



Tidal Streams

Computation of Rates

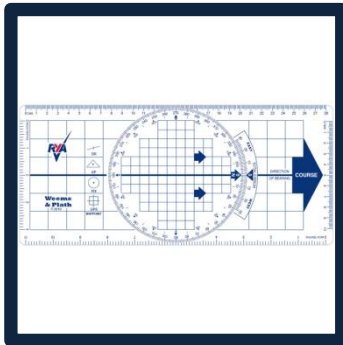
Introduction

How to work out the strength of a tidal stream using the 'Computation of Rates' table



You will need

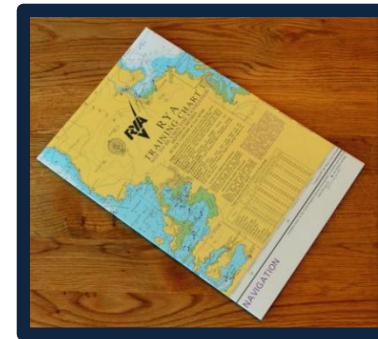
RYA Chartplotter



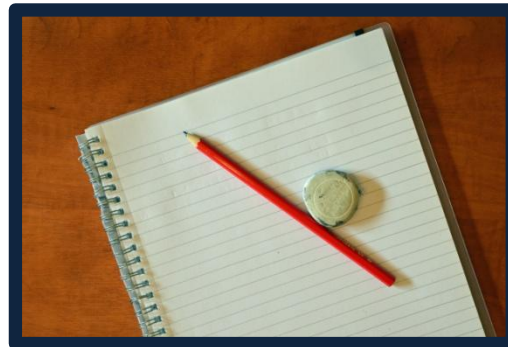
RYA Almanac



RYA Practice Chart 3



Pad of paper, pencil and rubber



Question

What is the rate and direction of the tidal stream off Cape Woodward at 13.15 DST on Friday 26th April?

Springs or Neaps?

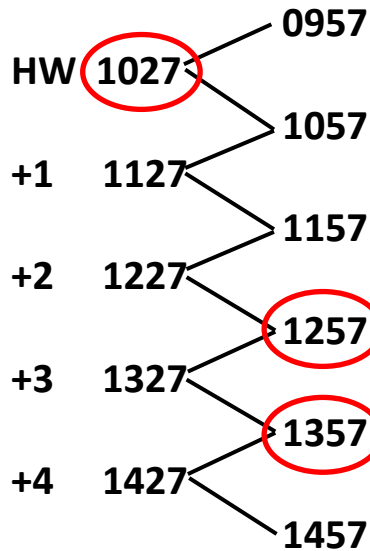
.....or is it in between?



It's VERY HIGH springs

How many hours after HW?

How many hours **after** HW is **13.15 DST?**



0927 UT (1027 DST)

5.8m

0.2m –

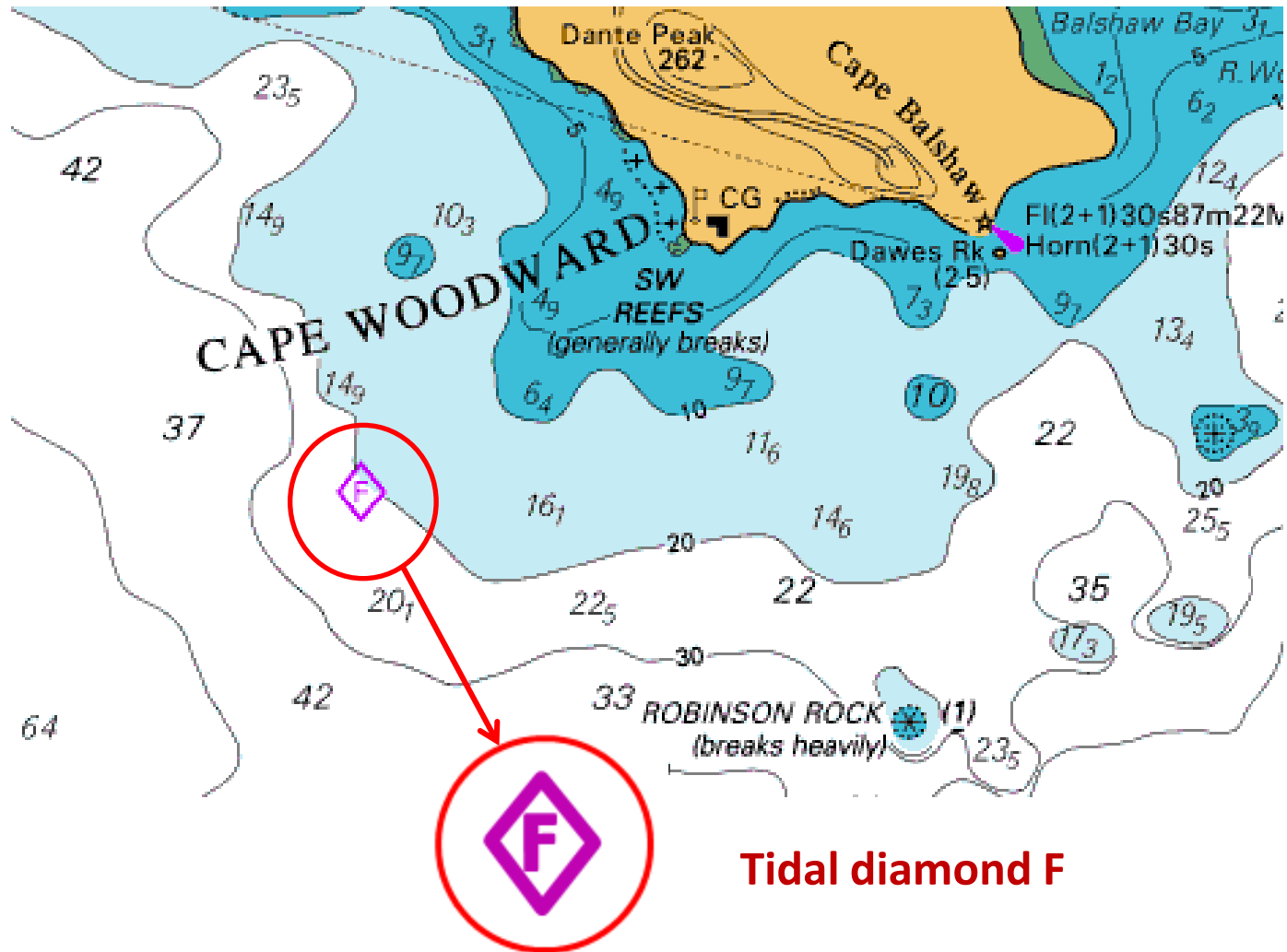
5.6m range

5.5m

0.6m

1315 falls into HW+3 hour (HW +3)

