

His boat, the sea, the winds that blow—
These things the sailorman should know.
The more he knows about the three
The better sailorman he'll be.

F.T.R.

WHICH is as trite a piece of doggerel as ever emphasized the obvious, for who would deny that every sailor, professional or amateur, in sail, steam or motor, has a plain duty to learn as much about his vessel and the elements as he can?

The best teacher is, of course, experience, for here is one case in which familiarity breeds, not contempt, but competence. Nevertheless, a little theoretical knowledge never does any harm, so here and now let us consider in the space available a few aspects of one of the "—things a sailorman should know"—the winds that blow.

The first thing to be done in the study of anything is to define that thing. The second is to measure it.

We all know that wind is air in motion—which is as good a definition as we need. As for measurement, long ago one Admiral Beaufort of the Royal Navy devised the Scale which bears his name and which, in a modified form, is still used by seamen the world over.

As originally written it has an appeal quaint to the land-lubber, special to the sailor; for the good Admiral, lacking precision instruments, assessed and described wind-forces by their effects on the ships he sailed, and his Table abounds in such phrases as "—wind in which one of His Majesty's Ships of the Line would carry reefed topsails," and "—wind against which no canvas will stand."

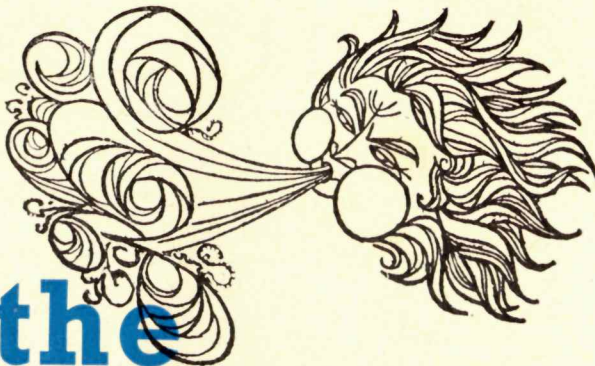
It was not very scientific, but it was better than nothing. And before we start feeling superior about it let us remember that our modernized version is usually no more "scientific" than the original because (unless you are one of the fortunate few who include an anemometer in your gear) you will still log your Beaufort Scale number on your personal opinion of wind speed—which is exactly what the Admiral did.

On the opposite page, there is a panel showing the Beaufort Scale of Wind Force. If you do not already know it, note it well, so that in future your log-book will reflect a reasonably accurate record of wind.

A number of points should be borne in mind when referring to this Table.

For one, if your local weather station reports a wind velocity of 50 miles an hour, do not log it as Force 10. One reason for this is that a mile an hour is appreciably less than a knot, which is the unit used for the Beaufort Scale. To be exact, 1 mile an hour = 5,280 feet an hour; 1 knot = 6,080 feet an hour. Or, if you prefer it, 40 knots = 46.06 miles an hour. There are other reasons which we will discuss shortly.

You will also be inclined to overestimate the force of the wind: At night; in heavy seas; when the wind is against the current; when close-hauled or heading into the



the WINDS THAT BLOW...

wind; in shallow water.

You may underestimate—a more rare fault—when the sea is calm (for example, under a lee); running with the wind; when the wind is with the current; when tucked snugly in bed ashore.

Another reason why your local weather station is not a reliable guide lies in the fact that wind velocity as a rule increases with height, the effect being most marked in the first 100 feet. Weather stations are usually at a fair height and clear of surrounding obstructions, and the wind gets a fair go at them.

Close to the surface—where *you* are—it will be hindered by friction and disturbed by waves, and its velocity will be considerably less.

As an example of this effect, Ahto Walters, who cruised round the world in the *Ahto*, used to set a big squaresail topped by a scrap of a raffee when running and, in telling me of his experiments with this rig, he gave the following as a fairly typical example:

Wind: Force 4 Sea: Moderate Swell.

Speed.

With squaresail only 3 knots.

BY FRANK ROBB

This stirring rough-water picture was taken by Sonny Thomas way back in 1932 off Whale Rock during a stiff Cape northerly. Frank Wightman, at the helm of *Lothair*, cocks a weather eye. The occasion was a boat-for-boat duel with the late Doc Jamison, one of the Royal Cape Yacht Club's best-loved, and toughest, members before the war.



