On Going to Sea in Yachts

CONOR O'BRIEN

". . . the English motto 'Muddle through' will take you up to a point, but it won't get you very far, unless it is backed by great wealth . . ."

Nautical books by Conor O'Brien

Across Three Oceans *1927*
From Three Yachts *1928*
The Small Ocean-Going Yacht *1931, 1949*
On Going to Sea in Yachts *1933*
Voyage and Discovery *1933*
The Practical Man's Cruiser *1940*
Sea-Boats, Oars and Sails *1941*
Atlantic Adventure *1943*
Yacht Gear and Gadgets *1945*
Deep-Water Yacht Rig *1948*

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Illustrated with twenty-five drawings by the author

Lodestar Books
71 Boveney Road
London SE23 3NL
United Kingdom

www.lodestarbooks.com

First published 1933 by Oxford University Press

This edition published by Lodestar Books 2011

Set in Walbaum from Storm Type Foundry

PREFACE

The matter in this book is largely based on some articles that appeared in the *Yachting World*, and more literally (because I am no motor expert and wanted the *imprimatur* of an authority) on others printed in the now defunct *Motor Boating World*. They were intended to point to two morals: first, that as the cruising yacht, built with no idea of match sailing and equipped with an engine, is a very recent development there can be no question of orthodoxy in her design; and, second, that if a vessel is not rigged yacht-like and Solent-style she must be shipshape and Bristol fashion, which is the better way.

To show the possibilities of cruising for the young and poor I have included some chapters on open-boat sailing. But that is easy; the problems arise when one comes to choose a real and habitable yacht, for cruises of greater and greater length, till perhaps they extend across the oceans. Here the standards of orthodox yachting have to give way to considerations of practical seamanship; which are, if possible, to avoid accidents, but if they occur to make the damage easily remediable, either at sea or in port with limited resources. The rigs and fittings I illustrate are generally within the competence of any handy man; they were designed for my own yachts, to keep them going while at sea, and, as near as might be, always ready for going to sea.

conor o'brien

july 1933

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I
Cruise in Your Own Ship

'Buy a yacht and see the world!' This must appeal to the many who have been transported to the ends of the earth by the modern facilities for travel of a sort, but have found that sort of travel unsatisfying. Better to be the captain of one's own little boat than so much couponed merchandise in a cruising liner. In that floating caravanserai you don't see the world, only your fellow passengers; even in your brief hours ashore you aren't in the country, only in a herd of foreigners.

But a cruising yacht can show you the world; she will stop as long as you like while you look at it, if she's also your home; she will discover enough interesting places to fill a lifetime with no need to go to the ends of the earth; and her owner is a person of consideration. Travel in her is like the travel of a hundred years ago; not the short care-free holiday of the tripper-ship, but a serious part of one's education; demanding due forethought for its various and exacting conditions, and due provision against its many pitfalls.

When men made the Grand Tour in their own carriages they had couriers to arrange the posting; when they cruised in large yachts they had a sailing master and crew to do all the work for which they felt disinclined; it was the Age of Amateurs. Yacht clubs still have rules to guard jealously the amateur status of their members, but every year

more and more breaches of them are winked at; except in the matter of public competitions the professed amateur is justly stigmatized as amateurish. But the sea will not tolerate amateurishness; if the yachtsman, wanting to enjoy the freedom of the sea, doesn't carry professionals, he must make the sea his profession; at least, he must make himself as perfectly master of it as his circumstances allow.

There are now more small cruising yachts without paid hands than big ones with them, and the perfect skipper is getting rare. The young generation is being brought up without that mentor, and its seamanship is correspondingly amateurish. The English motto, 'Muddle through', will take you up to a point, but it won't take you very far, unless it is backed by great wealth. I don't presume to offer advice to the very rich; their skippers are quite capable of looking after them. I'm writing for the people who have to count the cost of paying for their mistakes.

Several yacht clubs offer annual prizes for the best logs of cruises, one of the conditions usually being that they should show evidence of care and foresight in providing suitable equipment. Well, the prizes have to be awarded, though the logs are marred by quite unnecessary accidents; it's evidence of the amateur point of view that they're accepted as a spicy part of the game, whether they're a spilt saucepan or a split mainsail; something to write a story about rather than to be ashamed of.

Granted that they may not be serious if one's cruise is short; that they may be unavoidable if one's time is so limited that one can't supervise one's fitting out. Most people do, in fact, want to get into a short season as much hard sailing as they can, and excusably let their ship degenerate

a bit till she comes in for laying up and a complete refit. If cruising is never going to mean more than that to them, my remarks about it will mean nothing. But I perceive that every year more and more people want to extend their radius, both in time and distance; they want to escape from our uncomfortably crowded home-waters; they want to retire from business as soon as they have secured a modest competence – to say nothing of those who have lost their jobs and can just manage to live on their savings – well, there were enough to pester me with requests for advice on how to sail to the South Pacific till I wrote some articles in the yachting press to choke them off.

I still get appeals from would-be South-Seamen – a typical one is going to stick to five-tonners till he can afford a fifty-tonner – so I will answer them here. There's all the difference between a voyage round the world and a coasting passage, even a passage to, say, the Mediterranean. On that you may get equally bad weather, and it may seem worse, because of lack of sea room, but you haven't in the same sense burnt your boats. You can get the things you've forgotten sent out to you. You can ship some sort of crew to get any sort of vessel home a few hundred miles, if your cruise collapses. But if you arrive on the wrong side of the Atlantic with an unsuitable boat and an uncongenial crew you are likely to be left there with no crew and a ship nobody will buy. Try out your seamanship on a modest scale, where your mistakes won't come too costly; when you think you've got your ideal ship try her out on a modest cruise in waters where she's a marketable commodity if she doesn't suit you; imagine that for six months you've got to do all repairs to sails and gear on board, with the resources of

the ship only; and then sail with the crew that has helped you to do them. You may escape the awful fate that overtakes too many who have saved up for an ocean cruise, the ambition of a lifetime, only to find that they haven't the equipment for it. I have dealt with the material equipment elsewhere; the moral equipment, what one might call sea-sense, is only to be gained by a long course of respectful treatment of the sea.

One can't learn seamanship from books, only by trial and error. If my precepts kept anybody from making mistakes they would be a disservice to him; but I never yet met a yachtsman who followed the advice he asked for. Then what excuse have I for writing them down? Just this. I want to induce a critical mind in the yachtsman from his first initiation. I want to suggest experiments on every size and type of craft that passes through his hands, so that he can get over his mistakes early. I want to insist on the essential nature of the sea, and hence the requirements of a good sea-boat. And I want to remind the ambitious that they will only succeed if at every stage of their yachting career they keep before them the ideal of a stouter vessel and a longer voyage.

There are always tempters about one, promising less labour and more efficiency – am I not one of them? Look on our inventions with diffidence; they're not panaceas, and hardly any two boats like exactly the same rig; but look with particular distrust on those that have not been tried out by the sea when it is in a cross mood, and don't try them yourself merely on the strength of another man's advice. I have known yachtsmen to deride the principle of Safety First; some have made considerable voyages and quite un-

deservedly survived them. The Breton fisherman shows a better sense of proportion when he exclaims, 'Lord, how vast is Thy sea, and how tiny my boat!'

It's a sign of the times that people want to cut off what they think is the dull end of their apprenticeship. It's a sad mistake in this matter of seamanship; they may have cut themselves off from the most interesting kind of boat. We are lucky to start sailing with a slender purse and the cheapest and worst sort of craft, if we are young enough for our enthusiasm to survive the trials she inflicts on us. We are not too proud to put out an oar when she misses stays; if she gets into trouble she's easily got out again; if she develops any virtues they're due to the work we've put into her; we learn that there's more in seamanship than just holding a tiller and trimming a sheet. Then, one fine day, we find ourselves twenty miles down the coast, and realize that a plain common boat is not to be despised as a means of travel. We refer to her with pride as our first cruiser, and I expect she always keeps the first place in our affections. Some people, in spite of age and wealth, never grow out of this open-boat stage – and there's a good deal to be said for travelling with your own boat as personal luggage, or hiring when you reach an attractive coast. But you're a slave to the weather; you have to travel light, and depend too much on the resources of the shore; the open boat is not a serious rival to the luxury liner.

With a deck you have a self-contained flat, indifferent to the weather (for I see no sense in a deck unless it's wide enough to live under), and the problems of the plain boat become complicated by the qualifications of a yacht. The tradition that yachting is a luxury trade dies hard, and if

one bows before it one's very unlikely to get the ideal cruiser. That is the ideal of one man only; designers and builders can't give it to him right away; he has to approach it by practical experiment, and he hesitates to practise on a delicate and costly craft. You don't meet the new and fashionable sort of yacht on the high seas or off distant coasts; it's the old boat or the cheap boat that gets farthest, the one that's worn to fit her crew as comfortably as an old suit of clothes. She may not look very smart, close to, but then she's got a long way from the Solent critics. And under a Mediterranean sun even a coasting schooner can be mistaken for a yacht!

I am accused of spoiling trade by writing this sort of thing. I answer, let the yachting trade accept the facts. It could sell more and bigger boats if they were not so needlessly expensive to build and maintain; more men would cruise for a longer season, and so require more services of every kind. I know that cheap cruisers are built, plenty of them, but generally at a sacrifice of seaworthiness rather than finish, and it's the finish that makes their upkeep costly and laborious.

II
Sea Hiking

Let us start at the very beginning, at a stage which most writers on cruising ignore with scorn; when our time and money are so limited that we have to travel in a small and simple kind of boat, trusting to the land for food and shelter, as the hiker ashore trusts to inns and hostels. But a tour in coastal waters has many advantages over a tour in the crowded country. The man who makes it in a small enough boat can avoid the worst of the crowd by stopping in creeks so shallow that the rowdy launch with radio attachment can't enter, but no inn is approached by a road so bad that it will keep out motor-cars. And even the smallest boat will carry more camping gear than a knapsack will, so the sea-hiker is spared all anxiety about his accommodation for the night.

The principal part of yacht cruising is to have a vessel of the right size, and for this sort of cruising the least possible size is the best. She is cheap; you need not treat her with exaggerated respect; if she has vices, she will not behave so viciously as a bigger one. And she may get just as far afield as that bigger one, which is dependent on regular and perhaps tidal harbours, while an open boat drawing only a few inches can dodge along the coast in unsettled weather, with a bolt-hole every mile or two or a beach where she can

be hauled up before the sea gets dangerous. Eminently the right thing for an inelastic week-end. She is certain of getting somewhere, either under sail or oars; and probably somewhere not entirely cut off from her owner's place of business. The heaviest item in his budget will be railway fares; against which see how small may be the first cost of the boat, and how little need be spent on ostentatious upkeep; for she need not lie afloat before the critical eyes of a yacht anchorage, but can be pulled out of sight in any safe corner. See also how she saves on attendance; you can rig her in five minutes and launch her down over sand or mud if the tide happens to be out, while the owner of a deeper yacht must hire a boatman to see that she's afloat when he wants to use her, and perhaps also to dry her sails, while yours can easily be stored in an airy shed.

With the question of first cost virtually negligible, what is the smallest boat in which one can begin one's cruising? I am a bit of a heretic in this matter, because I maintain that the larger boat, within reason, is the easier to handle, and that, as the novice ought not to go out without a companion, the right boat for him is the largest that two men can manage on a beach. I'm not suggesting that the second man ought to be a bear-leader; far from it – that destroys the virtue of the apprenticeship – but single-handed sailing is a scary thing, and too likely to make one forswear the sea altogether. Whereas even the most incompetent partner is a companion, and if he can't take the right halyard off its pin in a squall, why, he can take them all off – and that's a surer way still of avoiding a capsize.

I am not writing for boys who have been brought up in boats ever since they became too heavy to navigate a stolen

wash-tub. We others would do well to choose something from eighteen to twenty feet long as our first boat. She is not so likely to spring unpleasant surprises on us as a smaller boat would, and if she gets into difficulties she is better pulled out of them with a good pair of oars than with a pair of paddles. It's not, perhaps, strictly relevant to tell Channel cruisers that the fishermen of West Kerry don't consider that anything of less than twenty feet can be steered safely before a bad sea, because their ideas of a sea are somewhat exaggerated; but it is worth noting that the speed of an open boat depends on her length rather than on the sail she carries, and if we meet trouble we want to get out of it as quickly as possible.

Observe that while the smaller boat may have plenty of stability for smooth water, and may be sailed with her gunwale right down to it in the confidence that she'll luff to or run away from a puff in time to right herself, you can't be sure how she'll handle in a bit of a lop. The artificial conditions of a harbour are a bad training for the open sea, where Safety First must be your motto, and your vessel must be primarily boat and after that sailing-boat; that is to say, if you scent trouble you've got to get the sails right off her, and make all safe while you consider the situation. Hence my demand for a biggish boat that will give a feeling of safety, small sails that you can get off in a hurry, and a second hand to help you with them.

I started my sailing in the kind of boat the fishermen of West Kerry use as a rowing-boat with auxiliary sails – by putting some four hundredweight of stones in her we made her get to windward after a fashion, but she would seldom come to stays – and then I went to Dublin Bay,

where there are proper sailing-boats. I supposed that, as I could see other people sailing them single-handed round Kingstown Harbour, I could do the same, so one afternoon I hired one. The harbour soon palled, so I sailed her round the Kish Lightship. What I thought about the trip I can say; that only an idiot would go out alone in a boat that demanded his whole attention at the sheet and tiller and whose reefing was such a difficult and lengthy process that with the coast of Wales the nearest land to leeward it seemed better to drag on the whole mainsail. What the owner of the boat said, when eventually I brought her back, is not fit for publication. After that I bought for ten pounds a boat which even the Kerry fishermen said was fit to go anywhere. Then I felt I should not so much mind being blown off the coast of Dublin; Holyhead or the Isle of Man was only forty or fifty miles to leeward.

That boat, a coastguard whaler, was of course too heavy for beaching by any crew I was likely to obtain. But I'm not sure she wasn't the right type for the novice to start with, if he has to go alone. She felt so delightfully safe. I never did have to run for Holyhead, but I had the assurance that I could do so, and carried a compass in case. But this is outside the province of the sea-hiker; I would wish him a companion and a boat that the two of them could handle on a beach, and bid them stick to inshore waters.

During the war I had the use of a twenty-foot yacht's cutter, and she seemed to me the ideal. Two men could haul her up, with suitable tackle, but she was able enough to run as duty-boat when the Hebridean winter put the pulling boats out of commission. I'm not suggesting that these were proper conditions to learn one's sailing in; the boat's

crew were a hard-case lot, but when the S.N.O. pointed but that boat-sailing at that time of year was prohibited, and we had bargained for a drifter to relieve us, we did appreciate the relief. Besides, we had nearly pulled the boat to pieces, though we never had a spill; which shows what you can do with an open boat, if you try hard enough.

Here is the occasion for a word of warning about the maltreatment of boats that were not built for hard driving under sail. If you take an ordinary ship's boat, and put twice the designed sail over her, and a lot of ballast inside to counteract that, probably the first thing to happen will be that the mast thwart comes adrift. I remember our last trip as duty-boat very vividly. I had told off two heavy men to sit on that thwart and prevent it from shifting when we tacked – we had to beat down the whole length of Stornoway Harbour against a very strong wind – and tied down a reef, because I knew the Captain's views on boat-sailing. We had a Bishop as passenger; when he stepped into the boat he looked at the leaks and at the distance off the ship was lying, and he said to me, 'If you can keep that mast in her I'd feel more certain of getting there with the whole mainsail'. I remembered that whatever respect the Captain had for the King's Regulations he had still more for the Church, so I gave the Bishop the helm, turned out the reef, stood by with a stretcher to wedge that thwart if it gave trouble, and told the bowman to push off. The Bishop was an inspired helmsman; we came out flying; but as we rounded up at the gangway and let go the halyards the mast and all went over the side.

I don't know why boat-builders don't screw the thwarts down to the risings: I do, and in addition put lodging-knees

to a mast thwart. Of course, if a mast is very far forward – but only then, because the great virtue of an open boat is that one can easily get about in her – it is better supported by a clamp across the gunwales, reducing the leverage; or, in a half-decked boat, by the deck-beams, if they are properly fitted with knees, as they seldom are.

My whaler, like many others, had extra floors between the timbers as far as the turn of the bilge – a great protection on a beach, and no defect in a boat intended for rowing. But hard sailing broke nearly all the timbers along that line. If there is any extra strengthening of the sort the ends of the floors ought to be staggered. Yet I have seen a design for a yacht, intended to cross the oceans, which exhibited just that fault, with the addition of a particularly heavy bilge-stringer along the line of weakness, and no hanging knees under her deck-beams.

But we have not yet got to the stage of building up on our plain boat; it's a question of choosing the best we can find, and leaving her pretty much as we find her. Choose her for length; if you limit yourself, as I should advise, to what you can buy for ten pounds or so you won't get a showy performer to windward in the best of circumstances; and in the adverse circumstances of the open sea, which is to be your element, no small boat will do much to windward. But a good long one will give with a fair wind the thrill of speed, and that in safety.

You can't let a short or a badly-steering boat run very fast for fear of broaching-to, which means a spill. But it is a virtue of the open boat long enough to carry her sail well amidships that as she gathers speed she will develop a planing action, trim by the stern, and so become easier instead

of harder to steer. A quality not to be despised, in case one is caught out in a breeze, as may happen to the most careful of us. We may start along the coast with a wind off the land that conceals a nasty bit of swell; a sudden shift may turn that swell into a sea that gives no option but running for the port most directly to leeward. Then the man is safest whose boat can be trusted to run fastest – ten knots is not an impossibility. I remember coming home one day in my whaler, taking it easy at some nine knots – she was credited with a maximum of twelve, half her length in feet, as the thirty-two-foot Yarmouth luggers were with sixteen – and stopping to stand by an eighteen-foot half-decked cat-boat that was in trouble. She threatened to run under, though she was close-reefed, and was continually broaching-to. Eventually we had to tow her into harbour; it was only a mile away, but the entrance was rather difficult, and she was entirely out of control. Our length and speed made it possible to take Darrynane Harbour, in West Kerry, whatever sea the Atlantic raised in the mouth of it.

I don't advocate craft so long and narrow as the two hikers we met in Gibraltar, though they had arrived safely from Galatz in the Black Sea. Mere canvas canoes, some 16 feet long and only wide enough to fit one man into; more suitable for propulsion by paddles than by the little rag of sail they carried, but the sails served them well for their crossing of the Adriatic. True, at its narrowest, that's no more than from Kingstown to Holyhead; but I'd rather have my whaler for the job. There is plenty of wind in those parts, and the German hikers got it. We saw them off, bound for Hamburg all along the Atlantic coast of Europe; it was a revelation of what can be done in a boat

light enough to beach, though one would think canvas was far too fragile a material to make them of. Even our west of Ireland currachs, that carry enough hands to lift them clear of contact with the shingle, get torn at times. But when we saw them these canoes had survived three thousand miles of open sea.

However, a canvas boat can by no stretch of imagination be called a sailing-boat, and is slow and hard to handle under oars. It is not on our line of evolution; we must pursue a heavier and less fragile kind of beach cruiser.

III
The Beach Cruiser

There are not many coasts along which I should care to make passages in an open boat, unless I felt sure I could beach her without undue trouble and risk if the need arose. And that's a thing that can be done infinitely more easily by two people than by one – you can't be sure of getting help from the shore when it's most wanted. Even if, as one always hopes, one finds a landing-place off which a mooring can be arranged to keep the boat afloat, the single man will have her bumping against the rocks while he's arranging it. Unless, of course, he's prepared to do a bit of swimming, like those German hikers, who didn't wear enough clothes to mind a wetting. In our uncertain climate it is safer to assume a need for heavy woollen garments, and therefore a second hand to tend the anchor warp while the other is manipulating the shore lines. And in any case beaching is a two-man job.

It's not one of which I have very much experience; however, I perceive that there are right and wrong ways of doing it. The best of them, unless the sea is dead smooth, involves the risk of a good deal of water getting into the boat, so one must shift perishable stores and smart clothes into a place of safety, particularly out of the stern.

There are two points to be observed when running in on a shelving beach; to keep the boat exactly at right angles to

the waves, and to prevent her being in the place where the waves break just when there's a wave there.

If you can judge your position so that the wave breaks just ahead of you, the boat will run in on its back with her bows in the air, and her stern will strike the ground first, and so keep her straight; you jump out, hold her against the back-wash, and then run her up on the spent surge of the next wave. If you get your timing wrong she swamps or is rolled over. It's very much easier to regulate her progress by paying out or checking a line bent to an anchor dropped well outside the breakers than by pulling or backing with oars; and then the anchor is in a very useful place when you want to launch again. Without its help you are likely to be driven back ashore before you can get your oars out. But if you're taking shelter on an open beach from impending bad weather, don't leave the anchor out there, or the line may be cut; bend a tripping line to the crown and haul it ashore.

To pull a boat up the beach, unless it's very smooth and hard, don't use rollers. They pile up the sand over themselves, and generally run askew. The keel will run just as easily over half-round skids, which of course should be the right length for stretchers, if they're greased or well soaked with water – and without any risk to your toes.

If you're using a tackle to haul up it's no good hitching it to the painter; hook it to the fore-end of the keel, in which you can easily bore a hole. Now you don't want that tackle to be infinitely long, so every inch of it must be of use; if you hook it on to a long piece of rope there will be so much stretch that you'll come two blocks before you shift the boat at all. Carry lots of small chain, which stows bet-

ter than rope, and incidentally is ballast; the more you have the more likely you are to find something good to make it fast to, or a place where you can plant a crowbar with some hope of its staying put. If the beach is soft or the footing bad don't try to stand on it and pull the fall of the tackle in to you; grasp opposite parts, one in each hand, and draw them together, which will give much more power.

A steep beach that has to be taken broadside on, because a boat lying up and down the slope would have her stern under water, is no place for a single man. Unless there is somebody to keep the boat upright while he's arranging skids and tackles she'll fall outwards and fill. Unless somebody holds her stern up with a handspike she'll pivot on her bilge when you shift her bow, and get wet aft. Apart from risk of damage to clothes and gear you don't want to have to lift a weight of water as well as the weight of the boat. But if all goes well this is easier than hauling up endwise, because you only have to shift one end at a time.

It ought not to be necessary to add that in any beaching operations he who hesitates to get his feet wet is likely to get a good deal wetter in the end than he who jumps out quickest and gets his boat soonest out of the water – but I have seen men prodding about with oars and boat-hooks while their craft is gradually filling. You have not only got to act decisively, but also to be sure that your boat is not so cluttered up with gear as to be a stumbling-block. Here, I repeat, one should realize that the virtue of an open boat is that one can get about easily in her. And the early experiments should be made in the best kind of summer weather, for no amount of precepts will make their complete success likely.

Often the cruiser may hope to strike better luck than an open beach. The best of all is a narrow cleft between straight rock walls. Put a rope across the boat, fast to each gunwale amidships, and secure the ends on either side of the cleft, with plenty of slack. She will keep herself in the middle, parallel with the walls, merely ranging backwards and forwards with the swell. I have left my boat so tied across the cave in the Great Skellig Rock for four hours, and didn't realize how improbable it was till we came to re-embark. Then the water was rising and falling some 6 feet, and pouring over the ledge we stood on; we nearly had a smash getting her close enough to jump into. Somebody ought to have swum out and held her off with a boat-hook while the lighthouse men tended the lines – but the North Atlantic was in a bitter mood that evening, and we were two hours from home.

More likely one has to land on a straight bit of cliff or quay, off which an anchor must be used – and a small anchor is not a very trustworthy thing. With deep water, and not much rise of tide, the Mediterranean mooring serves. Anchor with enough scope to bring your stern in to the shore, and with a 56-lb. weight bent to your cable about the depth of the water down it; when you slack off your stern-line the weight will take the boat clear (Fig. 1).

In shallower water the hypotenuse mooring may be practicable (Fig. 2). Anchor as before, and walk along the shore with the stern-line, as far as you can go, and make it fast, pretty taut. If this brings the boat broadside on to the wind, or to a threat of wind, it would be better to bend the line to the cable just below the water than to the stern, so

Fig: 1 MEDITERRANEAN MOORING.

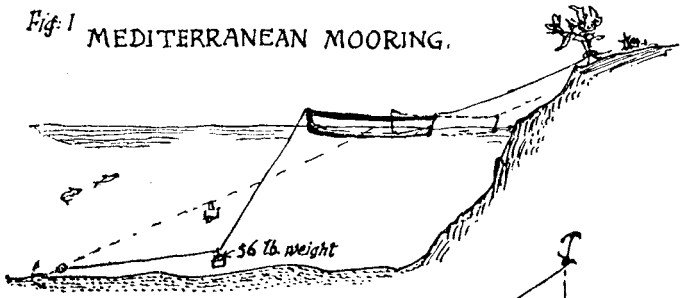


Fig: 2.

HYPOTENUSE MOORING.

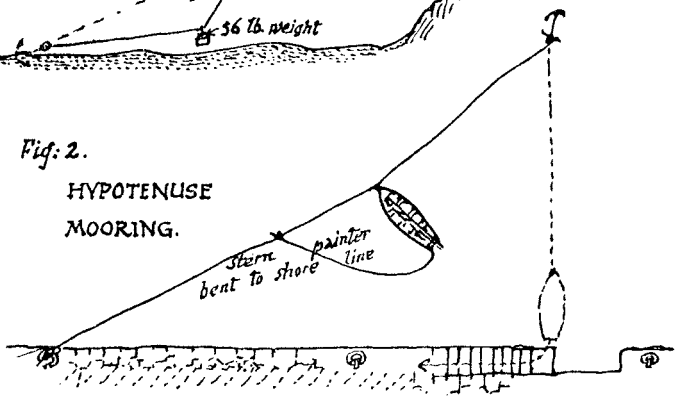
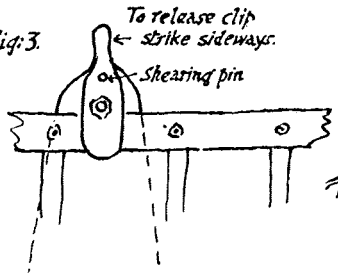
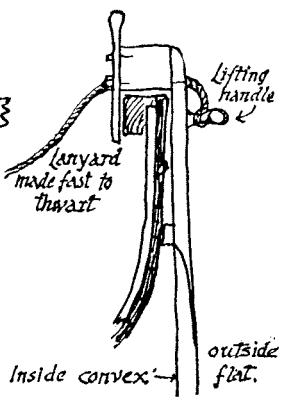


Fig: 3.



SINGLE LEEBOARD TO CLIP ON GUNWALE.



that she will ride head-on. This method can only be used if the bottom is quite clean, for the cable has to be dragged sideways across it, so any snags would be fatal. Obviously chain is preferable.

