    - Describe how to land on a beach or slipway when the wind is offshore, crosshore and onshore.
    - Reach across the wind.
    - Sail up wind.
    - Sail down wind.
    - Tack the boat.
    - Gybe the boat.
    - Pick up, and leave a mooring.
    - Come alongside a boat, pier, pontoon that is head to wind.
    - Come alongside a pier or pontoon that is not head to wind.
    - Recover a man overboard.
    - Heave to.
    - Sail under jib only' .
- Describe the "5 Essentials" and apply them to all points of sailing.
- Catamaran sailors will be able to use a trapeze if carried.
- Keelboat sailors will be able to change a headsail.

Rowing the boat

With boats like the lelievlet it is normal to take at least two oar-locks and a pair of oars on-board in event it becomes necessary to row ashore. You may also need to row to leave the shore from an enclosed harbour. Reasons can vary from lack space or wind, damage to mast, sail or rudder. The lelievlet can also be used for rowing in her own right with positions for 6 oar-locks and 3 pairs of oars.

Rowing points:

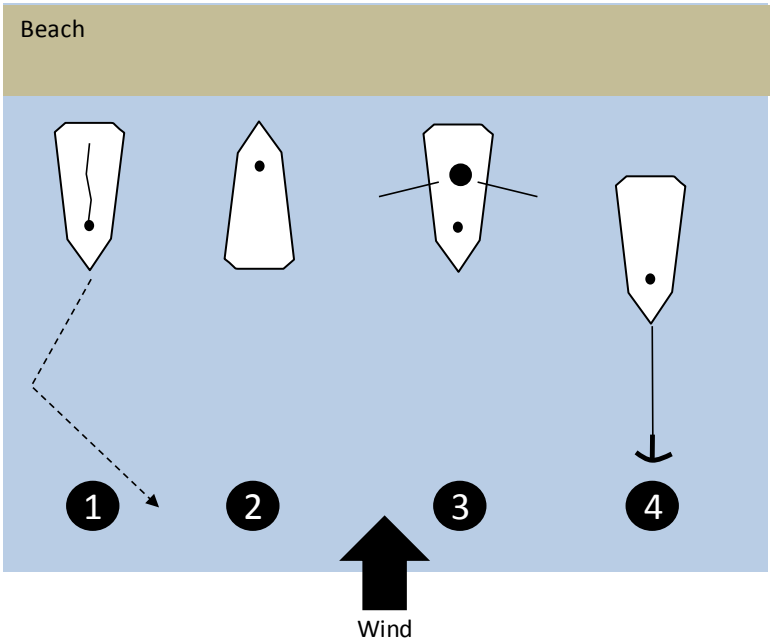
- To get into the boat, step carefully into the centre and sit down.
- Those who jump or stand on the edge of the boat are likely to do damage to themselves.
- Distributed equipment and people weight evenly.
- Once in the boat put the oar-locks (also called crutches) into position and then insert the oars as you push off.
- Comming alongside a quay or another boat, approach into tide or current because this will slow you down.
- Remove the near side oar first so that it doesn't get trapped or broken.
- When you climb out of the boat do remember to take the painter with you.
- Remember also that both wind and tide affect a boat and you will sometimes find it difficult to row against both.
- Finally, at sea remember that when you secure the boat you must allow for the tide if you are going to leave it at a quay for some time.

Leaving and Returning to the beach

Having got the boat into the water, the technique of sailing away from the shore will vary according to the wind strength, its direction relative to the shore and the waves it produces. The obvious extremes are when the wind is blowing directly onto the shore and when it is blowing offshore which each requires a different technique as shown below.

The principle to remember is that the bow of the boat should be pointing into the wind before the sails are hoisted. When a sail is pointing into the wind it flaps and produces no drive. If you try to hoist sails with the boat pointing away from the wind, the sails will fill and the boat will try to sail away on its own, even if you are still ashore.

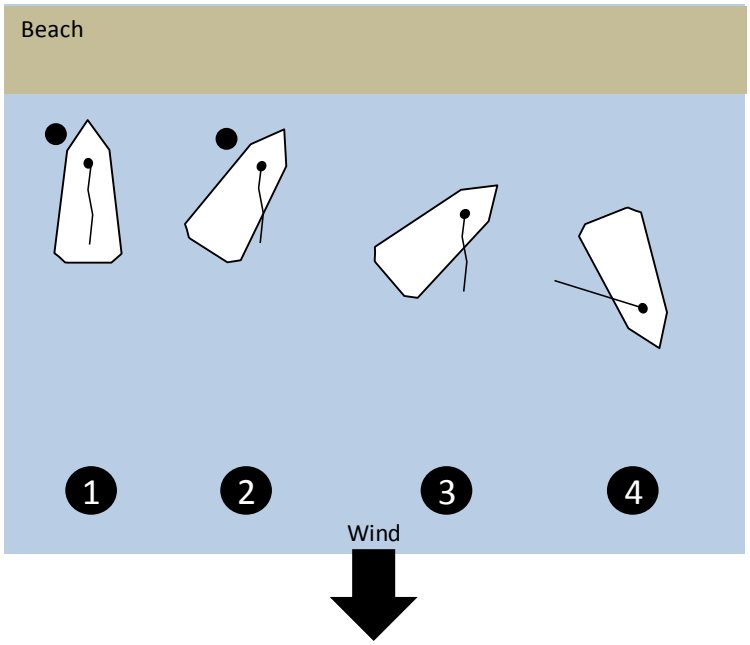
On-shore winds



Onshore Winds produce waves on the beach.

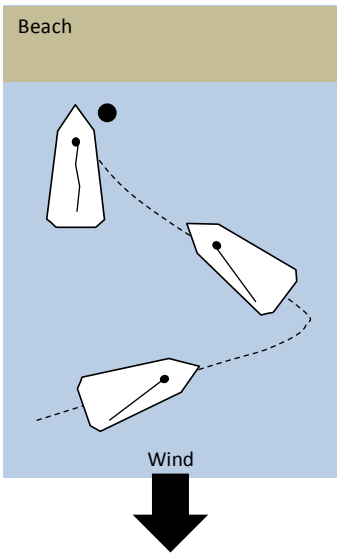
1. The boat must be launched with the sails readied but not hoisted and then turned until the bow is pointing into the wind while the sails are hoisted.
2. Never hoist the sails with the boat in position 2 as it will be pushed to shore.
3. The boat may be rowed or paddled clear of the shore and anchored.

Off-shore winds

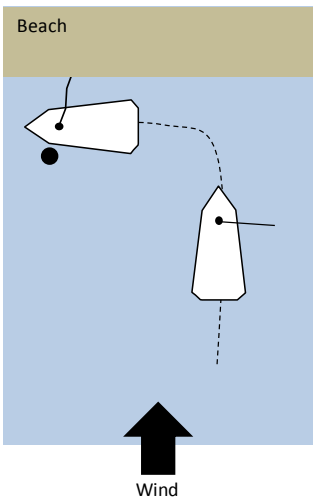


In Offshore Winds, the sails can be hoisted at the water's edge with the dinghy still on its trolley, or with the boat afloat. When everything is ready, the bow is pushed off and the boat can be sailed away.

