ZULU MARINER DATA CARD

10 BEAUFORT WIND SCALE

Wind speed in knots at 10 m. Wave heights are typical open-sea values; inshore they are less.

F	KNOTS	NAME	THE SEA	WAVES
0	<1	Calm	Like a mirror	0 m
1	1–3	Light air	Ripples, no crests	0.1 m
2	4–6	Light breeze	Small wavelets, glassy crests	0.2 m
3	7–10	Gentle breeze	Large wavelets, scattered white horses	0.6 m
4	11–16	Moderate breeze	Small waves, frequent white horses	1 m
5	17–21	Fresh breeze	Moderate longer waves, many white horses, some spray	2 m
6	22–27	Strong breeze	Large waves, white foam crests everywhere	3 m
7	28–33	Near gale	Sea heaps up, foam blown in streaks	4 m
8	34–40	Gale	Moderately high waves, crests break into spindrift	5.5 m
9	41–47	Strong gale	High waves, dense streaks, spray cuts visibility	7 m
10	48–55	Storm	Very high waves, overhanging crests, sea white	9 m
11	56–63	Violent storm	Exceptionally high waves	11.5 m
12	64+	Hurricane	Air full of foam and spray	14 m

BUREAU OF METEOROLOGY MARINE WARNINGS

Strong wind warning	26 to 33 knots
Gale warning	34 to 47 knots
Storm force wind warning	48 to 63 knots
Hurricane force wind warning	64 knots or more

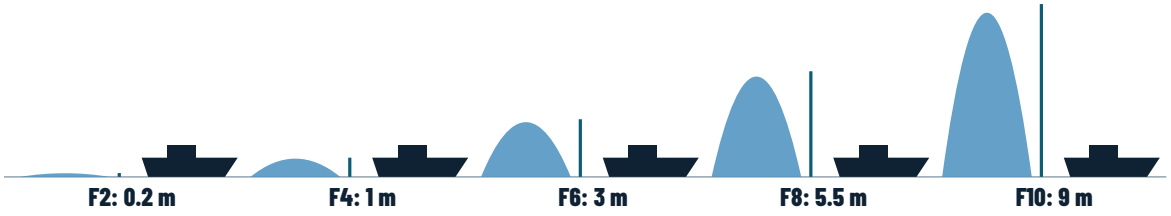
Forecast winds are averages over 10 minutes. Gusts can be 40% stronger, more in squalls and storms.

RULES OF THUMB

- Wind against tide: steeper, shorter, nastier seas.
- Waves double in height when the wind is about 1.4 times stronger.
- Swell travels far: a 2 m swell on a bar can break with no wind at all.
- Knots × 1.852 = km/h. Knots ÷ 2 ≈ metres per second.

WAVE HEIGHTS AGAINST A 5 M BOAT

Wave height (trough to crest) and a 5 m boat, drawn to the same scale. Real waves are many times longer than they are high.



Waves grow fast with the wind: about 1 m at force 4, 3 m at force 6, over 5 m at force 8.

Study aid only. Not for navigation.
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