With squaresail and raffee 5 knots.
With raffee only 4 knots.

In other words, the little raffee was worth more than the whole squaresail because it was "up there"—where the wind was.

To digress for a moment. This points a moral to would-be round-the-world-cruisers, who often start by chopping anything from ten to twenty feet off the mast "for safety's sake". It may be safer; it will certainly be slower. Eighty per cent of the time—more or less—there will not be enough wind, and you will be looking around for a place to hang more sail—and the higher the better.

Most round-the-worlders I have met would rather add ten feet to the mast than cut it off.

You might remember that this business of increase of velocity with height works the other way as well, and next time some would-be Bluenose skipper tells you: "It was blowing fifty miles an hour—official, because we checked with the weather station when we landed"—you can usually knock off up to ten because of height difference.

But don't mention it and spoil his story—a little pardonable exaggeration harms nobody and makes for a better yarn.

Given a good boat, the right sails, and sound gear you can keep sailing in winds up to about 70 miles an hour—which is Force 12—*provided there is not too much sea*.

Yes—seventy! It is not a recommended pastime, and a good skipper would keep going in such conditions only in an emergency (such as clawing off a lee shore) or, perhaps, in the heat of a race where he is prepared to accept the risk of damage.

If you keep it up for more than a short while you are almost certain to sustain some sort of damage, for in such a strength of wind all gear is strained to the limit.

Some years ago a race was sailed in Table Bay (around Robben Island and Barker Rock) in which the wind at times reached about the above figure. Although few boats completed the course, all made port safely. But without exception they had stories to tell and wounds to lick.

That was a southerly wind with a maximum fetch of not more than about seven miles, so the seas were not too bad. In a northerly of the same strength the seas would have been tremendous and sailing would have been impossible.

You will not be doing any sailing in anything much over that strength of wind for the simple reason that there is a limit to what canvas (or terylene) will stand, and that limit lies between 70 and 80 miles an hour. Even at the lower figure every 100 square feet of canvas has something like a ton of pressure to cope with, and if you allow a sail to lift it will shake the boat as a terrier shakes a rat. You will be lucky if the sail merely flogs itself to pieces without doing any other damage.

We can qualify all this by saying that, if you run before, the apparent wind strength will be lessened and steadier and the sail may stand.

And we can qualify that again by adding that running under sail before Force 12 is begging to be pooped or broached, and nobody who has experienced either of those mishaps seeks a repetition.

Where do we go from there? Well, with ordinary luck you can do a lifetime's week-end sailing with an annual cruise thrown in without running into anything stronger than Force 12. If you happen to sail in South African coastal waters you may, however, have several encounters with Force 12.

The famed Cape South-easter usually produces at least one blast of that strength a year, often more, and winds of similar strength also crop up once a year or so along the eastern sea-board.

If you are caught out in anything stronger you will not be sailing in the true sense of the word, but surviving by the use of one or more techniques that I hope to discuss in a later article.

At and over 80 miles an hour the wind assumes a powerful authority. It is still, by definition, no more than air in motion, but it now starts pushing you around, buffeting you, is hard to stand against, and appears to have taken a personal dislike to you

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THE BEAUFORT SCALE OF WIND FORCE

Beaufort Number	Velocity. (Knots.)	Pressure l sq. ft.	Sea Criterion.
0	(Calm)	0	0 Sea like mirror.
1	(Light Air)	2	·01 Small ripples. No foam.
2	(Light Breeze)	5	·08 Small wavelets, still not breaking
3	(Gentle Breeze)	9	·28 Large wavelets. Crests begin to break. Scattered white horses.
4	(Moderate Breeze)	13	·67 Small waves. Fairly frequent white horses.
5	(Fresh Breeze)	19	1·31 Moderate waves, taking more pronounced long form. Many white horses. Chance of spray.
6	(Strong Breeze)	25	2·3 Large waves begin to form. White foam crests everywhere. Probably some spray.
7	(Moderate Gale)	31	3·6 Sea heaps up. White foam blown in streaks along direction of wind. Spindrift begins.
8	(Fresh Gale)	37	5·4 Moderately high waves of greater length. Crests break into spindrift. Foam blown in well-marked streaks.
9	(Strong Gale)	44	7·7 High waves. Dense streaks of foam. Sea begins to roll. Spray may affect visibility.
10	(Whole Gale)	51	10·5 Very high waves with long overhanging crests. Foam in great patches blown in dense white streaks. Surface of sea taking on white appearance. Rolling of sea heavy and shock-like. Visibility affected.
11	(Storm)	59	14·0 Exceptionally high waves. Small and medium-sized ships lost to view for a time behind waves. Sea completely covered with long white patches of foam. Everywhere edges of crests are blown into froth. Visibility poorer.
12	(Hurricane)	67	18·0 The air is filled with foam and spray. Sea completely white with driving spray. Visibility very seriously affected.