Coming Ashore



When returning to the shore, remember to let the sails flap to slow down. With On-shore winds tack towards shore, raising centerboard as necessary and making shallower tacks until crew gets off and holds bow into the wind.



If the wind is blowing onto the shore or Onshore, it is also called a Lee Shore and you cannot simply sail straight at the bank. The safest approach is to turn into the wind when still some distance from the beach, drop the mainsail and then come in slowly.

Coming alongside a moored boat or jetty

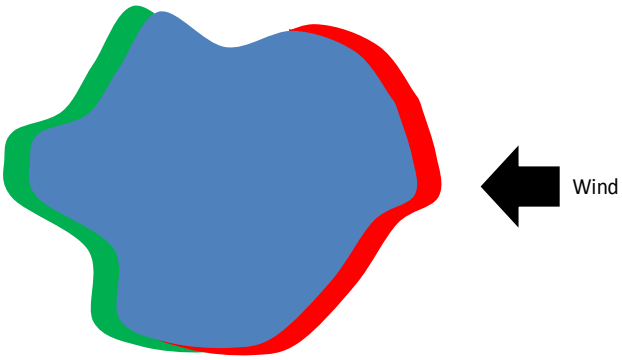
The procedure is very similar to coming ashore. The most important preliminary is to establish the direction of wind. Once again, there are basically two procedures.

If you are heading for the leeward side of the jetty, approach with the sails up. If you have to sail for the windward side of the jetty lower the mainsail.

Making fast to Mooring Buoys

Unless your boat is kept on a mooring, it is likely that you will only be securing to mooring buoys as a temporary measure. Conventionally, you will make your mooring line or dinghy painter fast using a round turn and two half hitches through the ring of the buoy, or through the mooring strop secured to the chain riser underneath the buoy. Alternatively, pass your line through the ring or strop and bring it back on aboard to be secured on the deck cleats or around the mast. This method makes leaving the mooring a simple operation.

Lee shores



Lee shores are to the leeward side of an approaching boat, has the wind blowing towards the shore. A windward shore, named because it is to the windward side of an approaching boat, has the wind blowing away from the shore. A given stretch of shoreline can be lee or windward depending on the current wind direction, in the diagram the right hand red shore is leeward and the left hand (green shore is windward).

Dangers of a lee shore

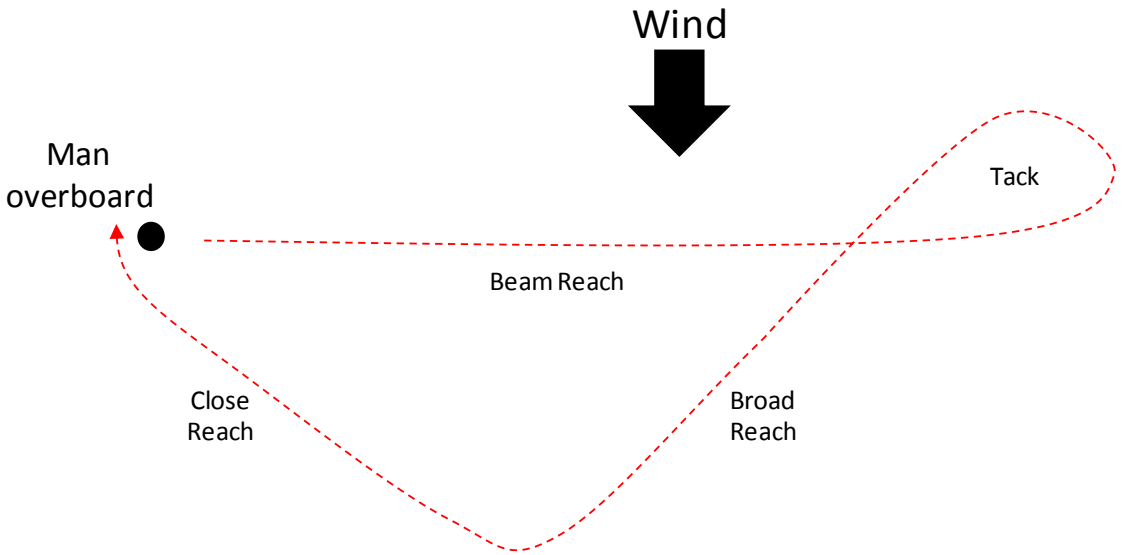
Lee shores are dangerous to craft because, if left to drift, they will be pushed into shore by the wind, possibly running aground. Sailing boats are particularly susceptible to this, as even under sail they are limited to the angle they can travel into the wind.

The beach of a lee shore in a storm is also at a significantly higher risk due to the undiminished effects of the wind and waves. A windward shore will have significantly lower waves and slower winds, as they will have been slowed by passage over the land.

Use an anchor to haul off

Using an anchor to haul off is a particularly useful skill on a lee shore. On such shores the tendency is to have the boat blown onto shore and the chances of being grounded is increased. If the crew haul out by pulling in the anchor, the boat can be brought out from the shore under the pull on the anchor against the wind.

Man overboard procedure



- Immediately throw a lifebuoy and attachments overboard.
- If there are others on board, instruct a crew member to watch the person in the water and point continuously.
- Sail off on a Beam Reach for 10 boat lengths, then Tack quickly, Broad Reach until you turn up towards the M.O.B. on a Close Reach.
- Let out sheets to slow down, and turn into the wind when at the man overboard to stop the boat.
- Come alongside to leeward of the person in the water if possible.

Person in the water

- Look for the lifebuoy which may be close by. Remain calm, keep your legs together and restrict movements to stop flushing cold water under your clothing.
- Whatever your situation conserve your body heat - the greatest threat to your survival is from the cold.
- In rough conditions, turn your back to the waves to keep your mouth an d nose clear of spray.
- Tighten up wrist, ankle and neck fastenings of protective clothing to reduce heat loss and the onset of hypothermia. Do not attempt to swim back to the boat for the same reasons.

Sailing Five Essentials

Sail setting

You have already seen that a sail produces its maximum power when at a certain angle to the wind. You will find that any sail, whether jib or mainsail, will set best by letting out until it starts to flap gently along the leading edge, then pulled in just enough to stop that flapping.

When you turn towards the wind you must pull the sheets in, or the sails will flap. That's pretty straightforward, as the flapping sail will remind you. When you bear away, you must ease the Sheets.

Balance

Although you may have seen photos of yachts heeled over until the water almost comes in over the side, that is not the way to sail. All boats move efficiently when they are upright and flat. In a boat it is up to the crew to ensure that it stay upright.
If a yacht is allowed to heel away from or into the wind the effect is the boat will tend to turn into the wind (luff up) or bear away from the wind. The rudder will be needed to keep on course and this in turn slows the boat down

The helmsman should sit on the windward side of the boat, where he has better visibility and control. The rest of the crew balance the boat by changing from side to side as is demanded by the course.

Trim

The distribution of crew weight fore and aft is just as important as balancing the boat. The best way to learn the techniques is to practice them, but the idea of 'shifting your weight towards the wind' will help.

