Week 7

1

Secondary Ports

Tidal Heights

2

"I really must learn about Secondary Port Tidal Heights!"

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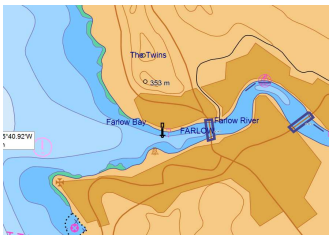
The Problem

- A yacht, seeking shelter from a SE wind intends to anchor just inside South Point in the Farlow River on Sunday 11 August at 1600 local time.
- The yacht has a draught of 1.5 m and the skipper requires a 1 m clearance at all times.
- In what depth should the yacht anchor if the intention is to remain until 2200?



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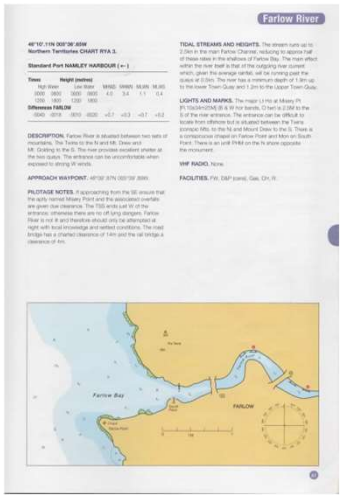
Information

- Details of the Farlow River are on page 61 of the Training Almanac
- It is a **SECONDARY PORT**.



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The Differences Table

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2

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The Differences Table

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2

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Standard Port Information

NAMLEY - Sunday 11 August

HW	1334 UT	4.0 m
LW	1930 UT	0.1 m

NB - Work in zone time until differences have been applied.

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The Differences Table

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2

1334

Difference for 1334

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Finding the difference

- Draw two lines at an angle.
- Divide the “base” line into equal units.
- Divide the “differences” line into equal units

Times of HW / LW

OR

Heights of Spring /Neaps HW / LW

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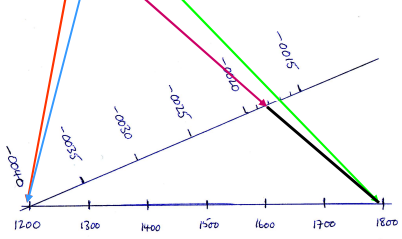
HW Differences

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2



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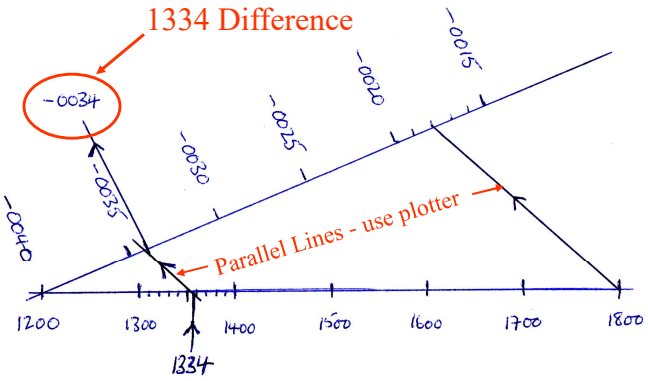
Difference for a HW at 1334



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Time of HW at Farlow River

HW time at Namley	1334 UT
Difference Farlow River	-0034
HW time at Farlow River	1300 UT
DST Correction (+0100)	1400 DST

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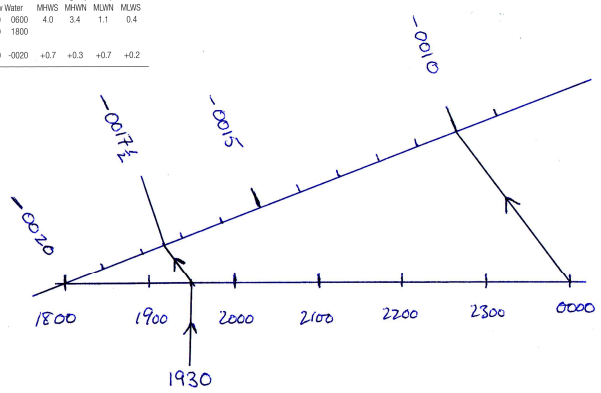
LW Time

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2



LW at Farlow River = 1930 - 0018 = 1912 UT / 2012 DST

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HW Height

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2

Height at Namley	=	4.0 m
Difference Farlow River	=	+0.7 m
Ht at Farlow River	=	4.7 m

