

The perfect plan

Sharpen a pencil, open an almanac and start preparing for the season. Follow our guide to making sure your summer cruises go without a hitch

TEXT ALAN HARPER

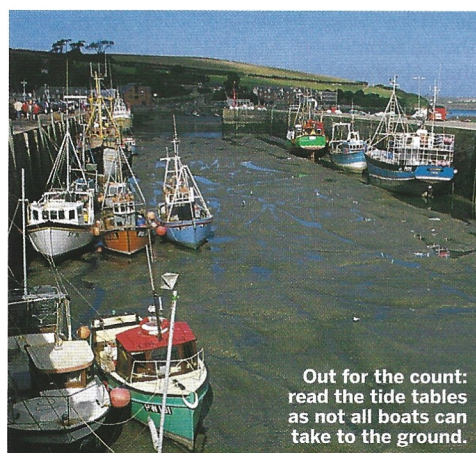
Ah, passage planning! The very phrase has slightly olde-worlde connotations, conjuring up visions of old sailors hunched by the fireside amid stacks of charts and almanacs, dreaming of French bistros, and painstakingly calculating cross-Channel tidal offsets for 14-hour passages at 4.5 knots.

But these days our idea of the sailing man's reality is probably as inaccurate as his idea of ours: that we wake up late, start the engines, punch in a few waypoints while doing the washing up, then set off at high speed for distant horizons – passing much too close to him in the meantime and always forgetting, somehow, to stow that last fender.

The truth is somewhere between the two. Even if you don't quite subscribe to the 'two hours of planning for every hour at sea' school, you must agree that on a planing boat, the more preparation you do before you set off, the easier things are once out at sea.

Tides

Tidal streams The quickest and most fuel-efficient route from A to B is a straight line, and if the tide is pushing you sideways that means aiming to one side of your destination. Navigating by GPS 'cross-track error' means inscribing a curved course through the moving water, even though it looks like a straight line



on the screen or the chart.

The chart, almanac, tidal stream atlas or chart plotter can show you the direction and speed of the tide for every hour of the day. Shape your course to compensate. If, for example, on a proposed three-hour, southbound, cross-Channel passage, the tide is flowing westwards at one knot for the first hour, 1.5 knots for the second hour and two knots for the third, it's going to push you a total of 4.5 nautical miles to the west of your destination. So set a course that aims 4.5 miles to the east (Figure 1).

Heading along the coast, the tidal streams are more likely to run parallel to your track. In

this case, their only effect will be to speed you up or slow you down. On a short trip of an hour or so this is hardly worth bothering about, but for long passages it can be significant.

Tidal heights At best, getting your timings wrong can mean waiting on the holding pontoon until the marina lock opens. At worst, you knock your props off on a rock that you thought had rather more water over it. PC programs and plotters can speed up tidal height calcs, but the principle is simple.

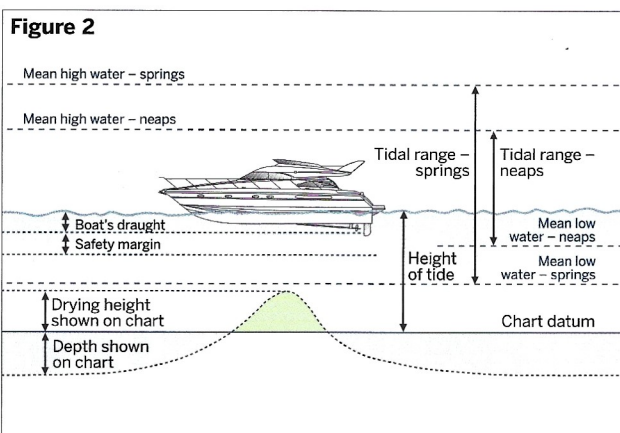
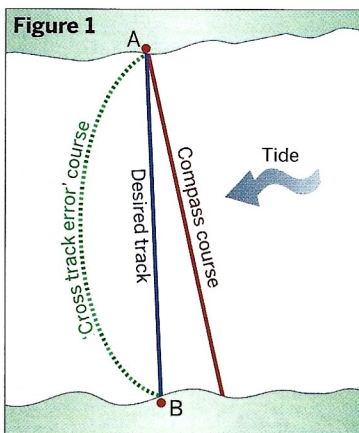
If your destination is a locked marina or basin, half the job is done for you because its times of accessibility, e.g. two hours each side of high water (HW $\pm$ 2 hours), will be found in your almanac. Work out the distance (in nautical miles), divide that by your cruising speed (in knots), and that's how many hours ahead you need to set off.