Find nearest diamond



Tidal diamond F

Look at table

Tidal diamond F

Hours		Geographical Position		Tidal Streams referred to HW at VICTORIA																				
		A	B	C	D	E	F	G	H	I	J	K	L	M										
		46°20'5 N 5 50'0W	46°20'6 N 6 18'4W	46°11'2 N 5 43'2W	46°10'6 N 5 53'9W	46°10'5 N 6 16'1W	46°07'8 N 6 05'5W	46°03'8 N 5 40'0W	46°02'1 N 5 17'2W	46°00'0 N 5 55'3W	45°56'0 N 5 42'2W	45°52'6 N 5 59'4W	45°49'3 N 6 20'4W											
Before High Water	6	-6	110	1 8 0 8	158	1 0 0 6	189	1 7 0 9	216	0 6 0 3	302	1 4 0 7	304	1 1 0 6	273	2 8 1 5	286	1 8 1 0	289	2 5 1 3	334	1 2 0 6	355	1 6 0 8
	5	-5	108	1 0 0 5	153	1 7 0 8	192	1 1 0 6	003	0 8 0 4	144	1 0 0 5	113	1 2 0 7	268	1 3 0 7	258	0 9 0 5	298	1 6 0 9	135	0 9 0 5	357	0 9 0 5
	4	-4	026	0 4 0 2	159	2 8 1 5	290	0 6 0 4	005	1 6 0 8	138	1 9 1 0	116	2 1 1 1	170	0 5 0 3	180	1 7 0 8	026	0 8 0 5	139	1 4 0 7	172	0 8 0 4
	3	-3	297	1 4 0 7	154	3 9			8	2 1 1 0	131	3 0 1 5	114	3 2 1 6	097	1 2 0 9	097	3 3 1 7	101	1 9 1 0	142	1 3 0 7	175	1 9 1 0
	2	-2	278	2 0 1 1	165	3 2			0	2 0 1 0	124	3 4 1 7	100	3 6 1 8	098	3 3 1 7	104	2 9 1 5	120	3 7 1 9	119	2 9 1 5	145	0 9 0 5
	1	-1	274	1 7 0 8	173	2 4			2	1 7 0 8	118	2 9 1 5	098	3 1 1 5	095	3 5 1 8	095	3 7 1 9	117	3 1 1 6	110	3 2 1 7	325	1 0 0 6
After High Water	0	0	271	1 1 0 5	186	1 2			4	1 2 0 7	115	1 8 0 9	096	2 2 1 2	097	2 6 1 4	092	2 8 1 4	112	1 9 1 0	109	2 4 1 2	329	1 6 0 8
	+1	+1	170	0 5 0 3	349	1 1			6	0 7 0 4	107	0 8 0 5	082	1 9 1 0	100	1 6 0 8	090	1 9 1 0	108	1 3 0 7	102	1 6 0 9	329	1 6 0 8
	+2	+2	111	1 6 0 8	341	3 0 1 6	179	1 6 0 8	199	1 0 0 5	310	1 4 0 7	282	1 7 0 9	110	0 7 0 4	352	0 8 0 5	199	0 7 0 4	098	0 9 0 5	332	1 8 0 9
	+3	+3	114	1 8 0 9	338	3 7 1 8	185	1 9 1 0	208	1 4 0 7	307	2 8 1 2	279	3 1 1 6	279	1 0 0 6	293	2 0 1 1	288	1 6 0 8	286	1 1 0 6	334	2 0 1 1
	+4	+4	113	2 2 1 2	342	3 9 2 0	187	2 1 1 2	210	1 9 1 0	306	3 6 1 8	276	3 6 1 8	283	1 8 0 9	298	3 3 1 6	293	2 9 1 5	291	2 0 1 1	333	1 7 0 9
	+5	+5	112	2 0 1 0	341	2 8 1 5	189	2 0 1 1	212	1 7 0 8	306	3 1 1 6	285	3 1 1 6	283	3 1 1 6	289	3 5 1 8	296	3 6 1 8	298	3 3 1 7	331	1 5 0 8
+6	+6	110	1 8 0 9	355	2 3 1 2	190	1 8 0 9	214	0 9 0 5	304	2 5 1 3	298	2 9 1 5	276	3 5 1 8	288	2 8 1 4	292	2 7 1 3	296	3 2 1 6	332	1 3 0 7	

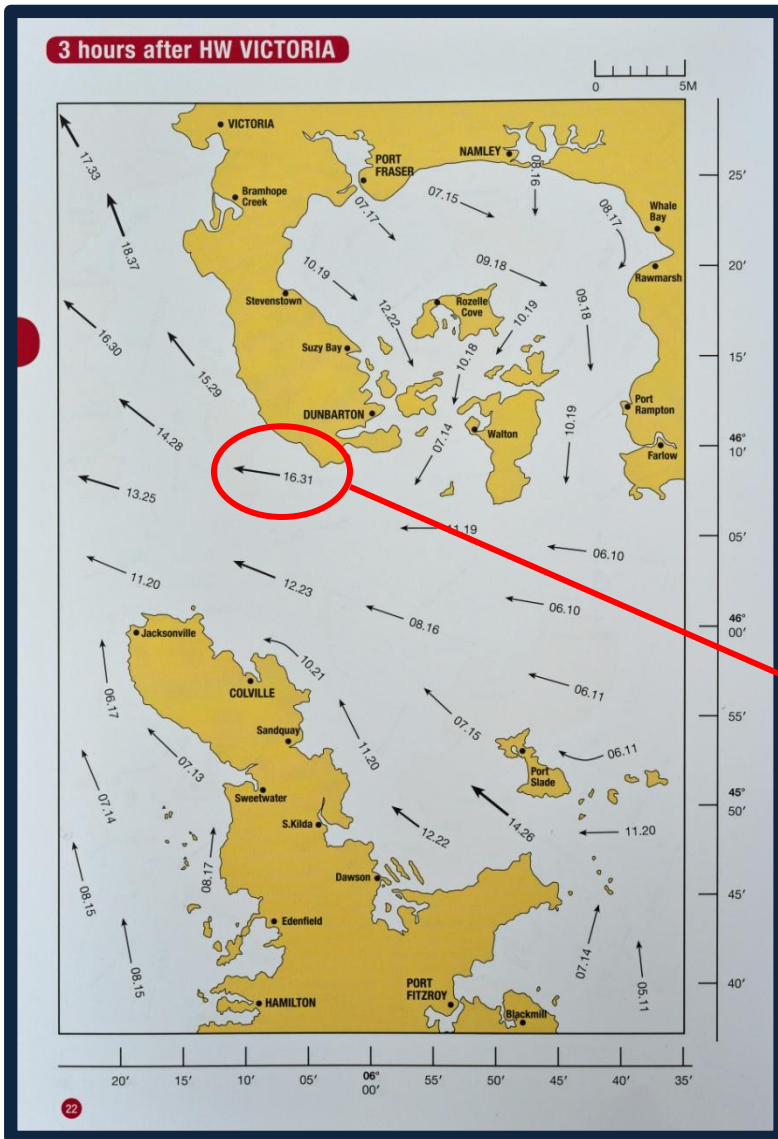
+3 hrs

HW

Spring rate = 3.1kn
 Neap rate = 1.6kn
 Direction = 279°(T)

