



TIDAL TIMES & HEIGHTS

Working out tidal times and heights
for Secondary Ports

Secondary Ports

**Now that you understand tidal terms and
what they mean and how to work out a tide
for a STANDARD PORT**

**Lets now try working out a tide
for a SECONDARY PORT**

You Will Need

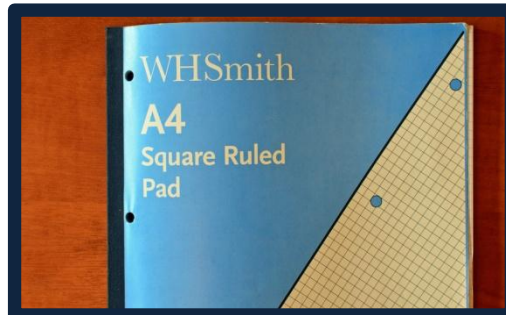
RYA Almanac



Pad of paper, pencil and rubber



Pad of Graph Paper



Question

- What is the time of **HIGH** and **LOW** water at **WALTON BAY** on the morning of **1st May**?
- What is the **TIDAL RANGE** and **HEIGHTS** that morning?
- Is it **SPRINGS** or **NEAPS**?

Part 1 - Time of Tide

Find WALTON BAY in the RYA ALMANAC (page 62)

WALTON BAY DIFFERENCES

STANDARD PORT - PORT FRASER

TIMES

HW		LW	
0000	0600	0500	1100
1200	1800	1700	2300
-0055	-0020	-0051	-0019

HEIGHTS

MHWS	MHWN	MLWN	MLWS
4.2	3.4	1.1	0.4
0.0	+0.1	+0.8	+0.3

Walton Bay

46°11'22N 005°50'43W
Northern Territories CHARTS RYA 3, 4

Standard Port PORT FRASER (+)

Time	High Water	Low Water	MHWS	MHWN	MLWN	MLWS	
0000	0600	0500	1100	4.2	3.4	1.1	0.4
1200	1800	1700	2300				

Differences WALTON BAY

-0055	-0020	-0051	-0019	0.0	+0.1	+0.8	+0.3
-------	-------	-------	-------	-----	------	------	------

DESCRIPTION: The approach to Walton Bay is straightforward and both the approach to Walton Bay and the approach to Port Fraser will leave the unit (UM) bay opens to the SE, the unit will come into view. This port anchorage. This transit will be the NE of the old pier.

TIDAL STREAMS AND HEIGHTS: 2.0kn of tide stream running across within the bay, the area accessible at all stages of the soundings vary between 2m

LIGHTS AND MARKS: Euxine (FLWRG 3rd 5m) (M) is 7.0m high. Walton Harbour is under the light at Lower Walton and pilotage aids.

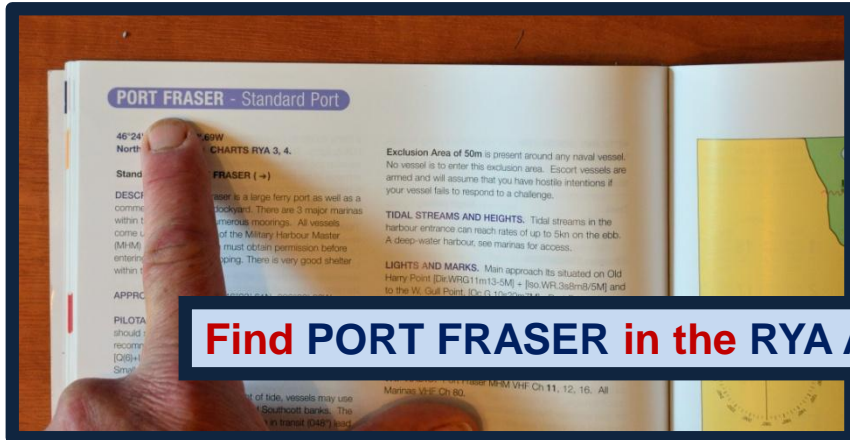
VHF RADIO: None.

FACILITIES: (F) on pier.

