



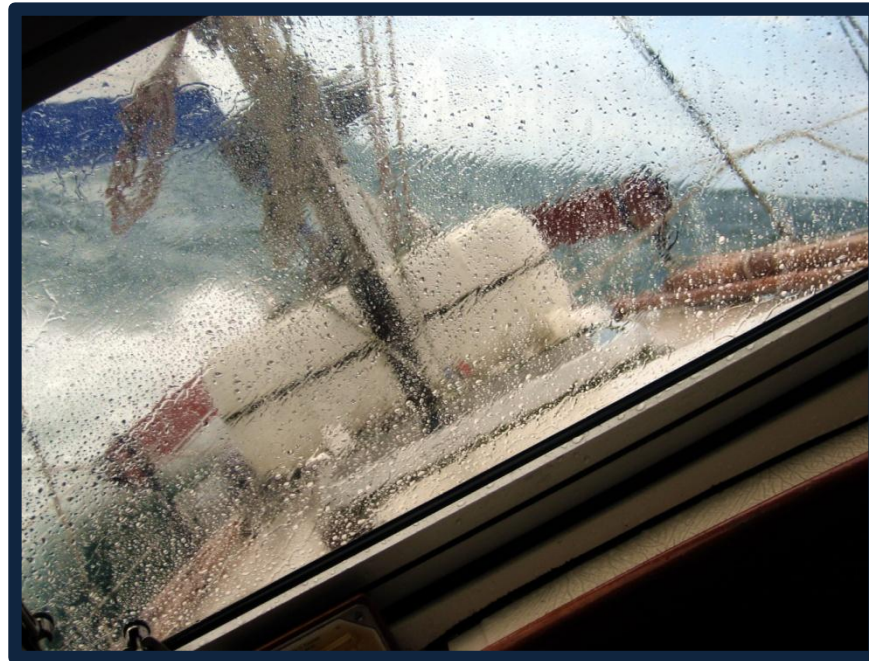
Tidal Streams

How to work out tidal streams

Introduction

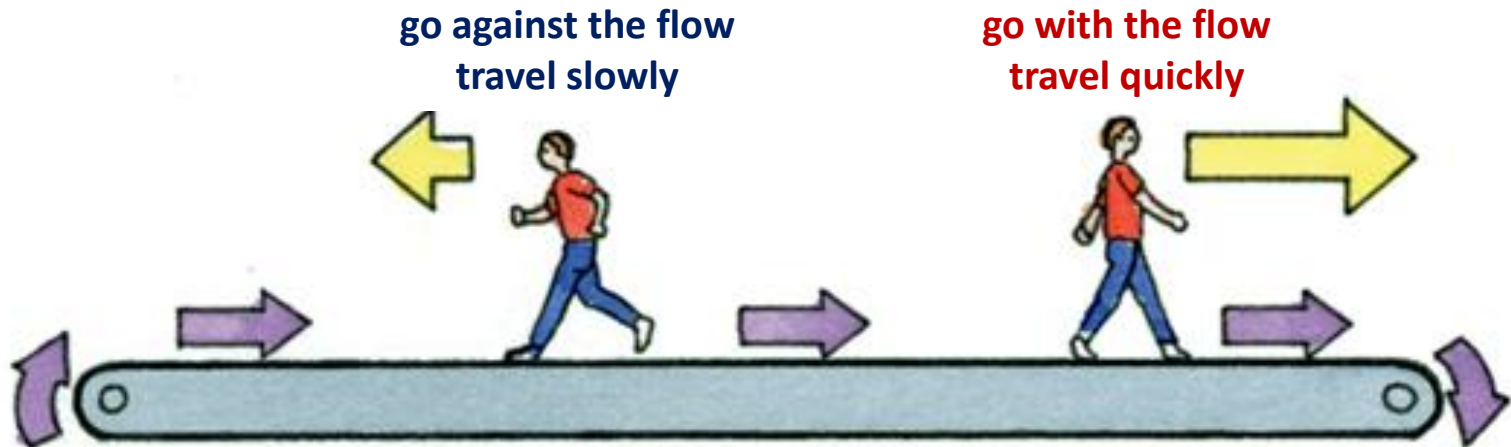
Understanding how tidal streams affect sea conditions and your yacht are crucial

This presentation takes you through how to recognise them and how to work out their effect

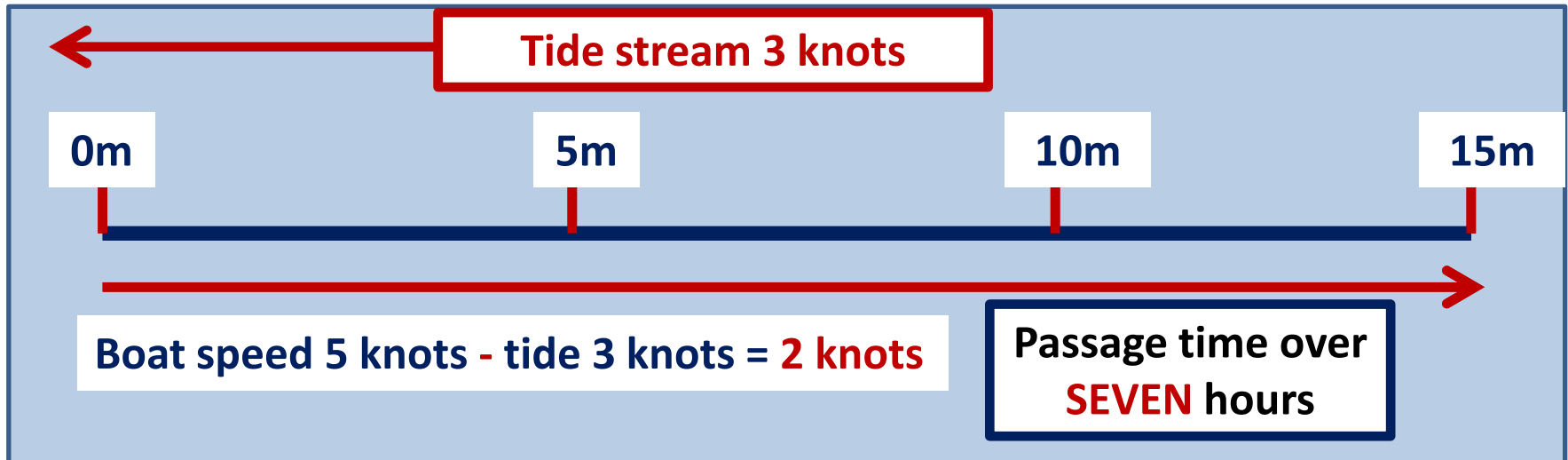
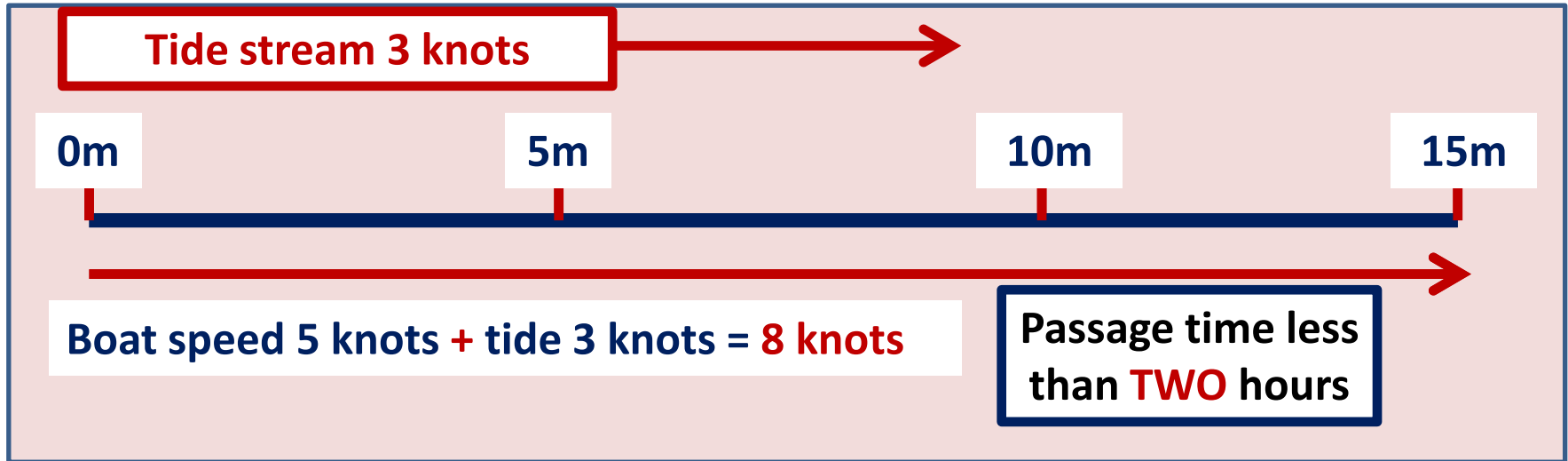


