SAILING/CRUISING/BOAT PASSAGE PLAN PRO-FORMA

DEVELOPED BY GRAHAM SENIOR-MILNE

COMMENTS TO:

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To complete the pro-forma manually just delete the formulas and then print.

PS I DON'T TAKE ANY RESPONSIBILITY FOR ANYTHING, SO DON'T E-MAIL ME WHEN YOU ARE STUCK ON A SANDBANK!

This is you stuck on a sandbank.

PASSAGE PLAN	DATE		SUNRISE/SUNSET	RISE:	SET:
FROM (SEE SEPARATE SHEET)			TO (SEE SEP SHEET)		
YACHT NAME			SKIPPER NAME		
CREW NAME & POSITION					
WATCHES					
WEATHER FORECAST					
CHARTS (FOR PASSAGE)					
ALMANAC (NAME & PAGES)					
PILOT (NAME & PAGES)					
TIDAL STREAM ATLAS					
TIDAL AND OTHER CONSTRAINTS					
TIDAL HEIGHTS FOR PASSAGE	PORT NAME	TIME LW/HW	HEIGHT LW/HW	TIME LW/HW	HEIGHT LW/HW
STANDARD PORT:					
DIFFERENCE:					
LOCAL PORT:					
LOCAL TIME (e.g. BST)					
WAYPOINTS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
LIGHT NAME					
LIGHT/SOUND/BUOY TYPE					
TRUE FROM PREV WP					
NET TIDAL STREAM (KNTS)					
NET TIDAL STREAM (DRCTN)					
ADJUSTED TRUE COURSE					
VARIATION					
ADJ FOR VARIATION					
DEVIATION					
MAGNETIC COURSE					
LEEWAY					
COURSE TO STEER					
DISTANCE FROM PREV WP					
SPEED					
ARRIVAL TIME					
PASSAGE SUMMARY					
PASSAGE DISTANCE		DEPARTURE TIME		ARRIVAL TIME	
PASSAGE DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC					
REFUGES	NB YOU NEED AS MUCH INFORMATION FOR YOUR REFUGE PORTS AS FOR YOUR DESTINATION PORT				
REFUGE 1 (SEE SEP SHEET)					
REFUGE 2 (SEE SEP SHEET)					
REFUGE 3 (SEE SEP SHEET)					
REFUGE 4 (SEE SEP SHEET)					
INFORM:	NAME		CHANNEL/TEL NO	DEP NOTIF TIME	ARR NOTIF TIME
COASTGUARD					
SAFETY CONTACT					

DEPARTURE PORT	ST MARYS, SCILLY			LAT/LONG		
CHARTS						
ALMANAC (NAME & PAGES)						
PILOT (NAME & PAGES)						
HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
MARINA	HOURS		CHANNEL		TEL/MOB	
TIDAL AND OTHER CONSTRAINTS	CROW BAR DRIES 0.8M					
OTHER NOTES	LOCAL PORT HEIGHT DIFF IS TOO SMALL TO BOTHER WITH HALFWAY BETWEEN SPRINGS AND NEAPS, SO NO ADJ MADE BELOW. DELETE DATA IN YELLOW BOXES TO START OVER.					
CHARTLET/DIAGRAM OF PORT INCLUDING WAYPOINTS (USE SEPARATE SHEET IF REQUIRED) AND/OR ENTRY/EXIT PROCEDURE (E.G. STEP 1 - PICK UP LEADING LIGHTS - DESC, BEARING ETC; STEP 2 - BUOY HOPPING INC BUOY NUMBER, TYPE, BEARING AND DISTANCE FROM LAST BUOY ETC) - OR REFER TO PILOT/ALMANAC CHARLET IF SUFFICIENT						

DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC (EG 'PASS 1 NM WEST OF' OR 'WAYPOINT SET 1NM TO WEST OF')					

CALCULATION OF DEPTHS IN WHICH YOU CAN ANCHOR OR MOOR AT GIVEN TIMES (HOURS EITHER SIDE OF HIGH WATER) (USE ONLY WHERE NORMAL TIDAL CURVE) (ENTER YELLOW BOXES ONLY)

HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE	PLYMOUTH DEVONPORT														
STANDARD PORT AT STANDARD TIME	14:03		15:12	16:12	17:12	18:12	19:12	20:12	21:12	22:12	23:12	00:12	01:12		02:23
LOCAL PORT TIME DIFF (Enter as mins/1440)	-00:35		-00:52	-00:52	-00:52	-00:52	-00:52	-00:52	-00:52	-00:52	-00:52	-00:52	-00:52		-00:33
TIME ZONE ADJ (EG BST) (Enter as mins/1440)	01:00		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		01:00
LOCAL PORT AT LOCAL TIME	14:28		15:20	16:20	17:20	18:20	19:20	20:20	21:20	22:20	23:20	00:20	01:20		02:50
STANDARD PORT HEIGHT (RULE OF 12THS)	1.3		1.6	2.3	3.2	4.2	4.8	5.1	4.8	4.2	3.2	2.3	1.6		1.3
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
LOCAL PORT HEIGHT (ABOVE CHART DATUM)	1.3		1.6	2.3	3.2	4.2	4.8	5.1	4.8	4.2	3.2	2.3	1.6		1.3
HEIGHT IN PREV ROW (minus next row)	1.3		1.6	2.3	3.2	4.2	4.8	5.1	4.8	4.2	3.2	2.3	1.6		1.3
LOWEST LW DURING STAY (plus next row)	1.3		1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3		1.3
YACHT REQUIRED DEPTH (equals next row)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0
ANCHOR/MOOR IN DEPTH AT LEAST	3.0		3.3	4.0	4.9	5.9	6.5	6.8	6.5	5.9	4.9	4.0	3.3		3.0

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR

YACHT REQUIRED DEPTH (minus next row)	3.0	REQUIRED DEPTH = DRAFT OF YACHT + REQUIRED CLEARANCE BENEATH KEEL (TO CATER FOR APPROXIMATIONS IN CALCS USE CLEARANCE 1 METRE OR MORE)
LOWEST LW DURING STAY (equals next row)	1.3	NB LOWEST LOW WATER MY BE SEVERAL DAYS AHEAD DEPENDING ON HOW LONG YOU INTEND TO STAY
ANCHOR WHERE CHART DATUM >	1.7	I.E. YOU CAN ANCHOR WHERE THE DEPTH (CHART DATUM) SHOWN ON THE CHART IS EQUAL TO OR GREATER THAN THE FIGURE

CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)

CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
HEIGHT OF SILL/DRYING HEIGHT	0.8	SEE NOTE IN CELL ABOVE
A: RISE OF TIDE NEEDED	2.5	REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12	0.32	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	8	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME REQUIRED DEPTH WILL BE REACHED	18:08	1/12 = 1 HR AFTER LOW WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

CALCULATION OF TIME AFTER HIGH WATER AFTER WHICH YOU WILL NO LONGER HAVE REQUIRED DEPTH (uses LW after relevant HW)

A: FALL OF TIDE UNTIL REQUIRED DEPTH REACHED	1.3	(HIGH WATER + CHART DATUM) - REQUIRED DEPTH (i.e. the total depth from the seabed at high water less the required depth from the seabed gives the amount by which the depth has to fall from high water to reach the required depth) OR (WHERE DRYING HEIGHT OR SILL) HIGH WATER - (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM + REQUIRED DEPTH) i.e. HW (measured from chart datum of course) can only fall by that amount which leaves your required depth plus the drying height or height of sill above chart datum.
B: TOTAL FALL OF TIDE/12	0.32	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	4	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME AFTER WHICH YOU NO LONGER HAVE REQUIRED DEPTH	22:40	1/12 = 1 HR AFTER HIGH WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