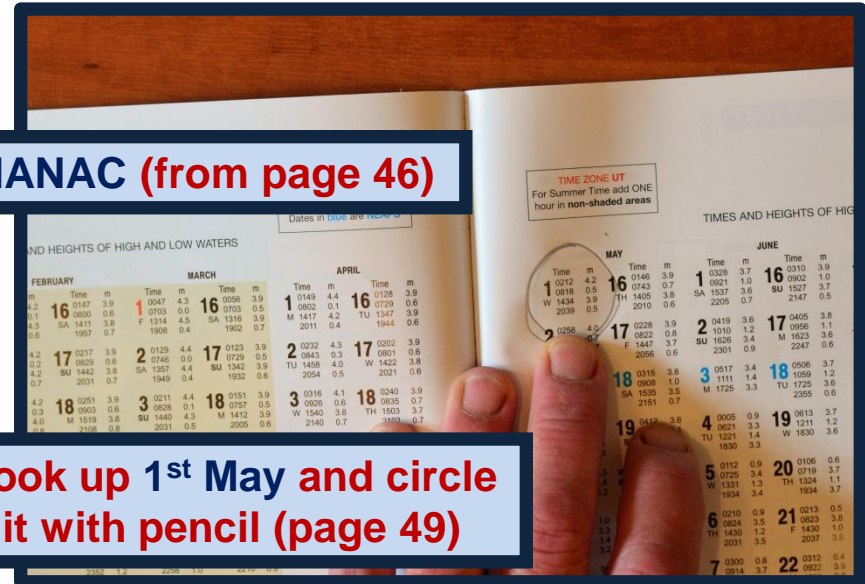
Look for and write down the following information:

- The STANDARD PORT
- The differences for WALTON BAY

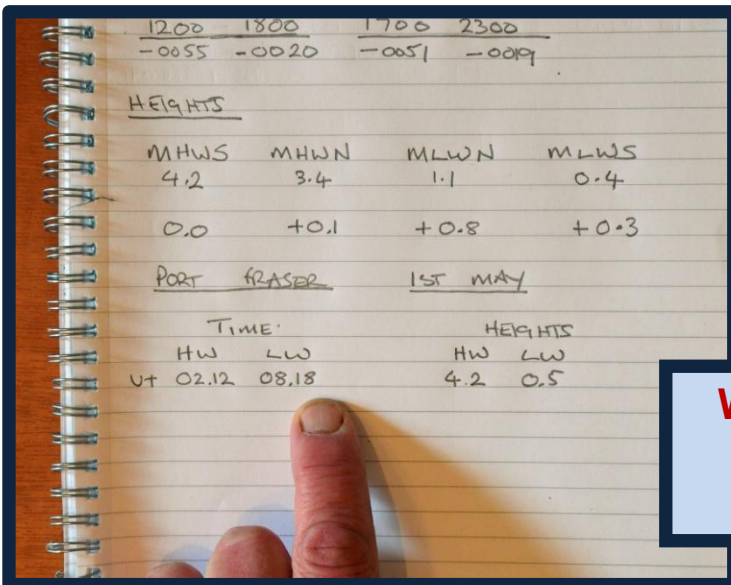
Part 1 - Time of Tide



Find PORT FRASER in the RYA ALMANAC (from page 46)

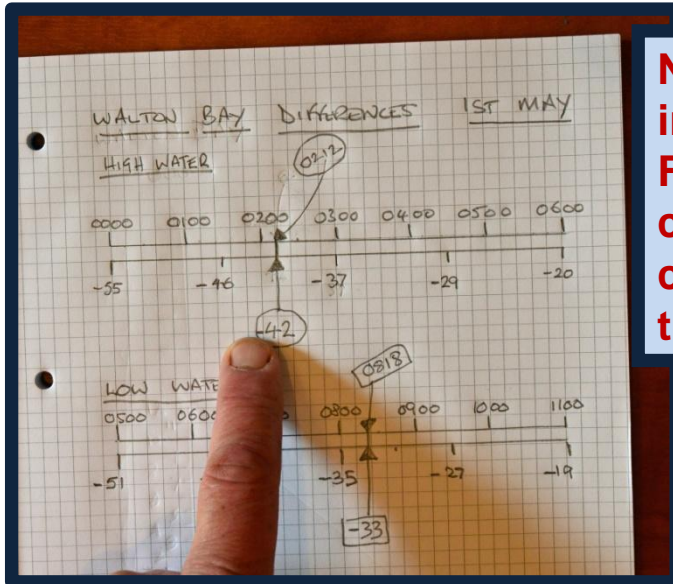


Look up 1st May and circle it with pencil (page 49)