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If you happen to fall out of an aircraft and find you have forgotten your parachute you may meditate—briefly—on the fact that irrespective of the length of drop you will hit at about 125 miles an hour, at which speed the pressure of air acting on the average human body is enough to neutralize the acceleration due to gravity. Presumably it follows that in a 125 miles an hour wind you will be in danger of being lifted up bodily and being blown away; there are, in fact, many recorded instances of people having suffered this fate during typhoons or tornadoes.

The strongest wind I ever encountered was a South-easter in Cape Town that averaged 80 miles an hour and gusted up to 125, as recorded by the anemometer at the Look-out station in the Docks area.

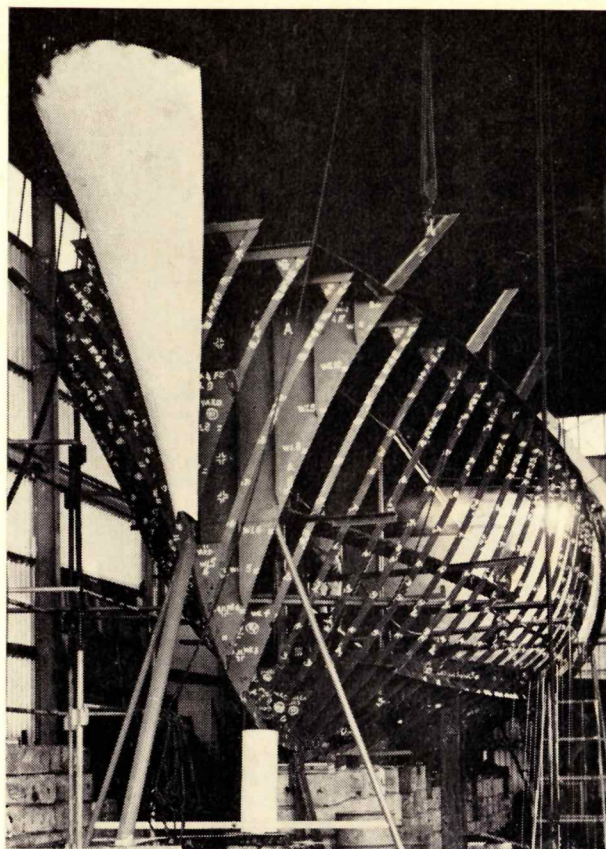
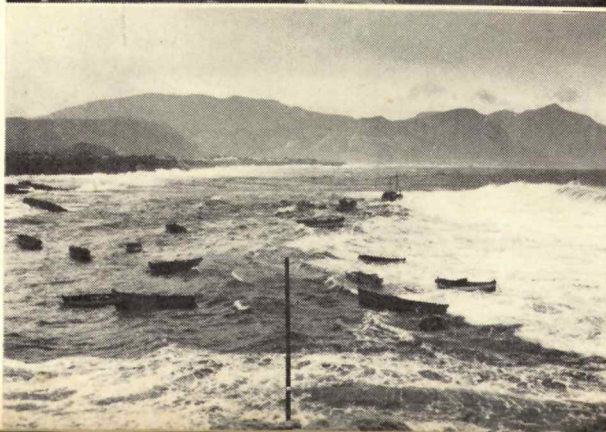
I was, thank Heaven, not at sea during this little dust-up, but was walking home about 1 a.m. over the most exposed part of the High Level Road above Strand Street after visiting the young lady of whom I was currently enamoured. It happened a long time ago—about 1926, I think—and although I have forgotten the name of the young lady, I still have a vivid remembrance of the eerie shriek and thunder of the squalls roaring across the city, of leaning against them at impossible angles and being forced willy-nilly into a crazy run until I crouched on the pavement, and was blown skidding over the asphalt pavement into a fence to which I clung while the wind threatened to tear the clothes from my back and bombarded me stingingly with small stones.

