

EXPERT ON BOARD

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Manoeuvre under sail

GETTING HOME WITHOUT AN ENGINE

We're used to relying on our engines, but could you get home without one? James Stevens shows how it's done

Whenever I think RYA training has been a huge success I am brought down to earth by the depressing statistic that the main cause of lifeboat callouts to auxiliary yachts is mechanical failure. This usually means the engine has packed up on a sailing yacht. The cause of the failure is sometimes pretty basic and easily solved, perhaps with a can of spare fuel, but sometimes even Dr Diesel would be unable to fix it at sea.

If a sailing yacht skipper is unable to use the engine they should be able to get themselves within striking distance of an engineer by sail power alone. It might involve anchoring and waiting for wind, but that's too bad. The RNLI is not there to get you home on time.

This independence and attitude of 'I'm going to sort this problem without help,' is an important quality of yacht skippers and the further offshore you go the more important it becomes.

Fortunately modern yachts are comfortable, have reliable engines and electrical systems and modern electronic navigation instruments are easy to understand and simple to use. Unfortunately even with these

improvements, ropes still wrap round props, plastic bags get drawn into engine water inlets and occasionally fuel docks sell contaminated fuel.

This engine reliability is a relatively new development. Only 40 years ago yacht engines were notoriously fickle and it was a considerable relief when, on entering port, they actually fired up. Skippers therefore, out of necessity, had an anchor at the ready as they approached their destination and scratched their heads wondering how they might enter harbours under sail alone. Now engine failure is less common, but the lifeboat statistics tell us that calling for help when it happens is still the solution favoured by many skippers.

Sailing instructors whose job it is to teach sailing in harbours and confined spaces are pretty good at these manoeuvres and practise them regularly. For most recreational sailors spending time practising mooring pickups under sail is not a way to inspire the crew who want to get on with the passage and arrive somewhere. In spite of this, it is worth making the effort to learn to manoeuvre without an engine. Sailors who are adept at this usually sail more efficiently by being fully aware of the interaction between wind and tide and working with the boat, as well as being unfazed by engine failure.



If you lose engine power, being able to sail to safety is a vital skill

A FEW BASICS

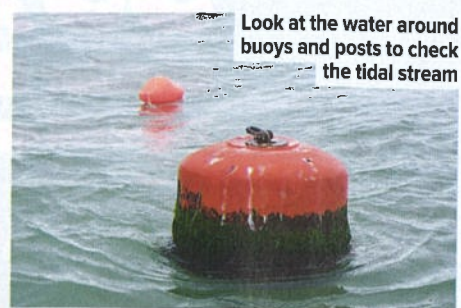
The skill of manoeuvring is to be able to sail slowly while staying in control. Sailing fast is great, but not when you are trying to come alongside. Here are a few key factors to bear in mind

CLOSE REACHING

The best point of sail for slowing down is a close reach. By allowing both sails to flap the yacht can be brought to a standstill, with some leeway if it's windy, and can be easily accelerated by sheeting in. This spill and fill technique will be familiar to trainee yacht skippers on RYA courses practising Man Overboard under sail. Any attempt to slow down with the main up and the wind aft of the beam is doomed to failure.

WIND AND TIDE OPPOSED

All manoeuvres except MOB, whether under sail or power, must take into account the tidal stream. Check nearby posts or buoys to check the tidal stream. If the wind is more than 90° to the tide, the wind is going to be aft of the beam on the approach, so the main has to be stowed and the yacht sailed under jib alone.



Look at the water around buoys and posts to check the tidal stream



Entering confined water, it's important to use your sail area to control steering as well as speed



As this boat has slowed, leeway has increased, just visible on the water to windward



If you're going to sail through moorings be aware of hazards to leeward, and the risk of broaching to windward



STEERING BY SAIL

On most yachts the pivot point is near the forward edge of the keel. The yacht is designed so that if both sails are set there is a slight tendency for the bow to come into the wind with the helm amidships. This is weather helm. If the mainsheet is released and the jib kept sheeted in, the effort moves forward and the yacht bears away even with the rudder amidships, and vice versa with the main. When manoeuvring at slow speeds it's important to use the sails to help you steer.

SAILING IN A CONFINED SPACE

If you have engine failure you are probably going to end up sailing into a harbour complete with fairways, traffic, moored yachts, navigation marks and other clutter. To make life more difficult the wind direction and force will change regularly as you close the land. The British Olympic Sailing team training in Sydney for the Games reckoned that whenever someone opened a window the wind shifted. You're not racing so you

can afford to set a small or partially rolled jib plus main to give good visibility while still providing some drive, and it is also a way of pulling the bow round when you tack.