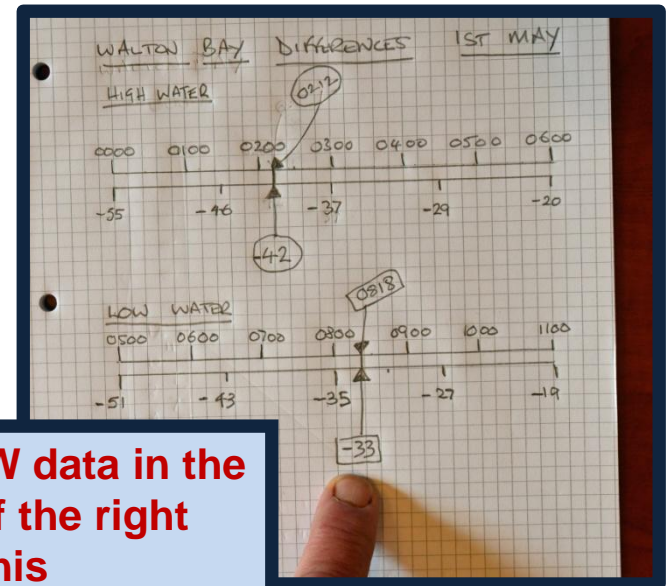


Write down the time in the morning of high water and it's height and then do the same for low water

Part 1 – Time of Tide

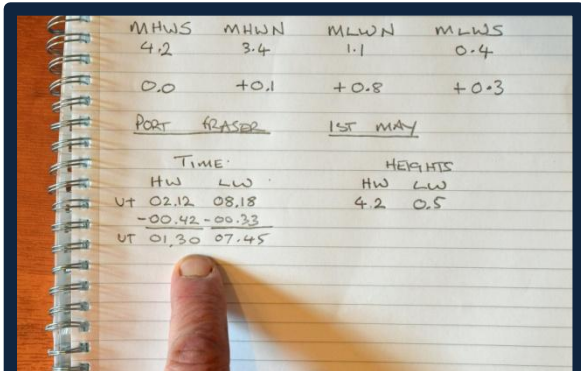


Next, you will need the graph paper to interpolate between the corrections. Firstly expand the HW data and then you can then read off the right correction for the HW time of 02.12 - in this case minus 42 minutes



Now you can do it for LW. Expand the LW data in the same way and then you can then read off the right correction for the LW time of 08.18 - in this case minus 33 minutes

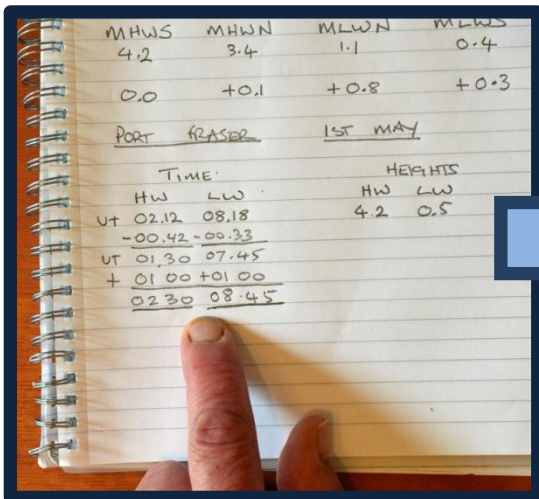
Part 1 – Time of Tide



Now take away the corrections from the Port Fraser tide times



Check to see if you need to make an adjustment for **SUMMER TIME**



Add **ONE HOUR** to the times written down

You now know the **TIME** of the tide

Part 2 – Range & Height

The RANGE OF TIDE is the difference between the HEIGHTS of high and low water

Take 0.5m (low water figure) from 4.2m (high water figure)
= Range of tide 3.7

HEIGHTS

MHWS	MHWN	MLWN	MLWS
4.2	3.4	1.1	0.4
0.0	+0.1	+0.8	+0.3

PORT FRASER 1ST MAY

TIME		HEIGHTS		
HW	LW	HW	LW	RANGE
UT 02.12	08.18	4.2	0.5	3.7m
-00.42 -00.33				
UT 01.30	07.45			
+ 01.00 +01.00				
02.30	08.45			