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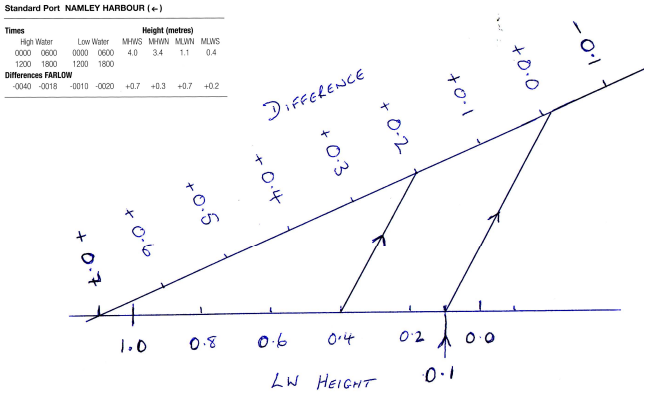
LW Height

Standard Port NAMLEY HARBOUR (←)

Times				Height (metres)			
High Water		Low Water		MHWS	MHWN	MLWN	MLWS
0000	0600	0000	0600	4.0	3.4	1.1	0.4
1200	1800	1200	1800				
Differences FARLOW							
-0040	-0018	-0010	-0020	+0.7	+0.3	+0.7	+0.2



LW Height Farlow River = 0.1 + 0.0 = 0.1m

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Summary

Farlow River

HW	1400 DST	4.7m
LW	2012 DST	0.1m

These times and heights are now used to mark up the Standard Port Tidal Curve

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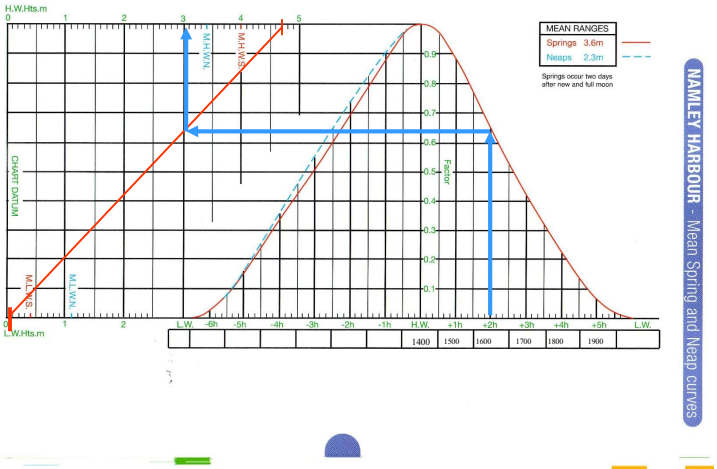
Tidal Curve



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Depth required at 1600

Height of Tide at 1600	=	3.0 m
Height at LW	=	0.1 m
Fall	=	2.9 m

Depth required = Fall + Draught + Clearance
= 2.9 + 1.5 + 1.0
= 5.4 m

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Low Water with a metre below the keel!

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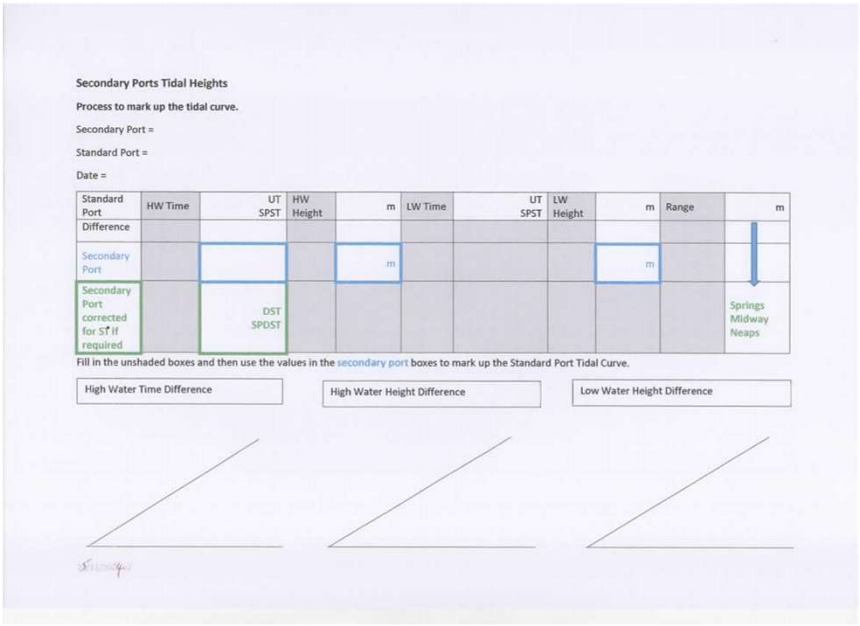

Secondary Ports Tidal Heights

Process to mark up the tidal curve.