The secret is never get into a situation where you are stopped head to wind. If you have to slow down let the sails flap rather than pointing up. You have to stay in control so that you can accelerate again. If you do get stuck head to wind (in irons), the only way out of it is to back the headsail, push the tiller to the opposite side, and wait for the boat to drift back. Don't forget leeway as you slow down; the keel will lose grip and slip sideways until you've accelerated again.

The possibility of passing close upwind and upside of a moored yacht or other hazard should send a shiver down your spine, much like a lee shore, so avoid it at all costs, as the wind may let you down at the last minute by dropping or heading you.

It's also important to ease the main when bearing away around the stern of moored yachts. One gust and a broach to windward could result in a large insurance claim.

Inland sailors tacking up rivers accelerate into the tack near the river bank. Too slow and you can end up head to wind in irons with the possibility of falling back on the original tack straight into the bank.

Pilotage is hard enough under power but even more challenging under sail even if you've done as much preparation as possible. Remember you can always slow down but you'll also have to think of several things at once and give quick instructions to your crew.



While the RNLI is there to help, could you sail yourself out of trouble instead?

PONTOONS

LEEWARD BERTH

Sailing to a pontoon gives you more options for fixing your engine, but it takes a confident sailor to sail into a marina and a relaxed marina manager or harbourmaster. If you are lucky a phone call to the marina will result in a launch being sent out to tow you to a berth, but in the real world you arrive about five minutes after the launch driver has gone off duty.

Tide is king, so approach into it. Preparation is also key, especially if you are short handed. Use as many fenders as possible down the topsides. Use three warps, bow, stern and crucially one from a central cleat or strong point. A hammerhead is the obvious choice of pontoon, preferably the berth on the end so if you are approaching too fast there is nothing to hit in front. With no bail-out option, sailing into a finger pontoon isn't recommended!

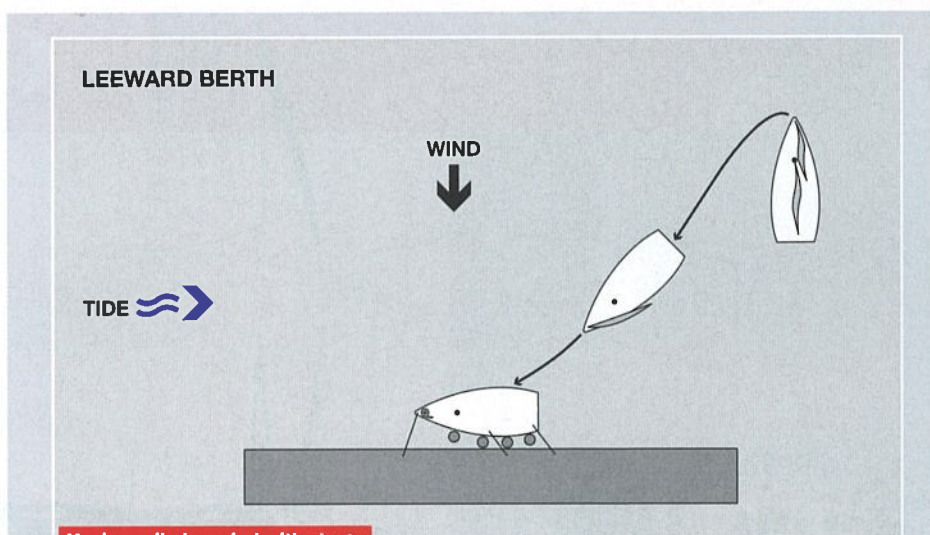
1 DROP THE MAIN

If the wind is blowing on to the pontoon (a leeward berth) even only slightly, it pays to drop the main upwind in clear water. If you don't, even if the final approach is on a close reach, the boom overhanging the pontoon will be a hazard to any unwitting yachtsmen standing there looking the other way. There used to be a harbourmaster's shed on a pontoon at Warsash on the Hamble whose windows were regularly broken by the booms of yachts sailing alongside. Alternatively the slack mainsheet can wrap around an electrical and water services bollard and extract it like a tooth, that's also an expensive repair.