HEIGHTS

MHWS	MHWN	MLWN	MLWS
4.2	3.4	1.1	0.4
0.0	+0.1	+0.8	+0.3

PORT FRASER 1ST MAY

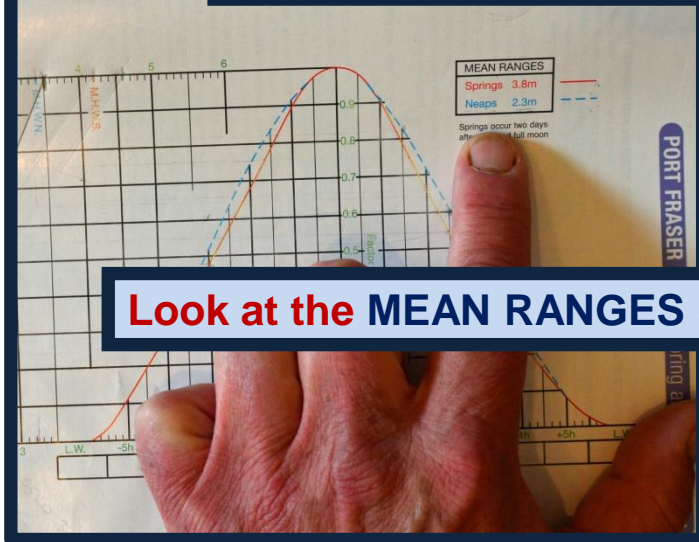
TIME		HEIGHTS		
HW	LW	HW	LW	RANGE
UT 02.12	08.18	4.2	0.5	3.7m
-00.42 -00.33				
UT 01.30	07.45	4.2	0.8	
+ 01.00 +01.00				
02.30	08.45			

Next add the HEIGHT correction for Walton Bay

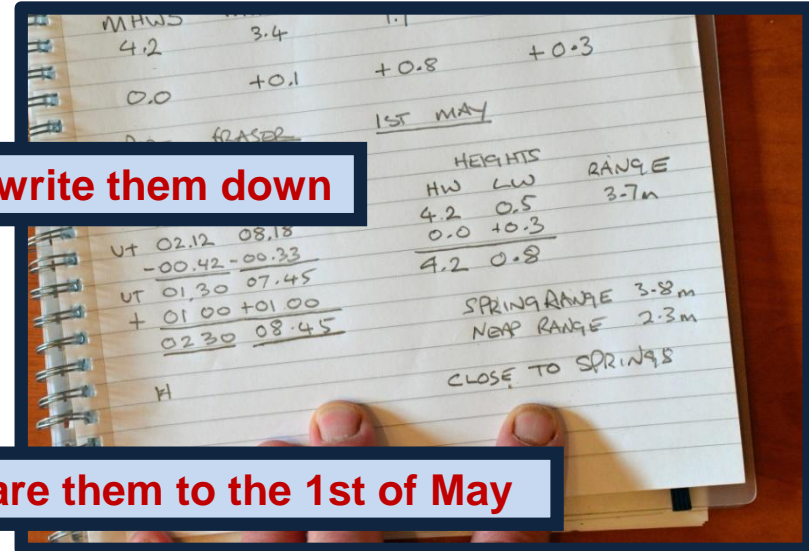
You now know the RANGE and HEIGHTS of the tide

Part 3 – Springs or Neaps

Find the TIDAL CURVE for PORT FRASER (page 51)



Look at the MEAN RANGES and write them down



Compare them to the 1st of May

You now know the range of tide is close to SPRINGS

Additional Information

You now know the **TIME, HEIGHT** and **RANGE** and whether it's **SPRINGS** or **NEAPS** but it would be a good idea to also know if the tide is getting closer to neaps or moving towards springs