Effects

Consider the tidal stream as an airport travelator...



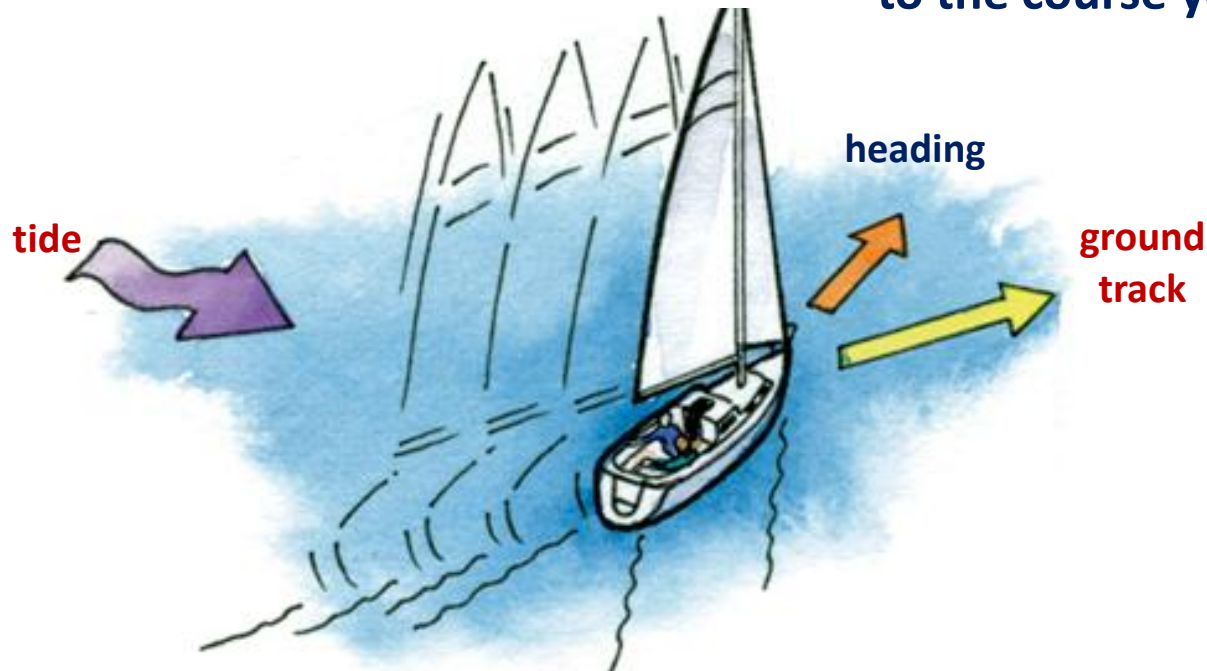
Effects



Effects

If you travel across the tidal stream the boat will be pushed sideways...

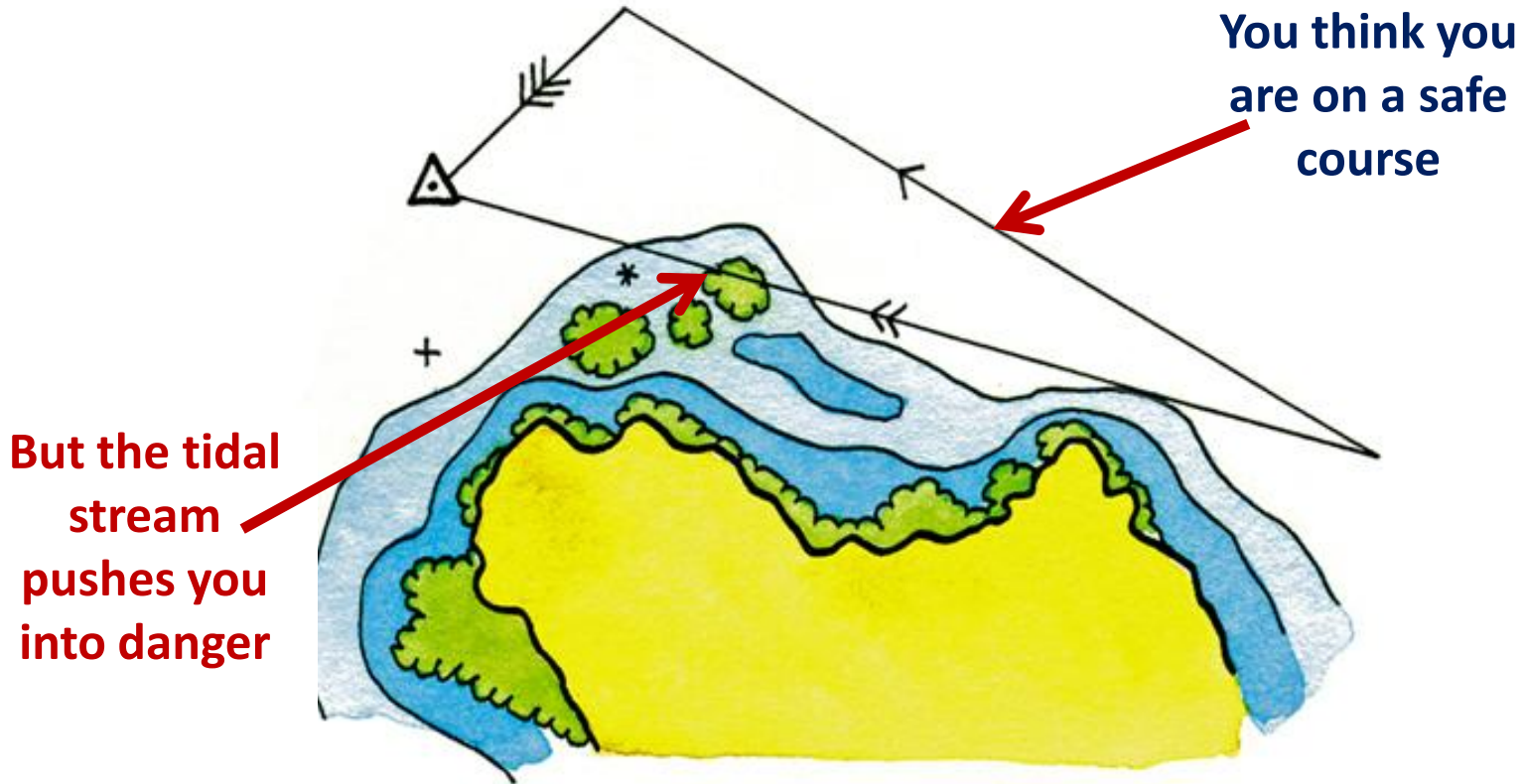
...giving a different ground track to the course you are steering



The direction and strength of tidal stream depends on...