2 CONTROL YOUR SPEED

If the wind is aft of the beam as you approach into the tide, happiness is a furling jib which can be rolled up or unrolled to slow down and speed up. Sometimes even a flapping jib gives too much windage to stop against the tidal stream and it might be necessary to ease the halyard and drop the jib and sail almost under bare poles.



Having sailed upwind with plenty of space, drop the main before lining up for the approach



TOP TIP

When surging line around a cleat, ensure it has a fair lead. Take the line to the aft end of the cleat, from the water side towards the pontoon, then lead it around both horns. It sounds simple, but lead the line any other way and it will either snag, or not provide enough holding power.



3 SLOW BUT SPRITELY

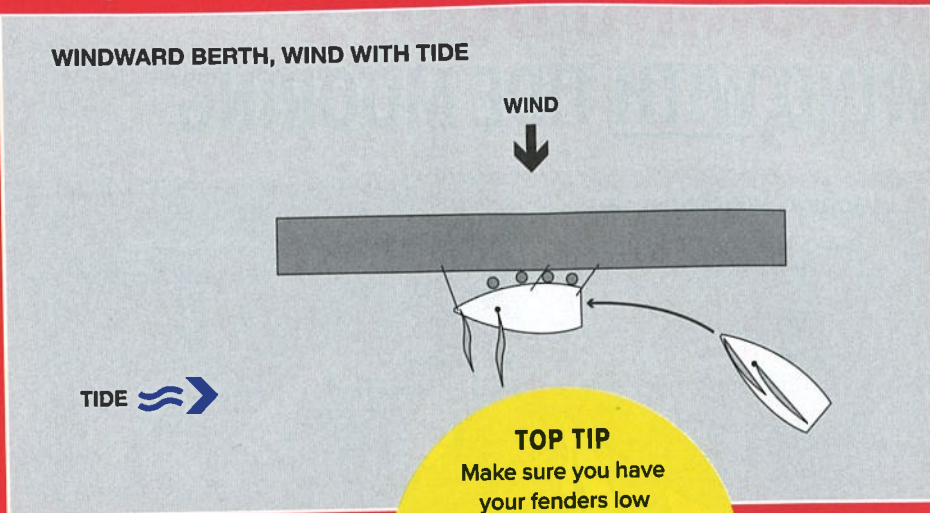
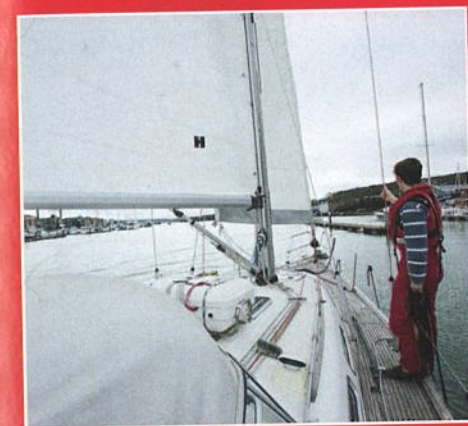
Remember that if you are sailing slowly under jib alone on a reach, when you sheet in to speed up, the bow will be pushed to leeward before you accelerate forward, so avoid getting downwind of your destination under jib alone. It's hard to come to a precise stop in exactly the right position, so the crew need to step ashore quickly.

4 SURGE THE LINES

Take a turn on a cleat and surge the warp on a shore cleat to brake the yacht. The midships and stern line are best for this. Surging the bowline simply brings the bow in with a thump against the pontoon. We've all seen seemingly helpful people on marina pontoon take bow lines and do this.

WINDWARD BERTH

If the wind is blowing off the pontoon – a windward berth – the manoeuvre is harder because you need to keep speed and steerage until the last minute. You have to approach from an angle to make progress against the wind rather than parallel with the pontoon like a train going down a platform.



TOP TIP
Make sure you have your fenders low enough. Coming in with any speed will make them swing up and pop out above the pontoon. Make sure you've got plenty along the full length of the boat.