Port

SPRING & NEAP TIDES
Dates in red are **SPRINGS**
Dates in blue are **NEAPS**

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

AND HEIGHTS OF HIGH AND LOW WATERS

FEBRUARY			MARCH			APRIL			MAY			JUNE		
Time	m		Time	m		Time	m		Time	m		Time	m	
16	0900	0.6	10	0703	0.5	1	0149	4.4	16	0128	3.9	1	0328	3.7
SA	1411	3.8	F	1314	4.5	M	1417	4.2	TH	1405	3.8	SA	1537	3.6
17	0217	3.9	2	0129	4.4	2	0232	4.3	F	0258	4.0	3	0517	3.4
BU	1442	3.8	SA	1957	4.4	TH	1458	4.0	SA	1447	3.7	TH	1111	1.4
20	1027	0.9	TU	1609	3.8	5	0507	3.5	17	0228	3.9	W	1831	1.3
W	1650	3.5	TU	1609	3.8	W	1528	3.7	18	0315	3.8	TH	1221	1.4
21	0507	3.5	6	0428	3.9	6	0630	3.9	19	0419	3.8	W	1830	3.6
TH	1750	3.3	W	1700	3.5	TH	1614	3.5	20	0512	0.9	TH	1211	1.2
22	0922	3.9	TH	1614	3.5	5	0507	3.5	21	0624	0.5	F	1430	1.2
23	0128	3.9	5	0507	3.5	6	0630	3.9	22	0719	3.7	SA	1537	3.6
24	0328	3.7	6	0630	3.9	7	0814	3.7	23	0814	3.7	SU	1623	3.5
25	0528	4.0	7	0814	3.7	8	1014	3.5	24	0908	1.0	M	1653	3.5
26	0728	4.3	8	1014	3.5	9	1214	3.3	25	1008	0.8	TU	1725	3.8
27	0928	4.6	9	1214	3.3	10	1414	3.1	26	1108	0.6	W	1830	3.6
28	1128	4.9	10	1414	3.3	11	1614	2.9	27	1208	0.4	TH	1930	3.4
29	1328	5.2	11	1614	3.3	12	1814	2.7	28	0108	0.2	F	2030	3.2
30	1528	5.5	12	1814	3.3	13	2014	2.5	29	0208	0.1	SA	2130	3.0
1	1728	5.8	13	2014	3.3	14	2214	2.3	30	0308	0.0	SU	2230	2.8
2	1928	6.1	14	2214	3.3	15	2414	2.1	1	0408	-0.1	M	2330	2.6
3	2128	6.4	15	2414	3.3	16	2614	1.9	2	0508	-0.2	TU	2430	2.4
4	2328	6.7	16	2614	3.3	17	2814	1.7	3	0608	-0.3	W	2530	2.2
5	2528	7.0	17	2814	3.3	18	3014	1.5	4	0708	-0.4	TH	2630	2.0
6	2728	7.3	18	3014	3.3	19	3214	1.3	5	0808	-0.5	F	2730	1.8
7	2928	7.6	19	3214	3.3	20	3414	1.1	6	0908	-0.6	SA	2830	1.6
8	3128	7.9	20	3414	3.3	21	3614	0.9	7	1008	-0.7	SU	2930	1.4
9	3328	8.2	21	3614	3.3	22	3814	0.7	8	1108	-0.8	M	3030	1.2
10	3528	8.5	22	3814	3.3	23	4014	0.5	9	1208	-0.9	TU	3130	1.0
11	3728	8.8	23	4014	3.3	24	4214	0.3	10	1308	-1.0	W	3230	0.8
12	3928	9.1	24	4214	3.3	25	4414	0.1	11	1408	-1.1	TH	3330	0.6
13	4128	9.4	25	4414	3.3	26	4614	-0.1	12	1508	-1.2	F	3430	0.4
14	4328	9.7	26	4614	3.3	27	4814	-0.3	13	1608	-1.3	SA	3530	0.2
15	4528	10.0	27	4814	3.3	28	5014	-0.5	14	1708	-1.4	SU	3630	0.0
16	4728	10.3	28	5014	3.3	29	5214	-0.7	15	1808	-1.5	M	3730	-0.2
17	4928	10.6	29	5214	3.3	30	5414	-0.9	16	1908	-1.6	TU	3830	-0.4
18	5128	10.9	30	5414	3.3	31	5614	-1.1	17	2008	-1.7	W	3930	-0.6
19	5328	11.2	31	5614	3.3	1	5814	-1.3	18	2108	-1.8	TH	4030	-0.8
20	5528	11.5	1	5814	3.3	2	6014	-1.5	19	2208	-1.9	F	4130	-1.0
21	5728	11.8	2	6014	3.3	3	6214	-1.7	20	2308	-2.0	SA	4230	-1.2
22	5928	12.1	3	6214	3.3	4	6414	-1.9	21	2408	-2.1	SU	4330	-1.4
23	6128	12.4	4	6414	3.3	5	6614	-2.1	22	2508	-2.2	M	4430	-1.6
24	6328	12.7	5	6614	3.3	6	6814	-2.3	23	2608	-2.3	TU	4530	-1.8
25	6528	13.0	6	6814	3.3	7	7014	-2.5	24	2708	-2.4	W	4630	-2.0
26	6728	13.3	7	7014	3.3	8	7214	-2.7	25	2808	-2.5	TH	4730	-2.2
27	6928	13.6	8	7214	3.3	9	7414	-2.9	26	2908	-2.6	F	4830	-2.4
28	7128	13.9	9	7414	3.3	10	7614	-3.1	27	3008	-2.7	SA	4930	-2.6
29	7328	14.2	10	7614	3.3	11	7814	-3.3	28	3108	-2.8	SU	5030	-2.8
30	7528	14.5	11	7814	3.3	12	8014	-3.5	29	3208	-2.9	M	5130	-3.0
31	7728	14.8	12	8014	3.3	13	8214	-3.7	30	3308	-3.0	TU	5230	-3.2