...your location, whether it's springs, neaps or in between and the time

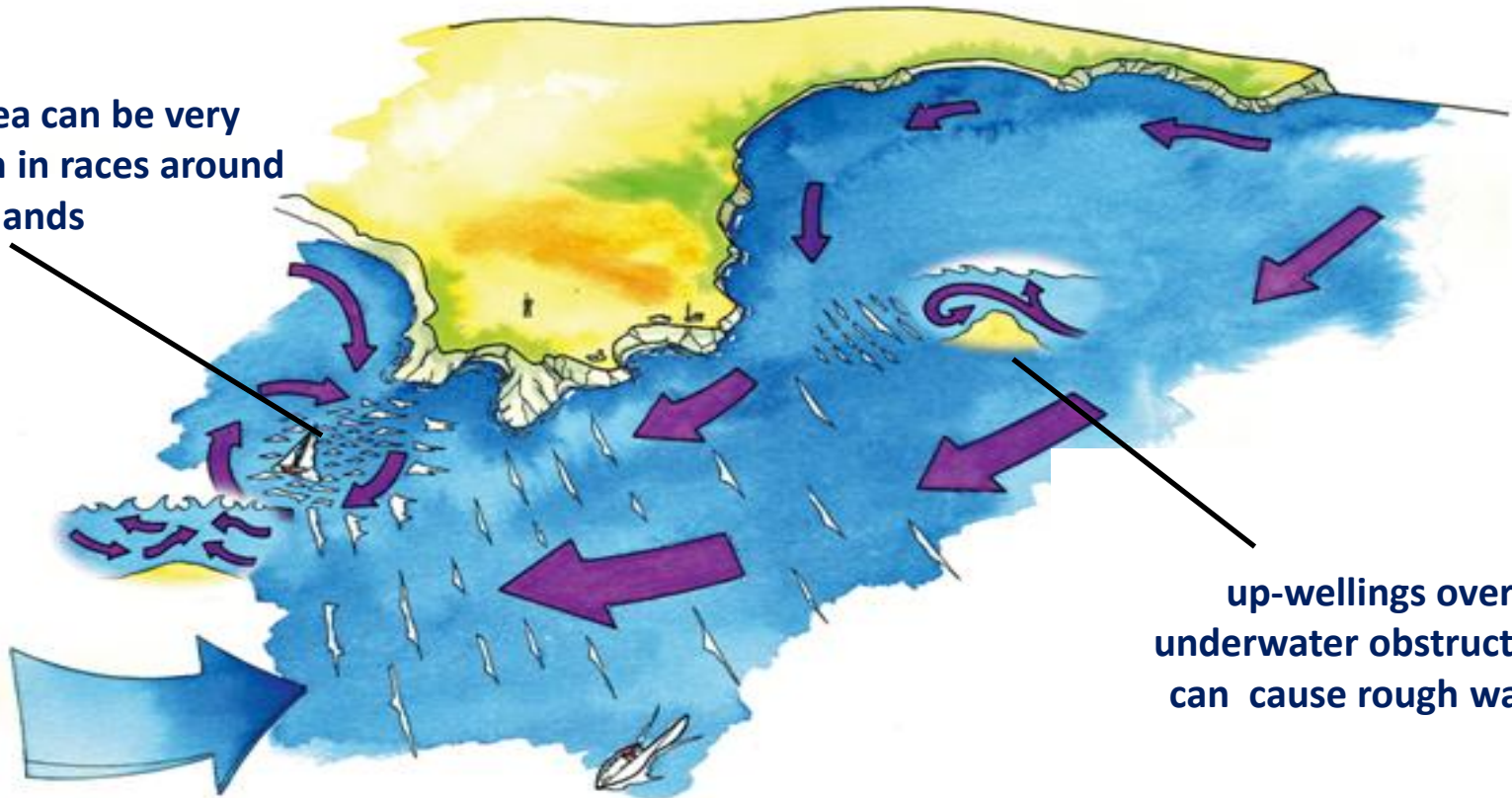
Effects



Effects

Tidal races often form off headlands
They often create over-falls, races and eddies