The Fisherman's mooring is popular in the West Country. Bend a line to the crown of the anchor, and balance it on the bow of the boat with the cable very clear for running. Push her off stern first as far as she'll go, paying out the small line, and then jerk the anchor into the water with it. I don't have much luck with this game; you can't tell where your anchor's gone to, or whether it has a decent hold. It postulates a grapnel, but that's probably the best form of small anchor; all fishermen use it. If it has five rather light arms you can chance it among rocks; if it jammed the one that was hanging it up would straighten out with a good pull. But never despise the half-hundredweight, which you can drop anywhere regardless, and which has a multitude of uses.

Here's much ado about mooring – and you can sleep pretty comfortably in a twenty-foot boat riding to an anchor, with a sail for an awning, if she's not too full of things. I have even spent some not too bad nights at sea, and cooked some excellent meals. How's that done? With an ordinary Primus in a common bucket (such as we carried anyway for baling) slung under a thwart; better than any patent cooker when there's a breeze blowing. But if I ever go open-boat cruising again I'll have a large tin haybox as well, and get my hot food at any time of the day. However, this is going rather beyond my brief, which was for a boat that would put you ashore whenever you wanted to cook or buy a meal.

Don't let her be too precious, or she might get hurt while she is landing you. Also, let her be easy to repair, which implies carvel build, if you can get it; and she won't stick in mud so tight as a clinker boat. But you can't leave a carvel boat very long on a hot beach, or she'll open up like a sieve. For those energetic persons who build for themselves I recommend ribbon carvel, which is very strong, and can't leak; and, for an indifferent carpenter like myself, easiest to make a decent job of.

Here I would warn the amateur builder against the unnecessary vanity of a centreboard. We want a strong boat; why weaken her keel by cutting in it a long receptacle for mud and gravel? We want to save weight; why carry, in addition to the mud and gravel, a heavy metal plate? For a long time I suffered from the vexation of centreboards, finally whittling them down to a light wooden daggerboard – but I couldn't ship that if the case was full of mud and gravel. Then I discarded them for a lee-board – rather more trouble when making short tacks, but that isn't the function of a utility boat – and was so much impressed by its efficiency when a crew of two is available that I am all against the unjustifiable extravagance of a centreboard. In my present dinghy I use a single lee-board, which clips over the gunwale while the boat is sailing, but comes adrift as she turns into the wind, so that it can easily be shifted over; the only loose gear about it is a lanyard to prevent its being lost if one hasn't a hand free to shift it (Fig. 3).

As for beaching one wants to be as little hampered by gear as possible, and preferably to approach the shore with mast and spars boated the rig must be a simple one and the spars short. The real enthusiast for travelling as dis-

tinct from sailing would vote for that finest of all rigs, the dipping lug, but most of us want to be able to make tacks, though I don't see any real necessity when one has a better means of propulsion in a pair of oars, and if one gets into a tight corner in a narrow channel oars are much the safest way out. We can't split tacks with a racing dinghy, so why bother about what the harbour sailors say of us? But any rig that can be cleared away quickly, and does not involve a boom to distract the crew's attention, which should be fixed on the boat, will do; any rig that fishermen use for the same kind of work, the spritsail or the standing lug. You can't make those dangerously complicated, however hard you try.

But why sails at all, if one's primary object is not to go sailing? Why not an outboard motor? I don't know, except that the internal-combustion engine always does seem to spoil things. I suppose it is always looking for oil, and so brings one to the noisy crowded places where oil is sold. It would go on strike if the boat were left tied up to a tree in a lonely creek, where there are no lights but the stars, and no sounds but the hooting of owls. I think that to get real good out of a small-boat cruise it must be done in a very primitive way; in the spirit of that early beach cruise of the Phoenicians who, at the bidding of Necho, king of Egypt, sailed round Africa from the Red Sea to the Mediterranean, and found out all about the Agulhas current.

But King Necho is dead – has been dead 2,528 years. That's the difficulty.

IV
Beginner's Luck

It was a report of the R.N.L.I. that set me thinking about my past misdeeds, and writing them down as a warning to others. Lifeboats seem to spend much of their time saving the crews of small yachts from the consequences of imprudence and inexperience, and that's not what I pay my guinea to the institution for. Those that don't have to take risks oughtn't to take them. The right place for any craft not powerful enough to keep off a lee shore if bad weather comes on is in shelter. There was no need for us to leave the shelter of Valentia Harbour when the weather was palpably bad. It had been blowing half a gale all the morning, and the wind was only just beginning to come down when we decided we couldn't stand the hospitality of the hotel for another night – we had won the sailing race in the previous day's regatta.

We were rather puffed up with our exploits, so when, at four in the afternoon, the wind appeared to be a fair one for our destination, we argued that the more of it there was the more likely we were to get home to Darrynane in time for dinner. We had a local fisherman in the crew, who ought to have known better; but he had an obsession about my boat. Because she was a little better than those he was accustomed to he thought her a great deal better than she really was, and encouraged us

to start. He at least might have guessed what was before us when we reached down Portmagee Channel through the squalls that came hissing over the island, and turned us back while we had the chance. As soon as we got out of the lee of the land it was too late.

I don't know a nastier bit of sea than that between Valentia Island and Puffin Island, two of the most westerly points of Ireland. There is a bay about three miles wide full of it – full to overflowing. It is deep, and the cliffs are steep, so the waves don't break on them, but run round till they meet and throw a backwash right out to the middle of it, where they pile up pinnacles like what you'd expect in the middle of a hurricane. At least that's what they look like from a small boat; the Irish Coast Pilot only says, 'The agitation of the sea is extremely violent.'

By the time we were hopelessly to leeward of the shelter of Portmagee Channel we discovered that it was much too violent to do any sailing in. We were four of a crew; we lowered all sail, and put out the oars; but they were equally futile. To weather the end of Puffin Island we should have to bring the wind abeam; but we couldn't make any headway against the sea, and the wind just blew us away sideways. There was only one direction in which we could go. The question was whether we should go slowly, broadside on, or quickly, bows on. Another question, but one hardly under our control, was where our drift would bring us to.

The line of high unclimbable cliffs was only broken by a wall of white that looked almost as high, where the swell dashed into fountains on the chain of rocks that stretched between the island and the main. We believed there was a

boat passage through the rocks, but none of us knew where it was, and though in fact it is fifty yards wide and carries five fathoms we couldn't see any gap in the line of breakers. However, it was no good waiting; we shifted the mizzen lug to the mainmast, shipped a long oar to steer with, and on general principles headed midway between the visible rocks.

Our fisherman, Jim, cast an anxious eye on the ballast; condemned half-hundredweights, ten of them.

'I suppose, Mr. O'Brien, them would be very costly. Would they be ten shillings, now?'

'They would not, Jim,' I answered. 'Three and six I gave for them.'

His face cleared. 'It would be better, so, if it came to a point, to throw them out than to lose the boat.'

We stood by to lighten ship, meanwhile trimming the weights forward a little. It would frighten you to look at the seas charging down on the inch or two of freeboard we showed aft. But that whaler of ours had a nice clean stern, and never shipped a drop. We refrained from jettisoning the ballast, at least till we had some idea what the critical part of the passage would be like. We didn't have long to wait; we were being carried at an alarming speed towards the blind smother. I don't know how far we were from it when, hove up by a big swell, we saw a lane cleared through the spray, and at the end of it the smooth water of St. Finan's Bay. All the waves didn't break all the way across, and the gap lay straight ahead of us.

The wave we rode on didn't break either. Its tottering crest, buttressed up by a rush of foam from either side, poured us into sudden safety . . . . A good incident to tell a story about, but a confession of very bad seamanship.

A salutary one, however, for it showed me what a very extended meaning applies, in really bad conditions, to the term 'lee shore'. Everything that is not directly to leeward must be regarded as being to windward; that is, you can't depend on weathering it. That's a consideration that doesn't occur to most yachtsmen, because they have sense enough to avoid very bad conditions; the phrase 'to be embayed' doesn't come into their vocabulary; but some day they may find out what it means, and that will teach them not to make too free with a coast that hasn't decent harbours in dubious weather.

We proceeded three or four miles, with the whole mainsail now set, and I suppose the sea we passed through off Bolus Head wasn't a great deal different from that about Puffin Island. But we didn't notice it; there was twenty miles of open water to leeward, and plenty of good harbours to choose from, if we couldn't make Darrynane – which, in the lee of the headland, we did easily in time for dinner.

Yes, a lee shore is the devil, for any sort of vessel. Even proper yachts sometimes get driven on to it. They very seldom, round our coasts at least, get driven unpleasantly far off-shore. The moral is obvious. It is different in places like the Falkland Islands. There, I was told, the instructions for coasting craft if blown out to sea was not to try to get back, for beating against the unvarying Westerlies is impossible, but to run for South Africa (in preference to Tristan da Cunha, where the landing is often uncertain), replenish there with stores, and return by way of Rio de Janeiro. But that may have been one of the tales that is told to travellers.

V
Two Passages

A FINE MAY is so delightful in Dublin that it would be a crime not to spend as much as possible of it afloat. I didn't want to lose time fitting out my yacht, especially as business confined me to short trips, so we took the train down to West Kerry, to bring back our whaler, which promised better sport in fine calm weather. Needless to say, we reached the coast in the teeth of bitter rain driving in from the North Atlantic. I am not at my bravest on a cold day, and we sat for a week listening to the rain and wind battering the windows of our hotel. Then the sun came out, and we pushed off in a hurry – a local fisherman and myself were all that was left of the expedition – to get round Cape Clear before the weather changed its mind again.

Next day it had changed very decisively. There wasn't a breath of wind as we rowed out of Baltimore Harbour. One doesn't carry on under oars for two hundred miles, so we drifted with the tide till the sails should be some use to us. They were very little before Galley Head, when the sun was setting; but then a good breeze came away from the west, that should bring us to Kinsale before it was too late to look for a hotel. Then fog came with the wind; we couldn't see the light on the Old Head, and knew it was no use looking for the town in the dark. We were committed

to a night at sea, and would employ it best by making up for lost time.

I set a course for the Daunt Rock, and cooked supper; then Jim lay down on a pile of oars and boat-hooks stretched across the thwarts, and slept profoundly. It was my first night passage in an open boat, but a good one to begin with. The air was warm, if thick; and my companion had a cheering confidence in my ship and in myself. I suppose he ought properly to have been keeping a look-out, but the truth was that we could see nothing, as our eyes, on or below the level of the phosphorescent wave-crests, were blinded by their glare. But he woke up with a great start when the fog-signal of the Daunt lightship exploded right above our heads!

That showed we were just where all the steamer traffic of Cork Harbour would be looking for something to run into. It wasn't a healthy locality, and the quicker we got out to sea the better. The wind kept steady, but would soon shift more northerly and clear the weather. I found Jim's couch just as soporific as he had found it.

At half-past one he called me to report that the fog had gone, and Ballycottin Light was abeam, distant about ten miles. In those days, I think, only the Liverpool boats called at Queenstown; we were well outside their track, and later saw the *Olympic*, westward bound, far inshore of us. A coasting yachtsman ought to have the sailings of the regular liners at his fingers' ends; not only will this save him from getting in their way, but they may give him his position if he has lost it.

We knew our position, but the wind threatened to fall light, and we couldn't hope to get round the Tuskar and make Wexford that day, so we stood in for the Waterford

river, getting a breakfast of mackerel on the way; if we had waited for it till we got to Dunmore it would have been a very late breakfast. It required some labour with the oars to make Shipsey's Hotel (as it then was) in time for lunch. There was nothing more doing in the way of wind that day, so we spent the night in the hotel. Dunmore was the ideal pull-up for cruising yachts; I have entered it, and lain secure there, in gales from various quarters; but now, I fear, it has been discovered by tourists.

That's not the orthodox way to navigate an open boat. She should not be concerned with the movements of transatlantic liners. One authority says that she should be kept a hundred yards off the beach, so that one can get out and walk. There isn't much beach between Baltimore and Waterford, but there's plenty between Waterford and Dublin. Schoonermen, who know where the streams run strongest, say that they can make nine miles in a tide on this passage, when there's no wind. We strangers wondered just where we got out and walked, but we started next day with benefit of tide, and drifted eastwards between Kilmore Quay and the Saltee Islands. We seem to have been well provided with 1½-inch rope, for we anchored in thirteen fathoms when the tide turned against us.

It wasn't to be another all night in. Jim, by profession a lobster fisherman, guessed he'd be better employed looking after his pots than looking at me drifting up the coast at the rate of eighteen miles a day. If it came to getting out and walking, he'd only walk to the nearest railway-station. I suppose this was before the railway came to Rosslare, because before long he discovered an air of wind and shook me up to make all sail for Wexford.

Jim hadn't seen what that boat would do to windward, if the water was smooth enough. He wasn't a spoil-sport; he forgot about the train at Wexford, and let her reach up the coast as far as she would go. There would be as many trains from Arklow. We hit the beach somewhere about Cahore Point, just as the wind dropped again, got out, and went to sleep on the soft side of a convenient sand-dune. It's a steep beach, and there's no appreciable rise of tide. But there's a great stream; it was almost too much for us when a southerly air tempted us to proceed.

The straight line of the shore hereabouts is broken at intervals by little reefs of rock, running out like dilapidated groynes. We sailed up famously in the slack water, till we struck a regular rapid pouring over the reef and through the gaps in it. Neither oars nor poles added enough power to force the boat against the current. In the end I got out on the beach with a long tow-rope, while Jim coaxed her through the gaps with a boat-hook. It was a slow, hot job, till the tide turned and whipped us into Arklow in plenty of time for Jim to catch his train.

Of course next day I wanted him. There was a nice breeze, but a dead muzzler; he was a heavy man, and I was short of ballast. It was quite a strenuous afternoon's work getting to Wicklow, tide and all. And the day after I wanted a companion still more. A little confession of carelessness may convey a useful warning about carrying sail when one is alone.

Nobody is likely to carry too much with the wind on or before the beam; the position of the lee gunwale is a good guide, and the sea doesn't get up without his noticing it. But running is so easy, and, as long as there is open water

ahead, so safe, that one may not notice conditions getting gradually worse – till, perhaps the wind shifts and puts a rocky headland to leeward instead of the approach to one's harbour. When you begin to feel doubts about how often you can afford to run away before the uglier seas it's time to shorten sail; if you put it off you may not be able to weather that headland with your reduced canvas.

Now the wind shifted like that when I was crossing Killiney Bay, rather closer in than was prudent, to cheat the tide, and put me on the wrong side of Sorrento Point. Not in any ordinary sense to leeward of it; under jib and mizzen I could have drifted quite safely and easily into Dublin Bay and smooth water. But the wind had got very strong, and the sea very ugly; with the whole mainsail over her I had a job to steer the boat straight before it, let alone luff out enough to clear the point. The main halyard was forward, and I dared not leave the helm to let it go; I couldn't touch the mizzen, because it would have fallen on my head or fouled the tiller, and the mainsail alone was big enough to capsize me if I bungled the steering. I had some nasty moments scraping round those rocks – not very many, because that was when the fishermen assembled on the wall above Dalkey Harbour swore to my twelve knots. Which was more flattering to the boat than to my seamanship. When one goes racing one carries a racing crew; a single man in a boat should never deviate from the principle of safety first.

VI
Sailing-Boats

I WANT TO SNATCH a few English words from the meaninglessness into which they are being hustled by popular journalism. Muddled thinking is largely due to an abuse of language, and no language is more abused than that of ships and the sea. Yachting? Cruising? What the devil will be their connotations by the time these lines are printed? Let us begin with safer definitions, of things too trivial for the advertisement-writers; boats, sailing-boats.

A boat is a craft that you don't try to sail to windward – except as a pastime on Sundays and Bank Holidays. On working days she's a working craft. A sailing-boat you can sail to windward if you have to. The usual definition adds that you mustn't make the main sheet fast, but hold it in your hand all the time. I think a better one requires that if in doubt you get all sail off her while you think what you're going to do next. Till she gets into the category of yachts – and that means enough ballast to sink her – you can't be certain how she'll handle. How often does one see a boat that has missed stays blow ashore because her owner is too proud to wear her or to help her round with an oar – or even because the alternative manoeuvres have not occurred to him? Though that's not confined to boats; a real yacht once piled up on the coast of Labrador in this way, and her crew ought to have left their bones there along

with hers. And I could tell a tale of Chesil Beach . . . . But that's another story.

The sailing-boat is a craft that depends for her safety and speed more on her handling than on her design; and that's why she's better for the beginner than a little yacht, because she may be cheap and nasty; and the nastier she is the sooner he will learn to get over the difficulties that occur to even the best and most expensive vessels.

Now muddled thinking obscures the distinction between the sailing-boat, which is primarily a boat, a means of transport in any reasonable conditions, and the racing-boat, which is essentially an unballasted yacht, only to be used by skilled hands in smooth water. What is right for the one purpose is pretty sure to be wrong for the other. What the fisherman or the hoveller uses to secure his livelihood, to say nothing of his life, is presumably right for the man who is going to cruise in the same waters; most of the designs one sees in yachting books and periodicals are only right for the man who wants to show off their paces round a harbour. Fortunately those designs are generally accompanied by a specification which makes the cost of building them prohibitive; and even the most eminent designers have been known to get plain useful boats built on the cheap – but of course for the sake of their reputation they can't publish their lines. Such boats are not conspicuous in fashionable yacht anchorages; if you look there for a ship you're too likely to be stuck with one of the showy and useless sort that apes the worst faults of the racing dinghy – cut off short with a wide transom, because some racers are restricted in length, or with their deadwood reduced so that they may spin round like a whirligig beetle to outma-

noeuvre a competitor. Many steer very badly off the wind with the centreboard down, and will not steer at all with it up. The safety of the boat is in the helmsman's hands, and she ought not to hang too heavy on them. Give her a long lean run and a very small transom or a sharp stern, as all working boats have, and she'll be fit to face the same conditions that they have to.

Of course she must be strongly built as well. Most working boats reject the centreboard because of its weakening effect on the structure. In many 'yachty' boats the structure is quite unnecessarily weakened, because the centreboard casing is kept so low that you don't have to step over it, though you are very likely to stumble over it. Why not raise it to the level of the thwarts, so as to get support from them, and at the same time be high enough to keep the water out? Then you can hang the plate in such a way that you can get it up instantly with a direct lift, in case you're going to hit the ground with it. There is a pleasing fallacy that if you do hit a rock the plate will rise up of its own accord – and so it would if the boat were running dead before the wind, or for some other reason making no leeway; but that's just when you wouldn't have the plate down. Most times when you hit anything are going to be when you're pinching the ship to avoid it, and therefore making a lot of leeway.

I once had a boat whose centre-plate was pivoted in her keel. Most providentially nothing ever went wrong with it, because if it had the only thing to do would be to fill and capsize her, to get the pivot out, unless there were a crane handy to lift her bodily out of the water. There may be other boats with the same fault. See that you can both lift your plate right out, or drop it right clear below the hull, while

you are afloat. For a small boat I would personally prefer a dagger-board, which doesn't require anything like so long a slot in the keel, and can be replaced with a bit of a packing-case if the original gets broken.

Given a safe hull, one must put a safe rig over it. Boat-sailing is only pleasurable so long as one is confident that the results of a sudden squall or a breaking sea can be countered; that is, after one has shipped a certain amount of water one can be sure one will ship no more. Loose water will put the boat out of trim, so that the action of the helm can't be depended on; it is necessary to get all sail off her till she is baled out. The best sail is that which can be taken off with the greatest speed and certainty. The worst is that still common rig of 'yachty' boats, the gunter lug.

A great many yachtsmen begin their sailing career under its malign influence. When they've tried once or twice to get its two long spars down into the boat with a bit of top on the sea they understand why its votaries generally anchor or pick up their moorings before they try to hand or reef it. But they don't, unfortunately, always realize that the boom is just as much of a nuisance as the yard; they add the yard to the mast and call their sail Bermuda, and that involves the retention of the boom, a thing I would not allow in any boat where it is dangerous to have your attention distracted by the fear of a crack on the head.

Fishermen almost invariably use a spritsail or some form of lug – for our purposes it must be a standing lug. The West of Scotland 'skiffs' provide the best model for cutting it. The mast is much raked, and the sail has a pretty square head, so that the leach is nearly vertical and keeps the sheets clear of the helmsman's head.

With attention to certain details this seems to me an excellent rig. The yard should be carried equally on either side of the mast, so that it can always be to leeward when close-hauled (then, as the luff and lee side of the sail are clear of obstructions, you get, according to the aerodynamical specialists, a maximum of efficiency) and always to windward when running free (which makes a great difference in light airs, and eliminates the risk of the yard jamming against the lee rigging in a breeze). The mast must be amply long, to give the halyard enough drift to work freely; and, of course, the sheave-hole in it cut fore and aft.

In laying out the length and rake of the mast take care that the heel of the yard can't foul the forestay. This won't be obvious when you are admiring the set of the sail at your moorings, or when tacking ship; but it may happen when you gybe, and then there's the deuce of a mess, and your jib torn, if nothing worse. When in doubt bend a line to the heel of your yard, long enough to lead well aft; this will come in useful anyway for dipping the yard round the mast when tacking. Only experiment will show whether it is necessary to have a tack tackle and slack it up for this purpose; I have never used one.

If the yard is hooked direct on to a traveller it won't come down when the sail is reefed, because the heel won't go far enough forward. The halyard should pass through an eye on the traveller, so that it will render when lowering and so avoid a jam.

The spritsail, in small sizes, needs the least weight of spars for a given area, because it can be set with the shortest mast. But I think in this country the mast is often unnecessarily short; I suppose to give the sail nearly as high a

Fig: 4.

HINGED
MAST CLAMP.
used by whalers
at Fayal, Azores.

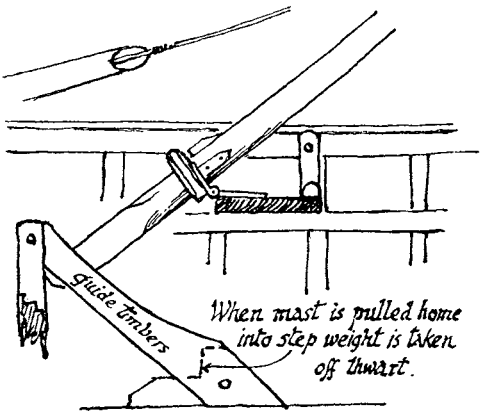
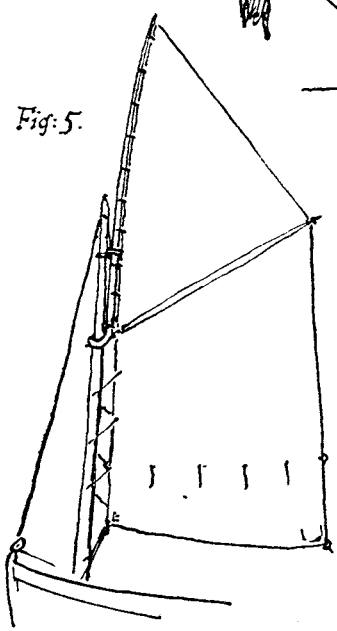
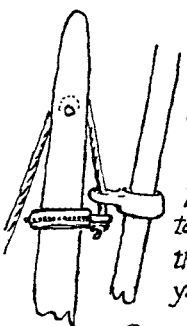
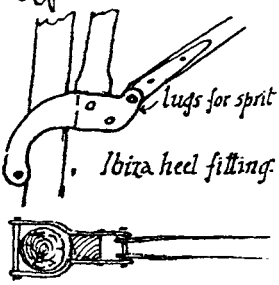


Fig: 5.







SLIDING
GUNTER.
with sprit attached.

peak as if it had a gaff, for the sake of elegance. The shape of the sail makes no difference to its set; that is determined by the angle of the sprit. For our purposes I don't think it is as easy to hand as the lug. It was generally used in the great days of whaling; but then the requirements were that not only the sail but the mast should be lowered instantly, and it is clearly easier to boat the naked sprit, and then the mast with the sail wrapped round it, than to gather a lug sail, part of which may have fallen overboard, on to its yard.

As a matter of fact the only whale-boats I have seen equipped for the chase – at the Tonga and Azores Islands – were rigged with a gaffsail hoisted by a single halyard. The gaff was not pulled away from the mast, but laid up and down it while the whole was lowered in an ingenious and suggestive manner. A collar on the mast took its weight on a clamp hinged to the fore side of the thwart; it had no proper step, but its heel was held between two sloping guide-timbers. When the forestay was let go the mast fell aft in the midship line till the crew could catch it, without any danger of its heel hitting the harpooner in the small of the back (Fig. 4).

The lighter gaff hoists easier than the heavy lug yard, but for that reason doesn't come down with the same certainty. (One has a crew of six when one goes fishing whales.) And it has to be relatively longer than when a boom is used, which makes rather a lopsided rig of it when squared off to a following wind; with, in consequence, harder steering, and in the case of a boat of considerable displacement more disturbance to the water through which she passes. For that reason I prefer to set my sail on a yard which has some part of it across the mast to form a balance.

But this point has to be observed about any boomless sail when running, which is the crucial point of sailing. When the boat starts rolling, the yard or gaff, which cannot be entirely controlled by the sheet, swings about, alternately filling and spilling the sail, and so accentuating the rolling till the wind gets under the clew of the sail and causes a gybe. The peak should be held in by a vang, and then the sheet can be run right out and the sail becomes in effect half a squaresail and virtually fool-proof. I sailed for some years most uncomfortably without vangs till I discovered that this was what they were given us for.

Those are the standard rigs, all excellent provided that the gear is cut down to the extremest simplicity, and the gadgets beloved of the yacht outfitter are avoided. But to those people who hanker after fancy rigs I would say that I have tried pretty nearly all of them, and I conclude that while all of them have points of superiority none show excellence all round for a small light boat. The dipping lug, and the common form of lateen, want a good crew to handle them in stays; I don't think it's safe to carry the sail to windward of the mast, for it might not come down in a hurry when most required. The Brazilian lateen (Fig. 7), with the mast raked aft and the yard always abaft it, needs no attention in stays, but it's a chancy sail for running, and the length of the yard is a nuisance. The sliding-gunter-cum-sprit (Fig. 5) is perhaps the best of all fore-and-afters, and can be reduced in an instant to a minimum, still preserving a good working shape, but it's difficult to stow altogether. The balanced lug, battened in the Chinese manner, must, I suppose, be reckoned a safe rig because of its popularity in canoes and such-like crank craft; it practi-

cally reefs or furls itself when the halyard is let go. But it doesn't always spill itself when the sheet is run out; and if the luff of the sail is so much more powerful than the after part that it really balances, and it is then to windward of the mast it might stick.

Naturally the first consideration in designing a sail-plan for a boat that must not be allowed to heel too far is to keep it low, so in anything over twenty feet it will include a mizzen. Mizzens are particularly apt to be afflicted by gadgets, because the space for working them is so cramped; but here, more than anywhere, simplicity is essential. A boat's rudder commonly drops below her keel, and may at any time strike something and be broken. Then you want to ship a steering oar as soon as may be, and if the mizzen mast gets in the way of that you've got to unship the mast.

