

HOW TO USE THE TIDE TABLES

METHOD TO FIND TIMES OR HEIGHTS OF HIGH AND LOW WATERS

STANDARD PORTS

The times and heights of high and low water are tabulated for every day of the year. The zone time used for the predicted times is the Standard Time for the port and is indicated at the top of each page. The heights are shown in metres referred to the Chart Datum of the port concerned.

SECONDARY PORTS

The times of high and low water are obtained by applying the time differences tabulated in the Secondary Ports Table to the daily predictions for the designated Standard Port. A negative time difference will give an earlier time than that for the Standard Port and a positive one a later time.

The heights of high and low water are obtained by correcting the predictions for the designated Standard Port using the range ratio obtained from the tidal levels data for Standard and Secondary Ports.

Predictions for the Standard Ports include the seasonal variations. Since the same seasonal variations apply to the designated Secondary Ports, they are allowed for in the final result and there is no need to apply them separately when using the method described below.

The techniques used to obtain the times and heights of high and low water at Secondary Ports are explained in detail in the following instruction and examples. The use of the calculation form on the following page is demonstrated by way of an example and a blank form is provided for further use.

EXAMPLE

Find the times and heights of high and low waters at “**Secondary Port**” on 1 September, using the following extracts:

Extract from Secondary Ports Table :

Port	Mean Time Differences		Mean Spring, Neap and Sea Level Heights (metres)				
	HW	LW	MHWS	MHWN	MLWN	MLWS	MSL
STANDARD PORT	hhmm	hhmm	3.2	2.8	0.8	0.5	1.92
Secondary Port	-0022	+0032	2.3	2.1	0.6	0.3	1.3

Extract from Predictions: STANDARD PORT

SEPTEMBER		
1	Time	m
	0316	0.4
	0941	3.3
	1546	0.6
FRI	2207	3.1

NOTE:

The data used in this example does not refer to the year of these tables nor to any particular ports.

DETAILED INSTRUCTIONS

Note: This method produces heights for Secondary Ports referred to Chart Datum. Users will need to apply a suitable correction if another datum is required.

- Obtain predicted times and heights of high and low waters at the Standard Port, enter them in box 1 (Times) and 2 (Heights).
- Obtain MSL and spring levels for the Standard Port from the Secondary Port Tables, enter them in box 3 (MSL) and 4 (MHWS and MLWS).
- Subtract the MLWS value from that of the MHWS for the Standard Port, enter the result in box 5 (Levels Range).
- Subtract the MSL value for the Standard Port in box 3 from the predictions in box 2, enter results in box 6. (*N.B. the HW column should have positive values, the LW column negative values.*)
- Obtain data for the Secondary Port from the Secondary Port Tables and enter time differences in box 7, MSL in box 8, spring levels in box 9.
- Subtract the MLWS value from that of MHWS for the Secondary Port, enter the result in box 10 (Levels Range).
- Obtain the range ratio by dividing the Secondary Port levels range in box 10 by that of the Standard Port in box 5, enter the result in box 11.
- Multiply the figures in box 6 by the range ratio in box 11, enter the corresponding products in box 12.
- Algebraically add the time differences for the Secondary Port in box 7 to the predicted times for the Standard Port in box 1, enter the results in box 13. THESE ARE THE TIMES OF HIGH AND LOW WATER FOR THE SECONDARY PORT.
- Algebraically add the values in box 12 to the MSL value for the Secondary Port in box 8, enter the results in box 14. THESE ARE THE HEIGHTS OF HIGH AND LOW WATER FOR THE SECONDARY PORT.

CALCULATION FORM

Standard Port Data	(1) Times		(2) Heights		(3) MSL	(4) Levels		(5) Levels Range
	HW	LW	HW	LW		MHWS	MLWS	MHWS - MLWS
		<i>0941</i>	<i>0316</i>	<i>3.3</i>	<i>0.4</i>	<i>1.9</i>	<i>3.2</i>	<i>0.5</i>
	<i>2207</i>	<i>1546</i>	<i>3.1</i>	<i>0.6</i>				
(6) Predicted Height - MSL			<i>1.4</i>	<i>-1.5</i>				
(2) - (3)			<i>1.2</i>	<i>-1.3</i>				
Secondary Port Data	(7) Time Diffs				(8) MSL	(9) Levels		(10) Levels Range
	HW	LW				MHWS	MLWS	MHWS - MLWS
		<i>-0022</i>	<i>+0032</i>			<i>1.3</i>	<i>2.3</i>	<i>0.3</i>
(12) Calculations			<i>1.0</i>	<i>-1.1</i>				(11) Range Ratio
(6) x (11)			<i>0.9</i>	<i>-1.0</i>				(10) ÷ (5)
								<i>0.74</i>
Secondary Port Results	(13) Times		(14) Heights					
	(1) + (7)		(8) + (12)					
	HW	LW	HW	LW				
		<i>0919</i>	<i>0348</i>	<i>2.3</i>	<i>0.2</i>			
		<i>2145</i>	<i>1618</i>	<i>2.2</i>	<i>0.3</i>			

TIDAL INFORMATION

Standard Port Data	(1) Times		(2) Heights		(3) MSL	(4) Levels		(5) Levels Range
	HW	LW	HW	LW		MHWS	MLWS	MHWS - MLWS
(6) Predicted Height - MSL								
(2) - (3)								
Secondary Port Data	(7) Time Diffs				(8) MSL	(9) Levels		(10) Levels Range
	HW	LW				MHWS	MLWS	MHWS - MLWS
(12) Calculations								(11) Range Ratio
(6) x (11)								(10) ÷ (5)
Secondary Port Results	(13) Times		(14) Heights					
	(1) + (7)		(8) + (12)					
	HW	LW	HW	LW				