the sea can be very rough in races around headlands

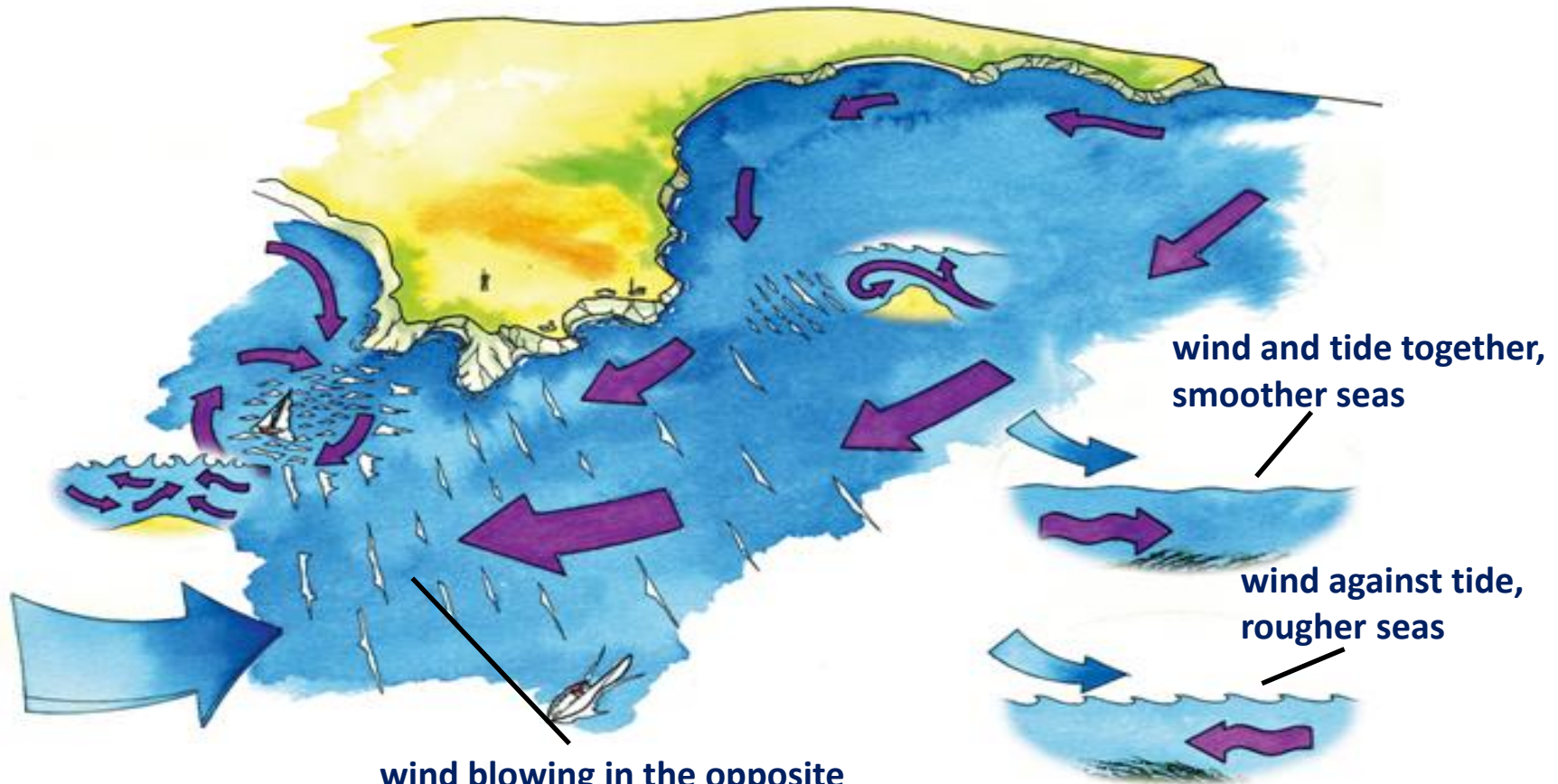


up-wellings over underwater obstructions can cause rough water

Be aware of turbulence over underwater shoals and rocks

Effects

Wind against tide can cause large breaking waves to occur



wind and tide together,
smoother seas

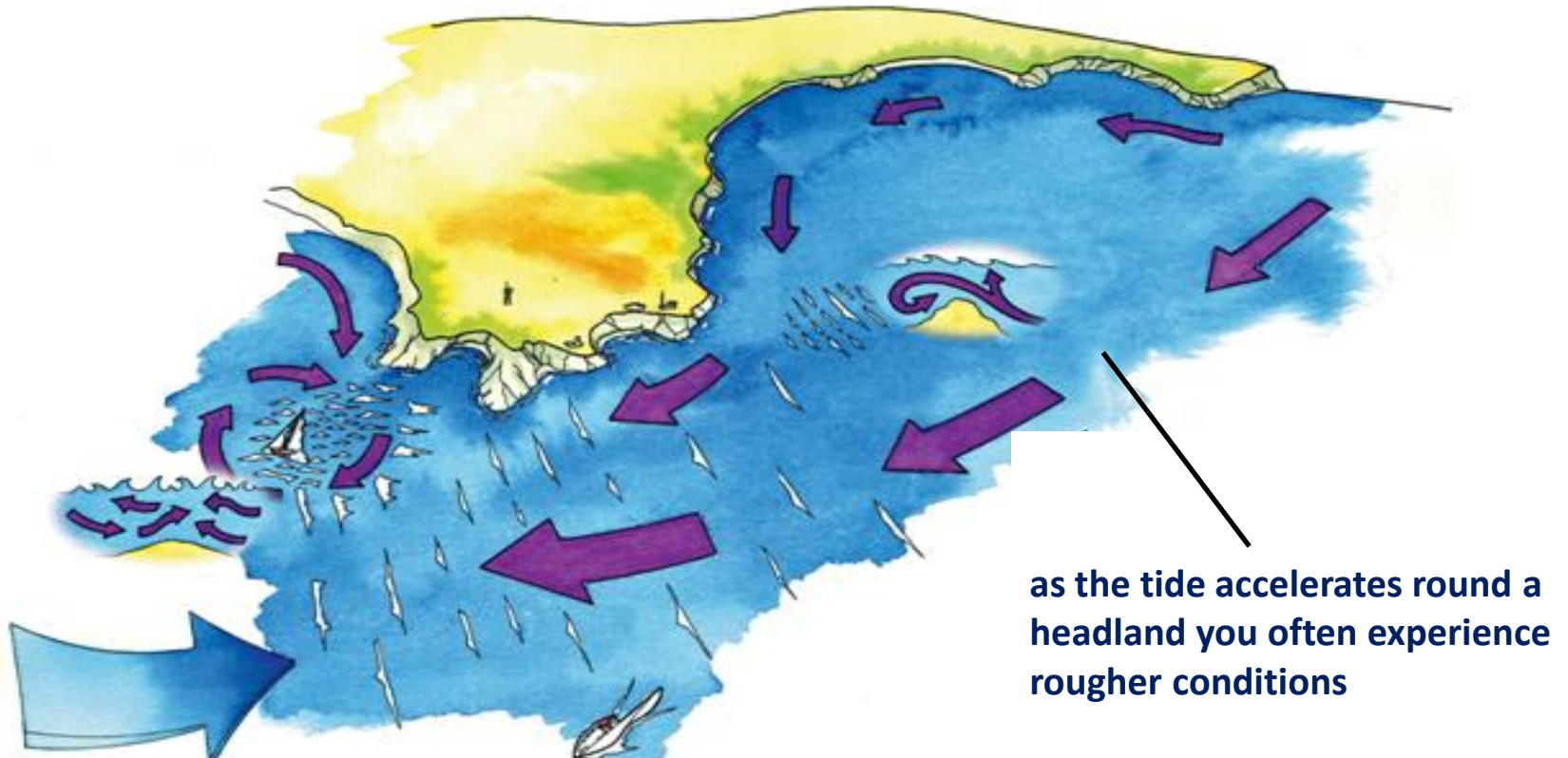
wind against tide,
rougher seas

wind blowing in the opposite
direction to the current can
cause rough seas

www.penguinsailing.com

Effects

Streams and currents often speed up as they squeeze around headlands



as the tide accelerates round a headland you often experience rougher conditions

Using tidal atlases and weather forecasts you can plan your passage to avoid the worst of the rough water