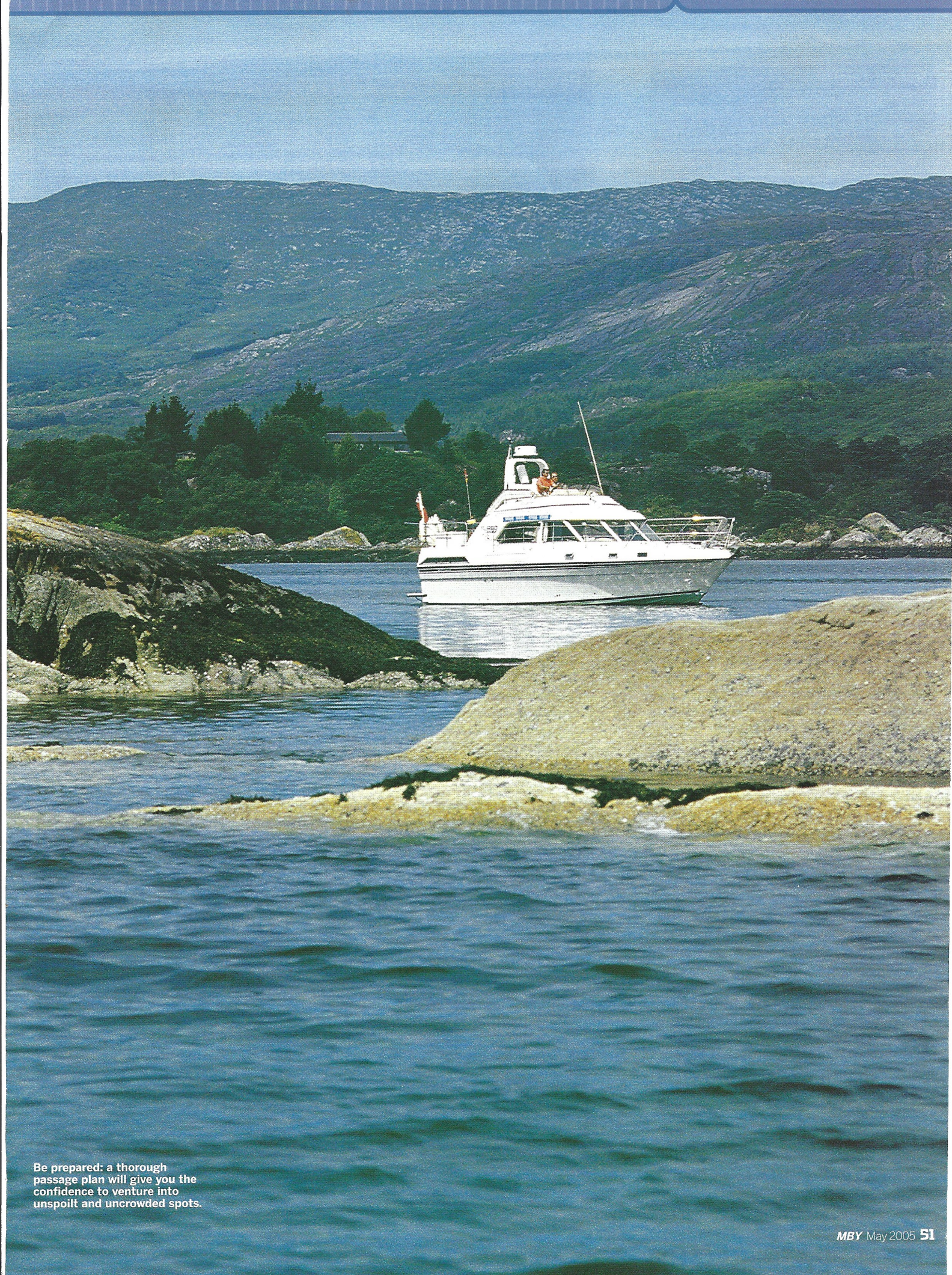
If the access difficulty is caused by a natural feature such as a sand bar across a river estuary, then you have to do the work yourself. You need to know your boat's draught, note down from the chart the depth or drying height of the hazard at low tide, and allow a safety margin (Figure 2). Next, use your plotter or PC, or the tide tables in your almanac plus the relevant tidal curve to establish at which time of day the hazard has enough water over it to allow you safe passage. The 'Rule of Twelfths' (see p52) can be a useful way of quickly estimating the height of tide between HW and LW – but be warned, it doesn't work in the Solent.