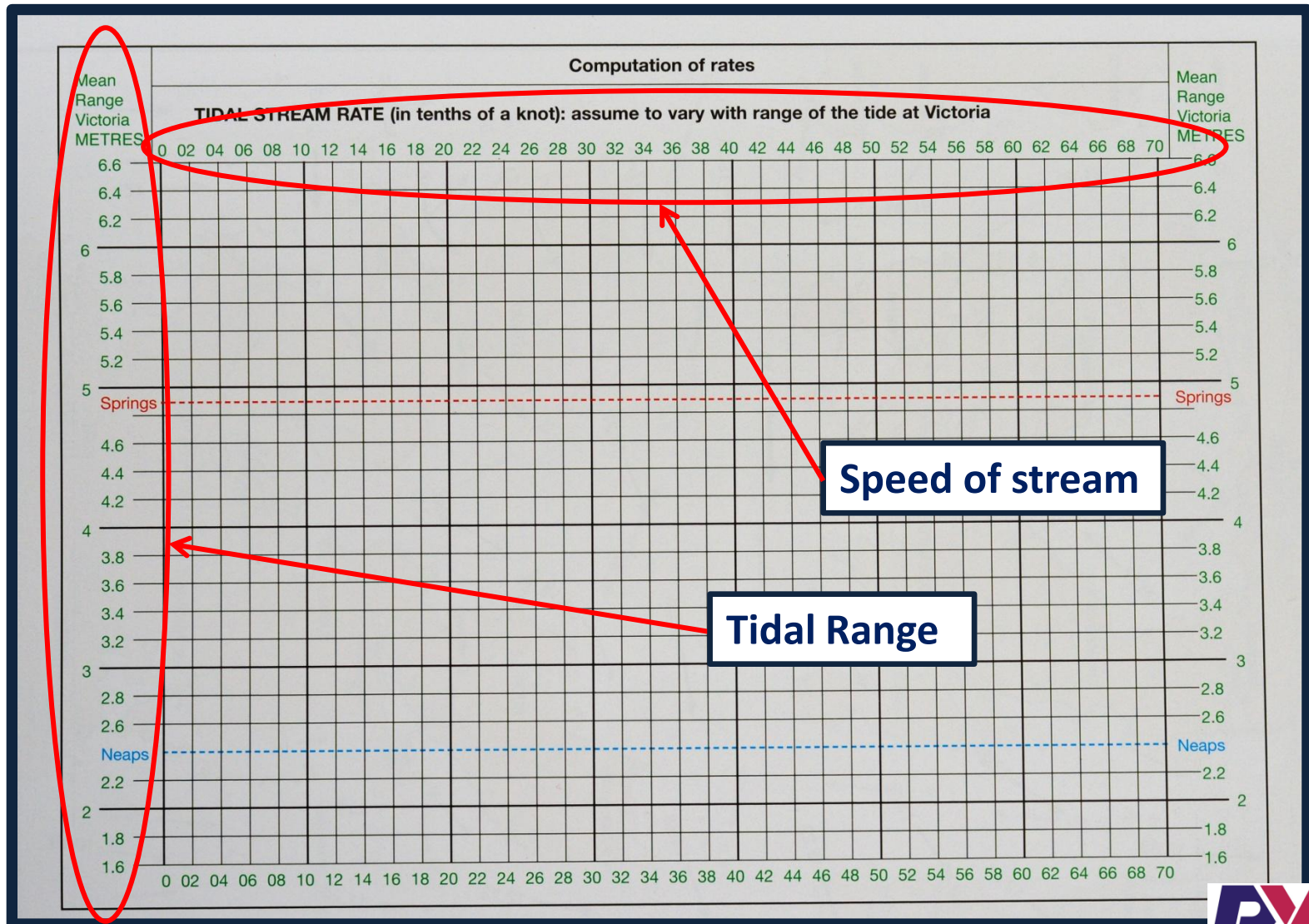


Or use tidal atlas

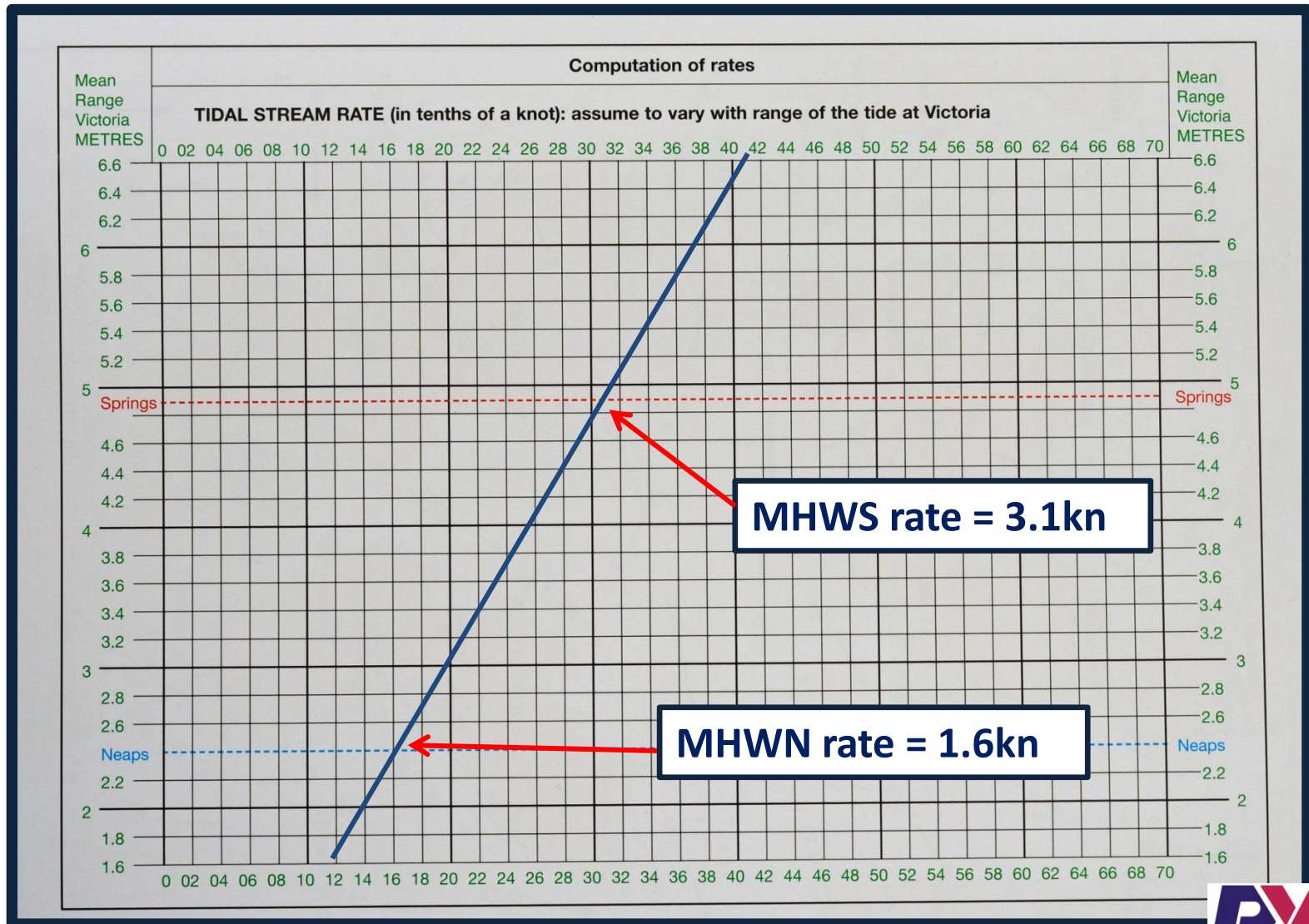


Spring rate = 3.1kn
Neap rate = 1.6kn
Direction = 279°(T)
(for direction overlay plotter)