Information Sources

Charts

- tidal diamonds
- shows races and over-falls

Almanacs

- tidal streams
- tide times

Tidal Atlases

- tidal streams & strengths by hour

Pilot Books

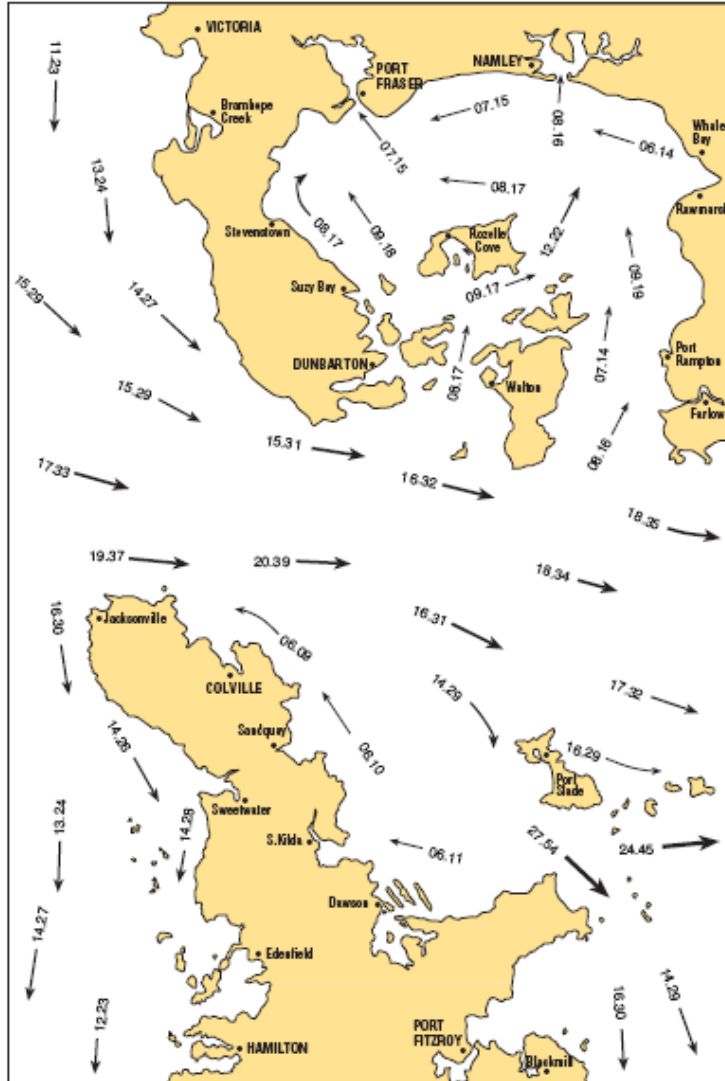
- information on passage strategies

Harbour Offices

- local information and anomalies

Tidal Stream Atlas

1 hour before HW VICTORIA

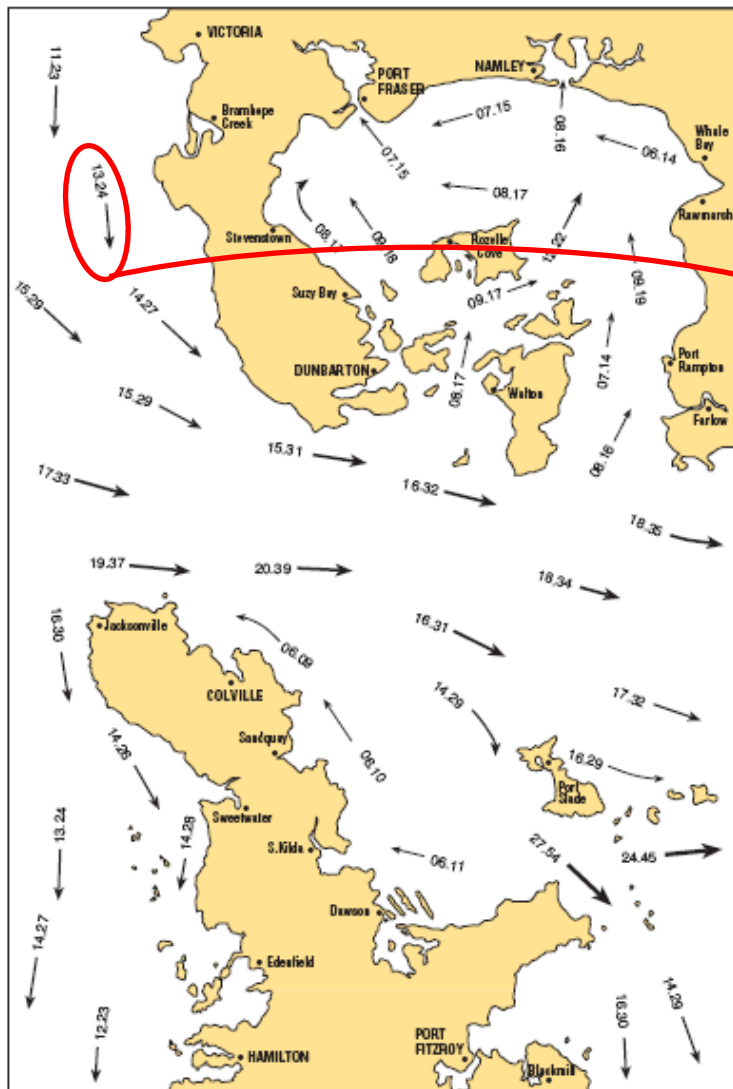


For finding the strength and direction of the tide

RYA Almanac page 12

Tidal Stream Atlas

1 hour before HW VICTORIA



What is the strength and direction of the tide off West Point one hour before HW Victoria?

neap rate 13 = 1.3kn

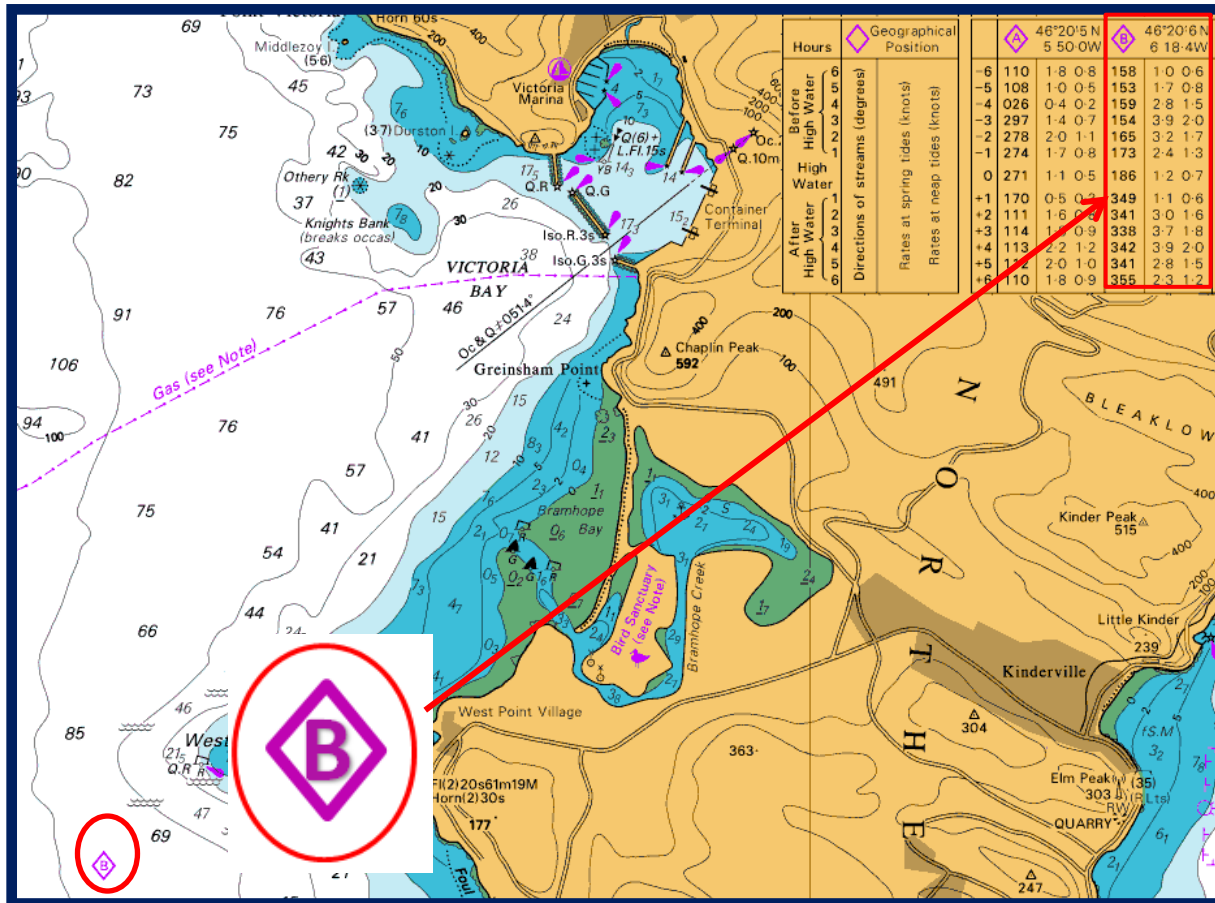
spring rate 24 = 2.4kn

direction
(measure with plotter)