Wind against tide Something else to bear in mind: a strong tidal stream setting into even a moderate breeze can cause a steep, lumpy chop. Where the tide is known to be strong – around headlands or through narrows – it's often wise, on breezy days, to time your passage so that wind and tide are going in the same direction.

Weather

Sources Television, radio, Navtex, text messages, newspapers, the Coastguard, coast radio stations, fax services, premium-rate phone





Be prepared: a thorough passage plan will give you the confidence to venture into unspoilt and uncrowded spots.

Rule of Twelfths

This yardstick has helped generations of seamen to quickly estimate the height of the tide at a given place at any time of day. It divides the total flow of tide into 12, and states that one-twelfth will flow out (or in) in the first hour after HW (or LW), two-twelfths in the second, three-twelfths in the third and fourth hours, then two-twelfths and one-twelfth again. (NB: it doesn't work in some areas, like the Solent, where the tides behave differently.)

How to do it From the tide tables, work out the height difference between LW and HW – say it's 6m – and then divide it by 12, to get 0.5m. So (see example below) in the first hour the height will alter by 0.5m, in the second by another 1.0m, in the third by another 1.5m, and so on. Simple – and it works whether you start from LW or HW. However, it's only a very approximate method – so always allow a safety margin.

Time of LW: 0600. Depth at LW: 1.0m.

Time of HW: 1200. Depth at HW: 7.0m.

Range of tide: 6.0m.

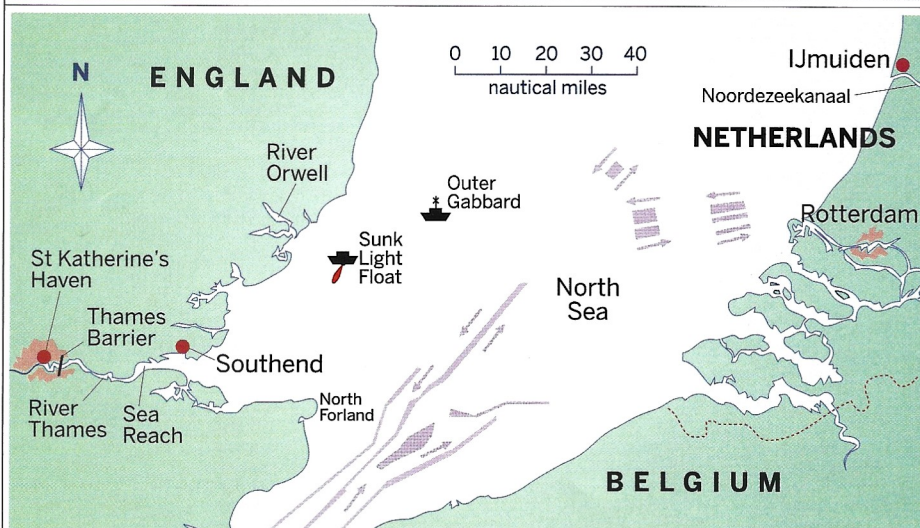
Time		Depth
0700	$\frac{1}{12} (1 \times 0.5\text{m} = 0.5\text{m})$	1.5m
0800	$\frac{2}{12} (2 \times 0.5\text{m} = 1.0\text{m})$	2.5m
0900	$\frac{3}{12} (3 \times 0.5\text{m} = 1.5\text{m})$	4.0m
1000	$\frac{3}{12} (3 \times 0.5\text{m} = 1.5\text{m})$	5.5m
1100	$\frac{2}{12} (2 \times 0.5\text{m} = 1.0\text{m})$	6.5m
1200	$\frac{1}{12} (1 \times 0.5\text{m} = 0.5\text{m})$	7.0m