TO PLOT THE ABOVE ON A TIDAL CURVE GRAPH YOU NEED FIGURES FOR LW, HW AND THE RISE OR FALL OF TIDE (WHICH ADDED TO LW (RISE) OR TAKEN FROM HW (FALL) WILL GIVE YOU THE HEIGHT OF TIDE YOU NEED TO PLOT TO GET A TIME READING OFF THE GRAPH). YOU ALSO NEED THE TIMES FOR HW AND LW. **THE 12THS RULE IS VERY APPROXIMATE AND YOU SHOULD ALWAYS USE THE APPROPRIATE TIDAL CURVE GRAPH TO GET A MORE ACCURATE FIGURE, ESPECIALLY WHERE THERE IS A LARGE TIDAL RANGE.**

DESTINATION PORT				LAT/LONG		
CHARTS						
ALMANAC (NAME & PAGES)						
PILOT (NAME & PAGES)						
HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
MARINA	HOURS		CHANNEL		TEL/MOB	
TIDAL AND OTHER CONSTRAINTS						
OTHER NOTES						
CHARTLET/DIAGRAM OF PORT INCLUDING WAYPOINTS (USE SEPARATE SHEET IF REQUIRED) AND/OR ENTRY/EXIT PROCEDURE (E.G. STEP 1 - PICK UP LEADING LIGHTS - DESC, BEARING ETC; STEP 2 - BUOY HOPPING INC BUOY NUMBER, TYPE, BEARING AND DISTANCE FROM LAST BUOY ETC) - OR REFER TO PILOT/ALMANAC CHARLET IF SUFFICIENT						

DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC (EG 'PASS 1 NM WEST OF' OR 'WAYPOINT SET 1NM TO WEST OF')					

CALCULATION OF DEPTHS IN WHICH YOU CAN ANCHOR OR MOOR AT GIVEN TIMES (HOURS EITHER SIDE OF HIGH WATER) (USE ONLY WHERE NORMAL TIDAL CURVE) (ENTER YELLOW BOXES ONLY)

HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE															
STANDARD PORT AT STANDARD TIME			-05:00	-04:00	-03:00	-02:00	-01:00		01:00	02:00	03:00	04:00	05:00		
LOCAL PORT TIME DIFF (Enter as mins/1440)			00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		
TIME ZONE ADJ (EG BST) (Enter as mins/1440)	00:00		00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		00:00
LOCAL PORT AT LOCAL TIME	00:00		-05:00	-04:00	-03:00	-02:00	-01:00	00:00	01:00	02:00	03:00	04:00	05:00		00:00
STANDARD PORT HEIGHT (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT (ABOVE CHART DATUM)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
HEIGHT IN PREV ROW (minus next row)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
LOWEST LW DURING STAY (plus next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
YACHT REQUIRED DEPTH (equals next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
ANCHOR/MOOR IN DEPTH AT LEAST	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR		
YACHT REQUIRED DEPTH (minus next row)	0.0	REQUIRED DEPTH = DRAFT OF YACHT + REQUIRED CLEARANCE BENEATH KEEL (TO CATER FOR APPROXIMATIONS IN CALCS USE CLEARANCE 1 METRE OR MORE)
LOWEST LW DURING STAY (equals next row)	0.0	NB LOWEST LOW WATER MY BE SEVERAL DAYS AHEAD DEPENDING ON HOW LONG YOU INTEND TO STAY
ANCHOR WHERE CHART DATUM >	0.0	I.E. YOU CAN ANCHOR WHERE THE DEPTH (CHART DATUM) SHOWN ON THE CHART IS EQUAL TO OR GREATER THAN THE FIGURE

CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)		
CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
HEIGHT OF SILL/DRYING HEIGHT		SEE NOTE IN CELL ABOVE
A: RISE OF TIDE NEEDED	0.0	REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME REQUIRED DEPTH WILL BE REACHED	#DIV/0!	1/12 = 1 HR AFTER LOW WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

