BANANA WIND

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Waves are not measured in feet or inches, they are measured in increments of fear. - Buzzy Trent

Waves & Tides

A rising or falling tide can often determine if or when you can navigate a passage, so a sailor must know how to determine tidal range.

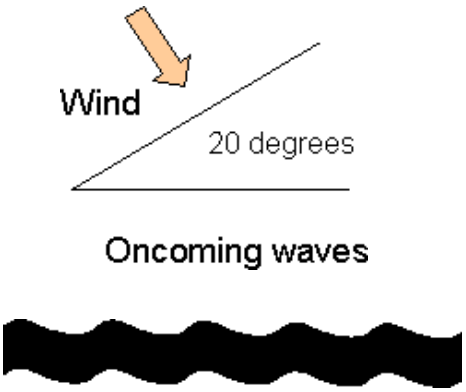
Waves

The wind backs 15 - 20 degrees from breaking waves.

Waves break in shallow water and on shoals.

Short, steep waves are created when a strong current opposes the wind.

Smoother waves are created when the current flows in the same direction as the wind.



Tides

Spring Tide

Occurs at full moon and new moon.

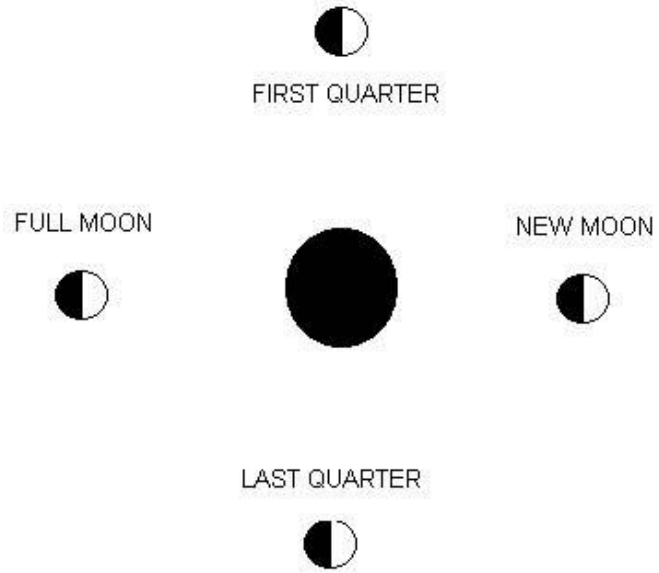
Results in higher high tides and lower low tides.

Neap Tide

Occurs at first quarter and last quarter.

Usually 1/2 to 1/3 the size of spring tides.

Time lag: Actual high tides occurs up to 6 hours after the moon passes. Low tide is roughly when the moon is over the meridian.



Tidal range = height at high tide - height at low tide

Chart datum indicates the low mean tide level (i.e. average lowest daily).

Tide tables tell you how much the tide stands above or below the chart datum at various times.

Semi-diurnal = two high tides and two low tides per day.

Diurnal = one high tide and one low tide per day. Occurs in the tropics.

Calculating Rising and Falling Tides

Rule of Twelfths

Tidal Range	X	1	2	3	4	5	6	7	8	9	10
1 hour	1/12X	.08	.16	.24	.32	.4	.48	.56	.64	.72	.8
2 hours	1/4X	.25	.50	.75	1	1.25	1.5	1.75	2	2.25	2.5
3 hours	1/2X	.50	1	1.5	2	2.5	3	3.5	4	4.5	5
4 hours	3/4X	.75	1.5	2.25	3	3.75	4.5	5.25	6	6.75	7.5
5 hours	11/12X	.92	1.84	2.75	3.68	4.6	5.52	6.44	7.36	8.25	9.2
6 hours	X	1	2	3	4	5	6	7	8	9	10

To calculate a rising tide

For example:

It is the second hour after low tide with a tidal range of 4

Rising tide height = low water height (chart datum) + hourly figure from the Rule of 12th table for the appropriate tidal range.

ft. Chart indicates a mean low tide of 5 feet. What is the rising tide height?

Rising tide height = 5 ft. (from chart datum) + 1 ft. (from Rule of 12th table) = 6 ft.

To calculate a falling tide

Falling tide height = low water height (chart datum) + tidal range - hourly figure from Rule of 12th table for the appropriate tidal range.

For example:

It is the fourth hour after high tide with a tidal range of 4 ft. The chart indicates a mean low tide of 5 feet. What is the falling tide height?

Falling tide height = 5 ft. (from chart datum) + 4 ft. (tidal range) - 3 ft. (from Rule of 12th table) = 6 ft.

Paying attention to tides is essential in determining the amount of scope when anchoring in an area with a large tidal range.

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