I seem to be devoting a lot of space to bad weather and to accidents which it is the business of a small boat to avoid. But what is there to be said about sailing a boat in fine weather that hasn't been said already? There are plenty of precepts for setting and taking in sail or for reefing when on your moorings or in the smooth water of a river; but once across the bar you have to consider safety not first but all the time, and to have thought out every trouble and the best way of dealing with it before it arises.

VII
Light Cruisers

No sort of vessel can get about her business in all circumstances by the help of the wind alone. When one considers anything bigger than a light open boat, which can make good a fair distance under oars, a cruiser must either give her crew enough protection and comfort to make them indifferent to a night out, or be equipped with an installation of power proportionate to her size. In the first case, when you deck your craft and fill her up with domestic fittings, her weight is bound to go up with a jump; in the second, as a very small engine is a poor economy, there is no objection to a reasonable increase of weight.

Now the people who get over the difficulty of entering harbour when there's no wind and a foul tide by making themselves comfortable at sea may be trusted to load down their ship till she becomes as good a sea-boat as her size allows. But an examination of any agent's list, or any yacht anchorage, shows that these are a small minority; in fact the word cruiser, till it was annexed by obsolescent passenger-liners, meant a yacht with an engine as either primary or secondary motive power – and always tending to be primary.

Well, that just means that the engineers are better organized, and better advertised, than the shipwrights. They turn out an engine – it's no good saying it's the wrong sort,

because they have a cloud of expert witnesses to prove it's the right one – and the shipwright has to build a hull round it. Even the experts don't always agree that the combination is a success. I'm supposed to be a bigoted sailing man, so I'll quote from the motor-boating press on designs submitted in a recent competition: 'On the score of seaworthiness this craft stands out almost alone . . . . while comfort is almost synonymous with deep draft and heavy displacement.' This craft would be about twice the weight of any of the other entries. Needless to say, she didn't get a prize; which explains why another writer, speaking of motor-cruisers in general, calls them 'sea-going, though as yet not sea-keeping, craft'. The men give out before the boat; they can't keep her going indefinitely; often not long enough to dignify their movements by the title of 'cruise.' Observe the annual farce of the London-Cowes race; and that's in relatively sheltered water. The excessively light hull is a 'harbour-keeping' craft, and you may see it on the same moorings every week in the season from Monday to Saturday.

Of course there are plenty of exceptions; nice little ships fit to go anywhere, and with enough bunker capacity to get them there without anxiety. They belong to men of wealth and experience; men who knew just what they wanted (they have to tell their builders that they want them for fishing, but that's all eye-wash) and could afford to get it (I need hardly say how much it costs to make an engineer vary his standard design). But the man who is not very rich in money or experience, the novice who is crowding in on the waters, has to take what he is given. The engineers, for the most part, give him a car engine; and the builders, if

they don't give him a boat exactly like a car, do give him the only kind of craft that can be driven by a propeller turning at more than a thousand revolutions.

It is obvious that the standardized boat is the cheap boat, and you can standardize a light hull, built with steamed timbers and straight planks, in a way that you can't a real ship. She can be slapped together with stuff from a common saw-mill, and needs no care in selecting timber nor ingenuity in cutting it. How far her shape is due to these methods of carpentry, and how far to mere indifference, with the knowledge that any old box will go if you put enough engines into her, I should not like to guess. I am not motor-minded, nor prepared to disregard centuries of marine practice on the strength of the productions of power-boat makers who never go to sea in them. But when one of those productions passes me in harbour, and I have to put storm lashings on my mess-traps and fend off my dinghy before she jumps on deck, I deny that they are designed in any reasonable sense of the word . . . . As I write, a Spanish trawler passes; a beamy boat, some thirty-five feet on the keel; not so deep as our fishermen, but I suppose displacing most of eighteen tons. She is a converted sailing felucca; I don't know how old, for things change slowly in the Mediterranean. Her single-cylinder engine is pushing her along at eight knots. But as long as she doesn't actually hit us I don't mind where she goes; she hardly leaves a ripple behind her. That's design; and I have an idea that it's also economy. There must be some power wasted if you raise a sea that sets the whole harbour rocking.

I don't see why it should be impossible to standardize a design as good as this age-old felucca – with steel frames,

if timber and skilled shipwrights can no longer be had. At first slightly more expensive (though a cheap motor with reduction gear could replace the costly semi-Diesel that is universal in the working boats of the Balearic Islands) because a thing is always expensive till it becomes popular enough for mass production. But when the thing becomes currency; when it acquires a definite selling value at second, third, fourth, ... nth hand, like a motor-car, it might become a better investment than one initially cheaper which depreciates more quickly and costs more to run. But I think fashions change just as slowly in the motor world as in the Mediterranean; it will be a long time before we are quit of the curse of light 'cruisers'.

One would think that the boat depending principally on sails, with its long ancestry, would be slower to lapse from sound tradition. The problem of the decked sailing-yacht would seem to allow very little variation. There must be room for the crew under the deck, and the hull must not float so high as to be hopelessly unweatherly; displacement or depth of hold for a given length should be fairly well fixed. But it isn't, because the word yacht means several different things, and muddled thinking has given the name more importance than the function. Formerly the yacht was modelled on, and practised evolutions with, the revenue cutter. A variety was evolved, generally of smaller size, for racing. A cross between them produced the cruising yacht. The old cutter is extinct; the first cross would be extinct, but that its union with the fishing-boat was fertile. But the racer has become a separate species, and with the old cruiser produces only sterile monstrosities. We are in the generation of the monstrosities; spoiled

racers that can't accommodate the crew needed to work them; barges lightened so that their miniature racing rig may move them in a calm till they have to depend on their engine to get them out of trouble; either no room inside, or no ballast inside; either day sailing-boats or houseboats. If we want to get anywhere we must follow the fertile line of evolution.

There is a pretty definite type of yacht that does make good cruises. The merest tyro, passing through an anchorage, will say of such and such a one 'That's a boat that's fit to go anywhere', and that boat probably has gone to some pretty distant places. He judges from the stoutness of her spars and gear; but there must be weight below to carry those spars. The man with a little yacht experience will wonder how she has gone so far; she looks slow and clumsy. But here again the question is not so much what the boat can do as what the crew can stand; if she keeps them dry, unbruised, and tolerably fed she may make better average passages than a smarter vessel that has to be hove to periodically to give all hands a rest. And the smarter vessel is likely to need more men to handle her; if one of them deserts, the cruise comes to an untimely end.

Well, those are considerations that affect something more ambitious than one's first yacht. A very small boat can't be other than uncomfortable at sea, so she has to be relatively faster to get into harbour with more certainty; also she needs more buoyancy and more stability, a lighter hull and outside ballast. You can't have what I should call a genuine cruiser much under fifteen tons. Admitted that Gerbault got round the world in his little *Firecrest*, but she lay down and acted the submarine in anything of a

breeze; he has chosen quite a different type for subsequent voyages. I doubt if she'll be much more comfortable; I'm afraid she'll knock him about unmercifully. Not being such a hard case I should have gone for a larger *Firecrest*. Up to a point increase of size doesn't necessarily mean heavier working, even for a single-hander – especially if he has an engine, so that he needn't be bothered by having a lot of sails set while he is weighing anchor. The gear is certainly heavier, but it may be more get-at-able; the working platform is larger and steadier, and one can afford enough bulwarks to give a sense of security. Up to fifteen tons size is a matter for the owner's pocket rather than his strength; and the expense need not increase strictly in proportion to the tonnage. Builders are accustomed to quote so much per ton – say £100 – irrespective of size; that is for real yacht work, as light as may be, yet strong enough to carry a great lead keel, and all finished with the best workmanship on the best materials. But most cruising men don't want that. They know their ship will be healthier if more weight is put into the hull, and less into the keel. Therefore, as far as the construction goes, they can do with cheaper materials and inferior workmanship, and still the job will be adequately strong, because a great deal of the strength of a wooden vessel is in her caulking, and the thicker the plank the harder can the oakum be driven home. Also, the more rigid the whole structure (even if this is somewhat to the detriment of her sailing qualities) the less risk there is of the caulking working loose in heavy weather – I am not considering the Very Rich, who can indulge in double diagonal or other fancy planking, and I confess that I know nothing about the cost and merits of all-steel hulls. Apart

from the kind of joinery that is put into yachts because it is a tradition that yachting is a luxury trade, you can build a perfectly satisfactory cruiser for £50 a ton. (My contract with my builders was for £20, but I put a lot of my own stuff into her; I reckoned that when I started for New Zealand in my twenty-ton *Saoirse* she had cost me the better part of £600.)

Whether or no you mind water getting into a leaky hull from below – that can be kept out of your lockers by frequent attention to the bilge-pump – it is intolerable when it comes from above through a leaky deck. That must be the strongest part of the ship. It gets least rest; even when the boat is on her moorings the wash of a passing launch will set her rolling, and the mast will put alternating strains on it. A yacht builder will tell you the deck must be of the lightest material, to keep the hull weights low down; he will make it of yellow pine, if he can get any. And then you may be reduced to Capt. Waller's expedient of hoisting your kedge anchor to the mast-head to stop dangerous rolling. I would make my deck of teak, if I could afford it, though my masts are heavy enough to need no anchors up them... anyway, the rule is to keep one's centre of gravity well up unless one wants to lose one's spars the first time there's a bit of a lop on the water.

Will the larger boat cost proportionately more to run? No. You paint on square feet of surface, while your tonnage goes up by cubic feet. Weight of canvas certainly goes up with the tonnage, but the canvas isn't the whole cost of sails; there are as many cringles, eyelets, &c, in a small sail as in a large one, and therefore nearly as much labour in the making; moreover, the sail-plan of the bigger boat can

perhaps be subdivided into smaller areas of lighter cloth. And the same with the riggers' work.

Then, a final argument for heavy construction. We have supposed an auxiliary engine. A heavy hull can carry a heavy-duty engine; and if that is run on heavy oil it will lighten both the fuel bill and the insurance premium.

VIII
Auxiliary Power

A FRIEND WHO poses as an authority on these matters told me some time ago that there were very few engines on the market suitable for a heavy-displacement yacht, and that even these had many faults. If I came in for a legacy convertible into auxiliary power, I should still be at a loss how to use it, for the makers seem to have done little to cure those faults, and in some cases have made their engines definitely less suitable by reducing their size and speeding up their revolutions. The sad fact seems only too obvious that they have spent thirty years on the theoretical perfection of the motor without giving a single thought to the conditions under which it has to be used.

A proper power installation is such a good insurance, such a relief to anxiety, that all cruising men carry an engine of some sort, in the hope that it is properly installed. But if it is not, if it tempts one to try short cuts and fails one at the critical moment, it is clearly a danger. I am not suggesting that the motor stops running, only that, at its rated number of revolutions, it may fail to keep the ship under command. A possibility which is naturally overlooked by people whose only experience afloat is trying out car engines in light launches round the smooth waters of a harbour.

I once sent for the engine-builder's representative to run trials in a 37-ton ketch – I had to take her on a voyage of

8,000 miles, and wanted everything just so before I started. There was a little lop of a head sea – not a real sea, only what one may get in the lower Shannon. The expert came on deck to report that the engine was pulling well; giving 24 h.p. maybe. Then he looked over the side.

'Well,' he said, 'it's a good thing you've got your sails loosed and there's a spot of wind, because I can't do anything for you. You've got the wrong engine and the wrong propeller.'

I should say that I had given those engineers the plans from which the ship was built; I had given them space for an engine and a propeller twice as big, and I had given them my own opinions about the job (which were worth nothing, for I'm no expert). And the tragedy was that all this whittling down didn't save her from being spoiled for sailing. I burned 3 tons of oil on that voyage. That was seven years ago. I might get a reduction gear fitted, now, if the idea of 30 h.p. in one cylinder was too shocking. That boat was not a yacht, so the size of the engine-room didn't matter. I admit a yacht installation is more difficult; but let us have some clear thinking about what is needed and what is possible, before we throw our hands in, like my friend the expert, and trust to our sails to keep us off the rocks.

When we need an engine we may need it very badly. The wind may fail, and the tide set us towards some danger; or we may be caught by a change of weather in an unsafe anchorage, with a bad swell coming in before the wind blows home; or we may be beating through a rocky channel in which the sea gets so confused that the ship won't come to stays. Those are times when the engine must not only develop its full power with a very much increased load, but

must deliver it in an effective way; it must give us something more than headway against a steep sea. It's no good her turning over at the guaranteed number of revolutions if there's 100 per cent of slip at the propeller; in that case her function would be merely to get us into port in time for dinner when it's a flat calm, and no good cruising man would put up with the inconveniences of the beast if she would do no more for him than that. He hopes that she will get him into places otherwise inaccessible, and out of them if he finds trouble there. He wants a good big propeller, something that will take a good grip of the water and literally screw the ship along in the way he wants to go.

But we have supposed that primarily he wants to sail; he doesn't want to spend his substance unnecessarily on oil. That installation is most economical which is least used, and that is least used which makes the least drag when it is idle. A big propeller must fold or feather; it is not enough to let it spin with a free clutch, picking up weeds and, if there's a decent breeze, heating the thrust-block and stern-gland.

The folding propeller, under the quarter, seems generally the more satisfactory. Size for size it is far more efficient, because it gets its water clear; it can be fitted to almost any old vessel, irrespective of the form of her run; and it does not involve cutting an opening in the very place where a break in the surface of the hull is most detrimental. On the other hand, being off the line of the keel, it is rather liable to damage; and it doesn't always fold and open with certainty. (And you can't go astern with it? God help us! Who wants to go astern with a sailing-vessel?) The other defects could be remedied by any one who took this excellent invention seriously.

I have only met one man who did: he was an amateur, designing a yacht for his own use, and its salient feature was a telescopic shaft by which the propeller could be drawn into a housing in the hull, after it had been folded mechanically; and the reverse process protruded and expanded it. The drawing I saw seemed a very sound bit of design, but I don't know if the yacht was ever built, nor have I seen any reference to this housing propeller elsewhere.

The central, feathering propeller has advantages, when it is fitted right; but my impression is that more often than not it is fitted wrong. It affords the only practical way of 'changing down' for a machine without a gearbox; you can keep the engine running at full speed, and therefore at full power, by reducing the pitch of the propeller, and so lighten a load that might otherwise be too much for it. And it is no hindrance to sailing when the blades are turned fore and aft. But the aperture in which it works is generally a serious drag; perhaps more through the fault of the shipwright than of the engineer. He insists on copying the excessively raked sternpost which is useful to the racing yacht, for which quick turning is essential, but quite out of place in a cruiser that has a motor to help her out of narrow places. He can't cut the screw aperture forward of this sternpost, so he cuts it out of the rudder. That always makes the boat steer badly, and I have seen it lead to one accident; the rudder went over too far, with the boat going astern, and a blade of the propeller fouled it. The right thing to do is to put a second sternpost nearly vertically abaft the inner one; the aperture, between them, can then be properly streamlined. I saw an American design in which the aperture was shaped to fit snugly round the propeller when the blades

were feathered; it was claimed that resistance when sailing would be reduced to a minimum. Certainly more would be gained than would be lost by increased skin friction on the additional deadwood about the upright sternpost.

Let us now get down to the engine, if we can – too often it is almost inaccessible. Nobody can expect an engine to start immediately or to run unfailingly unless it gets a little personal attention. It's surprising that a machine which is disguised as a dressing-table doesn't show its resentment more often; but the best-tempered of them may get out of adjustment, and, if we can't see what's wrong with it, may stop at the most awkward moment. Yachts are sometimes advertised as having all controls leading to the cockpit, but you want to know where they lead from; if anything gets adrift below and fouls the various rods and wires, you want to be able to take the lid off and set matters right by hand. The modern tendency is to make engines low, so that they will go under a table, or even under a floor; and long, so that you can't get at the after end of them; and consequently all the working parts are very small. Safety first is the rule on an element that doesn't allow you to stop for repairs in a quiet place. If the ship is standing on her head, you can't make microscopic adjustments; if she's drifting into danger, you haven't time to open up cunningly cased-in mechanism. All that is an argument for the biggest engine you can accommodate, and for sacrificing a certain amount of accommodation for it.

I must admit that what would otherwise be the most suitable engines often make extravagant demands.

Being designed for barges and fishing-boats, where the engine-room extends right across the ship and there is a

good flat floor to seat them on, they have their parts scattered impartially all round them, and are much too long to fit economically into the tapering run of a yacht. When a few more yacht owners ask for semi-Diesel jobs perhaps the makers will think of putting all the pumps, &c, on the same side – I wish I'd had the designer of one to grovel under a red-hot silencer to clear a choked cooling-water pump! That is the most vulnerable feature of any engine, as one sees when one looks at all the things besides water that there are in the sea. A strainer fine enough to stop those that can hang up a valve will want a lot of cleaning; put it above the waterline, in sight, and not out of mind.

An engine that is strictly subordinate to sail could be the simplest of all jobs. It doesn't want a reverse gear, it hardly wants a clutch – there are but two orders, 'Full ahead' and 'Stop' – and if the boat is strongly built it only wants one cylinder. It needn't take up so much as a couple of feet each way of floor-space, and floor-space is the most difficult thing to find in the after end of a sailing-yacht. To find height enough is dead easy. But the perfect engine is not yet, I believe, on the market; and if it were, yacht builders would be frightened by its height and weight – it has got to be pretty big if it is coupled direct to a propeller that turns at the most effective speed for our purposes; that is, about a third of what is sanctioned by yacht practice.

These big engines are inhibited by muddled thinking. They shake the ship most unpleasantly, and they make a noise like a goods locomotive on a steep grade; yachting will not tolerate such a nuisance. But their enemies forget that the nuisance is a very temporary one, if sails be the primary motive power; that it only occurs when you're

thinking about other things than your comfort; that to other people it's far less of a nuisance than a speed-boat is. But muddled thinking rules the market, so we instal a smaller, high-speed engine, with a reduction gear – or why not a chain drive? or, rather, why do not all the gear-cutters in the country compete to offer us bevel wheels of various angles, so that we can put our engine where it's most accessible and our propeller where it's most efficient? I suppose because yachting is not an engineer's but a shopkeeper's business. Anyway, this smaller engine can be put higher up, farther aft, and more out of the way of the cabin passengers; and, since it's not buried in the bilge, small repairs will be possible. And we have a greater choice of engines – and they're cheaper.

Even if one has a reduction gear it doesn't pay to cut down the size of the engine too much. Perhaps with the perfect propeller of variable pitch one would get value for all the power the engine could give, in the worst circumstances, but I don't know whether such a propeller is possible. Where the pitch is fixed, as it would be with a folding propeller, the engine can't be smaller because the side installation is so much more efficient, since it must stand up to its work if an exceptional load slows down the revolutions. But, caveat lector, I am as much in the dark about these matters as most motor engineers appear to be. Steam practice (a very much simpler problem) was worked out at sea, but motor practice is still trying out its theories in sheltered waters.

IX
Auxiliary Sail

The burning question for the small cruiser is bunkers, though to a good many designers it doesn't seem to be as important as it should be, for they turn out craft with a steaming radius of about a hundred miles. Which is absurd; not because the owner necessarily wants to make passages of that length, but because he should not be constantly preoccupied with the refuelling problem. If he prefers to take his holiday away from the crowds that throng the filling stations, he is likely to find his voyages disappointingly short and his times in harbour laborious.

Men are of a definite size; they have a definite amount of personal gear; they consume a definite amount of stores and water, and want a proper galley to cook in. When they have to economize they do so at the expense of the engine. A large fuel tank is so heavy a thing that it ought to be placed right amidships; but there it would interfere with the accommodation, so generally no larger tank is fitted than can safely be placed right aft. The small seagoing cruiser thus tends to become a '50-50', meaning that the sails are expected to do at least half the work on a passage.

Then there is another aspect of auxiliary sail, as an insurance if caught on a lee shore in real bad weather. Few small boats can be kept head to wind under power; if they are driven hard enough for that, they risk being driven

right under. But with a stout storm sail set and the engine running slow one might lie six points or less off the wind and make nothing worse than a square drift.

It is rare to see over a motor-cruiser, even if she is advertised as a '50-50', a rig that would be the slightest use as an insurance. I am reminded of the fate of a yacht described as an auxiliary ketch, which was abandoned at sea a few years ago. Her engines failed, and though there was plenty of open water to leeward her crew had so little faith in her sails that they lost their heads, and so their ship. Well, I don't wonder. I had no personal acquaintance with the boat, so I can't say whether (as I surmise, because it's true of most motor-cruisers) it was so dangerous to handle the sails in bad weather that the attempt was never seriously made. But that's a matter of safe and protected decks rather than of rig. I should be very sorry to be caught out in a boat that hadn't good high bulwarks and plenty to hold on to.

The popular rig is called 'Bermuda ketch'. It has two miniature racing sails, set on masts so tall and thin that most specimens are not trusted to stand up without runners or shifting backstays. Consider her running before the wind, which is a thing any boat ought to be able to do. She will not steer as easily as a boat built for sailing; the Bermuda sail is bad for running, and apt to cause heavy rolling; a boom-guy is a dangerous nuisance even when one has wide safe decks; and a gybe is likely to carry away a boom or a backstay. Consider an attempt to work to windward; an almost certainly futile one, but to give it every chance steer six points off the wind and keep the ship going good and hard. Then where is the superiority of the flat racing sail over a fuller, lower, less pressing one, such as

is used by all craft with hopelessly unweatherly hulls, and sometimes makes them perform miracles like those of the Pernambuco coasting-schooners?

A motor-yacht, with her engine running, can make some use of sails trimmed a great deal flatter than would be effective if they alone had to overcome the resistance of the water. Every little helps; but helps so little that it can hardly justify an otherwise unsuitable rig. And the Bermuda sail hasn't a monopoly of close-windedness. Recently we had a long turn to windward. My friends say my yacht won't go to windward anyway, so she may just as well be square-rigged. But that day the sea was so smooth that we really did get to windward with a very light breeze. Very much to my surprise it actually paid to steer not more than four points off the wind, making 3 knots through the water, with insignificant leeway – and the big square topsail was doing most of the work! Further to explode the fallacy that square-riggers are unweatherly we set a fore-course. That was never designed for close-hauled work; it was put on board for running down our longitude in the Trades, if we ever made another ocean passage, and is heavy enough for Cape Horn. But it pulled gamely at five points off the wind . . . . However, I'm not advocating square-sails as auxiliary to a motor.

On second thoughts, why shouldn't I? With rigging designed to that end I could brace up a fore-yard a good deal sharper, and get a better lead for the sheets. On a reach I would challenge any fore-and-after with the same amount of sail. Tacking ship is a two-man job; but how many motor-yachts will come to stays with certainty under canvas only? The question of handiness doesn't arise; any vessel

that, having an engine, doesn't keep it running while in narrow waters is a public nuisance.

But a useful square-sail implies a mast in the middle of the ship, a nuisance to the accommodation. That is why people go for a ketch rig, and make it a very bad ketch rig. As the mizen-mast of a ketch cannot be stayed satisfactorily, she must handle in a breeze under headsail and close-reefed mainsail; which implies a mainmast pretty near the middle of the ship. If one is going to take sail seriously, the placing of the masts is far more important than the shape of the sails. I have reports of more than one Bermuda ketch that would not handle in a breeze. I might suggest that if they were, even meanly, square-rigged forward, the mizen-mast could be properly stayed and carry a heavy-weather sail of decent size. And with the square rig I include the lateen for those who are content with a smaller sail area, and do not want to be bothered with so many ropes.

Riggers and sailmakers are a most conservative and unimaginative people. The only changes they have made in the last hundred years, except when hustled into them by racing enthusiasts, have been the somewhat doubtful blessings of roller reefing-gears. One would think that they should have welcomed the development of the motor, which frees them from the necessity of considering short tacks and the trimming over of sails in a second of time, and allows them to set an all-purposes sail at leisure in the way which will be most effective for the work in hand. But they have no more initiative than the engineers (or can it be that they don't trust the engines to go?), and the two parties remain at cross-purposes.

That useful invention, the trackway by which a sail can be easily extended along, or stripped off, a spar, has only been employed, in small yachts, on that spar where the cruising man does not particularly want it, to wit, on a mast. (The most confirmed aerodynamical theorist will tell one that the luff of a sail close to a mast is subject to very detrimental eddies; the most perfunctory experiment will prove that the sail pulls much better if it is given a good drift with a slack lacing – when one is not fighting for inches under a rating rule.) But why not use it on a yard? Consider the lateen rig I suggest in the drawing (Fig. 6); the yard slung at its centre, with an isosceles sail based on it, so that the tack becomes the peak, and vice versa, according to which tack you are on. You don't have to climb up the yard to furl the sail; it all runs off whichever end of the yard happens to be down on deck. And if the weather demands it, you can substitute a large light square-sail for the working lateen with hardly more trouble than it would take to set a spinnaker.

Then there is the dipping lug. Too cumbrous for use as sole motive power, but the most all-round efficient sail known, if you don't have to set it in a hurry, with the chance of hoisting it the wrong side of the mast. I think that to appreciate fully the blessings of an engine one has to have served one's time in sail, with the anxiety of getting under way in a narrow anchorage, and the annoyance of finding one has started with all the wrong sails, and having to shift them as soon as one gets into open water and meets the true wind. What a blessing to leave the harbour under power, and not have to worry about how you are going to carry your canvas till you see which way the breeze is

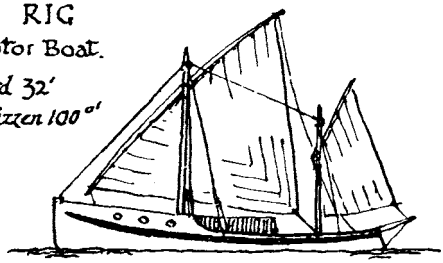
Fig: 6.

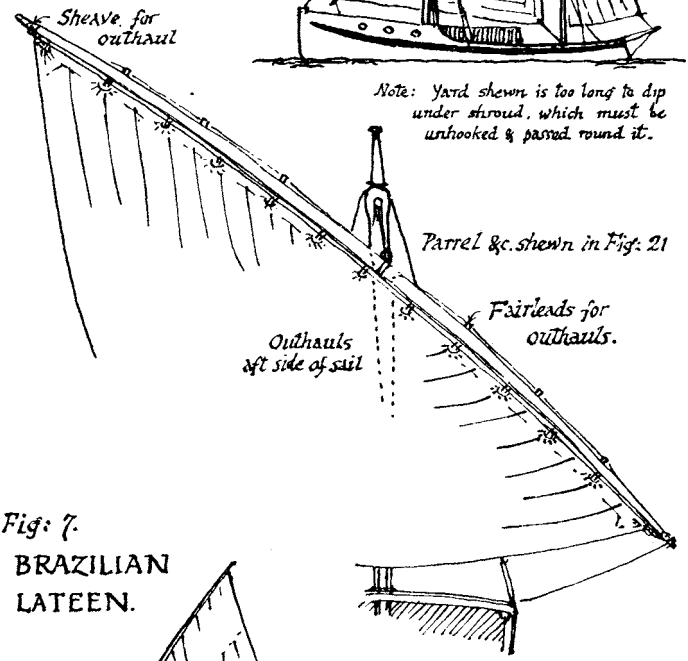
LATEEN RIG

for 40' Motor Boat.