1	7928	15.1	13	8214	3.3	14	8414	-3.9	31	3408	-3.1	W	5330	-3.4
2	8128	15.4	14	8414	3.3	15	8614	-4.1	1	3508	-3.2	TH	5430	-3.6
3	8328	15.7	15	8614	3.3	16	8814	-4.3	2	3608	-3.3	F	5530	-3.8
4	8528	16.0	16	8814	3.3	17	9014	-4.5	3	3708	-3.4	SA	5630	-4.0
5	8728	16.3	17	9014	3.3	18	9214	-4.7	4	3808	-3.5	SU	5730	-4.2
6	8928	16.6	18	9214	3.3	19	9414	-4.9	5	3908	-3.6	M	5830	-4.4
7	9128	16.9	19	9414	3.3	20	9614	-5.1	6	4008	-3.7	TU	5930	-4.6
8	9328	17.2	20	9614	3.3	21	9814	-5.3	7	4108	-3.8	W	6030	-4.8
9	9528	17.5	21	9814	3.3	22	10014	-5.5	8	4208	-3.9	TH	6130	-5.0
10	9728	17.8	22	10014	3.3	23	10214	-5.7	9	4308	-4.0	F	6230	-5.2
11	9928	18.1	23	10214	3.3	24	10414	-5.9	10	4408	-4.1	SA	6330	-5.4
12	10128	18.4	24	10414	3.3	25	10614	-6.1	11	4508	-4.2	SU	6430	-5.6
13	10328	18.7	25	10614	3.3	26	10814	-6.3	12	4608	-4.3	M	6530	-5.8
14	10528	19.0	26	10814	3.3	27	11014	-6.5	13	4708	-4.4	TU	6630	-6.0
15	10728	19.3	27	11014	3.3	28	11214	-6.7	14	4808	-4.5	W	6730	-6.2
16	10928	19.6	28	11214	3.3	29	11414	-6.9	15	4908	-4.6	TH	6830	-6.4
17	11128	19.9	29	11414	3.3	30	11614	-7.1	16	5008	-4.7	F	6930	-6.6
18	11328	20.2	30	11614	3.3	31	11814	-7.3	17	5108	-4.8	SA	7030	-6.8
19	11528	20.5	31	11814	3.3	1	12014	-7.5	18	5208	-4.9	SU	7130	-7.0
20	11728	20.8	1	12014	3.3	2	12214	-7.7	19	5308	-5.0	M	7230	-7.2
21	11928	21.1	2	12214	3.3	3	12414	-7.9	20	5408	-5.1	TU	7330	-7.4
22	12128	21.4	3	12414	3.3	4	12614	-8.1	21	5508	-5.2	W	7430	-7.6
23	12328	21.7	4	12614	3.3	5	12814	-8.3	22	5608	-5.3	TH	7530	-7.8
24	12528	22.0	5	12814	3.3	6	13014	-8.5	23	5708	-5.4	F	7630	-8.0
25	12728	22.3	6	13014	3.3	7	13214	-8.7	24	5808	-5.5	SA	7730	-8.2
26	12928	22.6	7	13214	3.3	8	13414	-8.9	25	5908	-5.6	SU	7830	-8.4
27	13128	22.9	8	13414	3.3	9	13614	-9.1	26	6008	-5.7	M	7930	-8.6
28	13328	23.2	9	13614	3.3	10	13814	-9.3	27	6108	-5.8	TU	8030	-8.8
29	13528	23.5	10	13814	3.3	11	14014	-9.5	28	6208	-5.9	W	8130	-9.0
30	13728	23.8	11	14014	3.3	12	14214	-9.7	29	6308	-6.0	TH	8230	-9.2
31	13928	24.1	12	14214	3.3	13	14414	-9.9	30	6408	-6.1	F	8330	-9.4
1	14128	24.4	1	14414	3.3	14	14614	-10.1	31	6508	-6.2	SA	8430	-9.6
2	14328	24.7	2	14614	3.3	15	14814	-10.3	1	6608	-6.3	SU	8530	-9.8
3	14528	25.0	3	14814	3.3	16	15014	-10.5	2	6708	-6.4	M	8630	-10.0
4	14728	25.3	4	15014	3.3	17	15214	-10.7	3	6808	-6.5	TU	8730	-10.2
5	14928	25.6	5	15214	3.3	18	15414	-10.9	4	6908	-6.6	W	8830	-10.4
6	15128	25.9	6	15414	3.3	19	15614	-11.1	5	7008	-6.7	TH	8930	-10.6
7	15328	26.2	7	15614	3.3	20	15814	-11.3	6	7108	-6.8	F	9030	-10.8
8	15528	26.5	8	15814	3.3	21	16014	-11.5	7	7208	-6.9	SA	9130	-11.0
9	15728	26.8	9	16014	3.3	22	16214	-11.7	8	7308	-7.0	SU	9230	-11.2
10	15928	27.1	10	16214	3.3	23	16414	-11.9	9	7408	-7.1	M	9330	-11.4
11	16128	27.4	11	16414	3.3	24	16614	-12.1	10	7508	-7.2	TU	9430	-11.6
12	16328	27.7	12	16614	3.3	25	16814	-12.3	11	7608	-7.3	W	9530	-11.8
13	16528	28.0	1	16814	3.3	26	17014	-12.5	12	7708	-7.4	TH	9630	-12.0
14	16728	28.3	2	17014	3.3	27	17214	-12.7	13	7808	-7.5	F	9730	-12.2
15	16928	28.6	3	17214	3.3	28	17414	-12.9	14	7908	-7.6	SA	9830	-12.4
16	17128	28.9	4	17414	3.3	29	17614	-13.1	15	8008	-7.7	SU	9930	-12.6
17	17328	29.2	5	17614	3.3	30	17814	-13.3	16	8108	-7.8	M	10030	-12.8
18	17528	29.5	6	17814										