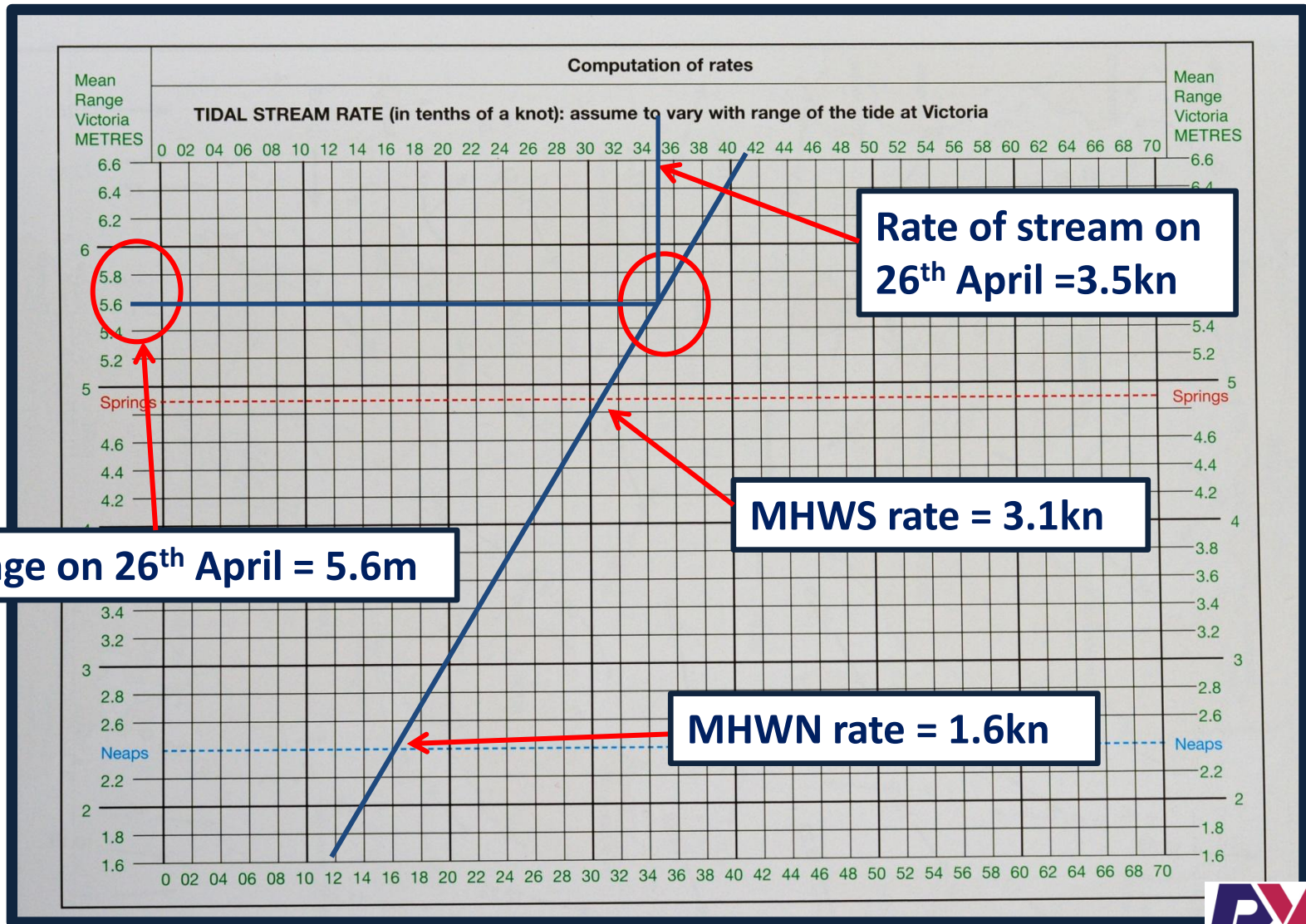
Computation of Rates Table



Computation of Rates Table



Computation of Rates Table



Question

What is the rate and direction of the tidal stream off West Point Ledge at 12.30 DST on Monday 22nd July?

Find out tide times

First, find the time of HW & LW and the heights of HW & LW at Victoria on Monday 22nd July (RYA almanac page 34)

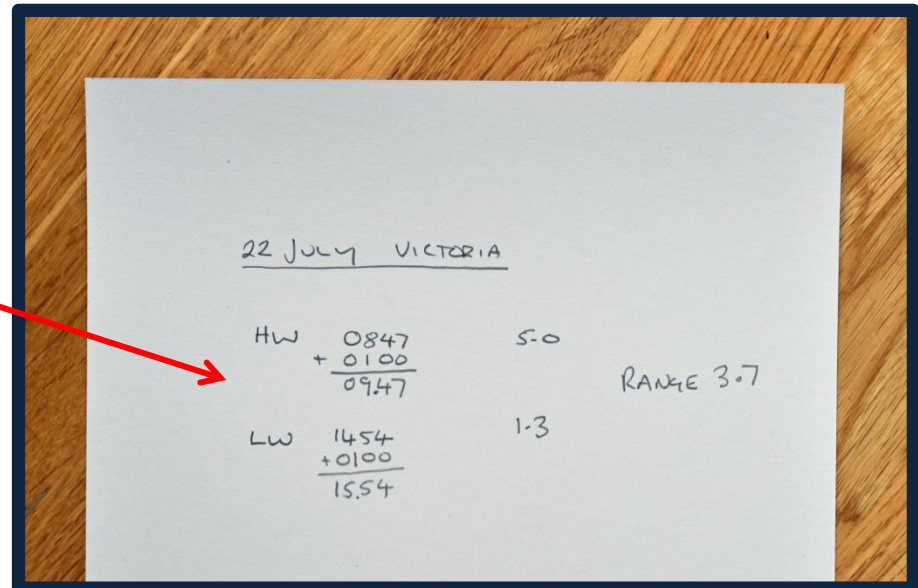
VICTORIA - Standard Port

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

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

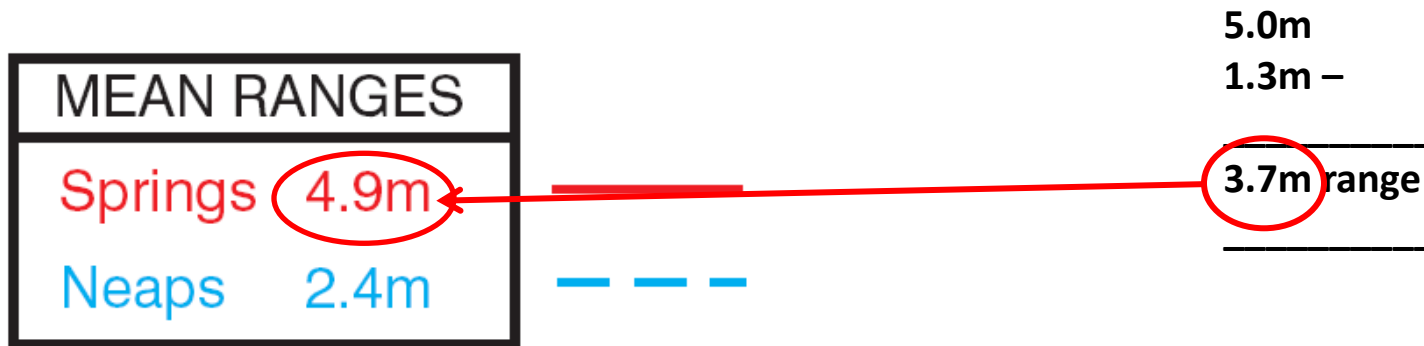
TIMES AND HEIGHTS OF HIGH AND LOW WATERS