Mast 20' Yard 32'

Lateen 300 sq' Mizzen 100 sq'

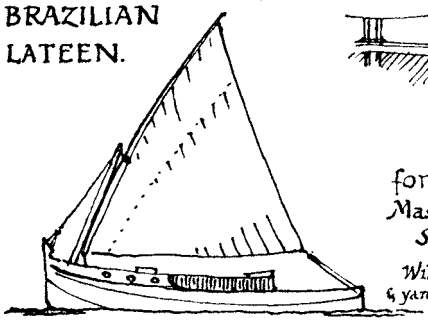




Note: Yard shewn is too long to dip under shroud, which must be unhooked & passed round it.

Fig: 7.

BRAZILIAN LATEEN.



for 40' boat:

Mast 16' Yard 32'

Sail 360 sq'

With fair wind tack is eased up & yard swings more or less horizontal to aft mast.

blowing! What a comfort to be able to eliminate the boom, a saver of labour in manoeuvres, but at all other times a dangerous nuisance, and very pressing for a boat not over-provided with stability!

If these rigs seem too fancy there is the bawley mainsail, equally free from the curse of a boom, easy to stow and able to be cleared out of the way at a moment's notice to leave the deck free; it can have a fine long gaff, which can set a fine large topsail over it, if any one is a hog on muslin. In a motor-cruiser one would never need to use more than one sheet, so there would be the minimum of obstruction to passengers, and no difficulty about carrying the dinghy on the cabin top. But don't try to use the gaff without vangs, as a friend of mine did, and broke his gaff-jaws when he eased off his sheet; one vang is enough, if it is made fast at the peak.

So far I have considered fair working rigs, involving the stepping of the principal mast well in the middle of the boat; a thing that small boats are loath to do, because it spoils the cabin space. If the accommodation is of much more interest than the sailing qualities, or if the owner doesn't object to a yard a good deal longer than the ship, I offer for consideration the Brazilian lateen, with a strongly raked mast right in the bows, and the yard slung on the aft side of it (Fig. 7). I have not seen it in any craft more than 30 feet long, and most of them were two-stickers; but when I see the far longer yards, more awkwardly rigged, that are usual in the Mediterranean, for boats depending entirely on sail, I don't see any insuperable difficulty in handling a 30-foot spar if you needn't do so except when you like to.

These suggestions of mine may be said to make a boat look uncommon odd. I don't think this is the right way to

look at the matter. A seaman would say that a motor-yacht tricked out with bits of racing gear looks uncommon silly. The motor-cruiser could seldom be called an object of beauty; but it is in its infancy, and all early experiments with power-driven craft produced monstrosities. As they became more fitted to their purpose they also became more pleasing to the eye. I should not like to prophesy about the ultimate appearance of the 50-50 cruiser, a type so necessary that it must develop on sound lines, any further than to guess that one of her masts will be used for the engine exhaust, instead of the present wasteful and unsavoury systems, which will become worse as the heavy-oil engine grows in popularity.

X
Slaves of Fashion

There was a time, and not so very long ago, when the fashion in yachts was set by beautiful big cutters and schooners, glossy black above their copper, with a gold line to mark their high bulwarks; stout masts on which three or four shrouds aside converged in a knot of white-parcelled eye-splices; above that an entirely different structure of slender topmasts and gossamer stays; the most graceful sight the mariner's eye has ever enjoyed. A yacht anchorage looked, but for the white sails, like Brixham harbour.

Now there are fewer trawlers in Brixham, and yachts come and lie on their abandoned moorings. The trawlers are as handsome as ever, but I wonder the owners of yachts are not ashamed to invite comparison. And the old seaman on the quay growls, 'No ugly ship was ever a good one'. What has happened?

Formerly the small yacht copied, as far as was practicable, her big sister. Their motive power and the nature of their employment were the same. They were comfortable enough to cruise along the coast, and got as far as most modern auxiliaries – I have been told that my old *Kelpie*, twenty-six tons, went out for the Mediterranean season regularly for several years – and when they came on a regatta they started with no more preparation than shipping an extra hand, and sometimes got round the course as fast

as a modern racer. But now the racer is copied by boats which never race and are nearly always fitted with an engine; whether you agree that the result is ugly or no, it's certainly illogical.

The racing rig has an impressiveness of its own, from its great height combined with economy of material; reduce it, and the impressiveness is lost; the economy not only looks mean but is bad seamanship, because the bare slender spars won't stand the big blocks and thick ropes that are essential for a cruiser's running gear.

I read some time ago in a reputable yachting journal an account of a race, where 'a liner which was passing threw up a surge that left the thirty-footer pitching and tossing . . . . Then the chain-plate gave, and the rest was easy.' Another competitor in the same race sprung her mast so badly that it could not be repaired. Well, that's all right in a race; there are plenty of people about to pick you up. But a cruiser, unless she is to be limited to waters not liable to be disturbed by the act of God or of fast steamers, must be rigged rather more substantially than that. The failure of that chain-plate is a convenient text for a sermon.

A chain-plate is the lowest fitting of the rigging, and the cheapest; it might have been three times as heavy, and it ought to have been only one of three. I once heard a man, arguing the case for rigging screws, remark that boats with lanyards had three or four shrouds aside; he didn't seem to realize that meant that men who had sense enough to use lanyards (who ever heard of their failing?) had sense enough to distribute the strain on the hull; he hadn't observed that those boats which had plenty of shrouds had topsides as smooth as an egg after fifty years' service, while

modern yachts, more scantily rigged, were pulled to pieces. There are materials available to-day of such enormous strength that you can concentrate your strains, set everything up bar-taut, and get home safe with it – if everything is equally strong. But the prudent man, if he can't examine and test all his ironwork before it is galvanized, or if, like most of us, he buys it ready-made, does not juggle with those problems in dynamics which are involved in the staying of a Bermuda mast, but designs his rigging according to rule of thumb and the experience of generations of practical seamen. The dynamics are based on such calculable factors as wind pressure and heeling moment in smooth water, but the stresses on the mast of a vessel that is tumbling about in a rough sea without enough wind to steady her are incalculable.

If the Bermuda mast doesn't break, the Bermuda sail splits. I think it generally splits because it's nearly always constructed on a vicious principle, with the cloths running across it, and no roping in the leech; it's much easier to make a sail this way than the proper way with the cloths parallel to the leech. It is possible to make a sail of this shape in the proper way, and a roping doesn't necessarily spoil it, unless it's cut with an exaggerated round in the leech. But it is subject to worse strains than a gaff mainsail. When the ship pitches the leech comes taut, between the head of a rigidly stayed mast and the end of a heavy boom, with a jerk which is far more severe than if part of the shock were absorbed by a gaff which is pretty certain not to be lying in a straight line between the points of attachment. I have used a sliding gunter to get over this objection; the top fourteen feet of the yard, being unstayed,

provided spring enough to save the sail; the only thing we ever broke was the yard, a very trivial bit of damage.

But this doesn't get over the fundamental objection to a sail which is mainsail and topsail at the same time; that it is either too heavy to be efficient when the whole of it is set in light weather, or too weak to be safe when reefed down in a blow. Somebody once wrote – I forget the occasion – in the yachting press about a proposal to carry two mainsails of varying weights to be used according to the strength of the wind, and condemned it as an unseamanlike practice. It might be a laborious practice, it might be an extravagant practice, but any one who has done much cruising – and it is among that class that seamanship survives – can tell of many days when he would rather have had a lighter sail than the power to turn more reefs out of his heavy one. Surely the more seamanlike rig is a small stout mainsail – and it need not be so very stout if it is small – with power to add topsails of size and weight corresponding to the weather.

But fashion has condemned topmasts, most unjustly, because an earlier fashion decreed that you should house your topmast whenever you reefed your bowsprit, and that was done whenever you wanted to find a job of work for the enormous crews that corresponded to spars that one never sees over a cruising yacht nowadays. The reaction against this ritual has robbed us of our topmasts, and nearly cost us our bowsprits as well. Yet my thirty-five-foot topmast survived a pampero that was about as bad as they make them. And if one does have the dismasting habit, it's better to practise it on a cheap and unessential spar than to jeopardize the whole ship. Observe what has happened to the small pole-masted gaff-rigged yacht of the present day. For

the sake of appearance the masthead is tapered upwards from the hounds; that part which is most unsatisfactorily stayed is whittled down till the peak halyards, which, as usually rigged, put the most severe strain on the mast, have no adequate support. The old spar-makers made the masthead the strongest part of the whole fabric.

Even more serious, structurally, is the abbreviation of the bowsprit. Racing-yachts have two tall, narrow headsails; the forestay is set up half-way in on the forecastle head, the jib is tacked to a mere bumkin. They hope the luff-rope of the jib will keep the mast up; the forestay is at too fine an angle to be much support. They set up the jib halyards, all wire, before they hoist the mainsail. Is this a suitable disposition for the cruising man, who talks of (I don't know whether he actually risks) shifting jibs at sea? The sensible thing is surely to set up the forestay to the stemhead, and make it solely responsible for keeping the mast from falling out of the ship; then you can indulge in as long a bowsprit and as many fancy jibs as you like; and I, who have made long passages, say that comfort on them depends as much on being able to set plenty of headsails as on anything else. My present bowsprit, on a yacht of thirty-eight feet water-line, is sixteen feet outboard, and I wish it was a bit longer.

In the matter of rig the modern yacht conspicuously lacks style, but in the form of her hull she lacks logic. She has presumably been designed for, and launched with, a power installation. She very seldom really needs to make extremely short tacks, or to turn round in her own length. The short keel and cut-away profile which make sudden manoeuvres possible are an enormous disadvantage on

a cruise. I know it's very good sport beating up a narrow channel, and I know many owners of small boats would not ship an engine because it would spoil the sport; but the boat that's easy-working in smooth water is heavy-working in rough, and too uncomfortable to make long open-sea passages. As a matter of fact I think the candid observer who counted yachts of over fifteen tons going up or down any river would find, out of a hundred, ninety-eight navigating under power, one without an engine, and one with an engine that wouldn't go. For the sake of the last two the others keep their motors running and obey the rules for steam vessels, and quite rightly; personally I even maintain that the revised rules ought to have provided that vessels having power navigate under sail at their own risk – but I suppose not enough of them do it to make such a rule necessary.

Then why, except at the dictates of fashion, do so many builders sacrifice all head-room in the forecastle, make the installation of a propeller needlessly difficult, and give us a boat that is a nuisance to dock and an embarrassment in a dry harbour, needs constant attention to the helm, and may run away with us in a breeze?

Look at the deck fittings of the average yacht. What is the sense in stripping her as for a race if she's never going to compete in one – unless, perhaps, an Ocean race, and you want everything big and strong for that? How much do bulwarks detract from the qualities of a cruiser? What is the objection to a windlass capable of working proper ground tackle? I can see one great advantage in a man-sized windlass; it gives one something decent to hold on to on an otherwise dangerous fore-deck. Nobody ever wants to run the boom of a cruising yacht off square; what harm

then would it be to spread out the gear a bit, to give one a chance of finding the right halyard in the dark, and incidentally abolish runners and shifting backstays?

A man who knows what he wants well enough to bully his builder may get a comfortable and easy-working ship, but a man who just goes into the market looking for a yacht won't find that type there; people who have a good thing stick to it. The other type, the spoiled racer and her imitators, are always changing hands, they are almost currency; naturally it is to the advantage of the trade to decree that they shall also be the fashion.

XI
The Sailing Machine

To a generation brought up among motors a machine means something with wheels turning round in it. But to the old seaman the elaborate and costly structure that drove his ship was also a machine, to be designed and maintained with all the engineering skill at his disposal. Forces had to be applied in the most direct way, friction avoided as far as possible, shocks lessened by some form of spring, and each material so treated as to preserve it and make it work smoothly in all conditions. When riggers were men who had served their time afloat, and captains had more power to see that their ideas were carried out, the sailing machine approached perfection, so nearly that it was made in engineering shops ashore, and the individual craftsman lost his job, and the art all its vitality.

There are still riggers to be found, but the yacht trade has little need of them. Small yachts for the most part are no longer fitted out by their owners and crews, but by the ship-chandler's man, who is only concerned to sell the latest gadgets and will never have to depend his life on them at sea. The owner, in these hustled days, doesn't have time to see the work done; consequently he often doesn't understand how what has been done really works. So the smallest accident sends him back to the ship-chan-

dler. Well, that gentleman doesn't mind. And if there's a bad accident, if a mast goes over the side, as like as not nobody knows exactly how it happened, so nobody can be blamed. Racing yachts are different; every one concerned takes an interest in making them perfect machines for their particular purpose; but they take so much more interest in cutting down weight aloft that they make them useless for the purpose of cruising.

To begin with the frame of the machine; masts and standing rigging. The spar used for a mast is not likely to fail unless it has been weakened by ill usage. Water that runs into the rents that inevitably appear in a hot summer runs or dries out again and does no harm. But if it runs along a bolt driven right through the wood, that has very probably become loosened by the summer sun and the weight of the halyards on it; or if it is held up by an iron band which still more inevitably loosens; or if some well-intentioned person has put a sheet of copper round the masthead to prevent the rigging from crushing the wood, or has filled the rents with putty, all the conditions for starting rot are present. (If you must fill those rents, there's only one way of doing it; lift out the mast, lay it horizontal on the quay, and run in resin. It will run out again, when the mast is stepped; it will be messy; but it will fill the gap, like pitch in deck-seams – the difference is that the deck is horizontal all the time.)

One can do without any bolts through the mast; one can do without any iron bands round it. Wire strops, and the wire eyes of shrouds, will do no harm to the mast if it's well painted first, and at the height of the masthead you can't tell paint from varnish the first season, and subsequently it

looks much better, unless you lift the rigging to scrape off the old varnish under it.

The wire of shrouds is, initially, enormously strong. Perhaps one yachtsman in a thousand – perhaps in ten thousand – keeps it so by parcelling and serving it over. The others try to conceal its rusting with paint. But I can't recall a case of a shroud parting; it would get too offensive to be tolerated before it got too weak for safety. The things that go are shackles and rigging screws (did I say, in the previous chapter, chain-plates?), the gadgets one is tempted to buy ready galvanized from the ship-chandler, things that one cannot examine for defective forging under their coating of zinc. I could make a case here for lanyards; one can guarantee the continuity of a hemp rope. Troublesome to set them up? Well, I do it about once a year, if I don't forget about it. I don't suppose I'll convert the gadgeteers, but I say to them in all seriousness: 'Get a competent engineer to estimate the breaking strains of your various fittings; if they're galvanized, halve the factor of safety he gives you, and you'll find it illuminating to see what excessive strength there is in some parts of the chain compared with its weakest link.'

There is one bit of wire in most yachts which would be a source of danger to them, if bowsprits were not worn so short that bobstays are entirely unimportant. Galvanized wire will not stand salt water. You may paint your bobstay, or parcel it, but very soon your chain will tear the covering off. The rational thing is to match chain against chain. Get the chain habit, because there are parts of the running gear where it is essential to the good cruiser, though it may be looked on askance by the conventional yachtsman.

Fig: 8.

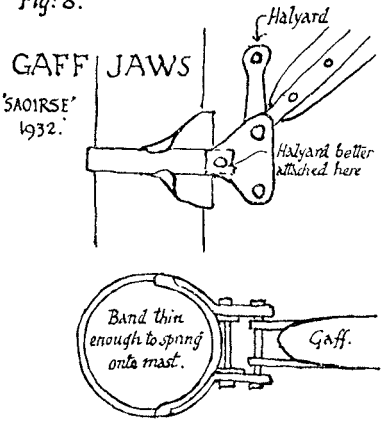


Fig: 9.

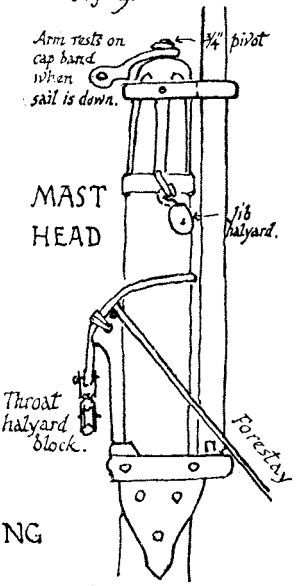
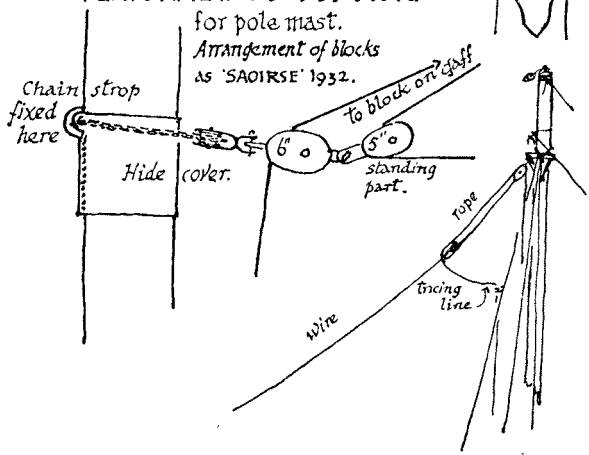


Fig: 10.

PEAK HALYARD FITTING
for pole mast.
Arrangement of blocks
AS 'SAOIRSE' 1932.



CORRECT ARRANGEMENT
OF WIRE LIFTS.

Fig 11.

Come to the moving parts; gaffs and booms, and the ropes that control them. Nobody has succeeded in bettering the gaff for all-round practical use, though it is mechanically bad, and its attachments to the mast leave a good deal to be desired. There is necessarily a great deal of friction at the jaws, but that's not its worst point. Plenty of grease will make light of that. The trouble is that it's inclined to fall too far inboard in light airs, and to sag outboard in a breeze. Generally, I think, the fault can be mitigated by shifting the halyard blocks farther up the mast. A gaff sail nearly always sets better when well reefed down, or when it has a topsail over it, both of which are equivalent to raising the peak halyards, and the former to giving more drift at the throat. Some authorities say that a very high-peaked sail sets best, and it certainly has less friction; *Saoirse's* preposterous mainsail, the limit in this direction, is far more efficient than I ever expected, but that may be partly because there's eight or nine feet between the throat halyard blocks.

The worst economy one can make is to have too short a masthead. The wear on the halyards will very soon cost more than a couple of feet on the spar, or cutting a bit off the mainsail and adding it to the topsail. There's nothing more annoying than a sail that threatens to grow too big for its spars, but one not infrequently sees throat halyards that come two blocks and chew up rope in no time.

Equally voracious are the rightly so-called jaws of the gaff. As they swing round the mast they crush whatever ropes they can get a bite at – generally topsail halyards first, then the throat, and even, if the rigger has been especially yachty, the peak. There is this much to be said about the old-fashioned wooden jaws, that if anything about the

gaff is going to break it will be one of them, and they're easier to replace than the spar. So much cannot be said about the iron jaws common in yachts. They chew up ropes just the same, and at times, apparently – it's never happened to me – break their parrel lines and come adrift from the mast. When I converted my mainsail from a sliding gunter there was a bit of ironwork left on the mast. Just to see how the altered sail would set I fixed the gaff to it; that was a year and a half ago, and it's still fixed in the same way. I give a drawing of it as it is (Fig. 8), because it works; a purpose-made fitting might look more probable, but might not work any better. It can't pick up ropes, and it can't break or jam if either of the halyards is accidentally let go with a run.

When I say it can't jam I ought perhaps to add that my masts are greased, not varnished; they're a part of the machine that needs lubrication just as an axle does, and besides I dislike the look of a spar all banded where the hoops have scratched it. Anyway a greased mast is likely to make a better show than a varnished one, except at the very beginning of the season, because it takes a quarter of the labour to scrape off dirty tallow that it does to scrape perished varnish.

Of the other attachments of the gaff, the upper throat halyard block is commonly hung from a diabolical instrument called a crane, one or two bolts right through the mast. In theory the bolts are hove up so tight that they are kept from shifting by the iron plates, through which they pass, on either side of the mast; in practice the wood shrinks and the whole weight of the sail is taken on five or six square inches of soft pine. If you must have a crane,

why not shore it up from the trestle-trees? The hounds have got to be so strong anyway that the little extra won't hurt them. But why have a crane at all, when a long wire strop, passing over a wood chock, which can be held in place by the forestay, and so doesn't need even a nail, will do the work just as well? I've sailed boats rigged this way more than 40,000 miles, and the rig's good enough for me.

You could hardly twist that chock off, however little drift there was between it and the gaff jaws. But the fittings for the peak halyard blocks are a very different matter; they fly round the mast with a jerk that will twist anything off in the course of time – if the fittings are strong enough it's the masthead that gets split or twisted off, according as they are bolts driven through it or square bands clamped round it. Now it is not so difficult as it looks to make a fitting that will slew round the mast whenever it's practically needed to do so. People may say that the blocks get foul when the sail is right down, and that the thing won't work with the close reef in; or they hang the blocks on wire strops – served with leather and no doubt kept well greased, but a wire strop that's subject to frequent bending, as this must be, soon breaks. Apart from that, it doesn't matter how crooked the blocks are, so long as they slew all right when the sail is well peaked up; there's very little strain on anything till that's done. And, in most cases, the time when you want to save your mast is when the whole sail is set – when the ship is rolling or pitching badly and you carry everything you can to steady her.

The perfect device, if you have a fidded topmast, is a pivot in the centre of the masthead, round which an arm carrying the halyard block can revolve (Fig. 9). I had this on an

8,000-mile voyage of deplorably light winds and confused seas, and, barring the wear on the pivot, the ordeal hadn't left a trace aloft. For a pole mast I suggest that a small iron block travelling on a fixed chain strop would work much freer than a strop expected to slew round the spar, and would centre itself when the sail was down (Fig. 10). I haven't tried this, because I have no need to; my present rig includes vangs, so my gaff doesn't swing about. It gave me an insight into the durability of wire strops. When I reverted to gaff rig I used the lift blocks for the peak halyards, because they were already up there. The strops parted in a week. I expect the bit of chain I substituted will want no attention for years. And nobody could tell, at that height, if it was chain or wire.

These arrangements postulate a single block, or at any rate a very simple lay-out at the masthead. I used a single part of chain for halyards, but the captain of a coasting schooner that was rigged in the same way told me he was reverting to the old rig with rope; he said the inelastic chain was too hard on the sail. But he wasn't going to put back as many blocks as he had originally; he had found out that the effort needed was very trivial compared with that needed to hoist the throat. Most yachts have more blocks aloft than they really need. And that is because they are bad blocks, too small for the rope that has to be tugged through them; too small to carry patent sheaves, I suppose, or why do they inflict on their owners those antediluvian nuisances, common sheaves, which fishermen and the like have rejected these many years? Not infrequently blocks don't give a really fair lead to the ropes; they are, again for the sake of neatness, crowded too close to the mast, and

their strops, if they have such, are too short. A good long hemp strop is as good as a swivel for most purposes. The crew of a small yacht don't go aloft much while at sea, and that's the only way you can tell if the machine is working properly, so her rigging ought to be spaced out in an apparently exaggerated way to avoid chafe of ropes and the splitting of blocks. And while on the subject bring as many ropes as possible down to the rail, instead of all round the mast; there is bound to be a congestion of topsail gear there, don't add to it.

I shall be told that wire halyards don't chafe. Neither is there any spring in them. Then why not chain right away? It won't chafe, and it doesn't matter if it rusts, which is more than can be said for wire. Flexible wire is an abomination wherever it is used about a yacht. The individual wires of which the rope is made up are so thin that the coating of zinc on them must be thin too, so it very soon comes off, and rust takes its place unless the whole is kept smothered in grease, which is impossible at sea. The sheaves over which it works must be very large, to reduce to a minimum the friction between the wires, which have to slide over each other to allow the rope to bend, and as soon as they get a bit dry you are forcibly reminded that zinc is not a lubricant. Yet it is often seen in a cruising yacht, most often in the place where it is most dangerous, that is, the lifts. Why any one should want to bend a wire over a sheave at the mast-head where he seldom goes to examine it, when he could have a rope purchase up there, to absorb the continual shocks of the boom, and a straight piece of wire from there down to the boom-end (as coasters do) is a mystery (Fig. 11).

It is a fallacy that wire is more durable than rope, unless it's disproportionately thick. And if a strand should break, and jam in a block, as once happened to me in a squall, it's very much pleasanter to be able to cut a halyard with a knife than with a cold chisel. Apart from accidents rope lasts surprisingly, and as accidents nearly always happen in the last fathom, they can be prevented by splicing in a chain end. That's a necessity for gaff-topsail halyards and sheets, and a convenience in several other places where you can't be sure the rope always has a fair lead. Like many other people I tried hoisting a squaresail yard on the fore staysail halyards, and after a few days I found, like many other people, that the rope was cut. I spliced in a bit of chain, which lasted till I altered my rig two years later. I have never seen a chain splice break, and as most of the weight comes on the chain the rope can be as light as one can conveniently handle.

That depends on the size of one's hands. Mine are rather small; I like 1¾-inch, if it's a fairly soft-laid three-strand manilla. But the thing that gave me most pleasure was a 2-inch tarred hemp, well greased; when it had pulled down a bit and the tallow had worked in it was equally supple in all weathers, and not at all slippery. It served as topsail halyards, and in winter as a gantline, for six years before it was degraded to baser uses – my topsail is a square one, of nearly three hundred feet area, on a twenty-one-foot yard, so it wants good gear. I have just condemned a two-inch manilla as jib halyards, after seven years' service. If one takes proper care of rope, and rubs a little oil into it now and then (because rope, like wire, suffers from internal friction, though to a less degree) it will last for ever,

unless it's habitually overloaded. There is a temptation to use small rope in the fashionable small blocks, because its breaking strain shows an enormous factor of safety; but if it pulls down and gets 'long in the jaw' it has lost all its elasticity and a shock might part it. A tarred rope may become so stiff under a continued strain that it cracks when you bend it; grease will obviate that. A rope with a very hard twist in the strands may take a kink when wet that will never come out of it. I think for most purposes the softer rope is the more durable, as long as it's carefully protected from chafe.

A very important part of the machine is the hauling end of the rope, for ease of working depends largely on the facilities the crew have for getting a good pull and belaying without letting anything go. A heavy pull should be taken through a fair-lead or under a well-rounded thumb-cleat, so that when you have to catch a turn you're not left all up in the air. It distresses my economical mind to see a man standing in a cockpit and making a mainsheet fast on a cleat screwed to the deck. I think of how much rope and how many blocks might be saved if he had a nice fat timber-head on nice high bulwarks, and could stand on the deck to use it – as I did when I started yachting. I am sure that a little attention to the design and placing of deck fittings would eliminate a number of purchases, which are a snare set for the demoralization of the young seaman. If he has enough small blocks he can gain power to overcome the friction in all of them and to hoist his sail into the bargain; he won't feel any pull against him, and he can easily and safely belay on any nasty little pin the ironmonger has sold him. But he won't learn how to handle a rope with a live and kicking

load at the other end of it; if any part of his elaborate machine breaks down he won't be able to rig and use a simple substitute for it. And what will happen if he wants to lower his sail in a hurry after a heavy shower of rain?