Answer

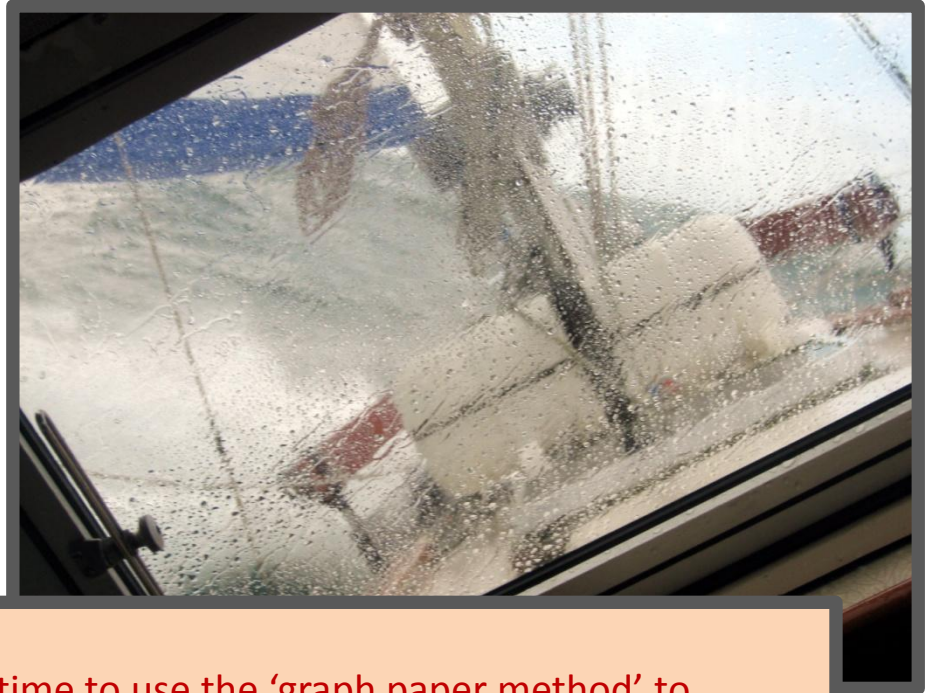
1.	Walton Bay	1 st May		<u>Heights</u>	
		<u>Times</u>		HW	LW
		HW	LW	HW	LW
	Port Fraser (UT)	02.12	08.18	4.2	0.5
	correction -	<u>00.42</u>	<u>00.33</u>	<u>0.0</u>	<u>0.3</u>
	Walton Bay (UT)	01.30	07.45	4.2	0.8
	+	<u>01.00</u>	<u>01.00</u>		
	DST	02.30	08.45		

2. Range Port Fraser on 1st May: 4.2m – 0.5m = 3.7m

3. Spring range for Port Fraser is 3.8m
Neap range for Port Fraser is 2.3m
Therefore actual range is very close to springs
Almanac shows springs have just past and the tide is
trending towards neaps