lines, mby.com – there are no excuses for setting off without a forecast. The BBC's *Shipping Forecast* (Radio 4) remains the principal source for mariners, but for a more focused local view be sure to stay tuned for the *Inshore Waters Forecast* as well. Don't forget that the national television weather forecasts after the news can be useful when planning.

Interpretation The Met men and women are better than we give them credit for, but weather prediction remains an inexact science, and the wise mariner treats any forecast with respectful scepticism. The strength of the sun can cause significant local variations in wind speed and direction, which a national forecast will not attempt to address; seek out local-area forecasts and compare them. Another problem common to British summers is that big, wobbly high-pressure areas can be hard to get the measure of, so forecasts for areas around their edges can be way off.

Even a fairly predictable phenomenon like a low-pressure area barrelling in from the North Atlantic can cause forecasting problems: maybe not of effect or track, but certainly of timing, and an error of a few hours can make a huge difference to passage planning. Listen to every forecast to see if the meteorologists are revising their thinking – and keep a weather eye on your own barometer. Get into the habit of logging readings regularly during a cruise, so you can spot any sudden changes in pressure. As a general rule, if there's a drop of 3mb or more in three hours, it's coming on to blow.

Passage 1 St Katherine Haven to IJmuiden



This is not as time-critical as it looks, in spite of having locks at both ends, because each lock has a waiting pontoon. But you might want to keep off the plane until you're into Sea Reach, since there is often debris in the Thames – so leave with at least 3 hours of the ebb left, to speed progress downstream, aiming to be off Southend before the tide turns. This might mean an early start, in which case lock out the night before and secure to the waiting pontoon.



St Kat's is a good place to start a continental cruise.

Distance 188nm approx.

Duration approx 8.5h (8 kts then 25 kts); 12 hours (8 kts then 15 kts).

Timings St Katherine Haven lock HW -2/+1.5h. Noordezeekanaal locks 0600-2100 daily.

Weather considerations Wind against tide in Thames Estuary.