When one has got over a youthful passion for gadgets one aims at arranging all gear so that one can exert one's effort on it with the greatest possible effect. Then it soon becomes apparent how much the gear can be simplified. But it can't be handled by a crew brought up on toys.

XII
Sails for Cruisers

I HAVE BEEN READING an account of a cruise by a small yacht that was afflicted with chronic sail-splitting, which is all right if one has a good engine and a friendly underwriter who will provide a new suit, but not so good when the new suit begins to gape at all its seams in the middle of the Bay of Biscay. The yacht was not being driven hard, the mainsail was made by the best firm in England – only it was the wrong mainsail. It would have done for racing in smooth water, but for cruising it was of the wrong material, the seams ran the wrong way, and I say – can you call me prejudiced if it is established that most of the sails that split are Bermuda sails? – it was the wrong shape. Presumably the owner didn't tell the sailmaker what he wanted in a sail because he didn't know, and the sailmaker gave him that sail because it was the customary pattern, and nobody bothers much about sails for cruisers nowadays. But there is, and always will be, enough serious cruising done under sail to make it worth while to consider seriously how the sails ought to be made.

Take the requirements of what I call the genuine cruiser; the boat in which you can live as long as you want to, and which is always ready to carry you as far as you want to go. Her sails must not be so fragile that they can't be used in doubtful weather – you don't want to have to wor-

ry every morning about whether you're going to leave the coat on the mainsail and set the trysail. They must not be so large that the crew can't handle them at need, nor so troublesome to set that you can't get away from an anchorage where the wind is against the tide without the help of your engine – it may refuse to start, or you may even not be able to afford one. They must be strong enough for their work, and of a material that will wear out evenly all over in the course of ten or twenty years, not one that is liable to split right across suddenly. They must not be more pressing than need be on the ship while she is at sea. They must, of course, give her a decent speed to windward; but, as the wind is sometimes right aft, they must not make you feel that a fair wind is a penance.

The modern racing yacht is marvellously weatherly, but at a cost in comfort the average cruising man cannot afford. A few, like Dr. Worth, do genuinely enjoy a hard thrash to windward; but it's very severe on the ship as well as on the crew, and most of us don't drive as hard as we might into a head wind and sea. A looser fitting suit would satisfy our more modest requirements – it's not an economy to rig a boat for a point of sailing she can't hold except in the smoothest water, when the water is so nearly always the reverse of smooth. If I have been misled into boasting about *Saoirse* working profitably within eight points (purely to show what could be done with a square topsail, though she repeated the performance with a raffee a few days ago – I must take back what I said about a raffee being no good on a wind, for she stopped dead when we took it in), if I make those rash statements it must be understood that it was in conditions we don't even hope for in

the ordinary way, when we steer five points off the wind and trust we're not making more than a point of leeway. Also that our sails have reached a very friendly stage of antiquity, mostly between ten and twenty years, when they'll do anything for us in light weather, though they won't keep their shape in a breeze.

Now isn't there a moral in that last sentence? Where there's a wind there's a sea, and the short-handed, impoverished, or family cruiser isn't going to butt into it as if she were in an Ocean race. But on the days when yachting is sailing for pleasure she wants to put up a decent show against real yachts. We shall be heartbroken when our canvas finally dissolves into rags; we feel that the best we can replace it with will be stiff and unkind, like a new pair of shoes. I know it's not impossible for a sailmaker to give me nice full sails of light flax canvas, with the seams running up and down them in the old fashion, but I know too it's more difficult to make them so without the leach curling in and forming a bag than if the seams ran the other way and the leach was flattened out by battens. The most miraculous sails I ever saw were at Pernambuco; but on the Barcaços the bag was taken out of them by the fact that the long flexible spars to which they were laced buckled in a breeze, and on the jangadas, which have a triangular sail, by the boom being shifted up the mast so as to stretch the foot. Barcaços are about as shapely as a canal barge, and jangadas are mere rafts, yet they beat out through the tumble of the reefs with never an accident. Those aren't seamanlike jobs – there's never more than a fresh breeze off Pernambuco – but I have wondered whether something of their effect could not be got by slacking off a boom lacing in light airs and hauling

it taut as the wind freshened. But when the wind blew very hard indeed I should take out the lacing altogether.

I dislike the idea of a boom lacing except as a temporary expedient for making the sail set flatter. It forms a ledge along the foot on which the weight of the wind falls, and presses down the ship; and if a sea should happen to break into the sail the weight of that is added. It distracts attention from the clew outhaul, which is important for the preservation as well as for the setting of the sail; and it tempts one to indulge in roller reefing, which is another thing I dislike. When you consider that sail-cloth, left to itself, shrinks something like one foot in twenty as it gets wet, you see that if it is rolled up dry there is a very nasty strain at the edge of the roll when the water gets at it. But in tying down the reef with points to the foot of the sail you allow it all to shrink equally. And a loose-footed sail is very much lighter to hoist; you only have to lift the weight of the sail, as you can set the luff taut with a tack tackle afterwards; and it can be effectually scandalized by tricing up the tack.

Modern cruisers seldom carry such enormous sails that the old way of reefing is a serious difficulty, if one comes up in the wind to do it. Reefing before the wind is another matter – and so it is with roller gear, if you don't want to spoil your sail. When there's trouble it's because the cringles on the sail are too small, and the holes on the boom are rough or haven't sheaves in them. It is unreasonable to try to pull a reef pendant round sharper corners than you would a main sheet. There is another reason for making the cringles good and big. You can't be sure you've got the pendants down so hard that nothing can move; in fact, if

Fig: 12.

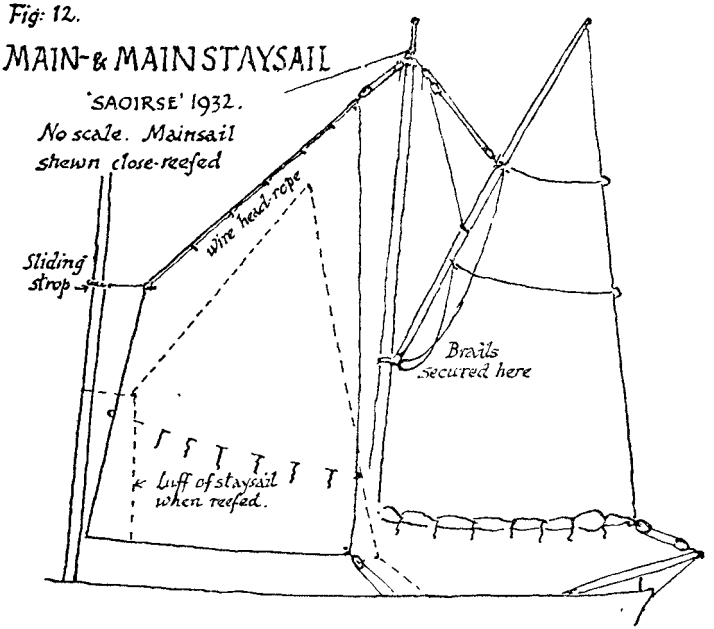
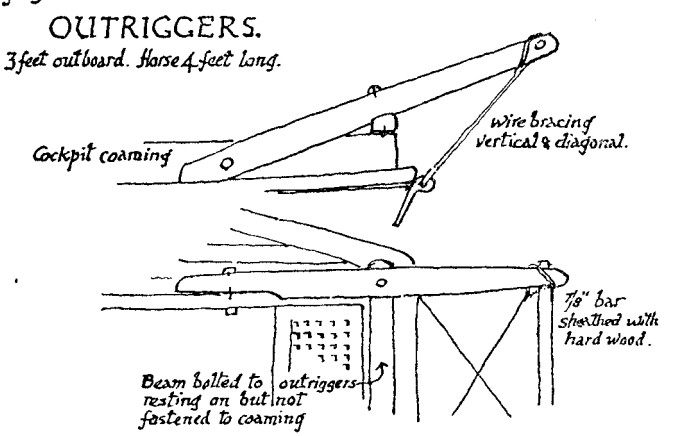

MAIN- & MAIN STAYSAIL
'SAOIRSE' 1932.
No scale. Mainsail shewn close-reefed
Wire head-rope
Sliding strop
Brails secured here
Luff of staysail when reefed.

Fig: 13.


OUTRIGGERS.
3 feet outboard. Horse 4 feet long.
Cockpit coaming
wire bracing vertical & diagonal.
7/8" bar sheathed with hard wood.
Beam bolted to outriggers resting on but not fastened to coaming

you had, you'd probably have cut the sail, but anyway after a time either the pendant or the sail will wear through unless you put on a good lashing as well (with a bit of cloth under it to protect the canvas), so the cringle has to be big enough to take several turns of the lashing as well as the pendant. A flexible wire, parcelled and served over, makes a better pendant than rope, and takes up less room.

It seems to me that sails are generally wrongly bent to gaffs, and that's important, because you can't get at them to slack up lacings and outhauls, as with booms. It is surely a mistake to make fast the throat and then haul out the peak; the peak must be a fixed point, whereas the throat can accommodate itself to shrinking and stretching, if the head of the sail is free to slide along the gaff – which of course it won't do if it is held by a lacing hauled taut. The right way to bend it is with separate rovings, slack enough to move easily round, up or down the spar, but seized across tightly over the head-rope of the sail – if there's any play there they'll soon cut – with plenty of drift in the throat lashing and a mast-hoop close under it. It's very easy to stretch the head and foot of a sail too much, but impossible to stretch the middle part of it – at any rate the part above the close reef – at all, so unless one is careful about these things the leach soon shows an ugly hollow curve. A sail ought in fact not to be stretched between its spars, it ought to hang from them; look at the beautiful way a dipping lug sets. But that's a counsel of perfection. The nearest practical approach we can make to it is to do without a boom, and trim the gaff with vangs rather than with the sheet.

Now we come to the controversial question of sail-plans, not so thorny as it used to be, since it is almost accepted that

any but the smallest cruisers should be some kind of ketch. I think that what has killed the cutter is not her expense, not the supposed difficulty of handling her big sail at sea, not the more real difficulty of stowing it when it crashes about catastrophically in a calm, so much as the danger of manoeuvring in a crowded harbour and of anchoring and weighing in a tide-way. If she can lie on her moorings with her mainsail set till it is time to cast her on the proper tack, if she can sail straight into her harbour, and the helmsman knows exactly what he's going to do when he gets there, a cutter can be handled by a man and a boy, like the Bristol Channel pilot-boats; but then the man was a pilot for all the ports he used. You can't potter about looking for a berth in a big cutter, and you can't know the pilotage of all the ports you visit on a cruise. What generally happens is that you leave and enter under power, and have such an unpleasant time setting and stowing your mainsail in the tumble outside the bar that you make your passages under trysail till you can sell your cutter and buy a ketch. As for those pilot cutters which still have no engine, their story is almost unrelieved tragedy. They don't go cruising at all unless they can get about half a dozen of a crew.

A ketch is just the reverse. She can set in a moment any combination of sails required, go as slow as you like and still be under command, with jib and mizzen stowed she will turn in her own length, and finally you can let the mainsail run down without burying the helmsman in its folds. Then you have two masts to hoist your boat in and out with, and, a feature I have only heard of in one yacht, you can rig your main lift from the mizzen masthead, and so avoid chafing the sail and fouling the gaff-topsail.

That's the conventional ketch. But having the mainsheet where it is, clear of the helmsman, you can abolish the main-boom, which is the greatest nuisance in any vessel, and make her far easier-working and hardly less efficient. It must be admitted she's never very efficient, as a sailing machine; it's difficult to stay the mizzen mast well enough for the sail to be much use to windward, and with the wind abaft the beam the lofty canvas so far forward is apt to make her trim by the head. Yet because she's easy to steer and to handle she can make smart passages with a weak crew, if there's not too much head wind about them. My *Saoirse* is no clipper, but she averaged 126 miles a day across the Pacific. But when we got home I was disappointed in her; there seemed to be more head winds than in old days, so I turned her into a sort of staysail schooner the better to deal with them. And that meant (for she's really too short for a two-sticker) that I had a main boom hanging out 6 feet over the stern.

Well, she was an improvement for coasting, and then I took her out to Gibraltar, following the big-ship track, which I reckoned would give her an average of at least a hundred miles a day; for though we were a weaker crew than on the Pacific run we had a much bigger square foresail, and a fine topsail to set over that. But I had reckoned without that boom. It slashed and it crashed, and when the wind shifted from one quarter to the other it was an all-hands job to pass the boom-guy over, so very soon we had it firmly lashed down on the gallows, and carried on under foresail only. And that didn't give us our hundred miles. It's a most uneconomical thing to blow along before the wind under square canvas; it seems that some kind of in-

terference is necessary, to make cross currents of air; even the mizzen of a ketch makes a difference. But once that boom was secured we were in no hurry to loose it again on its errand of destruction. Then came a gale; to run before it would have pushed us off the map of Europe, and it was very soon too bad to bring on the beam; we didn't want the mainsail to heave to with. Then calms and squalls; we set the mainsail for half a day, and it crashed and slashed till we gave it up and set a trysail instead. And so we took a fortnight to get to Cape St. Vincent, and there we met a Levanter blowing out of the Straits, and had to set the mainsail for that; and it was a week of Purgatory. So when at last we staggered crestfallen into Gibraltar I took a saw and made two halves of that damned boom, and with them built an outrigger to sheet the sail to. And it felt quite like old times when we used to consider 150 miles no more than a fair day's run.

I don't know how far the resulting rig, which suits us admirably (but we are not feeling so ambitious these days), is to be recommended for general use. Our experiments have to be made with the material to hand and at no expense except our own labour, and the only way of supplementing the inadequate area of the lower sails is to carry a large square topsail, which most people would shy at. But I suggest that a longer, narrower vessel might be rigged just as simply as *Saoirse* yet with enough canvas in her lower sails, and that a professional sailmaker might find in cutting them a problem worthy of his art.

The points about it are these: the mainsail (which of course ought to have a lower peak, and a gaff-topsail over it) is no more trouble than the mizzen of a ketch – less

than most, as we hand it. We let go the throat halyards altogether, lower on the peak (which keeps the gaff close up and down the mast) till the jaws are right down, then brail in to the gaff, which secures the sail for a temporary stow; unhook the sheet and bundle up the rest of the sail at the foot of the mast, and lower the gaff to taste. Reefing is perfectly easy. The gaff must of course have vangs, but they are a real blessing in a sea. Set up the gaff firmly to the right angle, and if the sheet is well in the gaff won't pluck at it as the ship pitches; and if she rolls there will be very little tendency to gybe provided the sheet is run right off.

The so-called main staysail is much less trouble than the mainsail of a ketch, and the ship ought to work under that and a headsail for shifting berth in harbour and the like. Mine isn't really a staysail, for the throat slides up the foremast on a strop well garnished with parrel balls, being hoisted by halyards at the main masthead; a very simple job, and the pull on the sheet is trivial compared with that of a gaff sail. But that's no good, even with a boom, if the wind is abaft the beam; it postulates a squaresail of some sort, but leaves the foremast very clear for setting it.

And why not carry a light yard permanently aloft, and set a light squaresail under it, and a raffee over it, with little more trouble than a spinnaker, and very much more latitude in the direction of the wind? But this square-rig business is too serious to tack on to a chapter written for the general yachtsman cruising on the coast; and unless it's taken seriously it's best left alone.

XIII
Risk of Collision

Mr. Justice Hill, giving judgement in the Admiralty Court in the case of S.S. *Kitano Maru* v. S.S. *Otranto*, said, referring to the Regulations for the Prevention of Collisions at Sea: 'The Regulations were framed to avoid risk of collision, and not merely to avoid collision. What was called for was the reasonable action of a prudent navigator, and not the acrobatic skill of a sensational display.'

The Judge's comment applies more frequently to small craft than to large steamers such as the *Kitano Maru*, which evoked it; and most frequently to yachts, which have a bad name for disregarding the Order in Council that promulgated the Regulations. Owing to the speed and handiness of their craft yachtsmen think they can display their acrobatic skill with impunity. Then they suddenly remember that they have the right of way, shave across the bows of a steamer, and end up the story of their hairbreadth escape in the Club afterwards with some such aphorism as 'Might is Right', or *De minimis non curat lex*. They are wrong there. No officer is going to risk his certificate by the least kind of collision, if we give him a chance to avoid it. But a low-powered steamer can't perform acrobatics at the last moment; if we expect her to, and run into her, it's our funeral.

I quote a story that has appeared in the yachting press. A small handy cutter, having left harbour under power, was beating out (sic) on the starboard tack with a fresh wind. It is not stated when the engine was stopped, but the preliminaries are unimportant. The yacht admittedly had the right of way over a stone barge, which apparently had only just steerage way. The owner of the yacht said, 'I would have been quite in the wrong to have gone round at the last minute', and ran into the barge. It was not suggested that a modern cutter wouldn't come to stays with safety and certainty in the conditions; rather the reverse. So my only comment is that her owner was quite in the wrong not to do so – as the Note to Article 21 of the Regulations says: 'When . . . . such vessel finds herself so close that collision cannot be avoided by the action of the giving-way vessel alone, she also shall take such action as will best aid to avert collisions.'

This is one of the few cases in which the yacht hadn't the sense to get out of the way in time; generally she only gives the officer on the other vessel's bridge a bad attack of nerves. If that makes him do the wrong thing, the yacht will be stung for damages as surely as the *Kitano Maru* was.

Yet the Regulations are perfectly simple and clear, if you read with understanding Articles 21 and 27, and Mr. Justice Hill's dictum, 'They were framed to avoid risk of collision.' Article 21 reads, 'Where by any of these Rules one of two vessels is to keep out of the way, the other shall keep her course and speed.' The significant part of 27 is ' In obeying and construing these Rules due regard shall be had to all dangers of navigation and collision'.

You can't define risk of collision. It depends on the human factor as much as on the speed, power, and handiness of the vessels involved. Until the person in charge of each knows that the other is going to take the correct action, the risk exists, though they are a mile apart. When a perfect understanding is arrived at the risk diminishes to that dependant on a breakdown or outside interference. The way to narrow the risk, as well as common courtesy, is to create the understanding at the earliest possible moment. The giving-way vessel does this by altering her helm slightly as soon as she thinks the change of course will be noticed; the right-of-way vessel by steadying on her course and paying particular attention to her steering. If the exigencies of navigation or traffic compel her to alter course after that, she must make the signal prescribed by Article 28 with her whistle, which should be used for no other purpose whatever in clear weather, to avoid the possibility of confusion.

Why the small-boat man too often fails in his interpretation of the Rules is that he doesn't imagine himself on the bridge of a vessel ten times as long and drawing six times as much water. If he wants to contract out of the Rules he must keep out of the big ship's area of risk, which is vastly wider than his own. What is the officer of the watch to think when he sees a craft wandering vaguely about in front of him, long after he has indicated his own intentions, and when, according to his own standards (which we must suppose are those of a prudent navigator, or he would not have got his ticket, much less his job) he is in serious risk of collision? Surely that the other is ignorant of, or at least ignoring, the Rules; certainly not that he is going to steady his helm in his own good time, but doesn't consider the time has yet

arrived; for the course and speed he is directed to keep are those he was pursuing before risk of collision arose.

In the circumstances the big vessel can't do anything, for she has no means of signalling to the other to keep out of her way; so don't let the circumstances arise.

To turn to the first part of Article 27, dealing with navigational dangers in relation to the Rules. It must be assumed that the person in charge of the right-of-way vessel knows the position and depth of shoals, &c, and will not try to crowd the other on top of them. If he doesn't, he must keep out of the fairway, and in as shallow water as his craft allows, till the other has passed clear.

There are more pitfalls for the inexperienced man in charge of the giving-way vessel. Signs that the other is not able to keep her course and speed, which are obvious to the man who has handled ships of varying types, are hidden from those who have quite recently gone to sea in a motor-boat. To take a simple case, I have heard such people complain of sailing-boats obstructing the fairway by making unnecessary tacks; they forget that a sailing-boat of the same size draws twice as much water as their craft. Then the practised hand will know where there are likely to be baffling winds and eddies of the tide, which may upset the calculations of sailing and low-powered motor-boats, and he will be careful to give them a good berth at the critical points. No sailing-vessel is going to tack under the bows of a power-boat if she is aware of the latter's intentions in time for her to lay off her courses so as to tack outside the area of risk. The trouble is that power-boats don't always express their intentions very clearly, when their owners are boxed up in a thing like a motor-car body. Some sort

of look-out should always be visible in frequented waters, or that mutual confidence which does so much to limit the risk of collision is destroyed.

I am afraid that a great many yachtsmen, other than racing men, are very vague about the rules for two sailing-vessels meeting. Those who own motor-boats are apt to say that it is enough to know that they have to give way to everything under sail. But suppose they meet two sailing-vessels at the same time, they must know which of them is keeping her course, and what the other is going to do. In fact they ought to know all about every craft in sight, and all their distinctive signals and lights. A boat under sail, especially if met with in or near a harbour, is quite likely to be in law a steamer; she may proclaim the fact by displaying forward, in accordance with the new Article 14, a two-foot black cone, point upwards, but, on the other hand, if she is a yacht, she probably won't, and you have to judge from her behaviour whether she's under power as well as sail.

Talking of lights, a good many small craft are very careless about the way they show their navigation lights. The only indication another vessel has of what you are doing is that she can see your green or your red. If you alter course so as to bring her from, say, your starboard to your port bow, see that your green light changes to red quite definitely, and doesn't change back again. If you are yawing about in a sea switch off, or cover, whichever light you don't want to show, till you are quite certain it will be invisible from the other ship.

Many of our harbours are getting so crowded with launches and other boats, some of them driven at a very high speed, that it behoves us to observe carefully not only

the letter of the law but also the courtesies of sea-usage. Only the experienced seaman can know what is excessive speed in any given circumstances, or what damage it is liable to cause. A claim against an unqualified man in charge of a fast launch would almost certainly be upheld by the Courts on the grounds that as he has not the experience and sea-sense that narrow down the risk of collision he must regard it as being, in his case, infinitely extended, and must therefore navigate with very special prudence, which means at a moderate speed.

XIV
About the Dinghy

Every owner of a yacht of such a size that her dinghy is a problem decides about once a year that the problem can only be solved by scrapping the nuisance that he knows and building one that he does not know. Now while I am pretty clear that the average dinghy was designed without any thought for the requirements of a tender to a yacht of moderate size, I am not going to offer suggestions for alternative designs, for the very good reason that if one builds a boat to suit any special circumstances one is sure to find one's self in circumstances for which the new boat is quite unsuitable. I am only giving some hints for dealing with the dinghy we already have – probably just a plain boat, perhaps with some pretensions to carry a small sail; possibly a pram. The folding boats that are any good – and the best of them are excellent – are too costly to be considered here.

There is only one problem for the man whose yacht is so small that her dinghy can't be hoisted in, and that is how to keep her from bumping alongside when he is moored in a tideway. People recommend hanging a bucket over her stern, but that's no good. Bend the bucket to the painter, and give her plenty of scope, and the problem's solved. There is no problem for the man whose yacht is so big that she carries her boat in davits. But there is for the man who

finds his dinghy difficult, but not impossible, to hoist in and carry on deck.

The difficulty will lead to her being towed for short distances and in fine weather, and dinghies are seldom so constructed as to facilitate towing. If you use the ordinary painter she sheers about all over the place; the towing should be done from a point as low down as possible. The handiest way of making the attachment, which I use in boats I build myself, is to put in a lower breast-hook, fastened to the risings, with an eye-bolt through the stem, the eye being of course horizontal. It's very convenient for mooring as well as for towing, because you can always get at it, which you can't with the alternative method of making a hole through the keel. But it isn't every old boat that has a stem wide enough to take a good strong bolt – a light one is worse than useless, for it will bend and split the stem.

On the rare occasions when I tow my present boat (not my own build) I do it from a hole in the fore end of her keel, which any one can make with a ⅝-inch bit. It's not safe to make it in the stem; you might tear that right out. But I nearly tore the hole out of the keel, in a stupid way, about which a word of warning. I didn't want to leave a shackle, which I seldom used, where it was liable to hit things when grounding on a beach, so I left the pin a loose fit in the hole, which it promptly enlarged. I ought to have made the pin a driving fit, or lined the hole with a short bit of iron pipe as a bush. As a matter of fact, I never meant the hole for towing, but for hauling up on a beach if I had to use a tackle, and forgot all about the tremendous wear the shackle would put on it.

Now about the ring for the ordinary painter, which is inside the stem, in the most inaccessible place that can be found. It is difficult to hook a tackle to it for hoisting the boat in – impossible if the lower block of the tackle is of any size – and a painter made fast to it chafes over the gunwale. I attach a short length of wire or chain to the ring, with a big ring at the other end of it, and splice the painter into that. Of course I can't hook davit falls to it, as they wouldn't hoist the boat high enough; but my yacht isn't big enough for davits.

Now the point about this short pendant – there is another in the stern of the boat, also ending in a good big ring – is that when you come alongside you don't have to fumble about with the whole length of the painter, but you just drop the ring over one of the belaying-pins in the fore-rigging, and the stern of the boat, with its passengers or parcels, falls in abreast the gangway. Then, if you are going to hoist her in forthwith, the stern pendant is also brought on board. You don't have to get into the boat again to hook on tackles, for the rings are now not in her bottom but on top of your rail. You have only to slip a couple of wooden fenders between her and the yacht's side, and, if you have two masts, hoist away.

With one mast it's not quite so simple, but this is how I do it (Fig. 14). Hook the fore-halyards, or burton, on forward of the rigging, and the topsail halyard aft; and hoist on the latter best. The next move finds a use for that otherwise unjustifiable extravagance, the runner. If you don't have such things, and your shrouds don't come far enough aft, you must set up a rope from the masthead, or place a good awning stanchion, where the runner would otherwise be. Haul

Fig: 14.

TO HOIST IN A BOAT

using one mast only.