1 CLOSE REACH

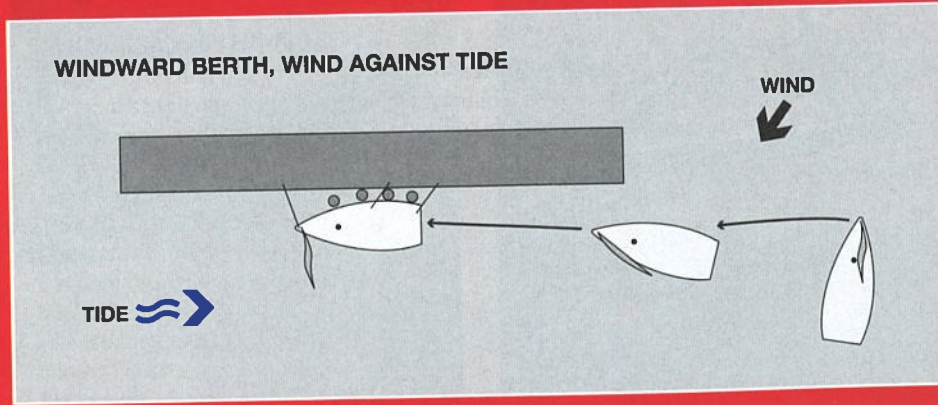
If the wind is forward of the beam, keep the main up, but reduce the size of the jib as you don't need boat speed, just manoeuvrability. Approach on a close reach spilling and filling the sails. How far aft your spreaders are swept, and whether you have a fully battened main, will determine the precise angle at which you can depower.

2 FINE CONTROL

On the final approach, sheeting the main in and out through the blocks is too slow if you want to speed up or slow down quickly. Pull lots of slack through the blocks, and grab the falls in one hand if it's near the helm. It lets you add or dump small amounts of power very quickly.

3 CREW POSITION

When you get close you can wind up the jib and ease the main. The first part of the boat to touch the pontoon will be by the shrouds. Position the crew there to jump ashore. They need to take a turn fast. If you're shorthanded, the midships line will stop the boat and hold you steady, but with more crew the stern line is a better brake.



4 READY WITH THE BOW LINE

On board it helps everyone if the main halyard is released as soon as a warp is round the cleat – no danger then of the main filling with half the crew ashore and half on board. The bow will pay off quickly, so you'll need to be able to reach the bow line from the pontoon once the other lines are secure. Bring it aft to the shrouds for ease.

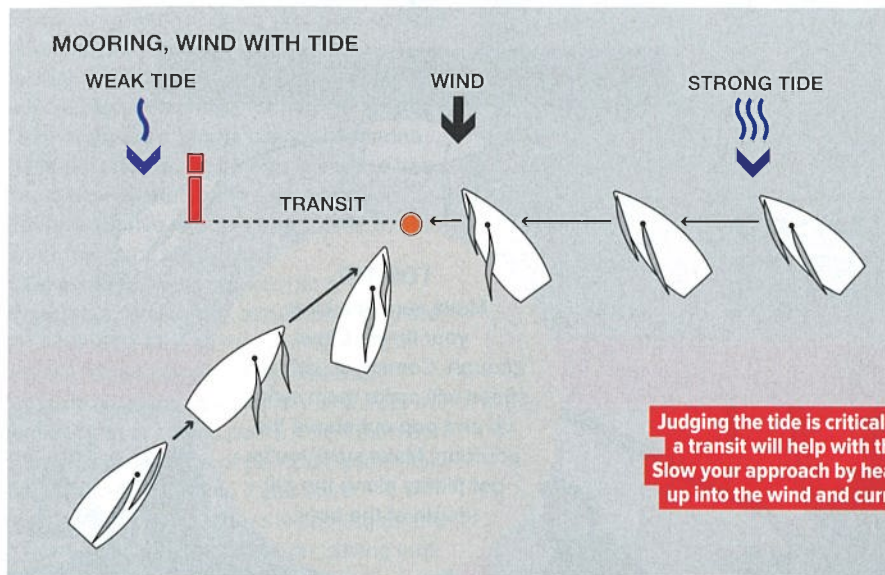
5 WINDWARD BERTH, WIND AGAINST TIDE

If the wind is aft of the beam as you're sailing against the tide, you need to treat it as a wind against tide approach. Drop the main as high upwind as you can and come alongside under jib making sure you don't lose ground to leeward. In this case you do need to approach parallel to the pontoon.



MOORING BUOYS

WIND WITH TIDE MOORING



1 LINE UP THE APPROACH

The principles of this are pretty straightforward and although it's in the Day Skipper syllabus, it can be a tricky manoeuvre on a boisterous day with a strong tide. With wind and tide together, use a small jib and a large main. The approach needs to be on a close reach. With no tidal stream simply sail to where you think a close reach is, point the boat at the mooring, release the main. If it flaps and you can pull it in and fill it, you are on track. From there you can simply fill and spill to adjust speed to the buoy, exactly as you would for a Man Overboard under sail drill. Of course, in the real world it's rarely that straightforward.