Secondary Port =

Standard Port =

Date =

Standard Port	HW Time	UT SPST	HW Height	m	LW Time	UT SPST	LW Height	m	Range	m
Difference										
Secondary Port				m				m		
Secondary Port corrected for ST if required		DST SPDST								Springs Midway Neaps

Fill in the unshaded boxes and then use the values in the secondary port boxes to mark up the Standard Port Tidal Curve.

High Water Time Difference	High Water Height Difference	Low Water Height Difference

Download from the Resources Section of the Website

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A few to try……

Secondary Port Tidal Heights - Examples

NB All times given in the questions are local times; answers should also be given as local times.

1. What will be the time of HW at Stevenstown (p45) during the evening of Sunday 21 July? **(2156 DST)**
2. What will be the time of LW at Rozelle Cove Marina (p65), during the afternoon of Saturday 9 March? **(1403 UT)**
3. What will be the height of tide in Bramhope Creek (p37) at 1630 on 26 September? **(3.7m)**
4. At what time will the rising tide reach a height of 2.6m during the day on Saturday 15 June at Endal Marina (p64)? **(1200 DST)**

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Coffee Time

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Logs and Sounders

24

Logs

- Measure distance run through the water.
- Electronic or mechanical.
- Need to be calibrated.
- Transducer
  - Paddlewheel
  - Propeller
  - Ultrasonic

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Dutchman's Log

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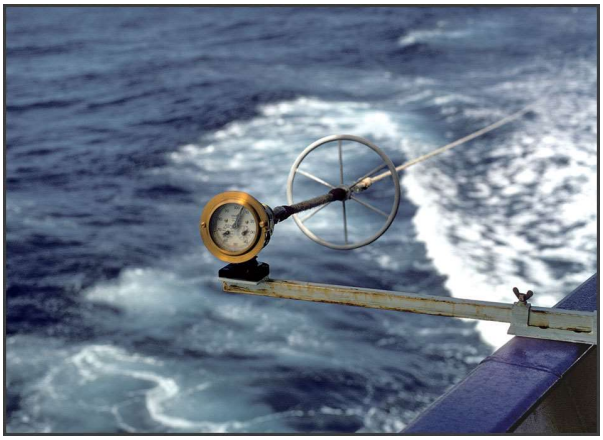
Walker Log



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Log and Paddlewheel

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Calibration

- Measured mile
  - Two runs in opposite directions
- GPS
  - Compare with SOG with no tide
- Under reading / over reading

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Sounders

- Electronic
  - Ultrasound wave used to find distance from transducer to seabed
  - Set from waterline, transducer or keel
  - Alarms for anchoring etc.
- Mechanical
  - Lead line

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For the Traditionalist!

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Sounders

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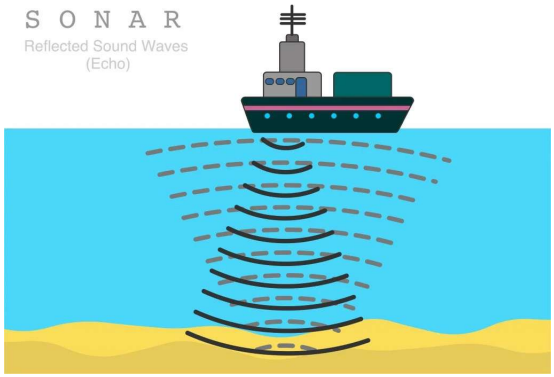
Depth measurement using sound

Speed of sound in sea water = $v_{(w)}$

Time between transmission and reception = t

Depth = ($v_{(w)}$ x t) ÷ 2



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Sounder / Fishfinder

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Calibration

- Sounders measure from the transducer to the sea bed.
- Some have programmable offsets to allow for depth to waterline or depth to keel.
  - Advantages / disadvantages of each?
- Calibrate using a lead line.
- When does the boat run aground?

'Er... when I said we've got 12.5, I meant volts, not metres...'

Cartoon credit: Claudia Myatt (PBO)

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