In other words, that means moving forward in the boat when sailing to windward and moving aft when sailing downwind.

By moving forward, you will help to keep the bow well in the water to cut through waves, while lifting the stern sections clear.

When sailing away from the wind, by shifting your weight aft you will lift the bow, preventing it from digging into waves and giving more stability to the boat. This will also help to promote planing in strong winds, when the boat lifts onto its own bow wave and speed increases dramatically.

Centre board

As well as driving a boat forward, the action of the wind on the sails will push it sideways across the water called making leeway. To prevent this, the boat needs more grip on the water, which is provided by a centreboard, daggerboard or keel. A centerboard pivots around a bolt as is the case in the lelievlet; a daggerboard is moved vertically up and down as in the Toppers.

A boat makes most leeway when sailing close hauled and so the centerboard should be right down. When sailing directly away from the wind there is no leeway and so the board can be raised.

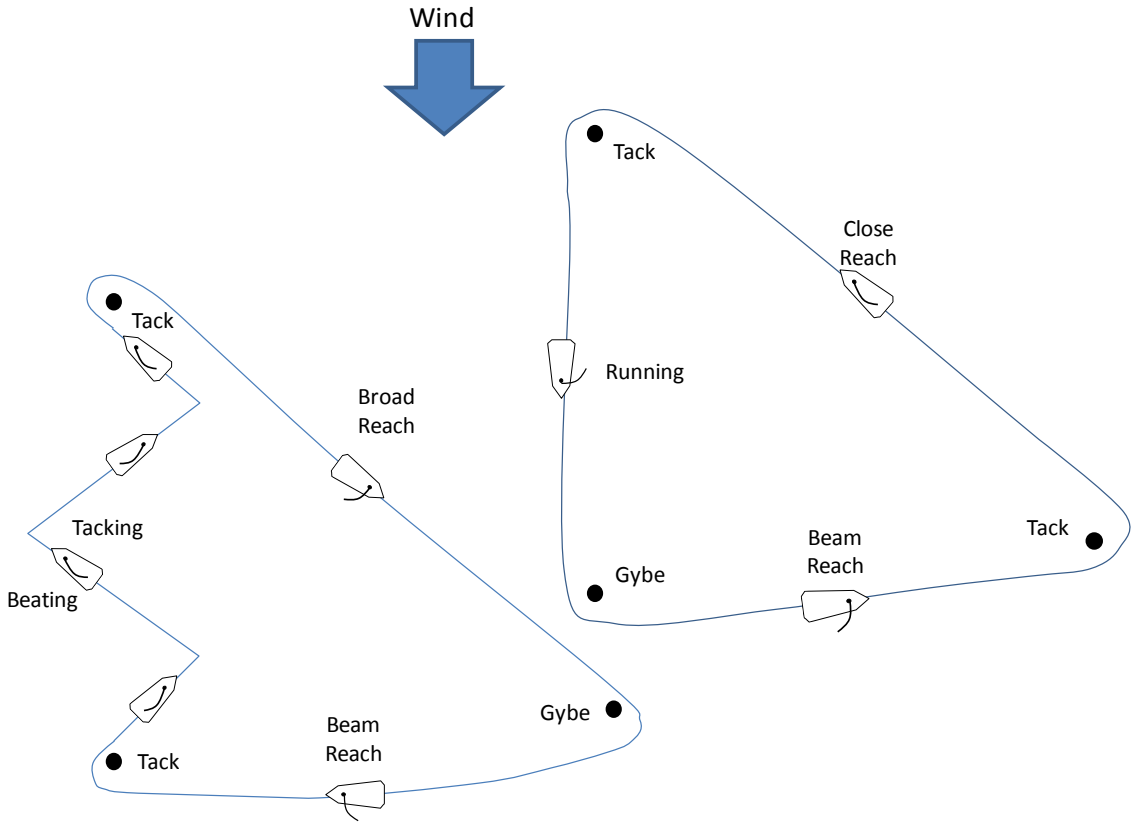
In between, when sailing across the wind, the board should be half down.

Course made good

This is the shortest, or quickest, distance between two points. Sailing an off-wind course in a steady breeze on a deep, current-free inland waterway, the course made good will simply be a straight line from start to finish. In all other conditions you need to decide on the best way of getting from A to B.

Sailing upwind, for example, you have to accept and allow for leeway, as outlined above in centerboard use. In addition, if you have to make a number of tacks to reach your destination (as described in the A Taste of Sailing section), you'll need to decide where you're going to make them. In theory, there is almost an infinite choice of routes to an upwind destination.

Triangular course to practice



Capsize Recovery

- Right a capsized boat.
- Describe what to do if you are caught under an inverted boat.

Capsize Drill

In the event of a capsize the following drill is applied.

- Clear the danger zone between the hull and the top of the mast.
- Check the status of the rest of the crew, make sure they're not trapped.
- Swim round to the daggerboard/underside. Hold on to the daggerboard to prevent the boat inverting further. (If you have a crew, then wait until they're also at the daggerboard area**).
- Ensure the daggerboard is fully out.
- All those around the daggerboard should hoist themselves upwards, trying to actually get on the daggerboard.
- The boat will begin to lean towards you. Continue to hoist yourself upwards.
- Finally, the boat will return to an upright position. Hold onto its side.
- Pull yourself into the boat, then assist others.
- When you're ready, sheet in, and you're ready to sail off.

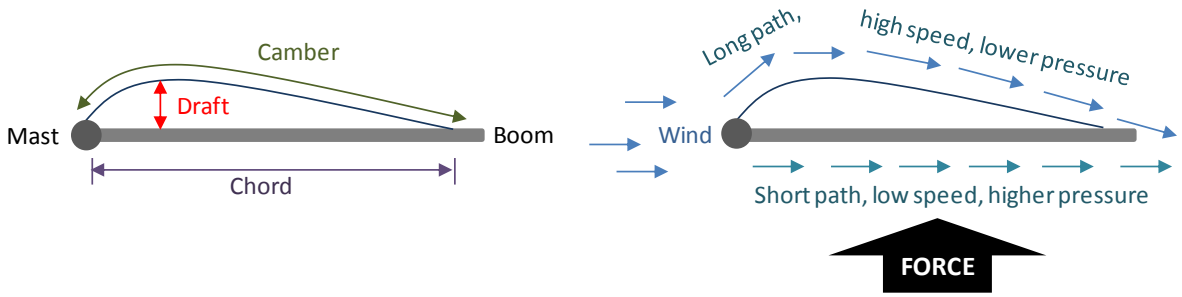
** On small sailing boats with a crew of two, one goes to the daggerboard and the other stays on the opposite side holding on to but putting no weight on the toestrap. When the person at the daggerboard brings the boat up the second person is brought up and into the boat automatically.

Sailing

Sailing Knowledge

- Describe how a sail and centre / dagger board works.
- Tell if risk of collision exist between two boats.
- Describe what should happen when:
    - A motor boat and sailing boat meet.
    - Two sailing boats on the same tack meet.
    - Boats are being overtaken.