2 GET THE JIB RIGHT

The jib is big enough to help tacking and assist the windflow over the back of the main but small enough to avoid belting the crew member on the foredeck who is ready with the boathook. You do need the jib though, as you could end up in irons without it.

3 START ABEAM IN TIDE

In a strong tide the starting position could be abeam of the buoy. The yacht will still be on a close reach but with the boat being set sideways by the tidal stream. Judging how far upwind and uptide to start is pretty difficult and it's a skilful helm and a nifty crew who can nail it first time.

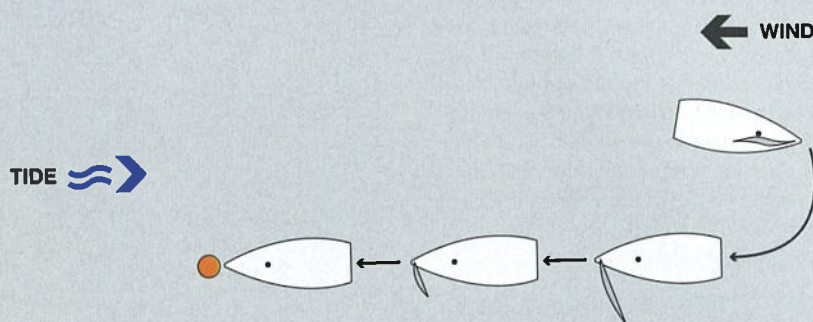
4 AN EYE ON THE TRANSIT

Remember that when the yacht stops next to the buoy it still has speed through the water so keep watching the transit on the buoy as you approach to avoid being set downstream as you slow down. Just before making contact turn into the wind and furl the headsail completely.

WIND AGAINST TIDE MOORING

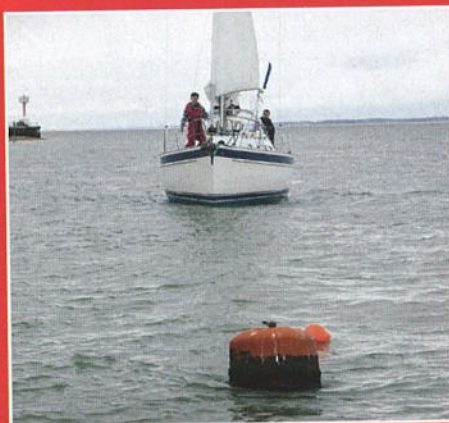
Approaching a mooring buoy with wind and tide opposed is a piece of cake compared with the wind and tide together, providing you know how to do it. If you don't and arrive with the main up it's going to end messily.

MOORING - WIND AGAINST TIDE



1 PLENTY OF SPACE

Give yourself a decent distance from which to approach the buoy. It may be slow, but you'll look good if you get the buoy on the first attempt. Simply sail upwind of the mooring, drop the main and sail back against the tide spilling and filling the jib.



2 SLOWING DOWN

Depending on the relative strengths of the tide and wind, you may not need very much jib at all to make headway, so furl it away. If you are still carrying too much way, sheer the boat to one side then the other to show alternate sides of the keel to the tidal stream, which will act as an effective brake.



3 ADDING POWER

If the yacht stops too soon simply apply power with the jib and start moving again. You can use the halyard or furling line as an accelerator, showing the breeze only as much canvas as you need to make progress and keep control.



4 STOPPING WITH CONTROL

You will still be carrying some way through the water, but the boat should be stopped next to the buoy with the sails furled. This will give you plenty of control as you'll still have steerage. The one thing you can't do easily is to slam the brakes on at this point, except to sheer to either side.