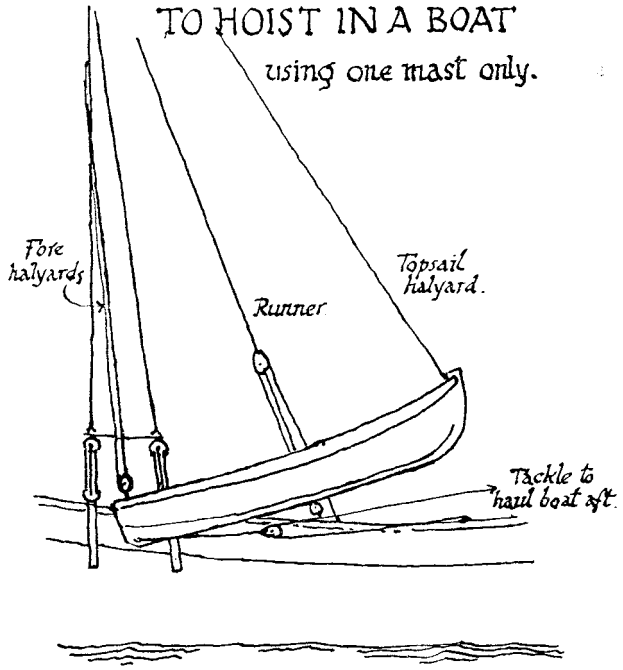
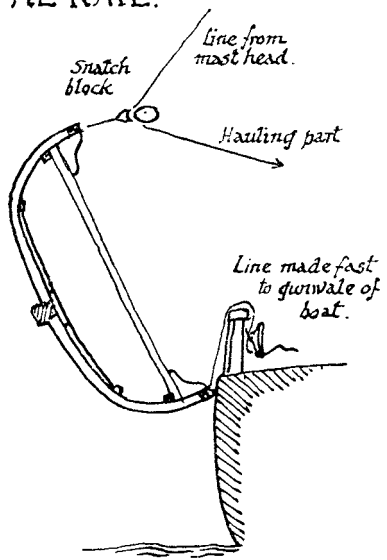


Fig: 15.

TO CAPSIZE A BOAT OVER THE RAIL.



the boat aft till this takes her amidships; then she can easily be swung round it, with no danger to the skylights if you're careful to hoist her stern high enough, and landed on deck. If you don't like the look of her lying there stern forward, bring her alongside wrong end first to begin with.

A boat sitting squarely right-side up on deck is a most useful receptacle for anything – even a second and smaller boat, which is a thing we all want, unless we're single-handers. But she sticks up a desperate long way, and if a sea doesn't shift her the boom will. It isn't obvious how to capsize a large boat on a narrow deck without doing damage, but it can be done, even by one man, in this way. Pass a greased piece of line through the hole in the fore end of the keel, and make fast, with a little slack, to the painter ring. Hook the burton – it should have a large smooth hook – into the bight, and hoist the bows two or three feet. Then go aft, and if the boat is a fairly light one, lift the stern by hand, turning it over meanwhile, which is quite easy if the line renders smoothly over the hook, till you find the boat hanging by her keel forward, and aft supported by your two hands under the transom. If she's too heavy for that, get a tackle on her keel aft, or, if you're nervous about your skylights, because that brings her over pretty quick, a similar gadget to that on her bows.

I once had a lighter, stronger, and narrower boat, which was hoisted in and capsized with one movement (Fig. 15). She had a short piece of line made fast to one gunwale, amidships, and another, with a large hook (or a snatch-block) opposite it. Bring the short line in over the rail, lift the inner gunwale with it as high as the state of the sea will allow, and belay. Put any masthead rope in the snatch-

block, and pull up the fall by hand. The boat must have a stern-fast to keep her from being drawn forward by the masthead rope, and if the lengths are nicely adjusted she rolls in over the rail just where you want her.

And when you've got her there (unless yours is the kind of yacht you never go outside the cockpit of, or is so big that the dinghy is no problem) you wish she was anywhere else. Swung out under davits is hardly practical seamanship, except in weather when you might as well tow her, so you presumably don't possess davits. But a yacht mainly power-driven, and not encumbered with topmast shrouds, might carry her as I have sometimes carried mine; that is, on her side, lashed outside the main rigging. In fact, just where she would be if you had davits, but not so far outboard (because the davits would prevent her stem and stern being brought in a little over the rail).

I said that if you use a short pendant to attach your painter to, the rope should be spliced into it, remembering what might happen if it isn't. When your boat is capsized on deck, nobody can get inside to detach a painter made fast there; but if it's bent to a ring four or five feet away, somebody looking for a piece of rope might unbend it. Not very long ago I launched a boat in the old-fashioned way, by shoving her over the rail, and we gave her a good shove off into a good strong tideway; and then we discovered that the painter had been tampered with. It happened in a friend's yacht, so I let him suppose I couldn't swim.

XV
Some Gadgets

It is generally admitted that certain ropes ought to have a chain end spliced to them, but the chain splice is not so generally practised. Can it be that the yachtsman generally doesn't know how to make it? The textbooks are not very lavish with instructions, so I will give some here.

You want a fairly long-link chain. As you will use it, there is little fear of it kinking, and chain renders over a sheave many times more easily than rope. If you have only short-link chain on board you will find that the rope you can splice into it is disproportionately thin (and the same applies to the shackles which you must use to make the connexion at the other end) unless you take it to the smith to get two longer links added, or add them yourself. That is, fortunately, easy. The split links sold to farmers for mending traces are just the right shape, and, if you put them in with the opening part next the chain, amply strong for all practical purposes.

Unlay a foot or eighteen inches of the rope, and pass two strands through the end link of the chain. With one of them follow up the groove left by unlaying the third strand, and finish as for a long splice. That gives you a good three-strand rope up to the link, and another strand rather up in the air. Tuck this as best you can, or, if you are meticulous, make three parts of

it, and tuck each under and over the other strands. It seems incredible that two strands, bent sharply round a thin and possibly rusty bar of iron, should be as strong as the whole rope, but I have never yet seen a chain splice break.

The good seaman prefers clip-hooks to shackles for any connexion that has frequently to be made and broken – the pin of a shackle may jam, and you're very likely to lose it overboard if it doesn't. Also I have had more accidents through the breaking of shackles than of clip-hooks; perhaps the better seaman would trust to a few turns of spun-yarn rather than the galvanizations of the yacht-chandler. But the mousing of clip-hooks is indubitably bad for the temper. I thought of those rubber rings which are used for mousing the ribs of an umbrella, but they're poor quality stuff, and didn't last long. Then I picked up the inner tube of a motor-tyre, and the bands cut out of that will, I expect, last me for years. Unless they break, nothing can shake them off the hooks.

We are talking of sailing-yachts, and let us suppose that yachts exist so poor that they can't afford an engine. Mine is one of them; and when I was bewailing the fact a friend suggested, 'What about the one-coolie-power sampan motor?' I had grave doubts as to whether, in the absence of detailed measurements of the yuloh, with which the coolie propels his sampan, I could make one that would work, and still more doubts as to whether one man, with any sort of device, could propel my 24 tons of displacement at a useful speed – I had much experience of how slowly we got on with one sweep over the side. But my friend said, 'Wait till you try it, and you'll be surprised.'

I made a nineteen-foot yuloh, which I am pretty sure is too short, but I haven't an Oriental expert who can tell me how much too short; and I tried it round the harbour of Ibiza, greatly to the surprise of the local mariners. As a matter of fact I only got an average of 1¼ knots over a measured three cables out and the same back; there was a light head wind going, and the machine was adjusted for a heavy load, and coming home we went too fast for it to function properly. I expect it would take a good deal of experiment to get the adjustment suited to any particular boat – for more speed one would want the yuloh longer outboard, and entering the water at a finer angle – so I only recommend the dimensions I figure to push a vessel of twenty tons with the rather peculiar stern of my *Saoirse* (Fig. 16).

The principle of the thing seems entirely sound. You are saved all the ineffective part of galley-slaving, and all your weight (barring a little friction) is transformed into propulsive force by the peculiar construction of the yuloh. It is hung in a pin working freely in a socket on the taffrail, so that it can cant over some 35 degrees either way. As the pivot is above the line joining the handle to the centre of effort of the blade, pushing the handle cants the blade automatically, and pulling it cants the blade the other way. You don't have to grip the handle, and use your wrists to regulate the angle. Nor do you have to bear down on the handle; a line – it's got to be a pretty strong line – from it to the deck does that for you. Only push to and fro, and you get the effect of sculling with a fraction of its labour; which means that you can use a very much larger blade than with a common oar. The rope from the deck apparently regulates, within limits, the amount of cant that the

Fig: 16.

19-FOOT YULOH.

made for SAOIRSE 1933.

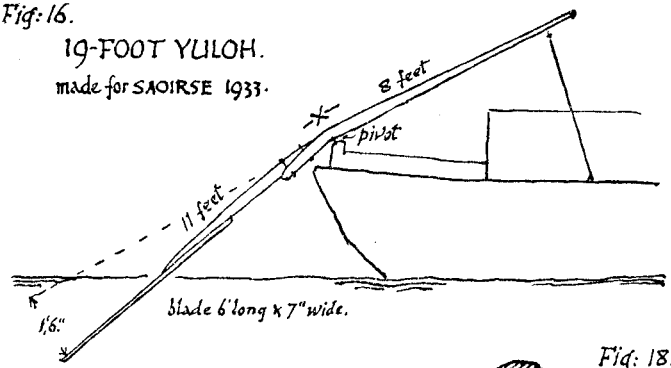


Fig: 17.

WINDLASS.

SAOIRSE. 1922.

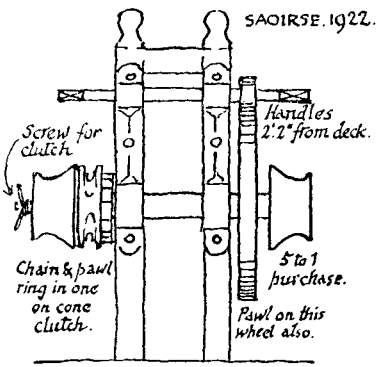
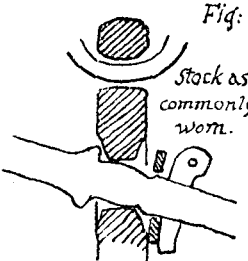


Fig: 18.



LOCKING RING FOR ANCHOR STOCK.

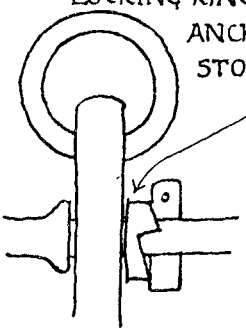
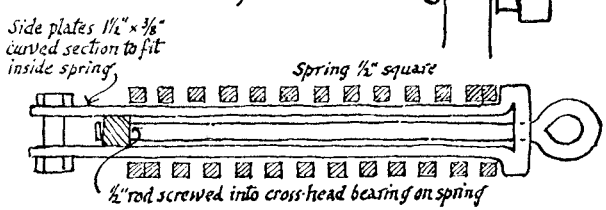


Fig: 19.

12" SPRING BUFFER.

SAOIRSE 1926.



blade takes; but it would not correct a very large error in the angle of bend in the shaft, which would make the cant excessive. Of course the bend could be adjusted by varying the length of the pivot-pin, but it's important to keep the weight as low as possible. In the East the blade is made of the heaviest wood procurable, and the handle of the lightest; I couldn't get a 7-inch blade except out of an imported deal, which no doubt accounts for some of my troubles.

The application of the yuloh to *Saoirse* is rather a special case, because I stand more than five feet above the water when I work it, and I am aiming at efficiency at slow speeds, possibly with a head sea, rather than fast going. So the angle at which the blade enters the water, about forty-five degrees, and the immersion, about four feet, as shown in the measured drawing (but both are likely to be increased in practice, as the shaft will bend considerably when my weight is on it) are not likely to be right for a lighter vessel. I am only concerned with the mechanical principle; the would-be yulohist must work out his own dimensions.

The smaller his boat the more he will appreciate the advantages of an oar over the stern compared with one over the side. We, in *Saoirse*, can walk about our wide decks and work a sixteen-foot sweep on our high bulwarks; not so the ten-tonner. He will find it far easier to run it out in the same direction in which it lies on deck – and making good stowage there, because of its curve. There is seldom a convenient way of rowing from the cockpit, and still less often a possibility of rowing from anywhere else. The rolling of the boat doesn't interfere with the yuloh, and as it has a large blade surface almost continually effective there is relatively little slip, and you see some return for your ef-

forts even in a jumpy sea. Note that as the pressure always comes on the same side of the blade that can be made flat, and the other side convex, which adds to its efficiency.

I should like to see this device given more varied trials, especially as regards the holding-down rope, which I can't fix to my deck, because there is a chart-house in the way. I have to use a rope horse made fast to the rail at either side of the house, and rove through a block on the handle of the yuloh; I am not sure whether the direct pull of a single rope wouldn't reverse the blade more smartly at the beginning of the stroke, and so obviate the tendency I find it has to come out of the water, or to unship the pin out of the socket, when we get speeded up a bit. However that may be, what I wanted was a heavy-duty engine, and I've got it at a cost of about six shillings.

When a yacht goes cruising to unfamiliar or congested ports she can't always lie at a single anchor, or even be sure of a clear berth with two down. Rather than risk hooking the ground chains of a heavy mooring it's better to pick up the buoyed one – if one can. (Only the very unprincipled will hang on to a buoy-rope all night, and they won't do so a second time if they carry it away and the infuriated owner makes them fish up the mooring again.) But one can't get, say, the end of a trawler's chain inboard, nor make fast to it properly unless one has that simple gadget which is universal in the West Country, but doesn't seem to be generally known among yachts hailing from other parts.

It is a large hook, hanging just outside the hawse-pipe on a strong chain, well secured. Heave up the buoy-rope with your windlass as far as you can, which will be till a big knot

on the rope or a big link in the end of the chain threatens to jam in your fair-lead. Put your large hook into the link, slack up the buoy-rope, and there you are moored. Even if it's your own light moorings, and not a trawler's, it's easier to secure them this way than to get the chain inboard – and the fathom of chain you save will pay for the hook.

I was assuming a competent windlass, a thing one can't safely do in the case of small yachts. The makers of these machines put a lot of ingenuity into elaborating their inconveniences and avoiding a simple and effective design. When I built *Saoirse* I wrote to the windlass-makers, told them what I wanted – two warping drums and a fast and loose gipsy wheel outside all – and informed them that I had two good oak bitts, 9 inches by 3 inches, to bolt the thing to. Well, they condemned my bitts, said that they would warp and jam the gear; they wanted to build a steel structure up from the deck, and reeve the chain through the middle of it (how I was expected to work a second anchor was not explained); they suggested a band brake on the whole contraption and no separate brake on the gipsy, which is the only brake ever required. In short, they told me to go and look at the windlasses that are on other yachts; and I looked, and put my foot down, and said I'd have something different. And the result is voted, by every one who uses it, the best windlass he has ever handled. After twelve years, with no more attention than a little oiling, it works better than ever it did; so much so that I've lately acquired an anchor that must weigh 1½ cwt., and think nothing of breaking that out.

Most small yachts are poorly equipped with ground tackle, and most single-handed or short-handed cruisers

are small, because their owners are afraid of heavy anchors. Let them consider whether a bigger and more practical windlass wouldn't soon pay for itself by saving anxious nights and the risk of accidents when getting under way. The machine may have plenty of power, but if it's awkward to get at in a hurry it won't be used; the crew will get in the chain as far as they can by hand, and then sail the anchor out of the ground. And that's all right as long as you know the holding quality of the ground, or have it all to yourself. But if the anchor comes home unexpectedly it may cast you on the wrong tack, it won't improve your steering while it is towing along the bottom, and it may hook other peoples' cables. Not having an engine I like to heave short carefully, with as little sail set as the ship will work under; and then be able to break the anchor out exactly when I want to, and sight it with the least possible delay.

Here I might point out the particular advantage to a small boat, whose anchor, once broken out, can be weighed by hand, of a very accessible gipsy wheel. The chain can easily be lifted off it, and when dropped on to it holds immediately; a very different proposition from one of those enclosed wheels one often sees, or even from a capstan, which is not entirely safe with a light chain.

To single-handers I suggest a device I used on my only single-handed cruise to ensure a clean get-away, working with a fairly light anchor. Put a good long buoy-rope on the crown of it. When hove short take the buoy-rope aft, outside the rigging, on the side you want to be to windward when you get under way. Then weigh the anchor with the buoy-rope, which will cast the ship the right way and keep the anchor out of trouble while you are trimming sail;

when you are clear of possible obstructions you can heave to and get it on the bow.

Having got our anchor, let us examine it. I was worried by mine, for I saw they were likely to become those common objects of the seaside, stockless anchors – I mean the sort which were intended to have stocks, but have lost them. That is inevitable with the ordinary pattern; the stock never fits tight, and every time it moves it makes the hole in the shank larger and itself smaller. Obviously if the shank were thickened in the way of the hole the movement, and consequent wear, would be reduced, and it would be impossible for the bend in the end of the stock to pass through the hole; consequently the stock would have to be straightened and the knob cut off, so that it would unship altogether when you wanted to stow it. And what a blessing to have nothing to foul your bobstay! And how much better it would stow!

But it's a heavy job to thicken the shank, and after all one is not making a perfect fit of the stock, only a rather better one. Now the sides of the shank are likely to remain parallel a great deal longer than the hole through it will remain cylindrical; let us try fitting the more permanent surfaces. Instead of the plain ring that goes between the forelock and the shank have one with two wedge-shaped surfaces worked on the outer side of it, opposite each other. Insert the forelock across the thin ends of the wedges, and knock the ring round – the thick ends forming steps for the hammer to strike – till it jams. It would be easy to touch up the forelock with a file, so as to make a good fit. To unstock, knock out the forelock; you can't hit the ring round the other way.

I perceive that the plaguey bend on the end of the stock is going to do me in here too, for it will turn the stock round and loosen the wedging. Unless it's cut off – and a good riddance!

When *Saoirse* had a main boom I put a big spring buffer on it – not horizontally on the counter, as most yachts do, which only mitigates the rare gybe, not the continuous plucking of the sheet when one is pitching into a head sea. I couldn't find a suitable fitting in any catalogue, so I got the village blacksmith to make it. Several people have asked me for particulars of it, so I append the drawing (Fig. 19).

XVI
Dream-Ships

I HAVE BEEN making a study of dream-ships, from their adumbration in the third column of *The Times*, through that exalted state common to dreams which they reach in Falmouth, till, at Gibraltar, they become a nightmare. A little farther on, if one followed them, one would see a rude awakening to the fact that dreams seldom have much regard to actuality.

I suppose it was Ralph Stock who invented the dream-ship; and he had to sell her in Tonga, though he started with the advantage of having his sister as the nucleus of a crew, unlike his successors, who recruit the lot by advertisement. But I imagine its vogue came from across the Atlantic. The dreamer argues thus: If a syndicate of American college boys can sail a schooner out to the South Sea Islands, why not five or six men selected from the host that is sure to answer my advertisement? He argues from wrong premisses. He forgets that the Islands are a good deal nearer New York or San Francisco. He buys too big a ship, not realizing how close young America likes to pack. He doesn't know how rich Americans are, even when very young, and consequently how much more readily they go on ventures. By the time the English are rich enough to contribute what the organizer of the expedition asks they are too old to be reckless about money,

and too settled in habits to enjoy living in a crowd. Those who would be most desirable would rather go to the Islands in their own ships than risk a year's cruise among strangers – and could afford to do it. Those who answer the advertisement couldn't be responsible for more than the three guineas a week, or whatever it is, they contract to pay. There is no margin of safety; no provision against accidents or desertions.

It won't be long before some of them feel they are not getting value for their guineas, working in a subordinate position – for there can be only one captain – and there's one more dream-ship wrecked. Not always literally; she may struggle on, like *Amaryllis*, with a paid crew and an owner constantly in dread of bankruptcy, almost overwhelmed by responsibility, but at least knowing where he is – which is not in a dream-ship! Even the rich man who can say to the skipper of his hundred-ton schooner, 'Go!' finds sometimes that he goeth not; we have seen one such abandoned, and her owner vowing that our *menage à deux* is the only sort that's seaworthy.

The cynic has said, 'Call not any man happy unless he can handle his boat alone; in these days even a crew by marriage may not be a permanent one.' But any man who buys too small a ship for that reason deserves to lose his wife. It is particularly true in a little yacht that two's company and three's none; but on a long cruise she's not a dream-ship, she's a workhouse. One wants space for comfort, and to accommodate a third in case of need. Perhaps a bigger vessel still, big enough to separate entirely a pair aft from a pair in the forecastle – and then only if you have got the ideal pair there, and if they leave can you manage without them

or replace them? A big ship and a paid crew mean a lot of expense, anyway. The dream was of amateurs.

They do better than a paid crew as long as you're making a fast passage across the ocean; there will be plenty of work in sailing the ship keenly to keep up the interest of as many men as you can pack into her. But racing passages, if persisted in, would take you round the world in about eight months; and what then? You will have seen nothing of it; if you once think about how fast your ship is going she becomes as tyrannous as a motorcar; she won't stop to let you look at things. You get all too soon to your destination, and when you start that leisurely cruise along the coast which was the object of your voyage what are you going to find for your big crew to do? No doubt they have trades, occupations, or hobbies of their own, but how many can be practised without offence at such close quarters – unless they all have a common interest, as in a scientific or surveying expedition?

There's the care and repair of the ship and her gear; plenty of work for all hands in that, as the man who cruises far away from yacht yards knows too well. But an amateur crew doesn't do it very satisfactorily; not that they can't, but they don't do tedious jobs without thinking, as a matter of routine, like paid hands, and it irks them; besides, it's more difficult to divide the work fairly among them. Well, I could always keep a good man interested in a boat like *Saoirse*, but that's because there are so many experiments going on aboard that the dull work gets neglected. We seldom go to sea twice with quite the same rig, but we never go to sea looking quite like a yacht. But that's all to the good, once you have made the wrench and torn yourself away from Solent standards; hurried work is passed, so

long as it is sound, and you get on to a new experiment as keen as mustard.

This is perhaps a counsel of perfection. It demands a yacht so robust that one's amateur carpentry and rigging won't damage her; an owner who gives up all idea of trying to sell her; a boatswain's store and scrap-iron locker filled with years' accumulations of odds and ends; and cruising-grounds well out of range of the Solent critics. Happily one doesn't have to go far to find folk who believe that handsome is as handsome does, and are more interested in the working of your gear than in its appearance.

The advertised dream-ship is always bound for the South Sea Islands. These must have a peculiar glamour, for they have no material advantages over certain islands very much nearer home, except their remoteness. And that cuts both ways; you may escape home worries, but you are devilishly lost if things go wrong on board. Better to be able to cut your losses and get home in a month; after all you needn't disclose your address to any one except your bank. People used to lie hidden for years in the west of Ireland.

But I'm not recommending that as a destination. Life is far easier if you follow the sun much farther south. Not as a mere sun-worshipper, but yachts do best in a warm dry climate. They may be smaller; you spend more of your time on deck, and when in harbour an awning makes you into a two-storied residence – if your deck is reasonably safe and comfortable. If you can enjoy the gorgeous light and colour of the Tropics from your top story you don't want so much comfort and decoration in the lower one. You save in clothes and fuel if you can depend on drying things in the sun and air. So also your sails and ropes last longer, and

you can put on paint and varnish with some chance of their staying on, and they do really protect your woodwork. And you need less of them than if they had to cover a hull commodious enough to live in through the inclement weather of the Temperate Zone.

How much smaller can we safely make the boat for a tropical cruise? Not so very much, perhaps. We have to get there; a long voyage, and we don't want her to be too slow. We may carry less clothes and cushions, but they're more liable to mildew if we pack them too tight. If mosquitoes chase us off the deck we don't want to be suffocated below it. The right size of boat is one that you can comfortably handle with the crew that you are perfectly sure of, and can manage at a pinch with one less, in case of accidents. One man can handle a twenty-tonner, if he takes his time over it, especially if she has a good engine, she is just right for two to live in; and there is room for a third, if he is wanted on long passages. It is foolish to try to pack them into a ten-tonner. A third man doesn't pull his weight there, so passages will be slow as well as uncomfortable – unless you drive the ship as her crew of two did *Svaap*, is which case they will be quick and very uncomfortable – and the cost of living on the coast is likely to be higher rather than lower than in the larger boat. The small boat may be a financial necessity, but she's not an economy. She can't afford a really convenient lay-out below decks, stores and water are more of a problem, and varied and inexpensive meals, which involve rather elaborate cooking, are apt to give way to crude bully beef and biscuit. After a spell of squalid picnicing at sea there is a grave temptation to waste one's substance in riotous living ashore.

All sorts of yachts do make long cruises, but those that make them easiest are of medium size, of undistinguished type, and crewed by two or three friends – or, better, by a man and his wife, because she will insist on the very necessary practice of the domestic virtues. They won't be the first or second you pick out of an agent's list, boats whose cabins are subdivided (that they may be advertised 'to sleep four ex saloon') till the two who are to be the permanent crew have to sleep in rabbit hutches, and sit with their knees almost touching in a saloon no bigger than a railway compartment. And looking like one too, with the settees narrowed by high upholstered backs ('You pull those down', says the agent, 'and you can sleep two more.' What? Beds in my drawing-room? God forbid!) and net-racks over them for your hand-luggage. Miserable little skylights that do nothing to relieve the gloom of the dark polished wood fittings, which are so ubiquitous that they leave no room for your own pictures and trophies and all the things you acquire on a foreign voyage – and you couldn't fix them up anyway, because you're afraid of driving nails into the panelling. All suggesting a most temporary means of transport; so temporary that it's probably all for sale at the end of each season.

The man who is continually altering his boat to suit his own tastes will in time make her absolutely unsaleable. But by then he wouldn't part with her at any price, for she is his dream come true.

XVII
On the Cheap

I READ A STATEMENT that one man can keep a twenty-ton yacht seaworthy and in commission on thirty pounds a year and his own time – the writer was unkind enough to add that he meant the man's whole time, twelve hours a day of it. Also he was misleading; a man wouldn't need a twenty-tonner to live in, unless he had a wife or some other companion, and two pair of hands do very much more than halve the work. Let us leave the thirty pounds as representing the cash outlay for materials used and such services as docking, and consider whether two people couldn't have enough time left to earn some of it by their trades or professions.

All the evidence seems to point to twenty tons as the right size for the yacht to be lived in; but she must be something more than a mere house-boat. Living is sometimes cheaper in one country than another; you want to be able to follow the exchange. It is nearly always cheaper in a warm climate than in a cold one; you will save by taking your yacht out foreign. And some speculator may build a Grand Hotel opposite your pet anchorage, and sweep you out of it with a flood of tourists. Perfect anchorages, with facilities for doing your marketing, are few and far between; but you've got to have one under your lee, or life becomes an intolerable struggle for the Very Poor,

and they may as well sell their yacht and live in a cheap pension.

But they can live more cheaply afloat, if they have the right kind of yacht in the right kind of place. I suppose the gentleman I have quoted referred to a twenty-tonner because she is just big enough for rigging and sailmaking work to be done aboard, big enough for all her gear, as well as your personal possessions, to be stowed so that they can be got at for examination and repair. This is a very different kind of yachting from the usual home variety, where for half the year your ship is gutted, and can be thoroughly cleaned and dried inside, with everything safely stored in a shed in the yacht yard. It requires not only a boat of a good size, with good access to all parts of her, but gear which is not intolerably heavy or bulky. What fun it is to get a cutter's spare mainsail out of her sail-locker, if she happens to get a sea on top of it, and you have to spread it out to dry!