MAY		JUNE		JULY		AUGUST	
Time	m	Time	m	Time	m	Time	m
1 0046	5.4	16 0015	5.2	1 0159	5.0	16 0139	5.2
0656	0.8	0822	1.1	0822	1.5	0801	1.1
W 1315	5.2	TH 1241	5.1	SA 1440	4.5	SU 1417	4.9
1920	1.2	1842	1.3	2038	1.9	2018	1.5
2 0132	5.2	17 0056	5.1	2 0251	4.8	17 0236	5.1
2 0747	1.2	0713	1.2	0920	1.7	0901	1.2
TH 1407	4.8	F 1327	4.9	SU 1542	4.3	M 1520	4.8
2011	1.7	1929	1.5	2139	2.2	2118	1.6
3 0223	4.9	18 0145	5.0	3 0351	4.6	18 0339	5.0
0846	1.6	0808	1.4	1024	1.9	1007	1.2
F 1509	4.4	SA 1424	4.7	M 1653	4.2	TU 1628	4.7
2111	2.1	2026	1.7	2249	2.3	2227	1.7
4 0325	4.6	19 0245	4.8	4 0458	4.5	19 0447	5.0
0958	1.9	0914	1.5	1130	1.9	1115	1.2
SA 1630	4.2	SU 1535	4.4	TU 1802	4.3	W 1738	4.7
2229	2.3	2229	1.9	2357	2.2	2336	1.6
5 0442	4.4	20 0309	4.7	5 0603	4.5	20 0555	5.0
1119	2.0	1037	1.5	1230	1.8	1219	1.1
SU 1758	4.2	M 1656	4.5	W 1900	4.4	TH 1842	4.9
2351	2.3	2256	1.9	2351	2.2	2336	1.6
6 0602	4.4	21 0517	4.8	6 0655	2.1	21 0041	1.5
1232	1.9	1143	1.3	0700	4.6	0658	5.1
M 1908	4.3	TU 1811	4.7	TH 1321	1.5	F 1319	1.0
				1946	4.6	1938	5.0
7 0059	2.1	22 0009	1.7	7 0144	1.8	22 0140	1.3
0706	4.6	0626	5.0	7 0748	4.8	22 0756	5.2
TU 1329	1.7	W 1249	1.1	F 1404	1.5	SA 1413	1.0
1957	4.6	1912	4.9	2025	4.8	2029	5.2
8 0150	1.9	23 0111	1.4	8 0225	1.6	23 0234	1.1
0754	4.8	0725	5.2	0821	4.9	0805	5.3
W 1413	1.5	TH 1344	0.8	SA 1442	1.3	SU 1503	0.9
2034	4.8	2003	5.2	2100	5.0	2116	5.4
9 0230	1.6	24 0203	1.1	9 0303	1.4	24 0325	0.9
0833	5.0	0816	5.5	9 0910	5.1	24 0940	5.4
TH 1448	1.3	F 1434	0.6	SU 1517	1.2	M 1549	0.9
2105	5.0	2049	5.4	2134	5.1	O 2201	5.5
10 0304	1.4	25 0251	0.8	10 0339	1.2	25 0413	0.6
0908	5.1	0905	5.6	0947	5.2	1009	5.2
F 1519	1.1	SA 1520	0.5	M 1553	1.1	TU 1633	0.9
2134	5.1	2133	5.6	2208	5.3	2245	5.5
11 0335	1.2	26 0337	0.6	11 0416	1.1	26 0458	0.8
0941	5.2	0952	5.7	1025	5.2	1114	5.3
SA 1550	1.0	SU 1604	0.5	TU 1629	1.0	W 1716	1.0
2203	5.2	O 2216	5.6	2243	5.3	2328	5.5
12 0406	1.1	27 0423	0.5	12 0485	1.0	27 0543	0.9
0414	5.3	0438	5.7	1105	5.2	1158	5.2
SU 1620	0.9	M 1648	0.6	W 1707	1.0	TH 1757	1.1
2233	5.3	2259	5.7	2322	5.4	2352	5.6
13 0438	1.0	28 0509	0.6	13 0536	0.9	28 0610	0.5
1047	5.3	1125	5.5	1146	5.2	1221	5.4
M 1652	0.9	TU 1731	0.8	TH 1748	1.1	F 1840	0.9
2304	5.3	2343	5.6	1837	1.3	SA 1821	0.9
14 0512	1.0	29 0555	0.7	14 0603	0.5	29 0651	0.5
1122	6.3	1212	5.3	0619	0.9	0707	1.2
TU 1725	1.0	W 1815	1.0	F 1232	5.1	SA 1322	4.8
2338	5.3	1832	1.2	1832	1.2	1918	1.5
15 0548	1.0	30 0027	5.4	15 0049	5.3	30 0132	5.1
1159	5.2	0641	0.9	0708	1.0	0750	1.4
W 1802	1.1	TH 1731	0.8	SA 1821	0.9	F 1840	0.9
		1859	1.3	1921	1.3	2001	1.7
31 0113	5.2	0730	1.2				
		F 1347	4.7				
		1946	1.6				



Springs or Neaps?

.....or is it in between?



It's midway between springs and neaps

How many hours after HW?

How many hours **after** HW is **12.30 DST?**

The whiteboard contains the following handwritten content:

LW 1454 1-3
+0100

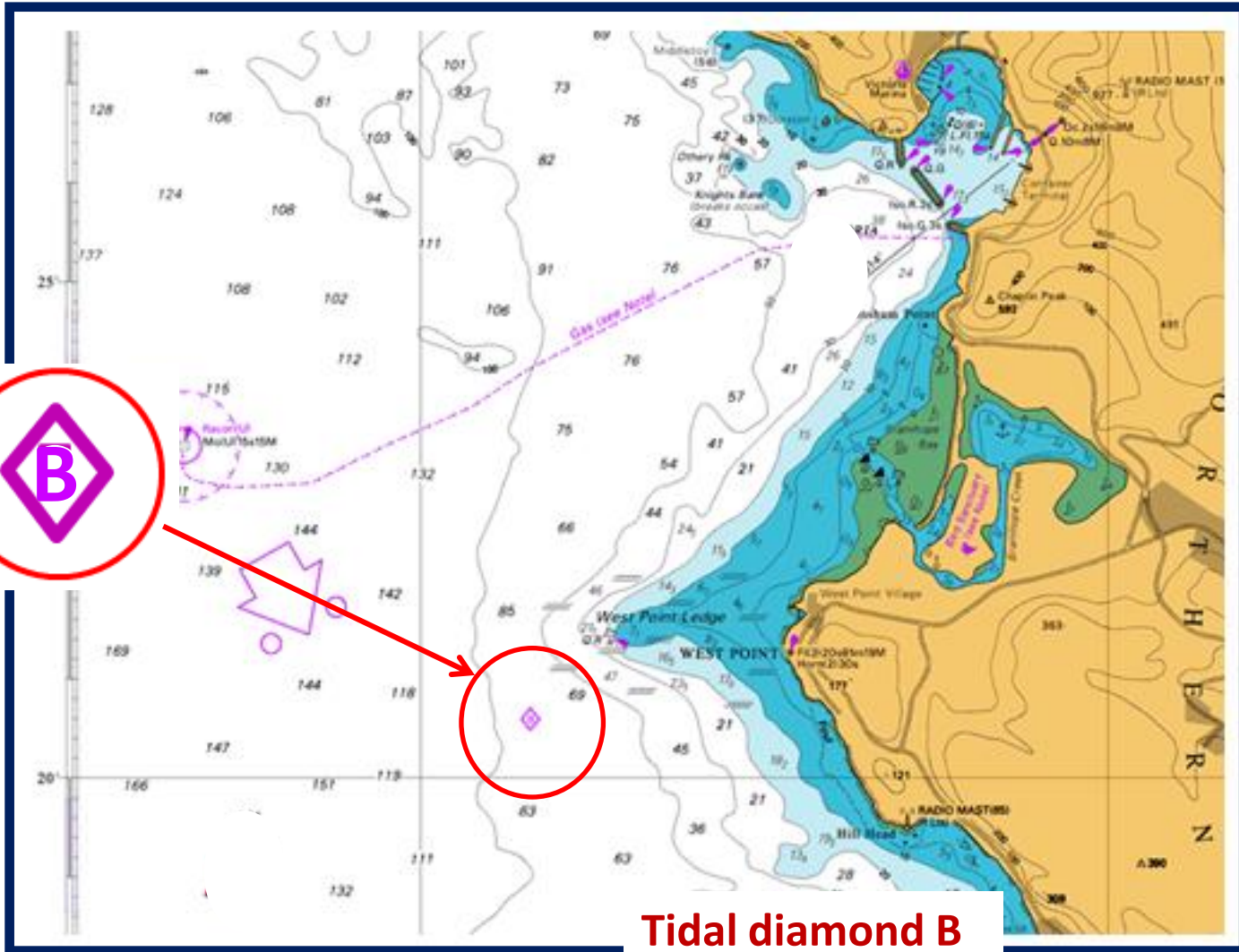
15.54

HW	0917	0947	1017
HW+1	1017	—	1117
HW+2	1117	—	1217
HW+3	1217	—	1317

A red circle highlights the text "12.30 DST?" in the question above, and a red arrow points from this circle to the "HW+3" row in the table.