WIND ACROSS THE TIDE

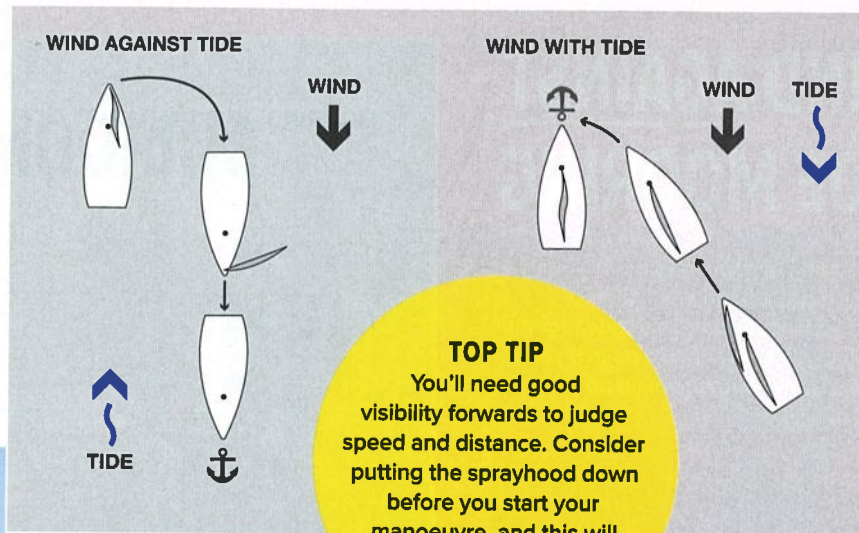
Judging wind and tide in the real world is less neat than in the text books, and often you'll have a combination of wind across tide. How other boats are lying will give you a good idea though.

It's important to avoid the main drawing as you arrive, so point the boat directly into the tide and release the main sheet: if it isn't flapping go down tide of the buoy, drop the main and approach under jib alone. If the main will flap as you approach the buoy use it in combination with a small jib.



ANCHORING:

The hard part about anchoring is deciding where to drop it. The actual manoeuvre under sail is quite easy – it's like a mooring but with slightly less accuracy required about exactly where you stop. Establish how the yacht is going to lie relative to the wind. If wind and tide are together, approach under main as you'll want the jib out of the way for the crew on the foredeck. For wind against tide, approach under jib alone.



How other boats are lying will give you a clue to wind and tide. Conditions in a bay will be very different to rivers

The problem is that most ports big enough to have a marine engineer surround their slipways and landing places with moorings, jetties, cables and fairways where you are forbidden to anchor. So it's a challenge to find a suitable sheltered spot which is deep enough with enough swinging room but easy to reach from the shore.

The difficulty with anchoring under sail is that once you have stopped and started to lower the warp or chain, the bow is going to pay off and the main is going to fill. It is therefore important to let the main halyard run as soon as the anchor touches the bottom. There is also trouble ahead if the anchor is dropped with the yacht still moving ahead. When the chain snubs and pulls the

bow downwind there's probably a gybe coming. Many skippers always anchor under jib alone which is safer but you need a high cut jib or roll it half in to keep it clear of the foredeck crew.

If you are anchoring in wind against tide conditions, the trick is to judge when the boat has stopped moving over the ground. A transit will come in handy here, and let you know when it's safe to drop the anchor.

IF IT'S WINDY

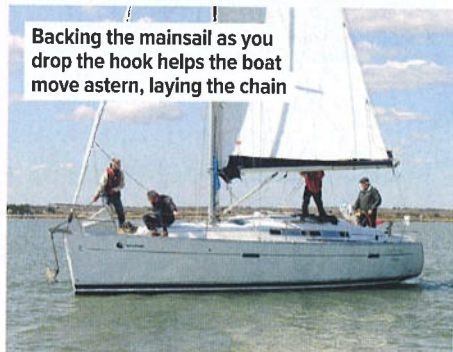
The safest way of stopping under sail alone is anchoring, so if you are anxious about an alongside manoeuvre or picking up a mooring surrounded by yachts on a windy day then prepare the anchor. It's a good idea

to have the anchor ready anyway in case the hoped for berth or mooring is unavailable or simply too difficult. The spot you choose to anchor might not be ideal, but it gives you a chance to check the engine and if it requires an engineer you can either call for a tow or wait until the weather moderates.

DON'T BE A LIFEBOAT STATISTIC

The RYA expects Yachtmasters to be able to sail themselves out of trouble, on to moorings and anchor under sail. That part of the syllabus has been there since 1973 when many yachts had no engine at all, never mind a reliable one. Now, even with engines which usually start, the RYA principles are the same but my guess is that very few yachtsmen except those racing keelboats actually pick up moorings under sail.

No crew out for a precious weekend afloat is going to want to watch their skipper missing moorings under sail, so the best place to practice is on a course. The rest of the crew will then be willing you to succeed rather than looking at their watches wondering when you are going to set off. If you understand the principles and how to approach the manoeuvres you are bound to nail it eventually and your usual crew will be impressed too.



Backing the mainsail as you drop the hook helps the boat move astern, laying the chain



Anchoring under sail: be ready for the bow to pay off to leeward