Sails last a long time if properly cared for, but if not they may make a formidable item in one's budget. Small sails, which may be of lighter, and therefore cheaper, canvas, are likely to get more care than unwieldily big ones. The Ibiza trading-schooners unbend all their sails when they're in port for more than a day or two – and how beautifully white and yacht-like they look in consequence! They all use cotton cloth, which needs a lot of care to keep it free from mildew. We are better advised to use flax, which doesn't look so well, and seldom sets so well, but doesn't perish if it isn't treated so well. Some kinds of rope are more liable than others to rot; I once bought a piece of white hemp, which was delightful stuff to handle, and as much of it as I used was quite lasting, but the rest of the coil must

have got damp where it was stowed in the sail-locker, for I found it entirely perished after a couple of months. And small steel wire rusts very quickly unless it is parcelled and served over.

These are very serious matters if one is making one's home in the tropics, where one hardly realizes the humidity of the air, and if, as is always good policy, one has brought several coils of rope out from home. I can't tell how much it might cost in foreign parts. Of course it can cost a good deal in England, too, and will if you take the first coil the yacht-chandler offers you. Tell him you can get excellent manilla for 6d. a pound – it may be less now; it's three years since I bought any – at least that will show him that you have some sense of values.

And before you cut it, see if you can't economize on the length you need. A friend once told me how many miles of rope he had on his pilot cutter; I forget the precise number, but it didn't seem so staggering when I noticed that he had purchases on everything, and most of them were the whole length of the lower mast. He certainly could have shortened those purchases; he might perhaps have traded half a dozen little yacht blocks for a couple of big common ones, and found the work no heavier. But I don't advise the Very Poor to embark on a pilot cutter; a divided sail-plan can be worked with great economy, without any purchases at all, if the blocks are large and well arranged, and there are patent sheaves in all of them.

It is obvious that only a small part of most halyards gets any heavy weight on it. When this pulls down or becomes worn the usual practice is to turn the rope end for end; but by now the other end is likely to be in no better condition.

It has been living in a coil, we hope stopped up in the rigging, but sometimes washing about in the scuppers; you can see that the twist has become disorganized by the way it has swelled. The strongest part of the rope is now the middle, i.e. the part that comes between the masthead and the rail when the sail is set. Use this for the heavy weight, and splice on below it a bit of light or condemned stuff. The true economist would start with a composite rope, if he were fitting out sufficiently far away from Cowes.

One of the curses of yacht rigging is yacht marline, which is used for serving, where it breeds nothing but Irish pendants. A good soft spun-yarn covers the ground much quicker, and stays there. If one can get just the right stuff, which is not easy, it pays to serve over the whole of one's shrouds, should the opportunity occur. Anyway, carry lots of it, for seizings and the like. The virtue of a seizing is that it grips the ropes so tight that they can't move over each other; it won't do this unless it is soft enough to pack closely into all the space. When the tar washes out of it, paint or varnish it, and it will last for ever.

Varnish generally is a vanity, not only because of its cost, but because its frequent renewal on a boat that's going to be kept in commission the year round is too heavy a labour. There isn't a more disheartening job than scraping spars, and you can't scamp it; that's where your twelve-hour day comes in. Nobody can tell from the deck that my yards are never scraped; they're painted, and if I want to look smart a rub of varnish over that does the trick without any preparation. And my masts, which one sees near enough to admire the grain, are greased; they may not be quite so shiny, but they keep their colour longer.

There are places where one must use paint, and white paint, in climates where the sun is strong. Skylights, hatches, and deck-houses, even of teak, simply open up if they're varnished, besides getting so hot that you can't touch them. And it doesn't do to paint topsides any but the palest colour. When *Saoirse* came to Ibiza she was a medium grey, her seams had been filled with hard stopping at Gibraltar, and she looked very smooth and smart. But very soon those seams were leaking badly; and that's not only a nuisance, like a leak below the waterline, but a positive danger, for a wet seam where it ought to be dry rots the edges of the plank. I had to have her recaulked, and, under the direction of the caulker, and no doubt with the help of white paint, made a proper job, if not such an elegant one, of those seams. We used red lead putty, pressing it in hollow with the little finger, and it hasn't shown any signs of cracking in a year. I don't know whether I have to thank the concavity of the filling or the nature of the putty for this.

The care of a yacht's bottom, in waters where there isn't much rise of tide and she has to be docked periodically, is an anxious and costly business, and antifouling composition is a heavy expense. Of this it is certainly true that the best is in the long run the cheapest. Unfortunately the very best protection of all, sheet copper, is impracticable in the case of the many yachts which are fastened with iron nails; if one has the luck to own a metal-fastened craft one should spend one's last penny on sheathing her.

Failing that, there are compositions that will keep a wooden vessel reasonably clean and quite safe from worm for a whole year, if they make a perfectly continuous cov-

ering over her. But the infant ship-worm can get through a microscopic hole, if he is not killed by the poisons in the surrounding paint. However strong these are, one should make the surface of the hull absolutely smooth, so as to give the paint every chance of covering it evenly. And then there's a chance of accidents. A seam payed with pitch, especially if the work has been done between tides, may have a blow-hole; a split plank may open a little; you may strike some sharp object, or the fluke of your own anchor may scratch you; one seldom sees a boat that has a perfectly sound seam between the garboards and the keel. No, I shouldn't like to go a year without docking in waters where the worm was prevalent. Even at home I once found a mussel as big as my thumb under my garboard strake. He can't get in there now; I have a strip of zinc over the whole length of that seam. There are various ways of stopping other holes. I might mention that when they recaulk their schooners, some of which are more than a hundred years old, in Ibiza, they paint over the oakum with red lead, and then pay the seam with Portland cement, and it seems to stick to the wood perfectly.

We always seem to spend too much time on domestic work, but it's an important item when one's yacht is one's permanent home. You can't let things degenerate till the end of the season, and it's hard to do cleaning and repairs if the whole of your personal possessions are on top of you. You can't have linoleum on your cabin floor if you aren't going to take it up for a year, or the boards will rot under it. We thought scrubbed deal boards looked very nice – and so they did, when we found time to scrub them. But now they've been sandpapered and rubbed with linseed oil till

they've got a sort of semipolish and quite a nice colour, and they're cleaned with a damp mop only.

The galley of the average small yacht leaves a good deal to be desired in the way of labour-saving. It was generally designed to be used by a crew who didn't mind putting things down on the floor or on lockers, and subsequently scrubbing the said floor or lockers; when it's not in the forecastle it's generally too cramped to put anything down. We have alongside the stove a large shelf (actually it's the top of the coal bunker) covered with copper, on which we put down saucepans, fill primuses, and do other dirty jobs, leaving the table, or a big enamelled tray, clean for culinary operations proper. Where the forecastle is no longer the living room of the crew, something similar might be rigged.

We are rather proud of our coal bunker, which holds a quarter of a ton and is filled through an opening in the deck, like a real bunker; but in fact it has been empty, and our stove cold, for a long time, while we have found a use for newspapers. Twisted up, and packed tight, they form a tidier substitute for hay in the hay-box we do our cooking in. We start our dinner while we're having breakfast, shove the pot into a butter-box packed with Daily Mails, and find even Balearic beef palatable when we take it out in the evening. Which is a thing you couldn't say about it after the more laborious process of roasting it!

Many yacht owners waste a lot of time getting fresh water. It is worth while, even if it means getting another tank, to carry half a ton. We make ours last till we can get alongside a quay, and fill up with a hose. I am not considering an engine, for I see that infinite money and time can be

frittered away on that, so I won't say anything about the fuel capacity of the average yacht. Paraffin we only use for cooking (and if petrol happens to be cheaper the primus will burn that more cleanly if not quite so hotly); the trimming of oil lamps is a messy and troublesome job compared with charging acetylene generators, and I think carbide is the cheapest known source of light.

Yes, I suppose that a ship could be kept up on thirty pounds a year well enough to sail to countries where each of her two occupants could live on the same amount; excluding insurance, which is ruinous, and putting something by for emergencies, two pounds a week in all. But whether they'll have to put in eighty-four hours' work, or have a reasonable amount of leisure, depends on whether they are content with a mobile dwelling or want to display a conventional yacht.

XVIII
Square Sails

Most people agree on the usefulness of square sails of some sort for a cruise of any length, but no two agree as to what sort they should be and how they should be used. The logs I have read are mostly so reticent about them that I suspect if they're ever used at all they're generally used wrongly; anyway, such views as are expressed about them are so diverse that they can't all be right. I have experimented enough with square sails to know how many mistakes one can make.

The commonest is to make the thing too small. A square sail is not a necessity in a strong wind. If the sea is moderate you can run under mainsail, with the wind a bit out on the quarter – you never bring it right aft unless you have to – but if the sea is so bad that you simply have to run dead a fore-staysail set 'across the deck' is as good as a square sail that's very little bigger. The time you want something that will stay where you put it and save gybes is when the wind is light and you're crashing about and breaking boom-guys, if not booms. Then a good big square sail is the passage-maker.

It's no good increasing the height alone. You can't control a strip of canvas the length of your mast and only the width of your deck by the sheets; you can't lead the braces of a very short yard aft, or they'd foul the other sails, and

led to the bowsprit end they're a nuisance, and not really effective. The sail sways about, spilling the wind first out of one side and then out of the other, and makes the ship roll intolerably.

Some people have an adequate yard, but taper the sail away to a narrow foot, with the idea, I suppose, that if they can keep the leaches taut enough it will stop this swaying. But running sails aren't set that way; make the foot twice the beam of the ship, and let the bunt blow well out, and the sail will pull much more steadily.

These small narrow sails are evidently not meant to be set when a gaff-mainsail is set on the same mast; they are a very inadequate substitute for it. But a decently wide one may be a useful supplement to it; like a spinnaker, but with the difference that if the wind or sea increases you take in the mainsail, and are under a fool-proof rig. When *Saoirse* was a ketch she had the two sails set at the same time for most of her voyage round the world. It wasn't a perfect arrangement; the sails interfered with each other a lot; but we made better passages than if they had been mutually exclusive. Of course that was on the supposition that however hard it blew we could take in the square sail safely and easily. If the inability to do so is considered a reason for carrying an inadequate sail, why carry it rather than a spinnaker? Where we went wrong was that our square sail was not big enough, at least the yard wasn't long enough, and the brace cut the leach-rope of the mainsail and caused that to split.

Everybody who has used a square sail wants to brace the yard up a little, because the ship goes faster with the wind on the quarter than right aft; and then a little more,

because as it comes more abeam both the square sail and the mainsail get the weight of it, and she goes a great deal faster still. And when they can't do that they condemn the square sail as a hindrance to progress, and use it no more. At a very small expense they could condemn what are the least desirable features of the ordinary yacht, brace up their yards, and if the wind blew hard enough to make them take in anything, proceed to make records without the far more pressing mainsail. One evening, when *Saoirse* was a schooner, we came out of the Shannon with a strong east wind, under square sail and close-reefed mainsail, a thing no bigger than the mizzen of a ketch. Soon it backed northerly, blowing up for a gale, and showing that a storm was coming that would shift the wind more westerly, and make the Kerry coast an ugly lee shore on a dark thick night. We thought it was already too thick to look for the shelter of Tralee Bay; it seemed a better chance, as we had a good offing, to try and get round the Blaskets before the shift of wind came. We sailed the ship to make westing, not on any specified course, bringing the wind as nearly abeam as we dared; we wanted every bit of that ten knots we sometimes boast about. This race was one in which the penalties for losing were more important than the prize for winning. I have a horror of an on-shore gale – it would have been worse had I known that the *Islander* was lost off Fowey that same night – and my companion, a schooner sailor who knew those waters well, was not encouraging about running for shelter, as there was no certainty that the change of wind would clear the weather.

The sea was not too bad to let the ship feel the weight of the gale, and she never travelled faster. My mate, who

had seen her driven hard under fore-and-afters, said that with the old rig we could never have driven her as we did that night, with the square foresail bellying high in the air and lifting her, light and dry, over the water. We beat that storm handsomely; we were fifteen miles beyond the Tearacht when the barometer jumped up and the wind whipped round to the north-west, blowing great guns. But we didn't mind now; we squared away before it at our ease, and rolled down towards the Fastnet. How we did roll in that fiendish cross sea! We crippled the mainsail over it – and a word about that may not be amiss. Don't try to quiet it by getting the sheet right in; that's the finest way of breaking gaffs or splitting sails, more surely destructive than a gybe with a bit of sheet out. Get the boom lashed down on the gallows, and you can set a bit of sail over it, or not, as you please.

There are several points worth notice in the foregoing story. First we had the wind in the beginning right aft, then more or less abeam, and lastly aft again; this time in circumstances where a gaff mainsail was a serious embarrassment. Without setting or taking in any sail, a consideration with an effective crew of two, we had it just where we wanted it. Then we didn't have to brace the yard up much; you can trim a square sail finer to the wind than a gaff sail, because you can control the whole of it directly, not only the foot. We had the tack well down, and the sheet right out, so that quite a lot of the sail really had a lifting effect. There is another point. When we took in our scrap of a mainsail, which appeared to be doing no good at all, our speed fell off appreciably. I think the experience of other men is also that under square canvas alone they go mighty slow. Another

sail, set on another mast, even if it is only a mizzen, helps a lot; perhaps it breaks up the air currents so that they chase the dead wind out of the foresail. That's a question for the aerodynamical experts; anyway, it would weigh a lot with me in favour of a two-sticker for long passages.

But about the square sail. Everybody would like his to be able to do what mine did that night, but how much alteration to his rig would be needed to enable it? Some people try to get round the problem by hoisting the yard on the forestay – ruinous to both stay and sail, and I don't know how they take it in with a fresh breeze blowing. Some replace the yard with two booms, one on either side of the mast; by canting the weather one forward they get a little of the effect of bracing the yard, though at the expense of spoiling the set of the sail; so little that it doesn't seem worth the constant attention to the two lifts and four braces which keep the booms in place. The sensible thing is surely to parrel your yard to the mast, where it ought to be, and where it will look after itself, and alter your rigging so that it can be braced up to the desired degree. That only means shifting what the yachtsman, for some inscrutable reason, calls topmast backstays, but what are really shrouds, farther aft till they become real backstays; and if there's a cap shroud passing through the spreaders, shifting that too, so as to make runners unnecessary. A mast ought to be more safely supported by three permanent and trustworthy stays spaced equally round it, than by five, two of which are at the mercy of a clumsy hand, and, moreover, are generally blamed when a boom is broken. If you have spreaders, make them swinging ones, and there's no danger of their chafing the mainsail. I carried them so

for years, and never bothered to decorate their ends with bunches of rope-yarns.

In a ketch there's no point in bracing up the yard very much; with the wind at all before the beam the square sail and mainsail interfere with each other. But, with a little attention to detail, a schooner could be sailed as a brigantine on a free reach; a substantial square foresail of the right shape begins to be effective at five points off the wind, and at six is better than any fore-and-after, and doesn't backwind the mainsail as much as a gaff foresail or main staysail. I think this would be accepted as the best rig for open sea work, where there isn't much tacking, if the supposed complexity of the gear were not so alarming.

As a matter of fact a proper working rig may look complicated, but it's easy to handle, because everything stays in its own place; the rigs that are condemned as being too much trouble are those in which nearly as much gear has to be sorted out, and put away again, before and after very temporary use. If you want anything more than the most primitive kind of square sail it pays to go all out for the most perfect.

The simplest sort, bent to a yard that hoists on a jackstay, without any lifts or braces, is necessarily small, and its periods of use must be short, for the yard cannot be allowed to bang against the mast and rigging indefinitely. Mediterranean schooners, which use a sail like this, give it lifts and braces both fore and aft; too much gear for the value of the sail. One would like to increase its size, if one could be sure of taking it in at need. A method I have employed for my square topsail suggests how that might be done, with very little more gear; to wit, two clew-lines, rove

through blocks on the yard-arms and leading straight from there to the deck. Bring the lee sheet inside the rigging, and clew down to it as you lower on the halyards, sticking out the weather sheet if necessary to allow the yard to dip under the rigging. Then haul up the weather clew, cast off the jackstay, and launch the yard aft along the deck; the ship being kept before the wind, so that as the yard-arm comes aft the sail is spilled.

This jackstay business doesn't seem to me sound. One wants a proper parrel to hold the yard firmly to the mast when the ship's rolling. Of the various patterns I have tried that figured (Fig. 20), designed and used for our square topsail, seems the best. There's no jackstay to guide the yard down, but I don't think that matters. Get one end inside the rigging, and the forestay will hold the other; the helmsman does the rest. I'm sure one could handle a much longer yard this way than if it ran down athwart the forecastle head – threatening to be rolled into the water – and one had to pick it up by hand to stow it fore and aft.

But, however you do it, man-handling a yard with a sail bent to, but not furled on it, limits too severely the size a small crew can tackle. One man, indeed, picked up the square sail of his ten-tonner on to the yard and furled it aloft. No particulars are available, but it seems the sail was only used on one passage, and for the whole of that – I don't wonder! I thought I could make a temporary furl with brails while the yard was being lowered; and so I could, but it came down in a hideous mess, and took all hands to sort it out and send it up again. We decided that the proper place for a yard was permanently aloft, out of the way – imagine a 29-foot yard on a deck 40 feet long!

– and no obstruction to close-hauled work, if it were kept pointed to the wind.

How is the sail to be set on this fixed yard? Obviously, if it's only going to be used with a fair wind, by three halyards, as all our coasting schooners do it; extremely simple, and it gives you a choice of square sails, according to the weather. The smaller one must of course be the same width on the head as the other, because of the halyards, so the yard should be capable of lowering, as it can if you don't want to brace it up much. If lowered still more, you get the equivalent of reefing the sail.

I don't like to leave the question of square sails at that so far satisfactory point, because some of my readers may discover, as I have done, that a staysail schooner is a better proposition than a ketch, if one can get enough sail over her without embarrassing one's self with a preposterous mainsail. The problem is that of the fore-topsail, always a difficult one in a schooner; and, if we are going to keep a fore yard aloft, that suggests a raffee; and, if that is going to be used on all points of sailing, the question arises, on how many of them are we going to use a square foresail as well?

I don't feel at all sure. A foresail is a nuisance when one wants to tack, and a devilish nuisance when it gets taken aback; but if it's bent so that it will stand on a wind it's difficult to dispose of when it's not in use – I don't fancy furling it on the yard, even in a twenty-tonner. My present one hauls out to the yard-arms on a trackway, and brails in to its centre, and has proved eminently storm-proof. But in light unsettled winds we unbend it, and work as a topsail schooner; the bundle of heavy canvas up and down the mast makes a sad hindrance to fine windward work. Un-

Fig: 20.

PARREL AND SLING

for squaresail yard lowering past gaff.

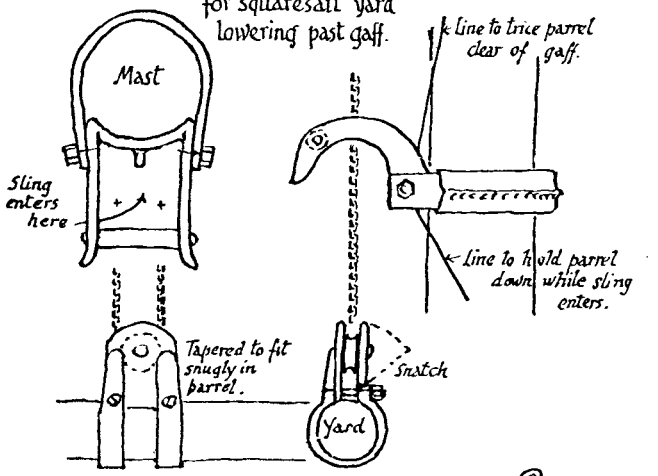
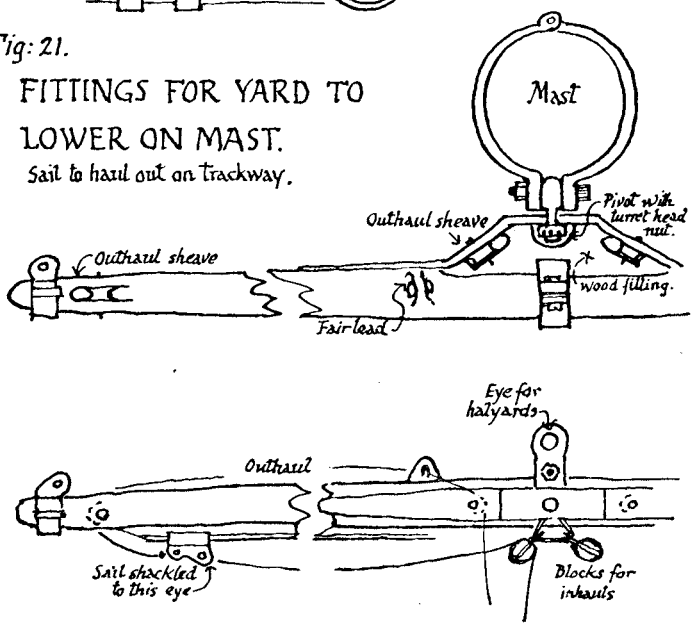


Fig: 21.

FITTINGS FOR YARD TO LOWER ON MAST.

Sail to haul out on trackway.



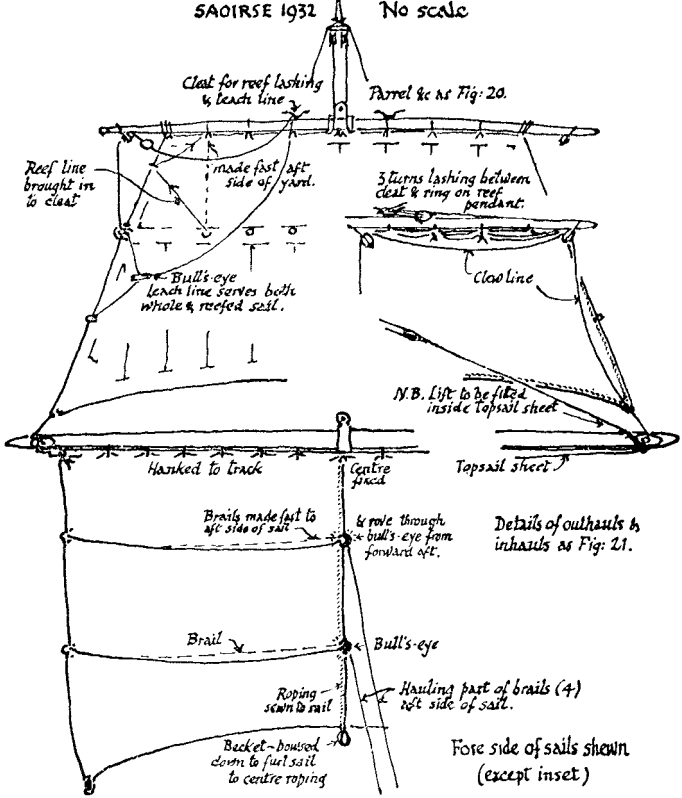
bending is easy; there's a gap in the middle of the trackway. But it's not so simple to set it again; I should feel inclined to use a light three-halyard sail till there was a prospect of strong steady winds; meanwhile, I do as well close-hauled under staysails and a raffee.

I can't praise the raffee too highly. It is so easy to hoist if you haven't got a foresail set as well; it comes down with certainty in any conditions; it pulls nobly four points off the wind if the sea is smooth enough to make such courses profitable, and it goes on pulling when you've rolled all the wind out of the fore-and-afters. And the gear we use – halyards, sheets, and two clew-lines – isn't extravagant. We found ours worked best with a head-stick 4½ feet long – not a yard, for it needn't be parrelled to the topmast – but that's no disadvantage. The clew-lines reeve through blocks on the ends of the stick, and thence go straight to the deck. A hand is kept on them while hoisting, so that the sail goes up in a bunch till it is clear of the jib; then it is sheeted home, and mastheaded by a purchase on the halyards. (If the headstick fouls the rigging, it can be freed by a pull on the clewline.) The reverse process takes it in, the fall of both clew-lines being brought round to leeward first. (Why not have an endless line round the luff of the jib to facilitate this – also to dispense with one of the jib-topsail sheets, which spoils the set of that sail so much in light winds?) The perfect cruising sail; but we seldom use it. We have no yachty appearance elsewhere, so we try to keep up the illusion with a square topsail on a twenty-two-foot yard. That was not intended to be a cruising sail, but I've put five years' work into trying to make it so. I will skip the intermediate stages of its evolution, which have

Fig: 22.

SQUARE FORESAIL AND TOPSAIL.

SAOIRSE 1932 No scale



Note: Topsail can be sent down fore side of lower yard with sheets attached, as described for raffee.

no practical value, and describe what looks to me like its final state.

We concluded that normally the sail should be reefed and furled aloft, where it is easier to make a neat and dry job of it, but that in emergencies one man should be able to take it in from the deck. When standing on the cross-trees one can tie up five of the nine reef points originally in the sail; two of the others are replaced by lines which are brought within reach; the outer two aren't used. The reef-tackles are made fast to the yard. The only lines going down to the deck are the clew-lines, which are set up taut to steady the yard, as it has no lifts. To furl the sail, it is clewed up to the yard-arms, the clew-lines being stopped to the yard in case we want to lower it in a hurry, leach-lines also belayed on the yard, and long yard-arm gaskets wound round it. There is plenty of end left over on the leach-lines, &c, to make bunt gaskets. And a very good stow we make of it.

We use the parrel described as suitable for a lower yard (Fig. 20). When not in use it rests on the cap; and, being there, may just as well embrace a similar fitting on the head-stick of the raffee, when we are in our winter rig; it makes that sail rather easier to set and to take in. To get the big topsail down we pass the lee brace round fore side of the lower yard, to cockbill the yard and guide it inside the rigging. The clews are a bit inclined to blow out at first, unless there's another hand available to keep the lines taut, but very soon these hang up on the jibstay and lower yard, and one can take the weight on them and cast off the halyards. If one thought it would often be necessary to get the yard down with the sail loose on it, that is more easily done if the clew-lines come straight from the yard-arms to the

deck, fore side of everything, as for the raffee, and are used as down-hauls instead of the braces.

Square topsails are only of academic interest, but raffees are more often used, and, apparently, often give trouble to their users. I think they must try to set them like spinnakers, hoisting the head before they sheet them. Of course you want a good purchase on the topsail halyards. The only purchase we have in *Saoirse* is for this purpose; and it has made what I thought, when it was inadequately rigged, rather a futile piece of canvas into a working sail as effective as any other in the ship.

XIX
Domestic Trials

A YOUNG MAN of my acquaintance, applying to be taken for a foreign voyage in a yacht that carried no paid hands, was asked what his cruising experience amounted to. He confessed that it was very limited, 'because things got so messed up that we had to make out some place every night where we could dine ashore'. I wonder how many men, less candid about their disqualifications, would have signed on – and wrecked the cruise.