1230 falls into HW+3 hour (HW +3)

Find nearest diamond



Tidal diamond B

Look at table

Tidal diamond F

Tidal Streams referred to HW at VICTORIA

Hours	Geographical Position	A	B	C	D	E	F	G	H	J	K	L	M
		46°20'5" N 155°50'0" W	46°20'6" N 156°18'4" W	46°11'2" N 155°43'2" W	46°10'6" N 155°53'9" W	46°10'5" N 156°16'1" W	46°07'8" N 156°05'5" W	46°03'8" N 155°40'0" W	46°02'1" N 156°17'8" W	46°00'0" N 155°55'3" W	45°56'0" N 155°42'2" W	45°52'6" N 155°59'4" W	45°49'3" N 156°20'4" W
-6	110	1.8 0.8	158 1.0 0.6	189 1.7 0.9	211 1.7 0.9	302 1.4 0.7	304 1.1 0.6	273 2.8 1.5	286 1.8 0.9	289 1.8 1.0	289 2.5 1.3	334 1.2 0.6	355 1.6 0.8
-5	108	1.0 0.5	153 1.7 0.8	192 1.1 0.6	200 1.1 0.6	314 1.0 0.6	313 1.2 0.7	268 1.3 0.7	258 1.7 0.8	336 0.9 0.5	298 1.6 0.9	335 0.9 0.5	357 0.9 0.5
-4	026	0.4 0.2	159 2.8 1.5	290 0.6 0.4	300 0.6 0.4	318 1.9 1.0	316 2.1 1.1	170 0.5 0.3	180 0.7 0.5	315 1.7 0.8	026 0.8 0.5	139 1.4 0.7	172 0.8 0.4
-3	297	1.4 0.7	154 3.9 2.0	359 1.5 0.8	300 1.5 0.8	311 3.0 1.5	314 3.2 1.6	097 1.7 0.9	097 1.8 0.9	119 3.3 1.7	101 1.9 1.0	142 1.3 0.7	175 1.9 1.0
-2	278	2.0 1.1	165 3.2 1.7	300 1.8 0.9	011 1.8 0.9	314 3.4 1.7	300 3.6 1.8	098 3.3 1.7	104 2.9 1.5	120 3.7 1.9	119 2.9 1.5	145 0.9 0.5	179 2.6 1.4
-1	274	1.7 0.8	173 2.4 1.3	007 1.4 0.7	012 1.7 0.8	318 2.9 1.5	098 3.1 1.5	095 3.5 1.8	095 3.7 1.9	117 3.1 1.6	110 3.2 1.7	325 1.0 0.6	182 2.4 1.3
0	271	1.1 0.5	186 2.0 0.7	010 0.9 0.5	014 1.2 0.7	315 1.8 0.9	096 2.2 1.2	097 2.6 1.4	092 2.8 1.4	112 1.9 1.0	109 2.4 1.2	329 1.6 0.8	184 1.8 0.9
+1	170	0.5 0.3	245 1.1 0.6	173 1.2 0.6	016 0.7 0.4	307 0.8 0.5	092 1.9 1.0	100 1.6 0.8	090 1.9 1.0	108 1.3 0.7	102 1.6 0.9	329 1.6 0.8	186 1.2 0.7
+2	111	1.8 0.9	341 3.0 1.6	179 1.6 0.8	199 1.0 0.5	310 1.4 0.7	282 1.7 0.9	110 0.7 0.4	352 0.8 0.5	199 0.7 0.4	098 0.9 0.5	332 1.8 0.9	331 0.8 0.4
+3	114	1.8 0.9	338 3.7 1.8	183 1.9 1.0	208 1.4 0.7	307 2.8 1.4	279 3.1 1.6	279 1.0 0.6	293 2.0 1.1	288 1.6 0.8	286 1.1 0.6	334 2.0 1.1	338 1.4 0.7
+4	113	2.2 1.2	342 3.9 2.0	187 2.1 1.2	210 1.9 1.0	306 3.6 1.8	276 3.6 1.8	283 1.8 0.9	298 3.3 1.6	293 2.9 1.5	291 2.0 1.1	333 1.7 0.9	349 1.9 1.0
+5	112	2.0 1.0	341 2.8 1.5	189 2.0 1.1	212 1.7 0.8	306 3.1 1.6	285 3.2 1.6	282 3.1 1.6	289 3.5 1.8	296 3.6 1.8	298 3.3 1.7	331 1.5 0.8	351 2.4 1.3
+6	110	1.8 0.9	335 2.3 1.3	190 1.8 0.9	214 0.9 0.5	304 2.5 1.3	298 2.9 1.5	276 3.5 1.8	288 2.8 1.4	292 2.7 1.3	296 3.2 1.6	332 1.3 0.7	354 2.0 1.1

+3 hrs

HW

FIRING PRACTICE AREAS

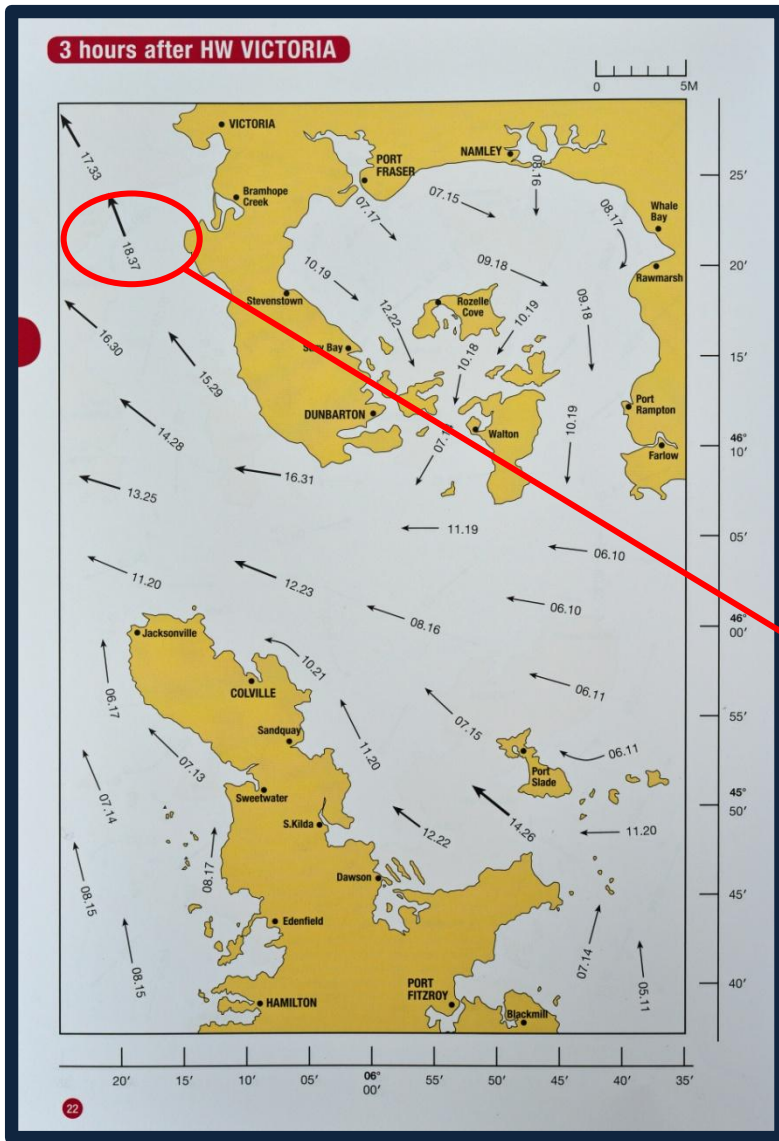
No restrictions are placed on the right to transit the firing practice areas at any time. The firing practice areas are operated

BRAM

Landing is Sanctuary.