How a Sail works



The force of the wind is used to create motion by using one or more sails. The movement of air over the sails acts in the same way as air moving over an aircraft's wing. Just like on an airplane, air flowing over the sail is deflected and accelerated. This generates lift, which acts to pull the sail, and thus the boat ahead, but also slightly downwind.

The downwind component is offset by an underwater daggerboard, centerboard or keel, whose shape resists lateral movement while offering little resistance to forward motion. Without a daggerboard, keel or centerboard, sailing upwind or across the wind would be virtually impossible.

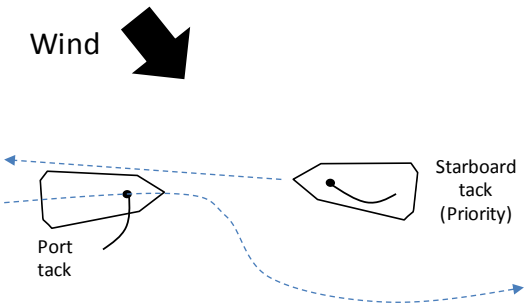
The lifting force of the sails also acts to lean the boat over to one side, which is called heeling. This is counteracted by ballast, either in the form of dense material located in the keel or in the form of human ballast located near the windward rail.

Basic 'Rules of the Road'

International Regulations

There are accepted rules governing your behaviour near other boats. They are called the International Regulations for Preventing Collisions at Sea.

Your principal duty is to avoid hitting anything; as a beginner it is always better to slow or stop the boat by letting the sheets go and turning into the wind, rather than to turn away from the wind which will cause it to gain momentum. If you hit anything at speed you will cause considerably more damage than if the boat is slowing.

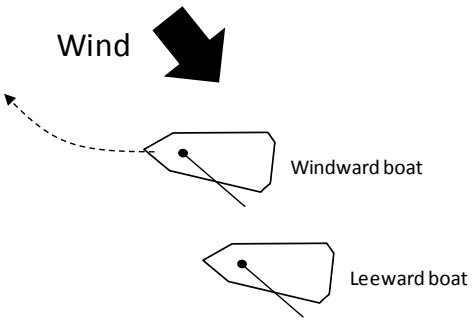


Port and Starboard

We have already seen in the Start Sailing section that a boat on starboard tack having priority over one on port tack. The point is also made that if you are on starboard tack you have a duty to maintain your course to allow other boats to keep clear.

Windward Boat

When boats are travelling together or converging on the same tack, the boat that is to windward must keep clear of the other boat.



Windward - The side from which the wind is blowing.

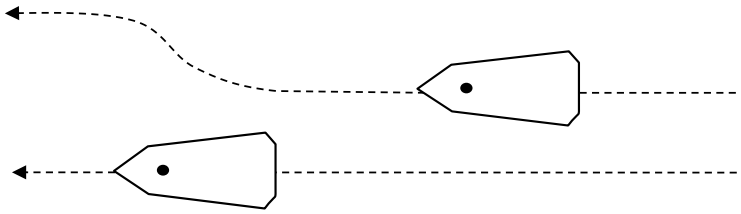
Leeward - The side away from the wind direction.

Power / Sail

When meeting boats of similar size, '**power gives way to sail**'. It does not apply, however, if you meet large power-driven vessels in rivers or estuaries where they must keep to certain channels to avoid running aground.

The rules for following or crossing channels are that you should follow a channel by keeping to starboard and cross a channel at 90 degrees, keeping clear of any vessels which are following the channel.

Overtaking Boats



Overtaking boats must keep clear of vessel they are overtaking

When overtaking, boats must keep clear of the vessel they are overtaking.

- Identify when high and low tide occur using local tide tables.
- Describe how to estimate the rate and direction of the flow of tide and describe the effect that this might have on a sailor.

Tide

While the NWAC is on Lough Derg it is required for the Basic Sailing Certificate that you have an understanding of sea tides.

Local Tide Tables

Information about what the tide is doing at any time can be found from Tide Tables, which give the predicted times of high and low water and the range of the tide for each day of the year. These predictions are based on information printed for Standard Ports. Tables can be obtained from Nautical Almanacs.

January 08 Tarbert Island Tide Table

Local Time

Day	Date	Time	Height
		Hr:Min	Metres
Mon	2	00:26	3.9
		06:23	1.8
		12:56	3.9
		19:04	1.7
Tue	3	01:36	3.9
		07:31	1.8
		14:05	3.9
		20:04	1.7

Here is an extract from the tide tables for Tarbert Island on the Shannon Estuary. It gives the height of the tide at various intervals to give you an indication of the high and low tides. For example on Tuesday 3 January the high tides were at 01:36 and 14:05 while the low tides were at 07:31 and 20:04.

Tidal range is the difference between the highest and lowest tide of the day. So for Tuesday it is:

Tidal Range : 3.9 – 1.7 = 2.2m

The tide flow is at its slowest at high tide and low tide. In between the tide will be at peak flow.

Springs and Neaps

When sun, earth and moon are all in a line (at new moon and full moon) the combined effect of the sun and moon causes the particularly big tides, which are called springs. In between these times, at the first and third quarters of the moon, the sun and the moon are at right angles to each other and their smaller combined pull effect causes smaller neap tides. Spring tides are both higher and lower than Neap tides.

Ebb and Flow

When the tide is rising it is said to be flooding and when it is falling it is said to be ebbing.

Relationship between Tidal Streams and Wind

The direction of the tidal stream can be observed by;

- Boats at anchor or at a single mooring riding with the bow facing the stream.
- Buoys leaning away with the stream and water 'piling up' against the buoys,
- Water swirling around a post or uncovered object.

It is also useful to know that tidal streams flow faster in;

- Deep waters or channels
- The third and fourth hours of the ebb and flood
- Off headlands

Relative Speed with / against current

When planning a day's sailing in tidal waters, first look at the tide tables. It ought to be obvious that with a favourable two-knot tide, a sailing boat of four knots will be effectively three times as fast as when it is battling against the tide. Yet it is common to see boats struggling home against a tide as darkness falls. The right use of the tide will enhance any day's sailing however to get it wrong and you could have a long journey home.

Weather

- Describe how wind speed, wind direction, visibility and temperature are measured and how these may affect a sailor.
- Obtain a weather forecast for your sailing area and describe how it might affect your planned activities.

The Beaufort scale

This is a measure for describing wind speed based mainly on observed sea conditions. Its full name is the Beaufort wind force scale.