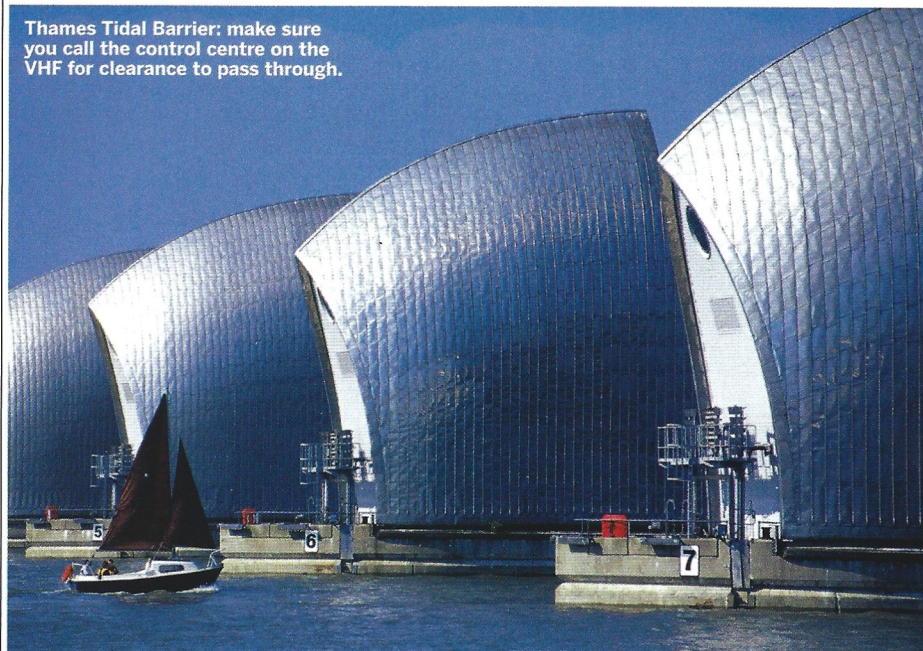
Departure window Between HW and LW-3h to make best use of the ebb.

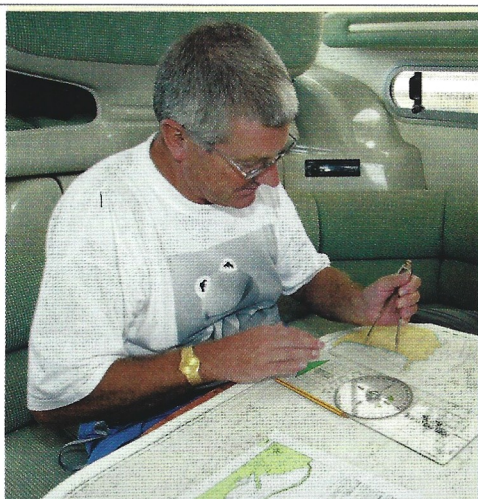
Decision points Open water off Southend (43nm). Sunk Lt Float off River Orwell (83nm).

Boltholes River Orwell: well-marked entrance, 24h access, several marinas.

Other considerations Thames Barrier transit procedures; shipping; separation zones off Rotterdam.

Thames Tidal Barrier: make sure you call the control centre on the VHF for clearance to pass through.





Paper or electronics?

The modern electronic chart plotter is a marvellous device, containing a wealth of information and labour-saving features. Cartographic quality has come on in leaps and bounds in recent years. And, of course, waypoint navigation is quick, simple and almost foolproof.

However, only the very foolhardy would go to sea without some form of back-up from paper charts. Many experienced navigators therefore argue that since you need paper charts anyway, the plotter becomes an unnecessary luxury. For these people, the ideal system is usually a combination of paper chart and GPS receiver.

Whichever method you choose – and for many of us the choice is made by budgets, space considerations or simply a reluctance to change the habit of a lifetime – the key to a successful cruise is still quality planning time.