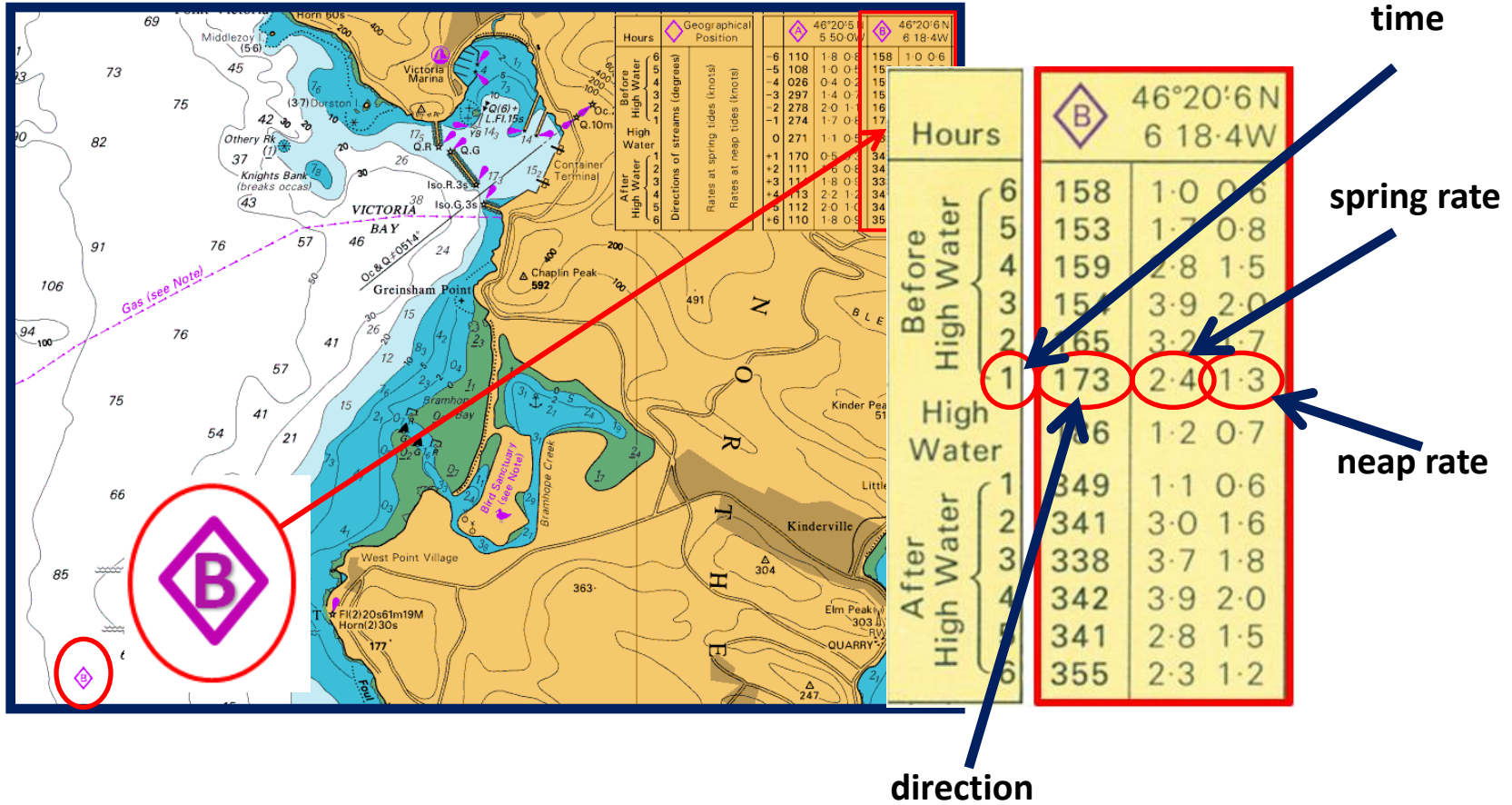
Tidal Diamonds

Shows the strength and direction of tide at a particular point



Tidal Diamonds

What is the strength and direction of the tide at diamond B one hour before HW Victoria?



Question

What is the rate and direction of the tidal stream off Cape Woodward at 0910 DST on Tuesday 28th May?

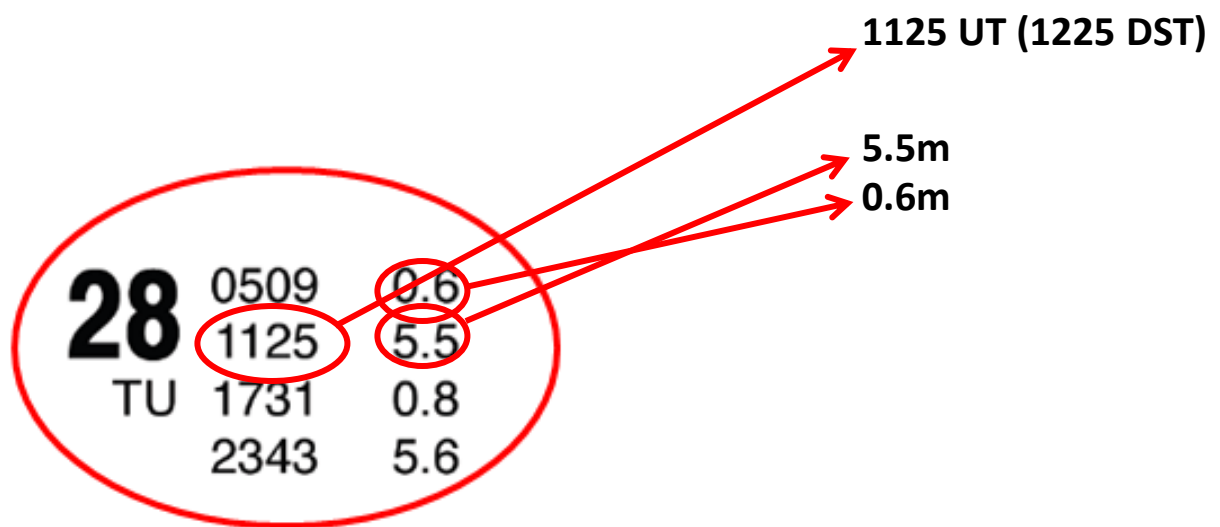
Find Out Tide Times

VICTORIA - Standard Port

TIME ZONE UT
For Summer Time add ONE
hour in non-shaded areas

MAY			
Time	m	Time	m
1 0046	5.4	16 0015	5.2
0656	0.8	0628	1.1
W 1315	5.2	TH 1241	5.1
1920	1.2	1842	1.3
2 0132	5.2	17 0056	5.1
0747	1.2	0713	1.2
TH 1407	4.8	F 1327	4.9
2011	1.7	1929	1.5
3 0223	4.9	18 0145	5.0
0846	1.6	0808	1.4
F 1509	4.4	SA 1424	4.7
2111	2.1	2026	1.7
4 0325	4.6	19 0245	4.8
0' 58	1.9	0914	1.5
SA 30	1.2	SI' 1535	4.5
29	1.7	11	1.9
5 0420	4.9	20 0345	4.9
1233	5.3	10	1.6
13 0438	1.0	16	1.6
1047	5.1	22.9	3.7
M 1652	0.9	28 0500	0.6
2304	5.3	TU 1125	5.5
		TU 1731	0.8
		2343	5.6
14 0512	1.0	29 0550	0.7
1122	5.3	1212	5.3
TU 1725	1.0	W 1815	1.0
2338	5.3		
15 0548	1.0	30 0027	5.4
1159	5.2	0641	0.9
W 1802	1.1	TH 1259	5.0
		1859	1.3
		31 0113	5.2
		0730	1.2
		F 1347	4.7
		1946	1.6

First, find the time of HW and the heights of HW & LW at Victoria on Tuesday 28th May



Springs or Neaps?