Force	Speed (Km/hr)	Description	Water Condition	Land Condition
0	0	Calm	Flat	Calm, Smoke rises virtically
1	1-6	Light air	Ripples without crests	Wind motion visable in smoke
2	7-11	Light breeze	Small wavelets	Wind felt on exposed skin
3	12-19	Gentle breeze	Large Wavelets	Leaves and small twigs in motion
4	20-29	Moderate breeze	Small waves	Dust and loose paper raised
5	30-39	Fresh breeze	Moderate waves, Foam & spray.	Small trees sway
6	40-50	Strong breeze	Large waves with foam crests and some spray.	Large branches in motion. Whistling heard in overhead wires.
7	51-62	Moderate gale	Sea heaps up and foam begins to streak.	Whole trees in motion. Effort needed to walk against the wind.
8	63-75	Fresh Gale	Moderately high waves with breaking crests forming spindrift. Streaks of foa	Twigs broken from trees. Cars veer on road.
9	76-87	Strong Gale	High waves (6-7 m) with dense foam. Wave crests start to roll over. Considerable spray.	Light structure damage.
10	88-102	Storm	Very high waves. The sea surface is white and there is considerable tumbling. Visibility is reduced.	Trees uprooted. Considerable structural damage.
11	103-119	Violent storm	Exceptionally high waves.	Widespread structural damage.
12	120	Hurricane	Huge waves. Air filled with foam and spray. Sea completely white with driving spray. Visibility greatly reduced.	Considerable and widespread damage to structures.

Onshore and Offshore Winds

From a weather forecast a sailor's most important information is the wind strength and direction. Until trained at reefing you should stay ashore if the wind is predicted to be above Force 3 and remember those offshore winds can be deceptive.

When the wind is blowing offshore, there will be a patch of flat water close to the beach which may lead you to believe that conditions aren't as strong as forecast. It is only when you get further out that you find the full strength of wind and waves; then you may find it difficult to return. With an onshore wind the most difficult thing is simply getting off the beach.

Weather Forecast

In Ireland Met Éireann - The Irish Meteorological Service is the main source of practical weather forecasting.

Internet

Met Éireann forecasts can be gotten from their website at http://www.met.ie. As well as the normal forecasts Met Éireann provide specific forecasts for Sea Area, Coastal Reports and Inland Lakes. Take as an example Lough Derg.

Example::

Meteorological situation at 15:00 hours: An anticyclone of 1032 hPa, between Iceland and Scotland, and a complex area of low pressure, with centres of 1000hPa over the Bay of Biscay and west France, maintain a northeast airflow over Ireland. An occluded front is approaching the south and southeast coasts and will cross the country later today and tomorrow.

Forecast For Lough Derg until nightfall today

Wind :	Northeast force 5 to 6 and gusty.
Weather :	Mainly fair.
Visibility :	Good.
Winds Overnight :	Moderate to fresh and gusty northeast winds.
Outlook for tomorrow :	Fresh and gusty northeast to east winds. Winds decreasing to moderate in the evening. Scattered outbreaks of rain and drizzle.

Other sources of forecasts

Media and Commercial Availability of Sea Area Forecasts

Sea Area Forecasts are issued and broadcast live from Met Éireann's General Forecasting Division on RTÉ Radio 1. Any gale warnings are also included on hourly news bulletin on RTÉ Radio. Any Gale Warnings are also included on hourly news bulletins on RTÉ Radio.

The Irish Coast Guard (ICG) Coast Radio Stations.

ICG Coast Radio Stations make a prior announcement of weather forecasts on Marine VHF Radio Ch16 and then broadcast the forecast on the named relevant VHF Radio working channel. Sea Area Forecasts are broadcast every 3 hours beginning at 0103 local time. i.e. broadcast times are:- 0103, 0403, 0703, 1003, 1303, 1606, 1903, 2203 local time.

Gale Warning broadcasts are also preceded by an announcement on Marine VHF Ch16. They are broadcast on receipt and are repeated at the next one of the following times:- 0033, 0633, 1233 and 1833 local time.

Weatherdial

Telephone recorded sea area forecast, small craft warnings and warnings of gales and heavy swell are available on the Premium Rate Weather Service, which is available on voice or fax. Voice forecasts for each of the four provinces, the greater Dublin Area and for Irish coastal waters and the Irish Sea can be obtained by dialling:

Munster 1550 123 850	**Ulster** 1550 123 853	**Leinster** 1550 123 851
Connacht 1550 123 852	**Dublin** 1550 123 854	**Sea Area** 1550 123 855

Safety

- Explain why it is important tell someone where you are going and when you will be back.
- Describe how to use and care for distress flares.
- Describe how to care for someone who is very cold.
- Explain why it is important for a sailor to have some training in first aid.

Passage Plan

It is very important that you never take to the water without informing a responsible party of your trip. In fact from a scouting perspective it is mandatory that before setting off, an authorised Scout official or contact person, or local Harbourmaster or Gardaí should be informed. It is advised that a passage plan should also be filed with the Coast Guard, giving details of craft, number of crew, route, destination and ETA. Similarly, return to home port or completion of the cruise should be reported to all the parties informed of the departure. It may be advisable to report progress during the cruise, particularly if changes have to be made in the Cruising plan.

Stowage & use of flares

If you are sailing without safety cover off the coast it is advisable to carry orange smoke flares. Modern flares are almost waterproof, but they should still be kept dry whenever possible. On extended cruises don't stow them in a buoyancy tank, or you may be unable to reach them if needed. Flares have a shelf life of three years, after which they must be replaced.

Read the operating instructions before you go afloat, so that you will know what to do in an emergency. Don't point the flare at anybody (including yourself when you fire it, but hold it as high as you can and point it slightly downwind.

Assisting another boat in distress

If you see anybody else in trouble and cannot assist, dial 112 or 999 and ask for the Coastguard or other emergency services available in your region. Tell the Coastguard where and when you saw something, the type of craft, number of crew and as much other information as possible.

Hypothermia

Hypothermia is the prolonged exposure to the cold, it can lower the body's core temperature to such an extent as to cause death. When sailing in cold water, hypothermia may be more of a danger to the person in the water than drowning, although one may lead to the other. As the temperature of the water falls, the risk of hypothermia increases. Neoprene and fleece are two materials which help to insulate the body even when wet. Most synthetic materials will not insulate a person in the water. Also as most of the heat loss occurs through the head you should wear a wool of fleece lined hat in cool weather and try and keep the entire head out of the water.

If you fall into the water, to maximize survival, do not swim. Conserve heat by keeping your knees drawn up to keep your body as small as possible and stay as near your boat as possible.

If someone does get exposed to the clod in this way it is important to dry them completely as soon as possible, then the treatment is to slowly warm the crew member. Faster warming, rubbing the arms and giving stimulants such as caffeine may cause harm and induce dangerous cardiac arrest. A medical emergency exists if changes in consciousness or delirium are present.

First Aid

All boats that are moving away from shore for a significant period should have a first aid kit and manual. For training courses in the NWAC the training is conducted in the general area of the centre and a rescue craft will be on hand with a First Aid kit and one is available in the Staff Quarters at all times.

The following are items should be available in a sea going kit. The kit itself is not of much value without trained First Aiders.

- A book on First Aid and and CPR Reference Sheet.
- Dramamine and Bonine for seasickness.
- Aspirin for pain relief. Also will reduce the mortality of a heart attack by 50%.
- Antihistamines (without a decongestant) to treat allergic reactions.
- Anti-acids and Zantac for heartburn.
- Milk of Magnesia.
- Antibiotic Ointment.
- Hydrogen Peroxide.
- Band-Aids, Gauze pads, and butterfly Band-Aids.
- Tape.
  Splints & Tourniquets.
- Burn Dressings.