Top Tips

Practical Tips for On-board Use



TOP TIP

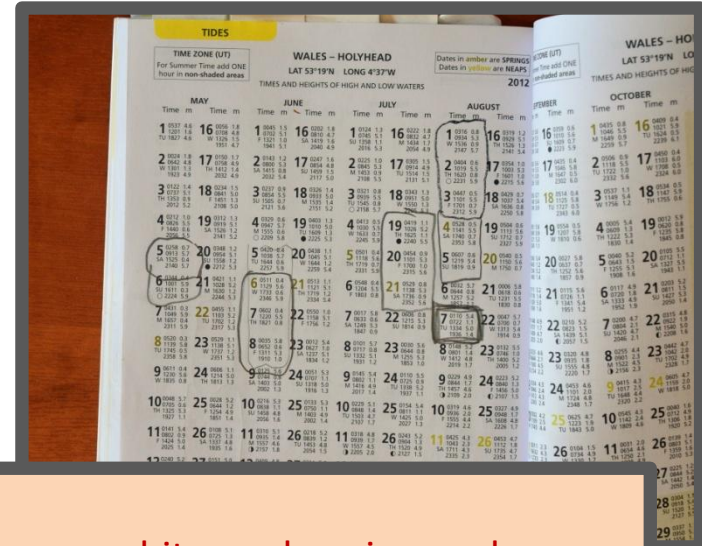
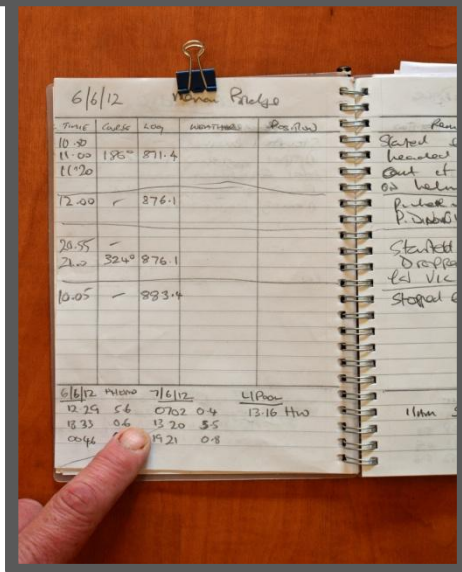
When navigating at sea you may not have time to use the 'graph paper method' to interpolate tidal differences. With practice and experience you will be able to quickly compute in your head reasonably accurate figures.

You may be 10 or 15 minutes out but this is rarely an issue except in marginal conditions and; if you need to be that accurate then perhaps you should review your passage options and give yourself more margin for error.

Top Tips

TOP TIP

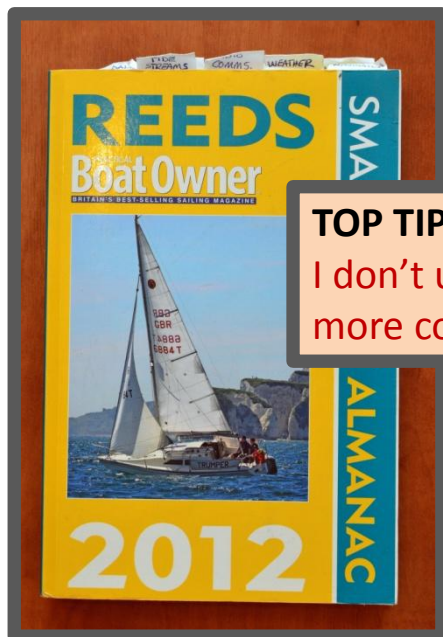
In the real world I write down my tidal information in my **LOGBOOK** on the page that I intend to use during the passage. That way I always have the information to hand when I need to refer to it.



TOP TIP

As almanacs are one hit wonders, ie, you buy a new one each year, I always circle the range of dates I am using. This is so I don't get confused and copy the wrong data and it makes checking much easier and quicker.

Top Tips



TOP TIP

I don't use a full almanac and prefer the **PBO Cruising Almanac**....it's more compact, better value for money and has all the information I need.



TOP TIP

Almanacs have load of pages of similar looking information. To make it easy to find tide times of ports I often use, I make tabs out of stickers. This way I can find the information I need quickly when I need to refer to it.

This website helps support us and our families.
If you found this document useful please consider donating £3.50 to
the running of this website.

[CLICK HERE TO DONATE](#)

Thank you for your honesty.

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