CALCULATION OF TIME AFTER HIGH WATER AFTER WHICH YOU WILL NO LONGER HAVE REQUIRED DEPTH (uses LW after relevant HW)		
A: FALL OF TIDE UNTIL REQUIRED DEPTH REACHED	0.0	(HIGH WATER + CHART DATUM) - REQUIRED DEPTH (i.e. the total depth from the seabed at high water less the required depth from the seabed gives the amount by which the depth has to fall from high water to reach the required depth) OR (WHERE DRYING HEIGHT OR SILL) HIGH WATER - (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM + REQUIRED DEPTH) i.e. HW (measured from chart datum of course) can only fall by that amount which leaves your required depth plus the drying height or height of sill above chart datum.
B: TOTAL FALL OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME AFTER WHICH YOU NO LONGER HAVE REQUIRED DEPTH	#DIV/0!	1/12 = 1 HR AFTER HIGH WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

TO PLOT THE ABOVE ON A TIDAL CURVE GRAPH YOU NEED FIGURES FOR LW, HW AND THE RISE OR FALL OF TIDE (WHICH ADDED TO LW (RISE) OR TAKEN FROM HW (FALL) WILL GIVE YOU THE HEIGHT OF TIDE YOU NEED TO PLOT TO GET A TIME READING OFF THE GRAPH). YOU ALSO NEED THE TIMES FOR HW AND LW. **THE 12THS RULE IS VERY APPROXIMATE AND YOU SHOULD ALWAYS USE THE APPROPRIATE TIDAL CURVE GRAPH TO GET A MORE ACCURATE FIGURE, ESPECIALLY WHERE THERE IS A LARGE TIDAL RANGE.**

REFUGE 1				LAT/LONG		
CHARTS						
ALMANAC (NAME & PAGES)						
PILOT (NAME & PAGES)						
HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
MARINA	HOURS		CHANNEL		TEL/MOB	
TIDAL AND OTHER CONSTRAINTS						
OTHER NOTES						
CHARTLET/DIAGRAM OF PORT INCLUDING WAYPOINTS (USE SEPARATE SHEET IF REQUIRED) AND/OR ENTRY/EXIT PROCEDURE (E.G. STEP 1 - PICK UP LEADING LIGHTS - DESC, BEARING ETC; STEP 2 - BUOY HOPPING INC BUOY NUMBER, TYPE, BEARING AND DISTANCE FROM LAST BUOY ETC) - OR REFER TO PILOT/ALMANAC CHARLET IF SUFFICIENT						

DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC (EG 'PASS 1 NM WEST OF' OR 'WAYPOINT SET 1NM TO WEST OF')					

CALCULATION OF DEPTHS IN WHICH YOU CAN ANCHOR OR MOOR AT GIVEN TIMES (HOURS EITHER SIDE OF HIGH WATER) (USE ONLY WHERE NORMAL TIDAL CURVE) (ENTER YELLOW BOXES ONLY)

HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE															
STANDARD PORT AT STANDARD TIME			-05:00	-04:00	-03:00	-02:00	-01:00		01:00	02:00	03:00	04:00	05:00		
LOCAL PORT TIME DIFF (Enter as mins/1440)			00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		
TIME ZONE ADJ (EG BST) (Enter as mins/1440)	00:00		00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		00:00
LOCAL PORT AT LOCAL TIME	00:00		-05:00	-04:00	-03:00	-02:00	-01:00	00:00	01:00	02:00	03:00	04:00	05:00		00:00
STANDARD PORT HEIGHT (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT (ABOVE CHART DATUM)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
HEIGHT IN PREV ROW (minus next row)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
LOWEST LW DURING STAY (plus next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
YACHT REQUIRED DEPTH (equals next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
ANCHOR/MOOR IN DEPTH AT LEAST	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR		
YACHT REQUIRED DEPTH (minus next row)	0.0	REQUIRED DEPTH = DRAFT OF YACHT + REQUIRED CLEARANCE BENEATH KEEL (TO CATER FOR APPROXIMATIONS IN CALCS USE CLEARANCE 1 METRE OR MORE)
LOWEST LW DURING STAY (equals next row)	0.0	NB LOWEST LOW WATER MY BE SEVERAL DAYS AHEAD DEPENDING ON HOW LONG YOU INTEND TO STAY
ANCHOR WHERE CHART DATUM >	0.0	I.E. YOU CAN ANCHOR WHERE THE DEPTH (CHART DATUM) SHOWN ON THE CHART IS EQUAL TO OR GREATER THAN THE FIGURE

CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)		
CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
HEIGHT OF SILL/DRYING HEIGHT		SEE NOTE IN CELL ABOVE
A: RISE OF TIDE NEEDED	0.0	REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME REQUIRED DEPTH WILL BE REACHED	#DIV/0!	1/12 = 1 HR AFTER LOW WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

CALCULATION OF TIME AFTER HIGH WATER AFTER WHICH YOU WILL NO LONGER HAVE REQUIRED DEPTH (uses LW after relevant HW)		
A: FALL OF TIDE UNTIL REQUIRED DEPTH REACHED	0.0	(HIGH WATER + CHART DATUM) - REQUIRED DEPTH (i.e. the total depth from the seabed at high water less the required depth from the seabed gives the amount by which the depth has to fall from high water to reach the required depth) OR (WHERE DRYING HEIGHT OR SILL) HIGH WATER - (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM + REQUIRED DEPTH) i.e. HW (measured from chart datum of course) can only fall by that amount which leaves your required depth plus the drying height or height of sill above chart datum.
B: TOTAL FALL OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME AFTER WHICH YOU NO LONGER HAVE REQUIRED DEPTH	#DIV/0!	1/12 = 1 HR AFTER HIGH WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

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REFUGE 2				LAT/LONG		
CHARTS						
ALMANAC (NAME & PAGES)						
PILOT (NAME & PAGES)						
HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
MARINA	HOURS		CHANNEL		TEL/MOB	
TIDAL AND OTHER CONSTRAINTS						
OTHER NOTES						
CHARTLET/DIAGRAM OF PORT INCLUDING WAYPOINTS (USE SEPARATE SHEET IF REQUIRED) AND/OR ENTRY/EXIT PROCEDURE (E.G. STEP 1 - PICK UP LEADING LIGHTS - DESC, BEARING ETC; STEP 2 - BUOY HOPPING INC BUOY NUMBER, TYPE, BEARING AND DISTANCE FROM LAST BUOY ETC) - OR REFER TO PILOT/ALMANAC CHARLET IF SUFFICIENT						

DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC (EG 'PASS 1 NM WEST OF' OR 'WAYPOINT SET 1NM TO WEST OF')					

CALCULATION OF DEPTHS IN WHICH YOU CAN ANCHOR OR MOOR AT GIVEN TIMES (HOURS EITHER SIDE OF HIGH WATER) (USE ONLY WHERE NORMAL TIDAL CURVE) (ENTER YELLOW BOXES ONLY)

HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE															
STANDARD PORT AT STANDARD TIME			-05:00	-04:00	-03:00	-02:00	-01:00		01:00	02:00	03:00	04:00	05:00		
LOCAL PORT TIME DIFF (Enter as mins/1440)			00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		
TIME ZONE ADJ (EG BST) (Enter as mins/1440)	00:00		00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		00:00
LOCAL PORT AT LOCAL TIME	00:00		-05:00	-04:00	-03:00	-02:00	-01:00	00:00	01:00	02:00	03:00	04:00	05:00		00:00
STANDARD PORT HEIGHT (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT (ABOVE CHART DATUM)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
HEIGHT IN PREV ROW (minus next row)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
LOWEST LW DURING STAY (plus next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
YACHT REQUIRED DEPTH (equals next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
ANCHOR/MOOR IN DEPTH AT LEAST	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR

YACHT REQUIRED DEPTH (minus next row)	0.0	REQUIRED DEPTH = DRAFT OF YACHT + REQUIRED CLEARANCE BENEATH KEEL (TO CATER FOR APPROXIMATIONS IN CALCS USE CLEARANCE 1 METRE OR MORE)
LOWEST LW DURING STAY (equals next row)	0.0	NB LOWEST LOW WATER MY BE SEVERAL DAYS AHEAD DEPENDING ON HOW LONG YOU INTEND TO STAY
ANCHOR WHERE CHART DATUM >	0.0	I.E. YOU CAN ANCHOR WHERE THE DEPTH (CHART DATUM) SHOWN ON THE CHART IS EQUAL TO OR GREATER THAN THE FIGURE

CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)

CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
HEIGHT OF SILL/DRYING HEIGHT		SEE NOTE IN CELL ABOVE
A: RISE OF TIDE NEEDED	0.0	REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME REQUIRED DEPTH WILL BE REACHED	#DIV/0!	1/12 = 1 HR AFTER LOW WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

CALCULATION OF TIME AFTER HIGH WATER AFTER WHICH YOU WILL NO LONGER HAVE REQUIRED DEPTH (uses LW after relevant HW)

A: FALL OF TIDE UNTIL REQUIRED DEPTH REACHED	0.0	(HIGH WATER + CHART DATUM) - REQUIRED DEPTH (i.e. the total depth from the seabed at high water less the required depth from the seabed gives the amount by which the depth has to fall from high water to reach the required depth) OR (WHERE DRYING HEIGHT OR SILL) HIGH WATER - (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM + REQUIRED DEPTH) i.e. HW (measured from chart datum of course) can only fall by that amount which leaves your required depth plus the drying height or height of sill above chart datum.
B: TOTAL FALL OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME AFTER WHICH YOU NO LONGER HAVE REQUIRED DEPTH	#DIV/0!	1/12 = 1 HR AFTER HIGH WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

TO PLOT THE ABOVE ON A TIDAL CURVE GRAPH YOU NEED FIGURES FOR LW, HW AND THE RISE OR FALL OF TIDE (WHICH ADDED TO LW (RISE) OR TAKEN FROM HW (FALL) WILL GIVE YOU THE HEIGHT OF TIDE YOU NEED TO PLOT TO GET A TIME READING OFF THE GRAPH). YOU ALSO NEED THE TIMES FOR HW AND LW. **THE 12THS RULE IS VERY APPROXIMATE AND YOU SHOULD ALWAYS USE THE APPROPRIATE TIDAL CURVE GRAPH TO GET A MORE ACCURATE FIGURE, ESPECIALLY WHERE THERE IS A LARGE TIDAL RANGE.**

REFUGE 3				LAT/LONG		
CHARTS						
ALMANAC (NAME & PAGES)						
PILOT (NAME & PAGES)						
HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
MARINA	HOURS		CHANNEL		TEL/MOB	
TIDAL AND OTHER CONSTRAINTS						
OTHER NOTES						
CHARTLET/DIAGRAM OF PORT INCLUDING WAYPOINTS (USE SEPARATE SHEET IF REQUIRED) AND/OR ENTRY/EXIT PROCEDURE (E.G. STEP 1 - PICK UP LEADING LIGHTS - DESC, BEARING ETC; STEP 2 - BUOY HOPPING INC BUOY NUMBER, TYPE, BEARING AND DISTANCE FROM LAST BUOY ETC) - OR REFER TO PILOT/ALMANAC CHARLET IF SUFFICIENT						

DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC (EG 'PASS 1 NM WEST OF' OR 'WAYPOINT SET 1NM TO WEST OF')					

CALCULATION OF DEPTHS IN WHICH YOU CAN ANCHOR OR MOOR AT GIVEN TIMES (HOURS EITHER SIDE OF HIGH WATER) (USE ONLY WHERE NORMAL TIDAL CURVE) (ENTER YELLOW BOXES ONLY)

HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE															
STANDARD PORT AT STANDARD TIME			-05:00	-04:00	-03:00	-02:00	-01:00		01:00	02:00	03:00	04:00	05:00		
LOCAL PORT TIME DIFF (Enter as mins/1440)			00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		
TIME ZONE ADJ (EG BST) (Enter as mins/1440)	00:00		00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		00:00
LOCAL PORT AT LOCAL TIME	00:00		-05:00	-04:00	-03:00	-02:00	-01:00	00:00	01:00	02:00	03:00	04:00	05:00		00:00
STANDARD PORT HEIGHT (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT (ABOVE CHART DATUM)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
HEIGHT IN PREV ROW (minus next row)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
LOWEST LW DURING STAY (plus next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
YACHT REQUIRED DEPTH (equals next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
ANCHOR/MOOR IN DEPTH AT LEAST	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR		
YACHT REQUIRED DEPTH (minus next row)	0.0	REQUIRED DEPTH = DRAFT OF YACHT + REQUIRED CLEARANCE BENEATH KEEL (TO CATER FOR APPROXIMATIONS IN CALCS USE CLEARANCE 1 METRE OR MORE)
LOWEST LW DURING STAY (equals next row)	0.0	NB LOWEST LOW WATER MY BE SEVERAL DAYS AHEAD DEPENDING ON HOW LONG YOU INTEND TO STAY
ANCHOR WHERE CHART DATUM >	0.0	I.E. YOU CAN ANCHOR WHERE THE DEPTH (CHART DATUM) SHOWN ON THE CHART IS EQUAL TO OR GREATER THAN THE FIGURE

CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)		
CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
HEIGHT OF SILL/DRYING HEIGHT		SEE NOTE IN CELL ABOVE
A: RISE OF TIDE NEEDED	0.0	REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME REQUIRED DEPTH WILL BE REACHED	#DIV/0!	1/12 = 1 HR AFTER LOW WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

CALCULATION OF TIME AFTER HIGH WATER AFTER WHICH YOU WILL NO LONGER HAVE REQUIRED DEPTH (uses LW after relevant HW)		
A: FALL OF TIDE UNTIL REQUIRED DEPTH REACHED	0.0	(HIGH WATER + CHART DATUM) - REQUIRED DEPTH (i.e. the total depth from the seabed at high water less the required depth from the seabed gives the amount by which the depth has to fall from high water to reach the required depth) OR (WHERE DRYING HEIGHT OR SILL) HIGH WATER - (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM + REQUIRED DEPTH) i.e. HW (measured from chart datum of course) can only fall by that amount which leaves your required depth plus the drying height or height of sill above chart datum.
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REFUGE 4				LAT/LONG		
CHARTS						
ALMANAC (NAME & PAGES)						
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HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
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DANGERS	1	2	3	4	5
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HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE															
STANDARD PORT AT STANDARD TIME			-05:00	-04:00	-03:00	-02:00	-01:00		01:00	02:00	03:00	04:00	05:00		
LOCAL PORT TIME DIFF (Enter as mins/1440)			00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		
TIME ZONE ADJ (EG BST) (Enter as mins/1440)	00:00		00:00	00:00	00:00	00:00	00:00		00:00	00:00	00:00	00:00	00:00		00:00
LOCAL PORT AT LOCAL TIME	00:00		-05:00	-04:00	-03:00	-02:00	-01:00	00:00	01:00	02:00	03:00	04:00	05:00		00:00
STANDARD PORT HEIGHT (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
LOCAL PORT HEIGHT (ABOVE CHART DATUM)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
HEIGHT IN PREV ROW (minus next row)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
LOWEST LW DURING STAY (plus next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
YACHT REQUIRED DEPTH (equals next row)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
ANCHOR/MOOR IN DEPTH AT LEAST	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR		
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CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)		
CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
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A: RISE OF TIDE NEEDED	0.0	REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12	0	(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS	#DIV/0!	USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
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				LAT/LONG		
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ALMANAC (NAME & PAGES)						
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HARBOUR MASTER	HOURS		CHANNEL		TEL/MOB	
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TIDAL AND OTHER CONSTRAINTS						
OTHER NOTES						
CHARTLET/DIAGRAM OF PORT INCLUDING WAYPOINTS (USE SEPARATE SHEET IF REQUIRED) AND/OR ENTRY/EXIT PROCEDURE (E.G. STEP 1 - PICK UP LEADING LIGHTS - DESC, BEARING ETC; STEP 2 - BUOY HOPPING INC BUOY NUMBER, TYPE, BEARING AND DISTANCE FROM LAST BUOY ETC) - OR REFER TO PILOT/ALMANAC CHARLET IF SUFFICIENT						