For a real cruise – one on which you can't land into a hotel whenever you feel hungry – is far more likely to be wrecked by incompetence below than on deck; and that is just where incompetence is the more likely to be displayed by youth of the male sex. It is the almost inevitable result of the democratization of yachting. The older generation was brought up in a continual state of terror lest the skipper should notice their shortcomings, and relegate them to the status of mere passengers – the old-fashioned yacht hand was a wonderful fellow, but very properly a tyrant, and when he said a thing was 'not yachting' one knew that he meant it was making unnecessary work for the crew, and took the hint. Very few amateurs can work out such a comprehensive code of rules for the comfortable and economical working of the ship, nor can they enforce them on a crew who are expected to be something more than passengers.

The new crews, on the other hand, have mostly learned their sailing in boats so small that the only problems they present are those of seamanship; a bad introduction to cruising, because they foster the idea that it is a kind of picnic; and the essence of a picnic is a culinary catastrophe. I am sorry if I have to attack the stock joke of logs, but I'm not much amused when I read it, and not at all when it's played in my own ship.

I feel sorry for that young man who missed his foreign voyage, but one simply couldn't afford to ship him. I feel rather churlish when I see my spare cabin standing empty, but I disguise it as a store-room when volunteers come along who would, I am certain, involve our small permanent crew in extra work. The chances are that a stranger will mean extra work. People who have been cruising together for a long time will have reduced their tastes, their methods of cooking, of laying the table, of washing up, to the most economical formula; they will instinctively put things down where they won't capsize. A stranger would have to be watched all the time, till the business of living became as instinctive with him, or, with the best intentions in the world, he will mess up, break, and spill things – and, my sad experience teaches me, make no offer to scrub the floor afterwards.

It would seem simple to those who have not tried the dangerous experiment of shipping a man they met at dinner in their yacht club, or was recommended by one of those secretaries who keep a register of members wishing to go as crew, to post up in a conspicuous place a form of Rules of the Ship, but practically it can't be done. Civilized man, as you meet him ashore, is singularly uniform, but

when he gets to sea he discards portions of his civilization in ways so unexpected and disconcerting that one can't legislate against them. He would probably feel insulted if your orders included, 'Do not put your teaspoon into the sugar-basin', or,' Do not stuff cigarette-ends under the sofa cushions'; but he is liable to do worse things when he is away from the eye of the Club servants, or, I suppose, of his own family. There is a class of person who cannot be made to understand that one's ship is one's house, and should be treated just like a house on shore; one can do nothing with them except warn one's friends against them.

But the majority of would-be crews irritate the owner by sheer thoughtlessness, by failure to realize that everything they do should be done in such a way as to inspire confidence in the man who is responsible for the safety of the ship, and incidentally of their own lives. I was very much annoyed by a seemingly absurd incident. Three of my four tea-cups hang in the pantry facing forward; my crew always hung the fourth up facing aft. It was every bit as safe that way, but I couldn't get away from the idea that the man had an incurable urge to do things wrong, that some dark night a rope would be belayed on the wrong pin, and there'd be a nasty smash. Actually an extra hand is not an economy till he not only does things of his own accord, without bothering the owner for orders, but does them with so much certainty that the owner doesn't have to go round afterwards to inspect the work. Most of the jobs in a small yacht really are one-man jobs, and it's easier for the captain to do them himself than to tell another man to; but that's bound to lead to strained relations between them.

I am getting a little away from the domestic troubles which were my theme; but any owner is likely to judge a new hand by his behaviour in all circumstances, and there'll generally be a meal or two aboard, to say nothing of the business of stowing gear, before the anchor's weighed and sail made. So I say to all aspirants for a place in an extended cruise that however good seamen they may be their abilities will be suspect unless they display the same neatness, orderliness and care below that they do on deck. Small yachts too often shine outwardly with the white paint applied by the yard that refitted them, but are a mass of corruption within. The large yacht is generally saved from disaster by an efficient steward. But the crew of the medium-sized yacht, if she is to make cruises worthy of the name, must display the whole catalogue of virtues, beginning with tidiness.

Any one who has tried the game will realize that the owner of a cruiser that carries no paid hands has a pretty strenuous time, unless he can get a good deal of help in the mere routine of keeping the ship clean and seaworthy; he isn't going to turn down volunteers if he thinks he can make use of them. There are always more volunteers than berths available for them, naturally; it's obvious that the best way to learn the business of a seaman is to ship in a sea-going yacht that is already a going concern rather than in a pious hope; under a man who takes the ultimate responsibility rather than in a position of responsibility for which one isn't fully qualified. The volunteer can make his job a safe one if he's endowed with intelligent observation, and is a bit of a psychologist; but if he's new to the sea he may profit from a few sugges-

tions of difference between the requirements of a yacht and life ashore.

A yacht is a very small kind of dwelling, so personal belongings must be of such a kind that they will stow snugly. The standard cabin trunk will not stow in a yacht's cabin, which is all sorts of odd shapes. If your berth is visible to the other occupants of the ship see that your *batterie de toilette* is invisible. One of George Birmingham's characters (I think it was) ran away from his wife because he couldn't bear the sight of her cleaning her teeth every morning.

A yacht is often in motion, so your belongings must be stowed securely. If, say, your banjo falls on to the saloon sofa, and the owner sits down heavily on it, he won't apologize; he'll curse you more emphatically than if he'd smashed his own instrument that you had borrowed. It's human nature to hate those one has injured more than those who have injured one.

Everything that goes into a yacht has to be picked out again by hand. You can't wash out anything except, perhaps, fine mud. The owner may suggest pouring buckets of water into her till there's a kind of thin soup in the bilges, and then pumping it out; but it's got to be a clear soup. If it's thickened with chips and match-sticks the pump will choke, and that was put aboard to keep the ship afloat if she leaked. The worst kind of dirt aboard a ship is sand; not only does it cut the pump, but I've seen a case where sand washing about in the bilge has worn away a garboard strake to the thickness of a card.

The owner has been in the ship longer than you, so presumably he has worked out the safest way of stowing messtraps, &c. Put back everything you use exactly as you found

it; or if you can't leave it conspicuously in the wrong place. I once saw a valuable barograph put neatly on its shelf, but unfortunately the man who put it there couldn't lay his hands on the screws, and left it loose. If he'd put it down on the cabin table it would still have been a perfectly good barograph.

Yachts' lockers are generally difficult to clean, so take great care scraps of food don't get adrift in them and breed corruption. Also it is often hard to see what there is in them; don't let the owner find them full of half-used tins in varying stages of decomposition.

However rich the owner may be he doesn't want to load a small vessel with superfluous stores; he will calculate them with a safe margin for the cruise in hand. Don't reduce the margin of safety. If he has ever made long passages he will be down on any waste like a ton of bricks. It's not meanness; he knows that the most unlikely accidents can happen.

When I was writing that last paragraph we were lying alongside a coasting schooner. Her captain has just told me that he was recently becalmed in a fog and didn't see a sail for a whole week. And that was in the middle of the English Channel!

All this seems very elementary schooling; the sort of thing that everybody ought to know by the light of nature, and does know, but doesn't always act on – or why do so many cruises have an abrupt and stormy termination? Most people say they wouldn't make a really long voyage without paid hands. But I'm still hoping to find an occupant for my spare cabin, and my mate wants to present him with the Book of the Words. She is, I fear, more particular than I about keeping the ship clean, and doesn't want to clear up after two slovenly males; so I let it go to the printer.

XX
An Ideal

Very few people succeed in getting their ideal cruiser. It needs much time and money, a very precise knowledge of what you want, and a ruthless sacrifice of what is not essential for your purpose. All small craft are a compromise; they can't be equally good on all points of sailing. If we try to make them so it's quite likely they will have no good points at all.

I would almost say that the ideal cruiser can't be built. A drawing-board has a singularly sterilizing effect on the imagination. When in doubt one plays for safety, and falls back on precedents; and the result is a design very much like every other – and they were made to suit the market, not the individual owner. The better plan would be to take an empty hull and worry away at it empirically. Things often look better in the round than they do on paper.

I suppose it's just because the yachts that do get built are on the whole uninteresting that the yachting press from time to time asks us, who have no earthly chance of building, to let our imaginations loose without a price limit. That's not so paralysing; if I imagine a vain thing there's only a little paper spoiled; I'm not cursed with the fulfilment of my wishes.

The Editor of the *Motor Boating World* asked me what I wanted, and why. The contemplation of motors makes

me feel rather middle-aged, makes me hanker a little after an asylum for Decayed Seamen. I became, for the occasion, motor-minded, and designed the ideal cruiser for a sexagenarian. After three years I look at the design, and it seems to me equally suitable for younger persons who have so many other interests that sailing isn't an end in itself, but also a means of getting to where their interests lie. That is our present case, so the old design may satisfy what we want in a cruiser; anyway, it shows how I think such a problem ought to be approached.

We want a craft in which two people can make a comfortable home in any climate, in which they can get to any place with reasonable dispatch, and in which they can explore any coast with ease and safety. We have in *Saoirse* a boat that meets our first two needs pretty well, and if she were a little longer she'd do it better; but she fails in the third, and if she were larger she'd be worse. It's a troublesome job for her small crew to work her in and out of even familiar harbours; if we don't know them, if they're badly charted, or if the curse of Babel comes between us and our pilot; in any case if the tide is strong and the wind baffling, it's an anxious job as well. We should spoil our comfortable home, our ocean passage-maker, if we tried to give her the handiness of a racing yacht; we want to give her a motor, and a good strong one at that.

Having a motor, we should not try to duplicate its functions. When there's a decent breeze our heavy-weather rig will get us along the coast just as well as it got us across the ocean; when there isn't, it's futile to carry lofty and elaborate sails on the chance of scooping up fugitive airs; the wear and tear on them in the course of a day might well

pay for a few gallons of gas-oil. Fishing-boats and coasting schooners, whose owners presumably count every penny, don't try; they've scrapped all their light canvas, and with it a lot of trouble; not so much the setting and taking in of sails, as the care of them. In warm climates rain is rain, and the heat makes it specially destructive; even a tropical dew will rot canvas very quickly if it's neglected. We want to spend our time in port seeing the country, not watching for a chance to dry and restow our sails. Those that we can dispense with shall be put away below decks for a full due, and we shall navigate primarily as a motor-boat. Not a so-called 50-50 compromise, but as good a motor-boat as we can have, for our particular purpose, barring the inevitable wind resistance of the masts that brought us out from England, and may have to take us to another continent if the one of our choice gets crowded out with trippers.

As we want a large allowance of comfort and seaworthiness in a small vessel we shall have to sacrifice speed; in the best conditions we can't exceed the critical figure of seven knots, corresponding to a length of fifty feet, without an unjustifiable increase of engine power and an embarrassing increase of fuel consumption, and our average would be about six. Twenty-five horse-power should be enough to drive a fine-lined vessel fifty feet long and twelve feet wide, with a displacement of twenty-five tons, with a good margin of safety, if we get the right sort of engine. What that engine will be I still don't know; the one which is mechanically perfect, with opposed pistons, is only made, and I expect can only be made, as a full Diesel, and I feel these high-compression jobs are not for the amateur; I want something foolproof, even if I have to use

a blow-lamp to start it. I shall no doubt get the right engine when I have convinced its maker that I don't mind if the thing stands six feet high and weighs a ton, and that I won't have any gadgets round it. A marine motor isn't a car engine; it doesn't have to meet varying speeds and loads; it's always run at its most economical revolutions, except in an emergency, and then one doesn't grudge an extra drop of oil. My small experience of semi-Diesel engines is that they'd go on for ever if superfluities like clutches and reverse gears didn't hang them up. Why not cut out the superfluities, which take up a deuce of a lot of space, when we have an engine that will turn in either direction and plenty of compressed air to start her turning? I don't believe the boat would be any harder to handle; in fact I see much more bad seamanship in those craft where a man on deck works the engines than in the old style where every movement is recorded in the engine-room log, which the Chief is liable to show to the captain with caustic comments.

Now that engine is going to burn over a gallon of oil an hour, the better part of a ton in a week or a thousand miles, and I don't see my little ship carrying more than a ton of bunkers. The engine is as uneconomical for long passages as sails are for short ones. We want the most perfect sailing machine we can get for that particular purpose. We can sacrifice without a pang extreme speed to windward; we can't make use of it for long periods, because the crew won't stand it, and for a brief emergency we can call on the engine. We can sacrifice extreme handiness in manoeuvring; we could only want that when we're coasting, and then the engine will always be running. In fact those qualities are in-

compatible with others that are much more valuable to us. We want our vessel to be fast on a reach (and not apt to run off the wind, as some modern ones do), easy to steer with a beam or a quartering wind (that's when we make up time, and we don't want to lose it by taking in sail because the ship is unmanageable), and safe running before any gale (*Saoirse* has never yet been hove-to with a fair wind, and I've no use for a boat that drives me to such straits).

The same kind of hull that is good for a sea-going power craft is good for my sailing requirements. That's the rule for small vessels; it sometimes applies to big ones too. What could be nicer than the lines of the average steam trawler? And the *Lancing*, the fastest ship that ever sailed, was built as a steamer.

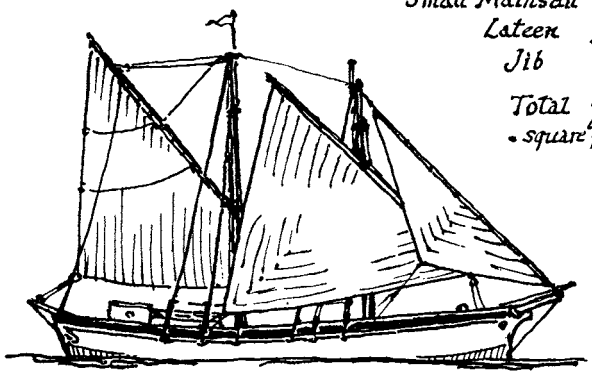
Needless to say, she didn't have a propeller sticking out of her just where it could do most harm, nor even a break in her run where the propeller had been removed. If we want to make good passages we also must eliminate such obstructions. I hesitate to do it by unshipping the screw and blocking up its aperture, if it can be done in any other way; I might want the thing when it would be difficult to ship it again. For instance, I have at the moment a fancy to revisit Brazil. I'm not really afraid of being hung up for long in the Doldrums, in a small handy vessel, but if it did happen I should feel a fool with a ton of oil on board and no way of using it. And if, in avoiding the Doldrums, I fell into the southeast Trade blowing half a gale over a four-knot lee-going current, sails alone wouldn't prevent my fetching up at Ceara instead of Pernambuco. We want power, but only for emergencies; if it's too readily available it's a vexation. When there's just a little wind one doesn't know

whether to steer fancy courses and try to keep the sails full, or to disregard them and steam straight ahead. If I could command shipwrights and engineers to do what I wanted them to, instead of objecting that it was seventy years out of date, I should ask for a lifting propeller, hung in a metal frame that slides down through a well in the counter, and engages with the shaft by a dog-clutch. It would be nothing of a job to lift the screw of a small yacht right out on deck – and it could be as big a screw as even I wish for – and slide down into the aperture a section of deadwood, filling it so exactly that neither Neptune nor Aeolus should know I had an engine aboard. And if they passed my pious fraud and were propitious I would honour them with a complete and handsome spread of sail.

It needn't be a very large spread, hardly more than *Saoirse* carries now; a boat eight feet longer will be the more easily driven. We maintain that our present rig is the handiest that could be devised for all-round work with a small crew, but the extra length will allow us to improve it in detail; especially we can carry our heavy canvas lower. For our sort of cruising it's more important to sail the ship fairly upright than to get the theoretical advantage of a long luff; and if we have to run much dead before the wind we don't want to make our progress on that poor point of sailing even slower by having our centre of effort too high. *Saoirse* is something between a brigantine and a topsail schooner; schooner when we think the rather difficult square foresail is likely to get us into trouble, and brigantine when we feel pretty certain we're not going to be caught aback. Or, schooner when the sea is smooth enough to make it worth while to sail close and by, and brigantine

Fig: 23.

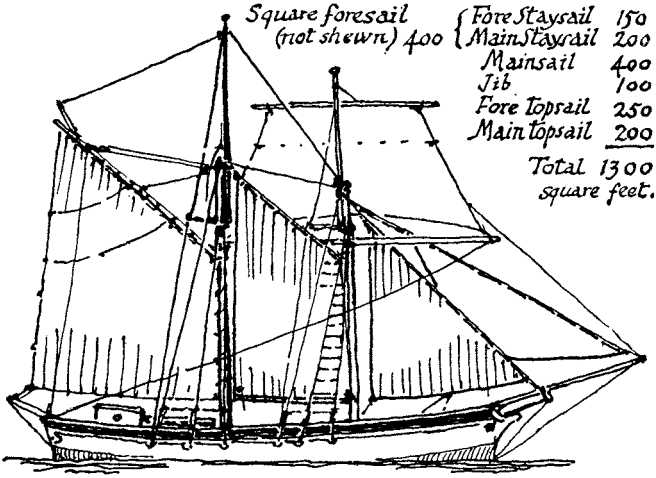
SAIL PLAN OF 50-FOOT MOTOR-BOAT



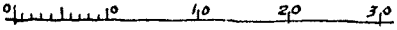
Small Mainsail	290
Lateen	330
Jib	100
Total	720.
square feet.	

Fig: 24

SAIL PLAN OF 50-FOOT OCEAN CRUISER



Square foresail (not shewn)	400	
	Fore Staysail	150
	Main Staysail	200
	Mainsail	400
	Jib	100
	Fore Topsail	250
	Main topsail	200
	Total	1300
	square feet.	



when we do better on a free reach – and that will be by far the more frequent on an ocean passage.

We put the largest sail that we can conveniently handle at four hundred square feet. It seems very small, but I distrust complicated reefing and furling gear; it might go wrong, and the job have to be done by hand. That's for the heavy working sails; light supernumeraries can be bigger, because one takes them in in good time – or if one doesn't, and they blow away, they're cheap. We shall have a rather larger, and more handy-shaped mainsail than our present one, also without a boom, and sheeted to the same outrigger. A longer fore-yard, with the sail under it wider, though not quite so deep, which will make it stow better. With jib, about nine hundred square feet, and when the wind's abeam the main staysail helps, though it isn't of much account when the foresail is in use. Quite enough for standing through average Trades, if they're accompanied by the average sea; and none of it more than thirty feet above the deck.

Now let's suppose smooth water and moderate settled weather, or the wind well aft on our course, and we have plenty of scope for topsails. I always say *Saoirse's* square fore-topsail isn't a cruising sail, but we nearly always carry it; to be on the safe side let's make this a little smaller, and of lighter canvas (though we shall have a perfectly good raffee in the sail locker). The gaff-topsail on the main is an easy matter, when there are no lifts for it to get foul of, it can be a decent size; and having a decent long topmast to set it on we shall want a main-topmast staysail to balance it, and there's obviously room for a considerable flying jib. Another six hundred or seven hundred square feet, not counting the possibility of stunsails or balloon jib-topsail –

why, we shall have almost as much as a real yacht! And that for two people to handle on a deep-water voyage – it shows that if the rig looks complicated it's light on labour.

And it's efficient. The sails that have to stand close-hauled to a fresh breeze are just right to do so without any reefs. But in light weather the topsails, all set on fixed, not swinging spars (for the gaff will of course be kept steady by its vangs), can hold an air of wind that would be shaken out of the heavy canvas. Those topsails can be really light – and the lighter they are the larger they can be, and the more spares we can carry. We may take some risks with them to make a quick passage, and if they blow away, and the masts with them, well, those are only topmasts. We have three-fifths of our sail area intact, as much as many auxiliaries carry in all, not to mention a ton of oil. And we could no doubt make some kind of use of our broken spars, not like a broken Bermuda mast.

When we get to our destination we don't want those light spars for the time. We know what happens to a coasting schooner when she gets an engine into her; she sheds her topmasts and yards. Her owners realize that the wind's no longer an economical form of power, unless it's a real good wind. We shall do well to follow her example. We shall have had enough of sailing on our passage out, and no immediate desire to do more merely for sailing's sake; we want to potter along the coast, and a motor and our second-best and smallest sails are good enough for that.

We have them ready to hand, two staysails and a mainsail; a typical auxiliary rig that needs the minimum of gear. All the rest, that may look very showy in harbour, is only a hindrance to steaming, and will be sent down; three twen-

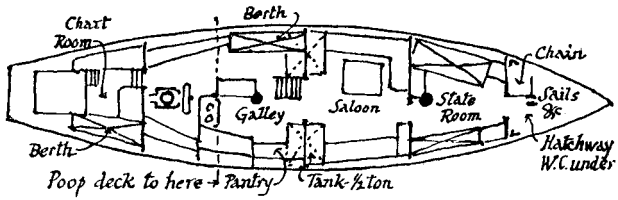
ty-foot spars will be less of a nuisance on deck than high up aloft with a lot of stays and ropes about them.

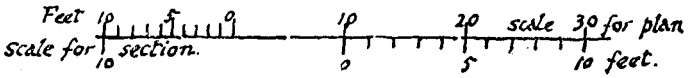
But what about that thirty-two-foot fore-yard? I won't have that on deck. We can dip it under the rigging, so that it lies fore and aft and makes a handy ridge for an awning – a thing which in my ignorance I once despised – while we're in harbour, or in calm weather at sea. But we can also set a quite useful lateen sail on it. An ugly sail; I feel that a lateen yard ought to be much longer and should have a graceful curve. A smaller sail than the two staysails it replaces, and it will need the retention of the jib, for the sake of appearance, if not for steering. But it will justify the existence of that yard, especially when we get a good following wind, and can run with it and the mainsail wing and wing. It's legitimate to do that cruising along the coast, where time is no object and comfort is.

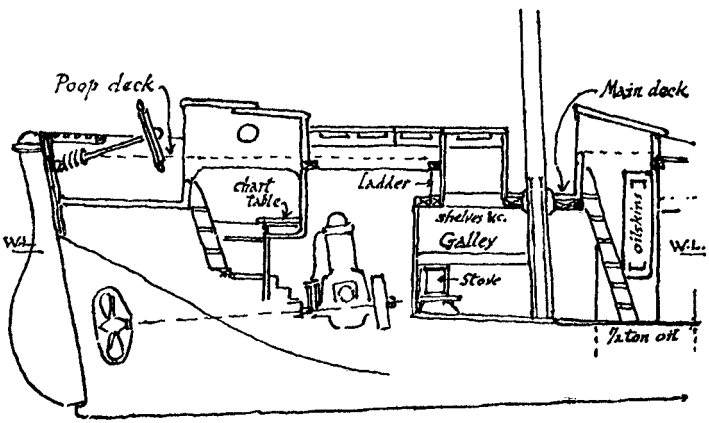
A lateen sail hanked to a trackway needs no more gear than two outhauls – and they're already rove off for working the foresail. One can't very well make tacks with it – one would have to carry the sheet round outside the rigging and forward of the mast – but one doesn't want to make tacks; at least I hope I have more faith in my engine. I don't know, though; I've just been looking at several yachts coming into harbour under power, and bungling their mooring disgracefully. We seem to have less trouble with sail; anyway it would be for their good to show them that it can be done better under sail – if our essential staysails weren't buried at the bottom of the locker. We'll dip the yard inside the rigging, and use the lateen as a fore-and-after – on one tack somewhat spoiled by the sail lying across the mast, but the Mediterranean feluccas always work like this, so why

Fig: 25.

ACCOMMODATION PLAN OF 50-FOOT AUXILIARY SCHOONER







Section through Chart Room, Engine Room, Galley & Companion.

shouldn't we? And as soon as we're anchored the yard is in its right place for harbour wear.

Now see how beautifully clear our decks are – if we lash up in the rigging a couple of topmasts and a topsail yard, the boat's mast and sail, and the various planks and spars that we carry because they may come in useful – well, they're at any rate clear overhead; there's nothing for the unwary to bump into. No booms, and the gaff and yard with all their gear can be hoisted high enough to be out of the way. Our deck is the top floor of our house, so it's worth while making it more comfortable than yachts' decks usually are by putting an 18-inch bulwark round it.

It's rather a problem to get high bulwarks without making the ship look hideous, if at the same time one wants headroom below without an excessive depth of hold. In *Saoirse* we do it by a raised cabin-top amidships, and a poop-deck of the same height aft. My ideal yacht would have *Saoirse's* narrow stern, and to get the same accommodation, as well as an engine, into it, the poop-deck must be lengthened as far as the mainmast. Forward the headroom problem is not so hard, for the ship's body would run well out into a deep forefoot. We ought to be at least as well housed as in *Saoirse*, and have space over for a decent engine-room, a big fuel tank, and several things that the mere man forgot when he was building a vessel with no definite intention of making long voyages in her, but which his wife has discovered to be lacking – hanging cupboards, a full-length mirror, a place for oilskins, and another for two bicycles. I think bicycles are a most necessary part of a cruising outfit. How seldom is one's ideal anchorage near a post-office or market, or the places in-

land one particularly wants to visit! How much more easily can one carry a paint-box, easel, and canvas on two wheels than on one's legs! How much time can one waste trying to hire mules or motor-cars! So many things, stores and spare sails, besides mere crew and passengers, have to be crammed into a foreign-going yacht that her lay-out must be quite different from that of the conventional stay-at-home.

We can't improve much on *Saoirse's*, which started with a galley in the best part of the ship, and a chart-house entered from the cockpit, where the man off watch can sleep right under the helmsman's hand. In the new design the engine-room would come between these. And a third hand, if any, would get even narrower quarters than a potential passenger does now. We hope we shan't want him on long passages, but on the coast a local man, who has no more possessions than what he stands up in, and is used to close packing, would be more use; as well as cook, steward, dinghy-wallah, and watch-dog he'd be pilot and interpreter.

I'm not working out all this stowage in any detail, because the drawing-board frightens me, though I feel sure that actually I could fit everything in. But there are two points to notice. One, the galley stove – we can't exist entirely without a good coal stove, though the chimney's always a nuisance – is very near the mainmast, which might be a hollow steel funnel. And the other, the engine is not much further from that mast, which would make an even more necessary exhaust for the messy products of the combustion of gas-oil. I don't know that it could be used for both; an alternative engine exhaust would be one of the

legs of the main-sheet outrigger. It wouldn't dirty things as much there as anywhere else.

I wonder if I ever shall have an engine. I wonder if this yacht I have been describing is really my ideal. It sounds as if life might be too easy, as if one might potter for ever along the same bit of coast, more and more lapsing into a house-boat, less and less inclined for the strenuous days of long passage, with sails uncared for and unused till they rot. No; it's safer to stick to the ship we know. I hope we may sail her for many years just as she is at present.

About the Author

Edward Conor Marshall O'Brien was born in England in 1880, to an aristocratic Irish family. As a young man in Dublin he practised architecture, and associated with leading figures in the art and literary worlds. An Irish Nationalist, in 1914 he, along with Erskine Childers, smuggled guns by yacht into Ireland. Following service with the Royal Naval Reserve in the First World War came a period working for the fisheries department of the Irish government. In the yacht, *Saoirse*, built to his design, he and a small crew circumnavigated the world in the 1920s, in one of the first vessels to fly the tricolour of the Irish Free State. He married the artist Kitty Clausen in 1927 and there followed many more years of sailing and writing. He died in 1952.