This page is intentionally blank

Improving Skills

Improving Skills

Introduction

Aim

To develop the skills and knowledge you need in order to set up and sail the boat more effectively and in moderate conditions. This course will also prepare you for the specialist courses ahead.

Previous experience / knowledge required

You will be expected to have completed, or have experience equivalent to, the Basic Skills course and have been sailing regularly. If you have not been regularly practising these skills you will need to do so prior to this course or extend the length of this course to allow time to do so.

Types of Boats

This course may be completed in any type of sailing dinghy, small keel boat or catamaran. Your certificate will show what type of boat(s) you used.

Duration

4 - 10 days.

Assessment

Assessment is continuous throughout the course. However, your instructor may also choose to use a formal practical assessment of boat handling skills and a short written paper or oral interview in assessing your level of background knowledge.

Rigging

- Rig the sailing boats used.
- De-rig, secure and care for hull & equipment.

This has been described in the previous sections.

Tuning

- Identify and demonstrate / describe the use of the following in order to optimise the boat / rig for a particular set of conditions:
    - Sail telltales.
    - Jib sheeting angles.
    - Halyard tension.
    - Outhaul.
    - Cunningham / down haul.
    - Kicker or vang.
    - Main sheet traveller / hawse.
- Use boat and rig controls to optimise the performance of the boat in a variety of conditions including light, medium and strong wind conditions and on all points of sailing.

Boathandling

- Tack effectively in all wind conditions.
- Perform a basic roll tack in light winds.
- Gybe effectively in all wind conditions.
- Demonstrate all of the skills covered in the "Sailing Manoeuvres" section of the Basic Skills course" in windier conditions.
- Describe the principles of sailing without a rudder and sail a beam reach without a rudder,
- Sail backwards for short distances.
- Catamaran sailors will be confidently using a trapeze if carried.

Capsize Recovery

- Right an inverted boat.
- Describe what to do if someone is caught under an inverted boat.

Capsize Drill

In the event of a capsize the following drill is applied.

- Clear the danger zone between the hull and the top of the mast.
- Check the status of the rest of the crew, make sure they're not trapped.
- Swim round to the daggerboard/underside. Hold on to the daggerboard to prevent the boat inverting further. (If you have a crew, then wait until they're also at the daggerboard area**).
- Ensure the daggerboard is fully out.
- All those around the daggerboard should hoist themselves upwards, trying to actually get on the daggerboard.
- The boat will begin to lean towards you. Continue to hoist yourself upwards.
- Finally, the boat will return to an upright position. Hold onto its side.
- Pull yourself into the boat, then assist others.
- When you're ready, sheet in, and you're ready to sail off.

** On small sailing boats with a crew of two, one goes to the daggerboard and the other stays on the opposite side holding on to but putting no weight on the toestrap. When the person at the daggerboard brings the boat up the second person is brought up and into the boat automatically.

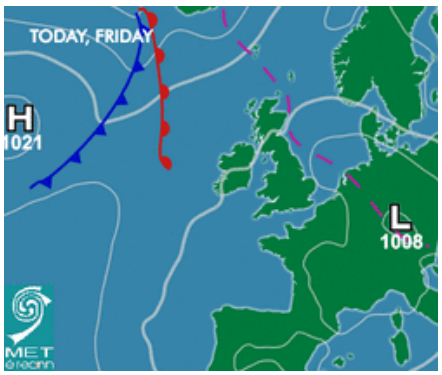
Boat Speed

- Be constantly aware of and apply the "5 Essentials".
- Set the boat up, and sail efficiently:
    - up wind.
    - down wind.
    - on a reach.
- Demonstrate how to obtain maximum leverage when hiking or trapezing.
- Demonstrate use of optimum sheeting on all points of sailing.

Weather

- Be constantly aware of and apply the "5 Essentials".
- Set the boldentify common weather conditions and describe how they may affect your activities.
- Identify sources of weather forecasts.
- Explain the significance of commonly used terms in marine forecasts.
- Identify the significance to sailors of common weather patterns illustrated on synoptic chart.
- Interpret the forecast with regard to planned activities.

Obtaining weather forecasts been described in previous sections.



Synoptic chart

A Synoptic chart is a weather chart that reflects the state of the atmosphere over a large area at a given moment in time.

High Pressure area

A high pressure area or 'high' is a region where the atmospheric pressure is greater than surrounding areas. In the northern hemisphere high pressure areas move clockwise, whereas they move counter-clockwise in the southern hemisphere. Highs are frequently associated with light winds and subsidence. High pressure typically brings clear skies.

Low pressure area

A low pressure area, or 'low', is a region where the atmospheric pressure is lower in relation to the surrounding area. Lows are associated with stronger winds and atmospheric lift. This lift will generally produce cloud cover through adiabatic cooling, once the air becomes saturated as it rises. Thus, low pressure typically brings cloudy or overcast skies, which may minimize diurnal temperature extremes in both summer and winter. These tend to bring wet weather throughout the year.

Barometric pressure

Barometric pressure or atmospheric pressure is the force exerted by the atmosphere at a given point and is measured by a barometer in millibars (mb). At sea level the barometric reading should be 1013.3 millibars. The changing of barometric pressure is used as an indicator for weather conditions. A rise in pressure usually means improving weather while falling pressure may reflect impending inclement weather.

Beaufort scale

The Beaufort scale has been described in previous sections.

Dangers of fog & its precursors

Sailing in fog has obvious dangers of low visibility, maintaining the knowledge of your position and the danger or running aground or into another vessel. It is imperative that you maintain a slow speed and a listening and visual watch. A good thing to do is to anchor in shallow water and wait out for the fog to clear.

The worst case scenario is to be hit and run down in fog. Ensure that all if the crew are in lifejackets, with a means of summoning help, whistle, handheld radio etc..

Coastal Knowledge

- Describe what causes tides and how neap and spring tides might affect sailors.

Tides, neap and spring tides are described in a previous section.

Sailing Knowledge

- Explain how sails and foils work, how they interact and how they drive a sailing boat.

Sails are described in a previous section.

Foils

A hydrofoil is a boat with wing-like foils mounted on struts below the hull. As the craft increases its speed the hydrofoils develop enough lift for the boat to become foilborne - i.e. to raise the hull up and out of the water. This results in a great reduction in drag and a corresponding increase in speed.

The term "hydrofoil" is also used to refer to the foil itself, especially when the airfoil profile has been specifically designed for use in water (such as for a propeller blade).

The French experimental sail powered hydrofoil Hydroptère (above) is the result of a research project that involves advanced engineering skills and technologies. In January 2007, the Hydroptère has reached a top speed of 47.2 knots.

This page is intentionally blank

Lelievlet & B.P. 18

Lelievlet

The lelievlet is the most commonly used steel sailing and rowing boat of the Sea Scouts of the Scouting Netherlands, it is also used by the National Water Activities Centre (NWAC) in Killaloe, Ireland. Its design is based upon the beenhakkervlet a 1960s diesel motorboat and its name is derived from the international scout logo, the French lily.