Vague air-borne shapes shot past through the dark night, and I was convinced, probably correctly, that these were sheets of corrugated iron and other building debris, any piece of which was capable of cutting me in half. I hung on like grim death and wondered dumbly whether the evening had really been worth while.

There have been other occasions, other gales. And apart from Admiral Beaufort's straightforward winds

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The Cape's winter rollers can make a mockery of the snugest haven after a week-long blow. Here is Hermanus harbour, top, just before a big swell sweeps over the entire wall. In the second picture it looks just like the open sea, with the pilchard trawler near the entrance slewing wildly at her mooring.



The shapely radiused bow of Durban's luxury motor cruiser waits poised for the enveloping plates of Lloyd's Grade A steel in the big Barends building shed.

TWO big luxury yachts of the sort more familiar in the Mediterranean pleasure ports are under construction in South Africa—the big Camper and Nicholson steel motor yacht for John Schlesinger in Cape Town, and this typical example of the best Dutch practice in Durban, at the yard of E. S. Barends and Company.

This latter firm has brought all the special Dutch genius for small steel craft construction to the Bayhead in Durban and is forging ahead on their project at a great rate.

Their twin-screw ship has the following principal dimensions: Length o/a, 73 ft. 8 in.; length b.p., 65 ft. 7 in.; moulded breadth, 18 ft. 10 in.; moulded depth, 10 ft. 4 in.; draft, 7 ft. 3 in.

The yacht is being built to Lloyd's Rules and Regulations, and classed to 100 A1 + L.M.C. She is of all-welded steel construction and will be powered by two six-cylinder Gardner diesel engines with 2 : 1 reduction gear and reverse gear r.h. and l.h. with a b.h.p. of 127 each at 1,500 r.p.m. (fully tropicalised and f.w. cooled), giving her a speed of 10 knots, with a fuel consumption at eight gallons an hour.

Fuel-carrying capacity is in the region of 2,800 gallons, which will give her an approximate range of 3,500 miles.

The generator is a Newage/B.M.C. marine-type, producing 11 kVA, 8.8 kW., 50 cycles at 1,500 r.p.m. single-phase 220 volts/250. This will provide adequate lighting throughout, and with the lighting in the engine room being supplied from two circuits s.p., in the event of a circuit failure the engine room will not be in darkness.

Fresh water is provided by means of a pressure system with pump and electric $\frac{1}{2}$ h.p. motor located in the engine room and controlled by pressure switch. Also installed in the engine room is a fresh-water distillation plant, which will provide fresh water at the rate of approximately 120 gallons a day. Fresh water tanks, fitted forward and aft of the engine room, give her approximately 1,200 gallons

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there are the freak winds—the circular winds, the two-way winds, the (more or less) vertical winds.

There was the time when Billy Kingswell's *Halloween* glided just before the five-minute gun into a clutter of lesser competitors with her tall Bermudan sail drawing well in a light wind. Nothing remarkable about that—except that the top half was on the starboard tack while the lower portion was on the port tack.

The phenomenon lasted for about a minute, during which time it occasioned a good deal of unkind comment and some urgent requests to *Halloween's* skipper to “—make up your — mind!”

Or, for the experience, try sailing through one of the little whirlwinds that spin out from Sea Point during a hard off-shore wind, humming like tops and whirling up a writhing column of white spray.

The wind bloweth where it listeth. Typhoon or zephyr, waterspout or williwaw, pampero and line-squall—to the weatherman they are all “air in motion”. But to the sailor it is infinitely more. It is a force to be used—an entity to be watched and studied.

And as long as the winds blow there will be sailormen, sheet-and-halliard men to trap it with mast and sail, watching the fluttering burgee and the lift of the leech—watching the invisible wind.

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