.....or is it in between?

1125 UT (1225 DST)

5.5m

0.6m –

4.9m range

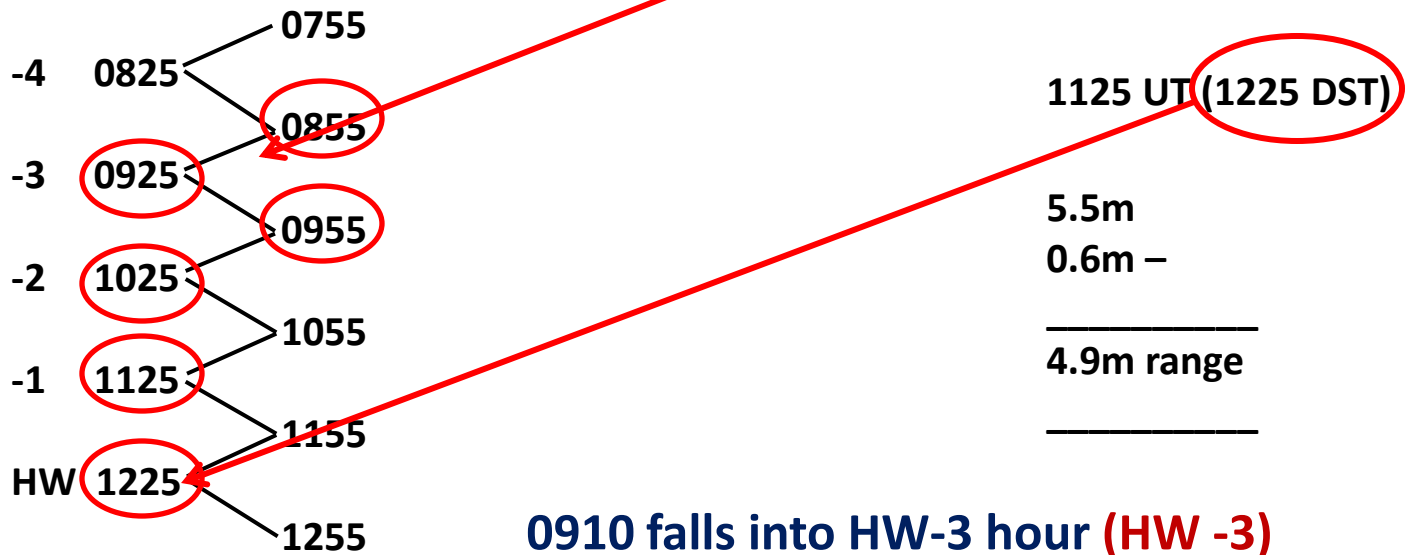
MEAN RANGES	
Springs	4.9m
Neaps	2.4m

— — —

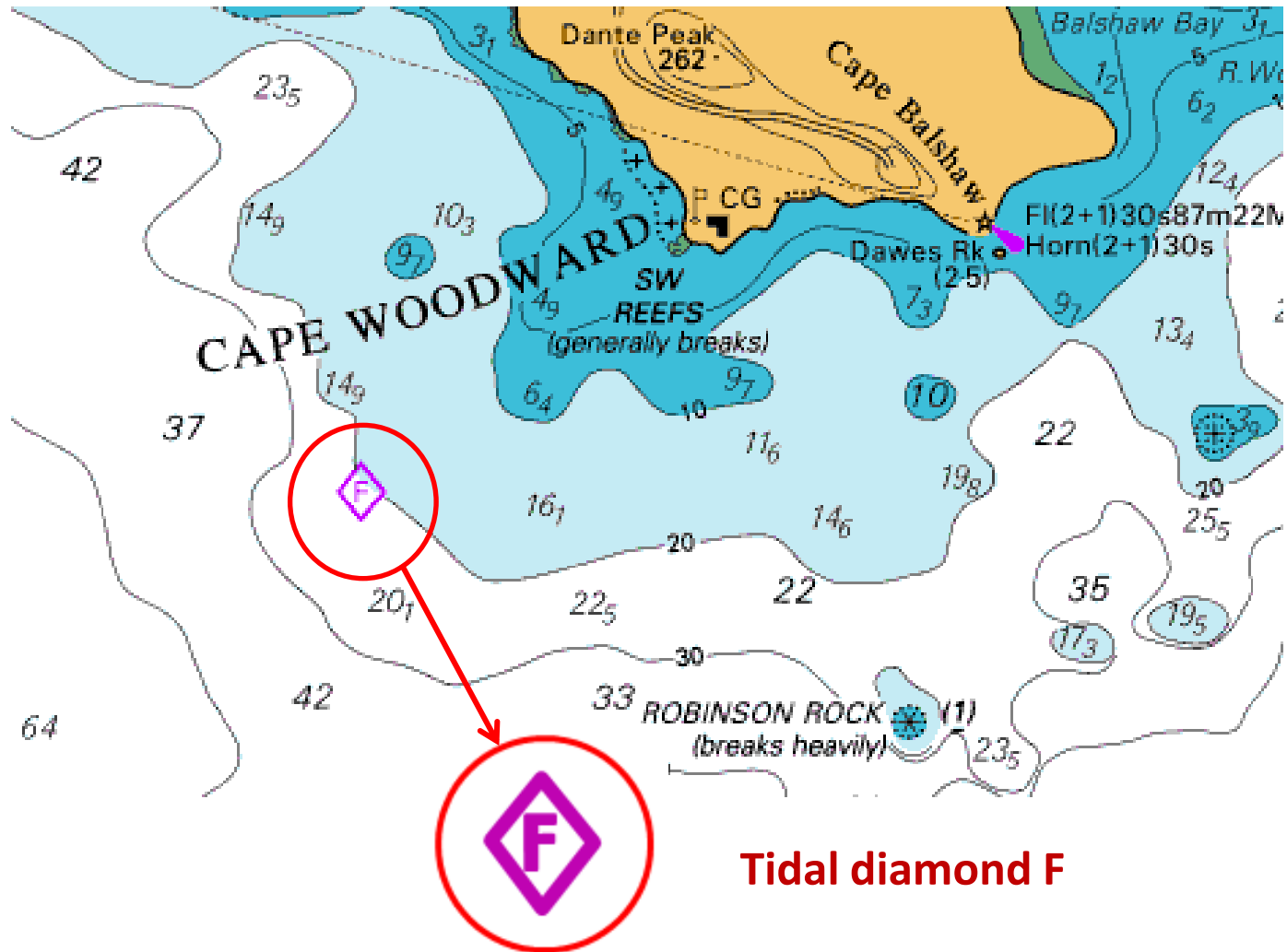
It's SPRINGS

How many hours before High Tide?

