

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 multiplying the height predictions for the designated standard port by the range ratio value for the secondary port.

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)					Range Ratio
	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	0.74

Extract from Predictions: STANDARD PORT

1 SEPTEMBER

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.

1. Obtain predicted times and heights of high and low waters at the standard port, enter them in box 1 (Times) and 2 (Heights).
2. Obtain the MSL value for the standard port from the Secondary Ports Table, enter it in box 3 (MSL).
3. Subtract the MSL value for the standard port in box 3 from the predictions in box 2, enter results in box 4. (*N.B. the HW column should have positive values, the LW column negative values.*)
4. Obtain data for the secondary port from the Secondary Ports Table and enter time differences in box 5, MSL in box 6, range ratio in box 7.
5. Multiply the figures in box 4 by the range ratio in box 7, enter the corresponding products in box 8.
6. Algebraically add the time differences for the secondary port in box 5 to the predicted times for the standard port in box 1, enter the results in box 9. THESE ARE THE TIMES OF HIGH AND LOW WATER FOR THE SECONDARY PORT.
7. Algebraically add the values in box 8 to the MSL value for the secondary port in box 6, enter the results in box 10. THESE ARE THE HEIGHTS OF HIGH AND LOW WATER FOR THE SECONDARY PORT.

CALCULATION FORM

Standard Port Data	(1) Times		(2) Heights		(3) MSL	
	HW	LW	HW	LW		
		<i>0941</i>	<i>0316</i>	<i>3.3</i>	<i>0.4</i>	<i>1.9</i>
	<i>2207</i>	<i>1546</i>	<i>3.1</i>	<i>0.6</i>		
(4) Predicted Height - MSL			<i>1.4</i>	<i>-1.5</i>		
(2) - (3)			<i>1.2</i>	<i>-1.3</i>		
Secondary Port Data	(5) Time Diffs				(6) MSL	(7) Range Ratio
	HW	LW				
		<i>-0022</i>	<i>+0032</i>	<i>1.3</i>	<i>0.74</i>	
(8) Calculations			<i>1.0</i>	<i>-1.1</i>		
(4) x (7)			<i>0.9</i>	<i>-1.0</i>		
Secondary Port Results	(9) Times		(10) Heights			
	(1) + (5)		(6) + (8)			
	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>	

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