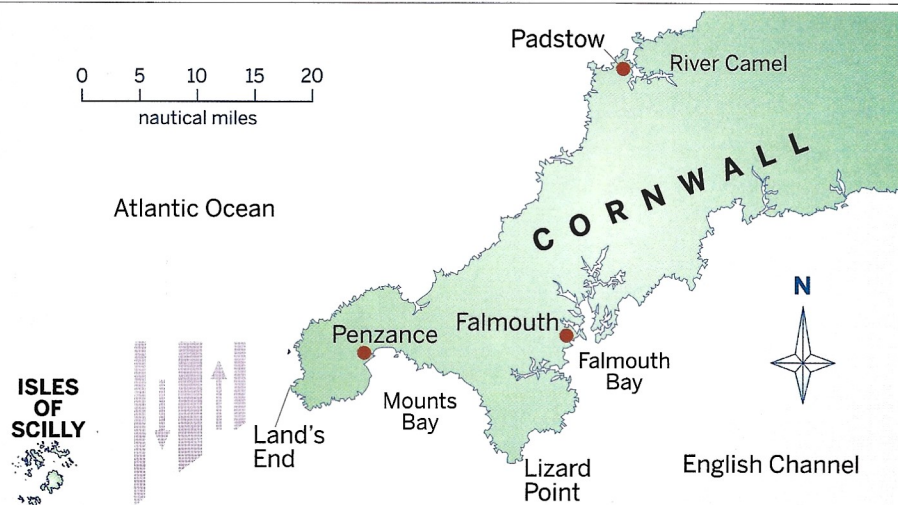
Flexibility

Decisions No matter how many forecasts you've noted, you'll only know what conditions are really like when you get out onto open water. If they're what you expected you'll make your first decision without realising it: keep going. If it's rough, however, you have three other options: slow down, divert, or turn back.

Turning back is the easy one. Safely back on your mooring, you can adjust the timings of today's passage plan to suit tomorrow, and get on with listening to the weather forecast at your leisure. Slowing down is slightly more complicated, because cruising at a different speed puts all your timings up the spout. This might not matter, unless you are aiming for a lock, for example, or trying to get round a headland before the tide turns.

Plan your way out of such problems before they arise. Build your main plan around your optimum, fine-weather cruising speed, say 25 knots. Then, in case the wind is more on the nose than forecast, or if it's choppier, do a secondary set of calculations for a more comfortable speed – 15 knots, for example. Bear in mind that an arrival window determined by a lock's opening times might be three or four hours, but if you're aiming to pass a particular

Passage 2 Falmouth to Padstow



An exposed offshore passage with precious few boltholes, for which you'll want settled weather. The shelter of Falmouth Bay provides few clues to conditions round the Lizard, and likewise Mounts Bay gives little away about the sea state on the north coast. Both headlands are decision points: at each, you can opt for Penzance or turn back to Falmouth. Apart from Padstow's tidal sill, you want to be entering the Camel Estuary with plenty of water under you: an hour before local HW is good, which means, with a 25-knot cruising speed, leaving Falmouth about five hours before local HW; this also

means Penzance is accessible about 1.5 hours after you leave Falmouth, which is about right. At 15 knots, to arrive at the entrance to the Camel an hour before local HW, means leaving Falmouth about 5.5 hours after local HW. If you then divert to Penzance, you'll be an hour or so too early for the lock, but there are waiting buoys.

The contrary tides that dog sailing boats in these parts are less of an issue with cruising speeds of 15-25 knots, but the overfalls they create must be treated with respect: give both Lizard Point and the Land's End peninsula 2-3nm offing.

Distance 90nm approx.

Duration approx 3.6h (25 kts); 6h (15 kts).

Timings Penzance lock HW-2/+1h Padstow tidal sill HW-2/+2h (springs), or HW-1.5/+1.5h (neaps).

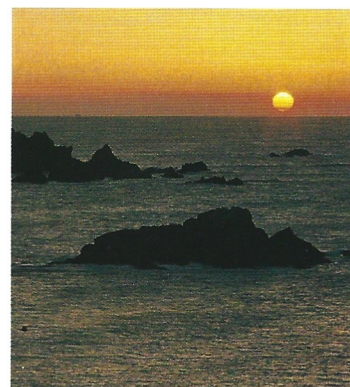
Weather considerations Exposed coast: if in doubt, wait for an improvement.

Departure times HW Falmouth -5h (25 kts); HW Falmouth +5.5h (15 kts).