How many hours **before** HW is **0910 DST**?



Find Nearest Diamond



Look at Table

Tidal diamond F

◇ F		46°07'8 N	
		6 05·5W	
304	1·1	0·6	
113	1·2	0·7	
116	2·1	1·1	
114	3·2	1·6	
100	3·6	1·8	
098	3·1	1·5	
096	2·2	1·2	
092	1·9	1·0	
282	1·7	0·9	
279	3·1	1·6	
276	3·6	1·8	
285	3·2	1·6	
298	2·9	1·5	

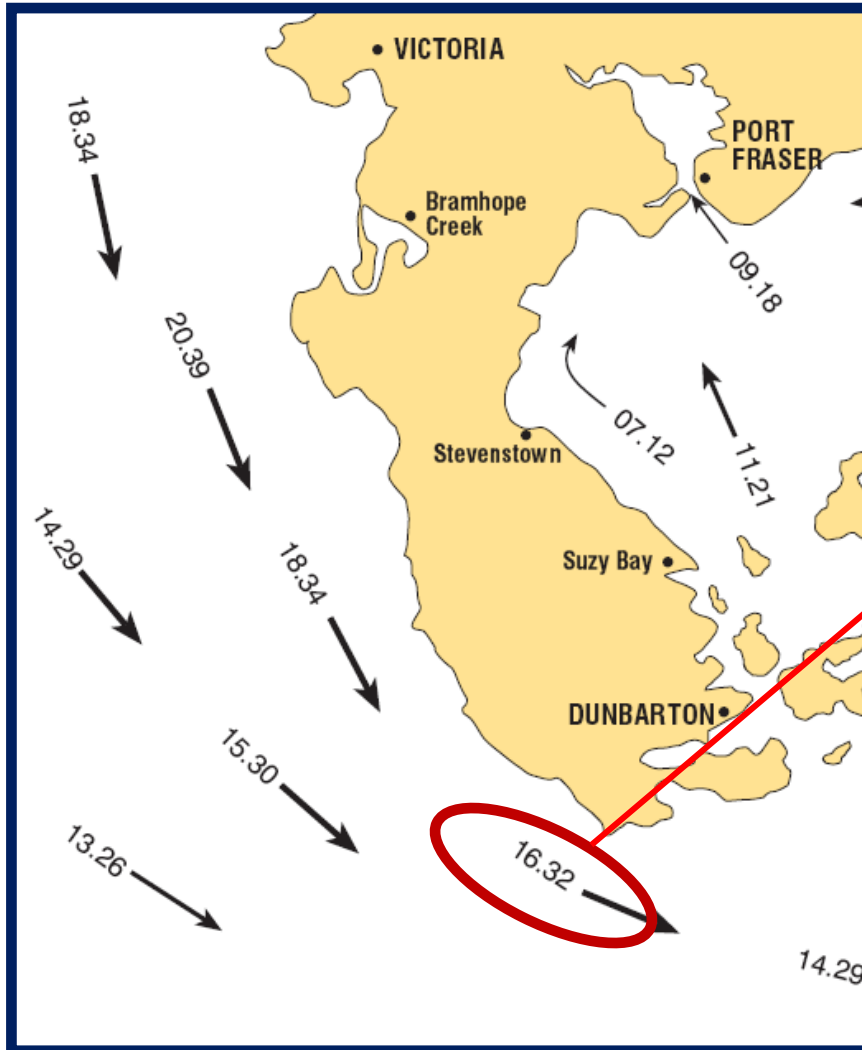
-3 hrs

HW

Spring rate
Neap rate
Direction

= 3.2kn
= 1.6kn
= 114°(T)

Or Use Tidal Atlas



Spring rate = 3.2kn
Neap rate = 1.6kn
Direction = 114°(T)
(for direction overlay plotter)

Summary

Aware of effects

- Airport travelator
- Swept into danger
- Races & over-falls combine with weather & wind

Find sources of information

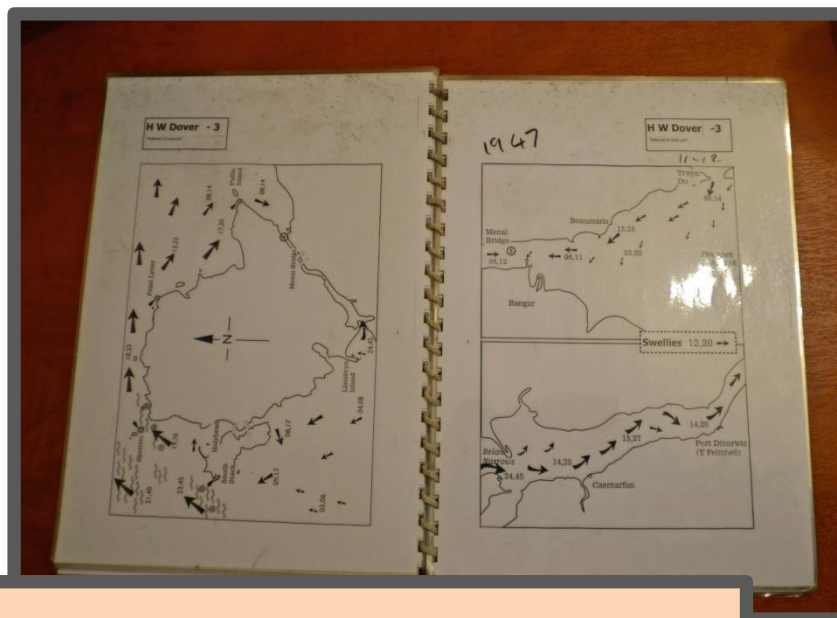
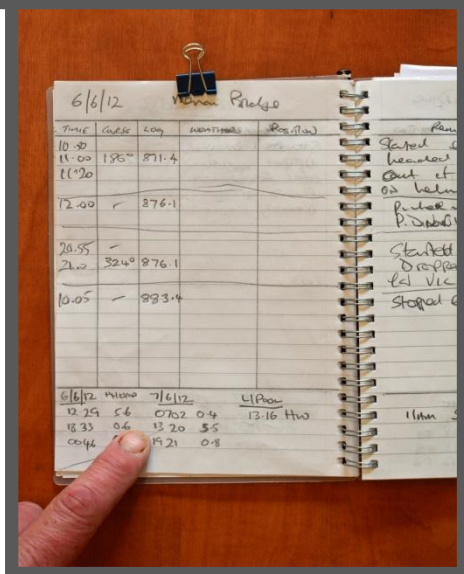
- Almanacs
- Charts
- Tidal Atlases

Passage planning and preparation are key

Top Tips

TOP TIP

In the real world I write down my tidal information in my **LOGBOOK** on the page that I intend to use during the passage. That way I always have the information to hand when I need to refer to it.



TOP TIP

I have laminated my **TIDAL ATLASES** and use china-graph pencils to mark the times of important tidal streams during **PASSAGE PLANNING**. This makes it very easy to refer to them on passage.

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Further Reading



We highly recommend Tim Bartlett's
RYA Navigation Handbook (G6)

You can buy a copy of this book by visiting our on-line shop

www.penguinsailing.com