Specifications

Height	5.60 m
Width	1.80 m
Height	6.50 m
Avg. Weight	650 kg
Sail:	12.15 m^2

Kingfisher, NWAC

History

Until the 1950s the Dutch Sea Scouts employed many different boats. Often these were a discarded lifeboat from the navy or other types of boats. These boats were almost always full of wood, making the maintenance so expensive in terms of time and cost. It was also difficult to source parts to enable repairs. This situation prompted a project to identify a standard vessel. The standard boat also made the running of regatta's easier as all the boats were of equal class. The vessel requirements were set as:

- They had to be easy to find.
- Seating space for 6 persons.
- They had to be able to be sculled, rowed or sailed.

In 1955, the Dutch Sea Scouts looking for a boat to meet these requirements and they became interested in the Teunis Beenhakker, a steel rowing boat. Designed by Kinderdijk. He had created a design for a rowing and motorboating for inland waterway skippers. The groups saw something in that draft and Mr. A. Stockman, skipper with Titus Brandsmagroep in Breda and Commissioner at the Catholic Explorers, adapted the design so it could be used as a sailboat. In 1956 Teunis Beenhakker built two hulls for trial. He made two almost equal hulls: one 4.60 m and the other 5.60 m. Both were built as sailing boats with 12.5 m^2 sails. Ultimately, the 5.60 m boat was selected as most suitable.

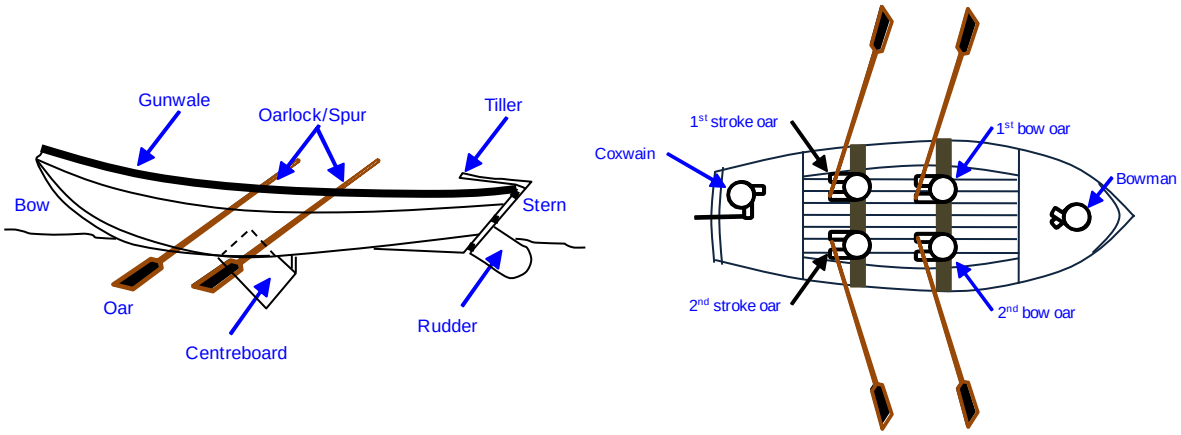
The lelievlet was, as had been predicted a great success. Until 2006 in the Netherlands there have been about 1600 lelievlet's built. Lelievlet number'1 'still exists and is still under the flag of the Titus Brandsma Group from Breda.

There are now also a large number of hulls by VMBO schools built under license, under the flag of the Botenbouwpoject Vlet on the Meuse.

Design

The Lelievlet hull is an all steel construction with ballast tanks fore and aft. It has two twarts across the beam. It has a centre board housed in a centre board housing in the centre of the boat and a housing just behind the forward ballast tank for the mast.

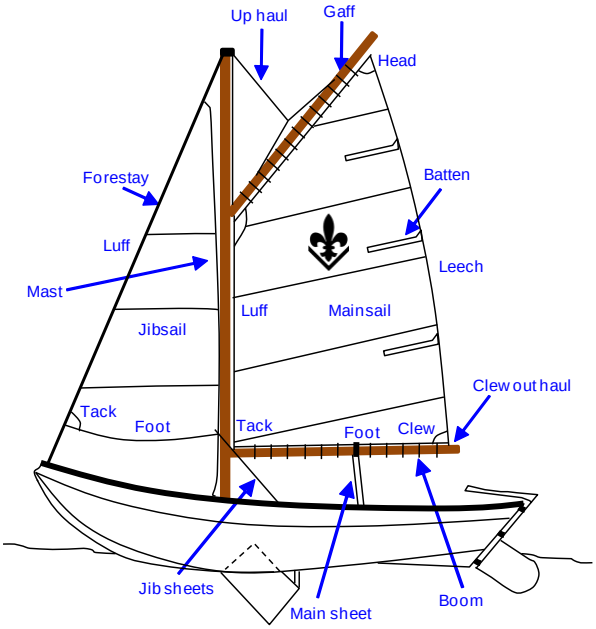
Rowing



For rowing it is best to have a coxswain, two stroke oars, two bow oars and a bowman in the configuration in the diagram. If you are rowing with the boat rigged for sailing then, raise the boom to a 45° angle upward, untie the main sheet, loop it through the frontmost eye for the jib sheet on the port side, loop it back and put it through the pulley on the boom. Centralise the boom and tie off the main sheet with two half hitches such that the boom can only move to port and not to starboard. Take the remainder of the main sheet and secure to the front most jib sheet loop on the starboard side. Now the boom should be unable to move in either direction and the sheet should be out of the way of the rowers.

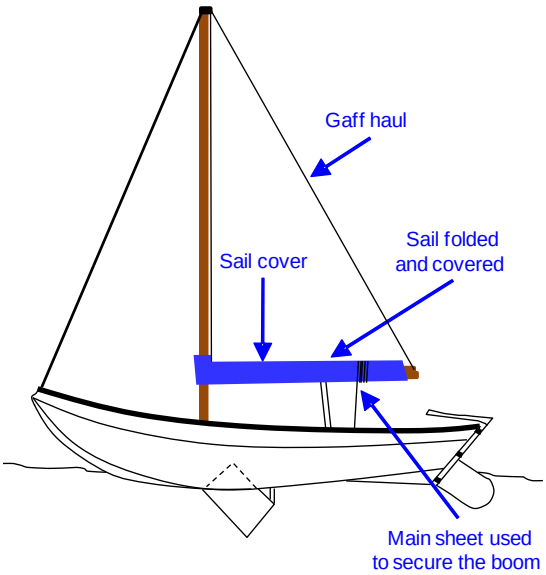
Rigging

To rig the lelievlet for sailing carry out the following steps:



12. Gather mast, boom, gaff, main sail, jib sail, mainsheet, jib sheet, rudder and related rigging items.
13. Place the mast in the mast housing step, raise with the help of the up hauls and bolt into place (ensure that the mainsail up haul, gaff haul and the up haul for the jib plus the forestay and shrouds are in place first).
14. Attach forestay and shrouds with correct size D-shackle and chain.
15. Attach the boom (with the mainsail) to the mast.
16. Rig the mainsheet to the boom and the deck.
17. Secure the foot and/or clew to the boom. Make sure the mainsheet is released so that the sail won't fill when you raise the sail (ensure you are facing into wind).
18. Raise the gaff and main sail slowly using the up haul and gaff haul, as you do so secure the mainsail to the mast (when raising these you need to balance between the two such that the gaff remains at 45° angle as it rises the main sail.
19. Clip the Jib sail to the forestay and connect the Jib up haul to the head of the jib.
20. Rig the jib sheets to the jib sail and link the port and starboard ends through the jib loops on either side of the boat. Finish with a figure of eight at each end to prevent them from running back out.
21. Place the centre board as required.
22. Rig the rudder. Retract it unless the boat is already in water deep enough to accommodate its length.