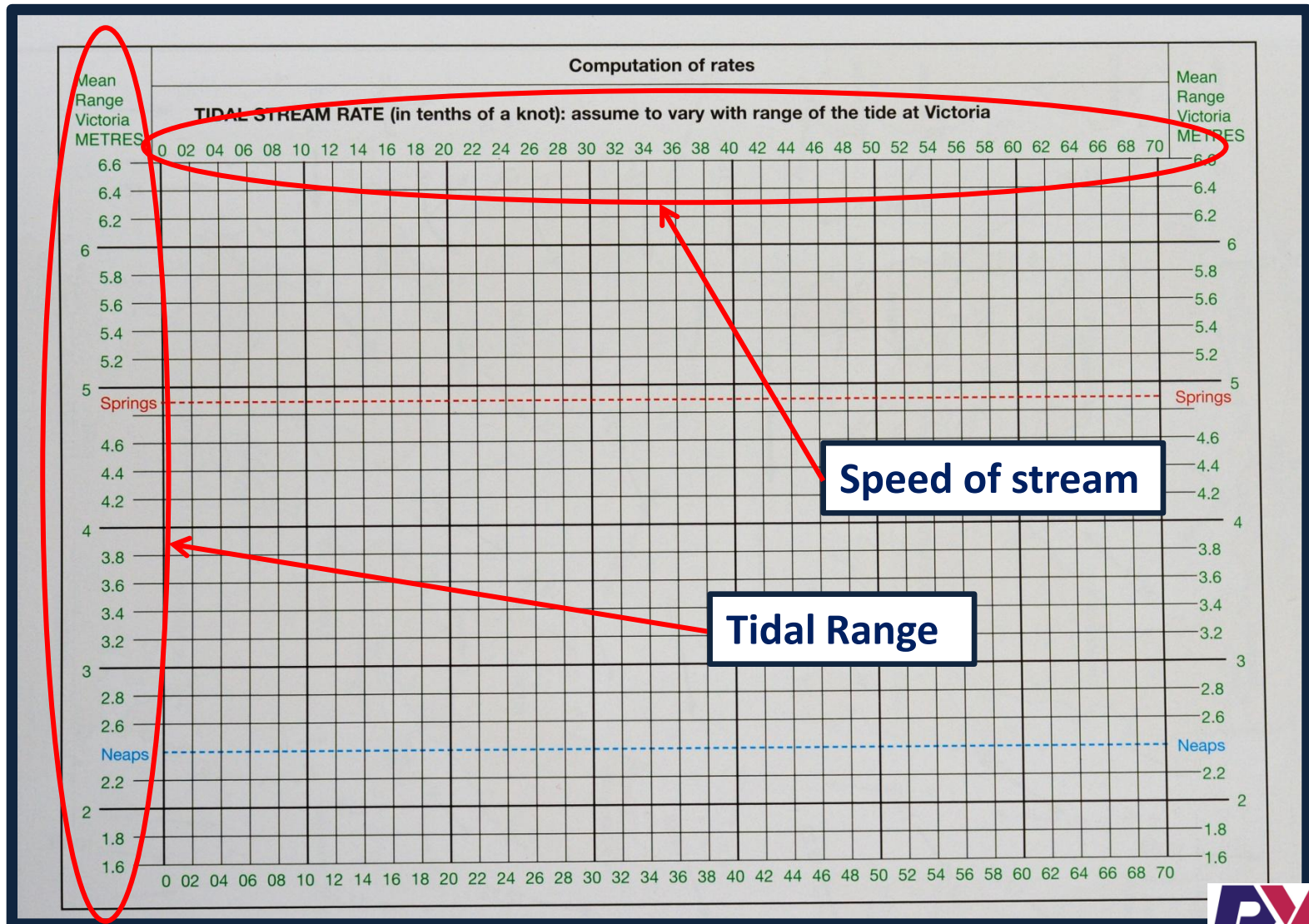
Spring rate = 3.7kn
 Neap rate = 1.8kn
 Direction = 338°(T)

Or use tidal atlas

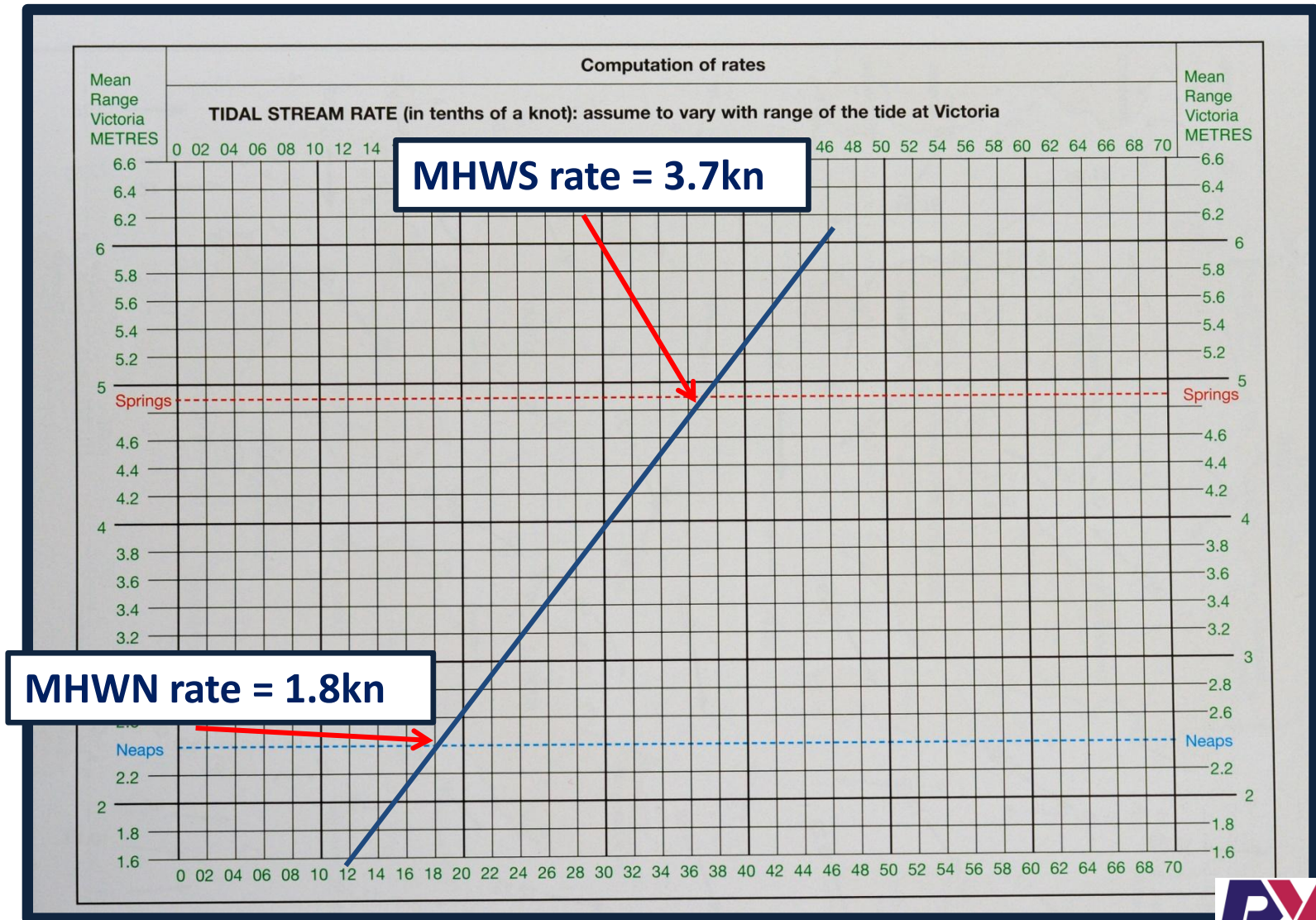


Spring rate = 3.7kn
Neap rate = 1.8kn
Direction = 338°(T)
(for direction overlay plotter)