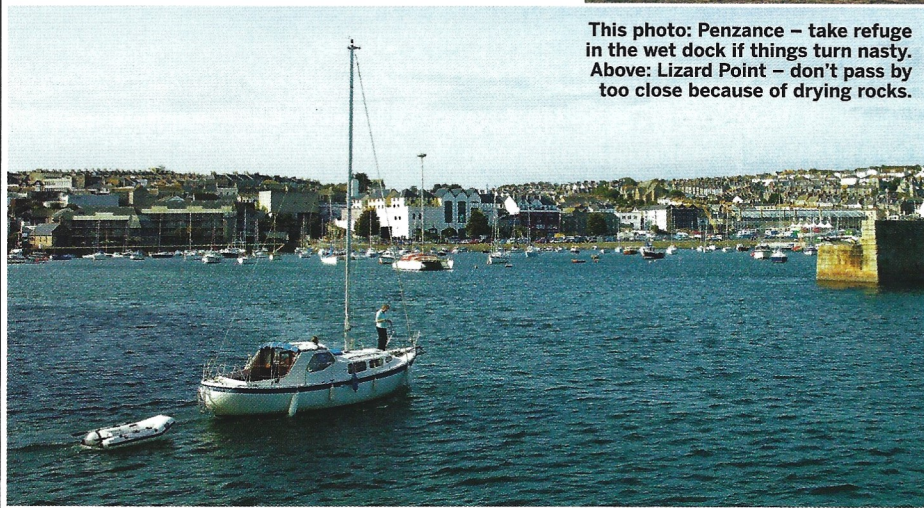
Decision points Lizard Point (16nm). Land's End (39nm).

Boltholes Penzance (32nm): locked basin.

Other considerations Overfalls, offshore rocks and reefs, separation zones off Land's End.



This photo: Penzance – take refuge in the wet dock if things turn nasty. Above: Lizard Point – don't pass by too close because of drying rocks.



headland at dead on slack water, for example, the window is only about half an hour.

If you've got a long or time-critical passage ahead of you, and you've had to slow right down to eight or nine knots, diversion is the better part of valour. It's time to think about boltholes.

Boltholes Every passage should have one. If it's too rough to continue, or you get an engine problem, a pre-planned bolthole is often a more palatable alternative than limping on or turning back. Because it might be needed for mechanical reasons rather than worsening sea conditions, your bolthole ought to be a harbour, where help can be obtained or the boat safely left, rather than just a sheltered anchorage.

This obviously doubles the planning workload – or triples it, if it's a long passage and two likely boltholes present themselves – but if you ever badly need one, you'll be glad you did your homework in advance.

Other factors

Gunnery ranges, separation zones, submarine exercise areas, overfalls, fish farms, traffic schemes – they're all marked on the chart, and where common sense doesn't supply an answer, *Reeds Nautical Almanac* will. Spending time in the comfort of port evaluating these potential hazards can pay dividends on the water.

Maybe 'two hours of planning for every hour at sea' isn't such a bad mantra after all. **MBY**

Four steps to smooth cruising

Crew management

A colleague who used to work at Salcombe's Island Sailing Club says there was a sign on the back of the office door, visible only to instructors, saying: 'Remember – boating is fun!' Family and friends need to enjoy themselves, or there's no point. Use your management skills to delegate, motivate and involve everyone.

Be flexible

If the weather's worsening, use those pre-planned boltholes. It's an adventure, and your second-choice harbour is better than going through 12 rounds with the sea. And if, for example, at the very start of your holiday the forecast promises nothing for the next fortnight but strong winds on the nose, think about going the other way. Don't tie yourself down.

Get toolled up

Lifejackets, in-date flares, liferafts and first-aid kits are a must. Think about that anchor. The one that came with the boat is your spare; get the next size up, with plenty of chain. Nothing adds more to a cruise than an anchor you can trust. And nothing ruins a cruise more than spending all night in your pyjamas, in the rain, trying to reset ground tackle that's simply too light. Perhaps think about an RNLI Sea Check.