Derigging



To derig the lelievlet after sailing carry out the following steps:

6. Lower and unclip the Jib sail. Fold it carefully and wrap the jib sheets around it. Place in the storage bag provided.
7. Lower the main sail with the up and gaff hauls to a position where the boom is more or less perpendicular with the mast and above the tiller handle. Lower the gaff onto the boom and tie the ends together.
8. Fold the main sail neatly on top of the boom/gaff over and back until it is completely folded. (Don not wrap around).
9. Secure the sail in place using the straps provided.
10. Place the sail cover over the sail and boom and secure it in place with the retention strings.

B.P. 18

During 1976 a questionnaire was sent to all Sea Scout Leaders throughout the country asking for their ideas about a Standard boat for Sea Scout use. At that time the nearest there was to a standard rowing craft was the East Coast Skiff. This was however confined to the east coast, and was considered by some to be unsuitable for their needs and comparatively expensive for a craft which could not be used for sailing also. The "Mirror" dinghy was used in some Groups for sailing instruction. The general feeling throughout the section was that we needed a boat about 5 to 6 metres long, which could carry about 5 or 6 Scouts and could be rowed or sailed.

Information about other Sea Scout boats was obtained - the New Zealand Standard Boat, the British "Home Counties Gig" and the Dutch "Lilievlet". Mr. Kevin MacLaverty, a marine architect, expressed interest in our project, and all the information that had been collected was handed over to him for study and opinion. The result was a set of plans and a model of a proposed new Irish Standard Sea Scout Boat which were presented to the Sea Scout Leaders' Conference in Cobh in 1977.

The design was for a "double-ender", 18 feet over all, capable of being rowed with 2, 4 or 6 oars, and rigged for sail as a ketch. The conference adopted the design, and a committee was established to pursue the matter further, particularly to seek sponsorship for making the mould. This sponsorship was eventually provided by the British Petroleum Company, and therefore the class was named "BP 18 ". The standard sailing rig is a Bermudan Ketch, with the jib and mainsail being the same size as those of a G.P.14 - a diagram is shown on the next page.

Specifications

LOA	5.52 m
LWL	4.57 m
BEAM	1.88 m
DRAFT	0.35 m
HULL	Moulded GRP with timber topstrake, keel and bilge protection, and rudder.
RIG	Bermudan ketch.
Sail Area	111.5 m^2

"BP 18"

This page is intentionally blank

This page is intentionally blank

Scouting Ireland
Charge Certificates for Sailing

Sailing Charge Certificates

Scouter's Responsibility - '*Before allowing a SCOUT to take part in any boating activity the Scouter-in-charge must consider the age, experience and reliability of the SCOUT, and the ability and experience of himself or any other person in charge of any part of the activity. The Scouter should always take whatever precautions a prudent parent would observe for the safety of his/her own children*'.

While the scheme is a system of qualifications for various types of boating, this document is only covering the requirements for sailing. The scheme is intended as an addition to the ISA Sailing scheme and it is based on assessment of:

- Practical competence in boat handling
- Leadership ability of the Scout or Leader concerned
- Local knowledge

A Sailing Charge Certificate is a licence to take Scouts boating and comes in various grades:

- **Basic Boat-handling Certificates** are issued for one season only, enabling those with limited experience to get afloat to improve skill and be assessed for a full certificate later. They are confined to enclosed safe waters, 1 May to 30 September, wind force 3 max.
- **Intermediate Certificates** are intended for Adult Leaders with limited experience and for Watch Leaders over fourteen years old and Venture Scouts. They signify competence to take charge of a boat and crew in enclosed safe waters and restricted waters.
- **Advanced Certificates** are available to Adult Leaders and Venture Scouts over 17 years, and signify competence to take charge of a craft and crew in Day Cruising Waters.
- **Instructor Ratings** are additional qualifications available to experienced Leaders with Advanced Certificates.
- **Coastal / Off-Shore Certificates** are awarded only to those who possess a Coastal or Offshore Yachtmaster Certificate of the ISA or RYA.

Sailing

The ISA Small Boat Sailing and National Powerboat Training Schemes are used to assess candidates for sailing and power Charge Certificates. These are excellent indications of level of technical skill, but the candidate should still be assessed for leadership, responsibility, local knowledge, and expertise with the relevant craft in use in Scouting. For example, a holder of Improving Skills Sailing Certificate, experienced only in performance dinghies, should have a familiarisation session and reassessment in a Lelievlet before taking charge of it. Any theory items in the Scout Certificate not covered in the ISA syllabus should also be checked.

Sailing Charge Certificates

- Basic Boathandling Certificate - ISA Basic Skills
- Intermediate Certificate - ISA Improving Skills
- Advanced Certificate - ISA Advanced Boat Handling or ISA Adventure 1
  ISA Day Skipper (Sail)

Issue of Charge Certificates

When assessment is completed for a particular certificate, the Charge Certificate Log Book should be signed by the assessor. It should then be sent to the Provincial Committee Secretary who will register the Charge Certificate, and notify National Office for record. There is no need for any other application form the completed Log Book is sufficient. Experienced boatmen, who wish to apply directly for Charge Certificates, should consult with the Provincial Committee Secretary to arrange for assessment, or recognition of previous qualifications.

Charge Certificate Insignia

These may be worn in uniform over the left shirt pocket or in a similar position on a jersey by those qualified. The badges indicate the type of certificate. The colour of the fleur-de-lys in the centre indicates the grade (red for intermediate, green for advanced, purple for coastal/offshore). A green border indicates instructor grade. Insignia may be obtained through your Provincial Committee Secretary.

Intermediate

Advanced

Instructor

Coastal/Offshore

This page is intentionally blank

Sailing
Log Book

Sailing Log Book

Date	Type of boat	Hours Experience		Activity & Weather Conditions		Authorisation
		Helm	Crew	Type of Course or Activity	Max. Wind Speed	Venue Instructor

Sailing

Date	Type of boat	Hours Experience		Activity & Weather Conditions		Authorisation
		Helm	Crew	Type of Course or Activity	Max. Wind Speed	Venue Instructor

Sailing

Date	Type of boat	Hours Experience		Activity & Weather Conditions		Authorisation
		Helm	Crew	Type of Course or Activity	Max. Wind Speed	Venue Instructor

Sailing

Date	Type of boat	Hours Experience		Activity & Weather Conditions		Authorisation
		Helm	Crew	Type of Course or Activity	Max. Wind Speed	Venue Instructor