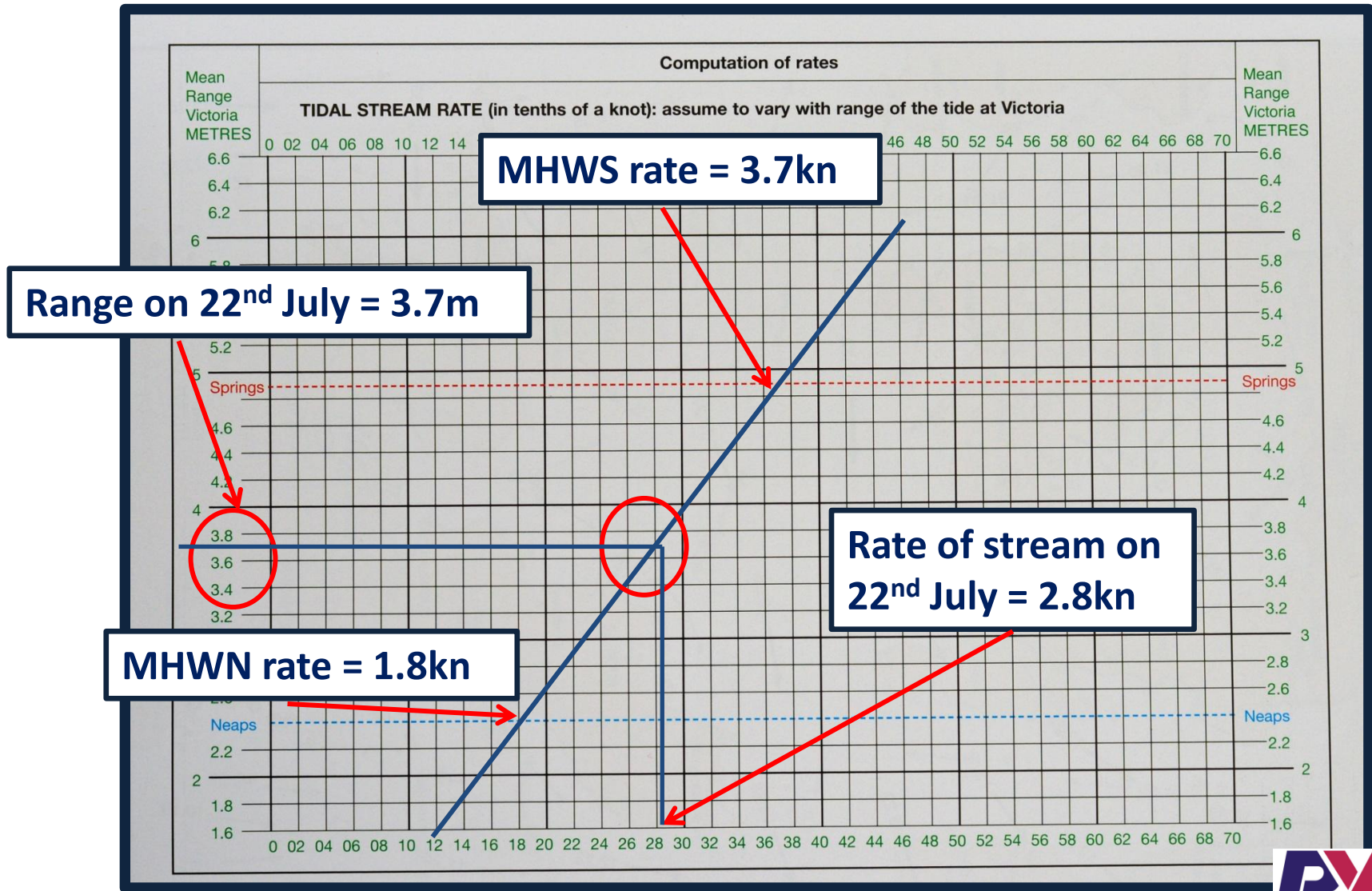
Computation of Rates Table



Computation of Rates Table



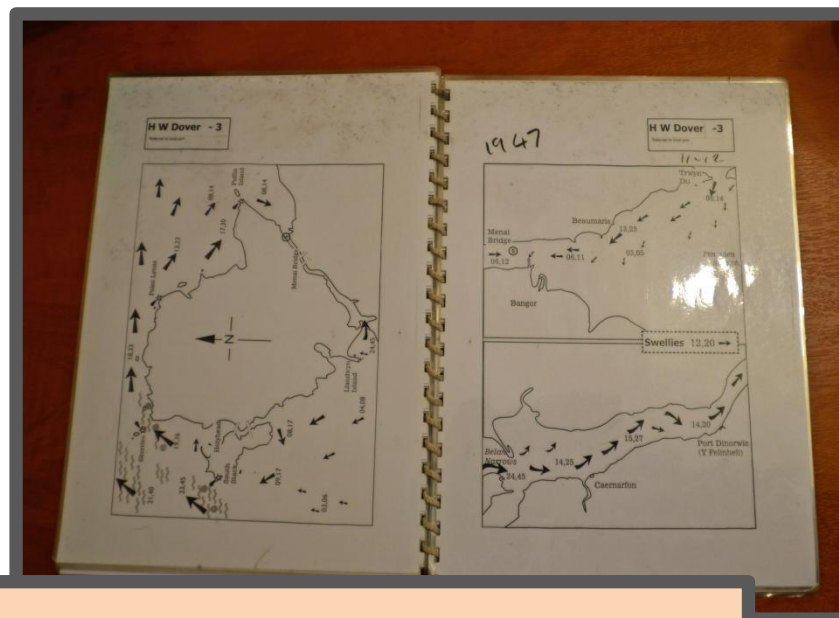
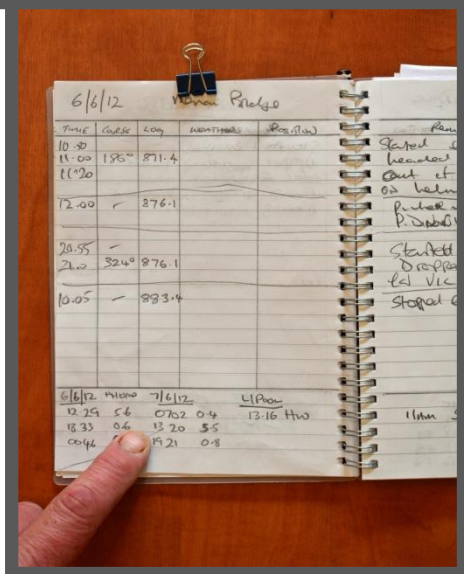
Computation of Rates Table



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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the running of this website.

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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