Don't over-reach

Long days at sea can be tiring. If you're intending to cover a lot of miles, remember to include the odd 'day off' into your plan for shopping, exploring and relaxing.

Passage 3 Crinan to Tobermory



Oban: escape the tidal race.

An area of strong tides – the famous Gulf of Corryvreckan and its 'Great Race' are close by. The critical zone is among the islands off Craignish Point, especially the Dorus Mor passage 2.75nm NW of Crinan, where the effects of wind against an eight-knot tide can be memorable. The water is almost never still, but unless it's blowing from the NW you may want to time your transit of this passage for HW Oban +3.5 hours, to catch the stream as it turns NW. This means locking out of Crinan no later than 2.5 hours after local HW.

The Sound of Luing can also be tidally boisterous – you have the option before entry of bolting into Loch Melfort or Craobh Haven – and there is another noteworthy area of overfalls at the top of the Firth of Lorne, which should be avoided in wind-against-tide conditions. Otherwise, from here on the tidal streams become more benign. If at this stage you want to opt out, duck in at either end of Kerrera and head for Oban. The main entrance to Tobermory presents no difficulties.

Distance 42nm approx.

Duration 1.7h (25 kts); 2.8h (15 kts).

Timings Transit Dorus Mor at HW Oban +3.5h.

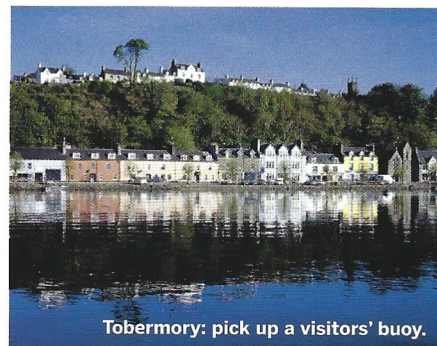
Weather considerations Avoid wind against tide.

Departure time Local HW +2.5h.

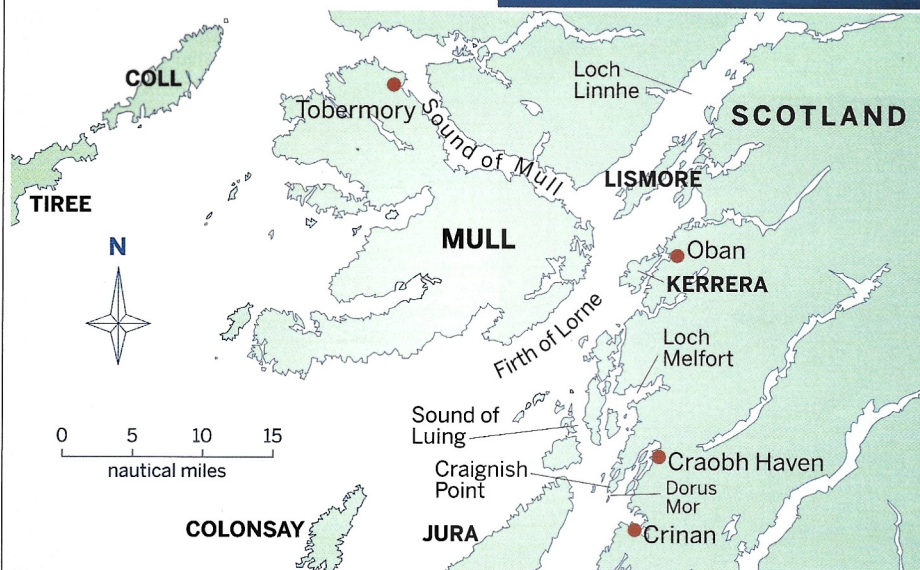
Decision points Southern tip of Luing; either end of Kerrera.

Boltholes Loch Melfort; Craobh Haven; Oban.

Other considerations Conditions change quickly at these latitudes – don't miss a forecast.



Tobermory: pick up a visitors' buoy.



PHOTOS: CORBIS.