DANGERS	1	2	3	4	5
NAME					
POSITION (LAT)					
POSITION (LONG)					
DESCRIPTION					
LIGHT/SOUND/BUOY TYPE					
AVOIDANCE TACTIC (EG 'PASS 1 NM WEST OF' OR 'WAYPOINT SET 1NM TO WEST OF')					

CALCULATION OF DEPTHS IN WHICH YOU CAN ANCHOR OR MOOR AT GIVEN TIMES (HOURS EITHER SIDE OF HIGH WATER) (USE ONLY WHERE NORMAL TIDAL CURVE) (ENTER YELLOW BOXES ONLY)

HOURS EITHER SIDE OF HW	LW	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6	LW
STANDARD PORT NAME + ALAMANAC PAGE															
STANDARD PORT AT STANDARD TIME															
LOCAL PORT TIME DIFF (Enter as mins/1440)															
TIME ZONE ADJ (EG BST) (Enter as mins/1440)															
LOCAL PORT AT LOCAL TIME															
STANDARD PORT HEIGHT (RULE OF 12THS)															
LOCAL PORT HEIGHT DIFF (RULE OF 12THS)															
LOCAL PORT HEIGHT (ABOVE CHART DATUM)															
HEIGHT IN PREV ROW (minus next row)															
LOWEST LW DURING STAY (plus next row)															
YACHT REQUIRED DEPTH (equals next row)															
ANCHOR/MOOR IN DEPTH AT LEAST															

CALCULATION OF THE MINIMUM CHART DATUM SHOWN ON THE CHART REQUIRED TO ANCHOR

YACHT REQUIRED DEPTH (minus next row)		REQUIRED DEPTH = DRAFT OF YACHT + REQUIRED CLEARANCE BENEATH KEEL (TO CATER FOR APPROXIMATIONS IN CALCS USE CLEARANCE 1 METRE OR MORE)
LOWEST LW DURING STAY (equals next row)		NB LOWEST LOW WATER MY BE SEVERAL DAYS AHEAD DEPENDING ON HOW LONG YOU INTEND TO STAY
ANCHOR WHERE CHART DATUM >		I.E. YOU CAN ANCHOR WHERE THE DEPTH (CHART DATUM) SHOWN ON THE CHART IS EQUAL TO OR GREATER THAN THE FIGURE

CALCULATION OF TIME AFTER LOW WATER AT WHICH REQUIRED DEPTH WILL BE REACHED (uses LW before relevant HW)

CHART DATUM **OR**		ENTER EITHER THE CELL TO THE LEFT OR THE CELL BELOW THAT - NOT BOTH
HEIGHT OF SILL/DRYING HEIGHT		SEE NOTE IN CELL ABOVE
A: RISE OF TIDE NEEDED		REQUIRED DEPTH - (LOW WATER + CHART DATUM) (i.e. at low water you will already have the height of chart datum plus the height of low water above chart datum) OR (WHERE DRYING HEIGHT OR SILL) REQUIRED DEPTH + (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM - LOW WATER) i.e. the tide will start at the height of low water above chart datum and needs to rise above that by the height of the sill/drying height above low water then further by the required depth.
B: TOTAL RISE OF TIDE/12		(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS		USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
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CALCULATION OF TIME AFTER HIGH WATER AFTER WHICH YOU WILL NO LONGER HAVE REQUIRED DEPTH (uses LW after relevant HW)

A: FALL OF TIDE UNTIL REQUIRED DEPTH REACHED		(HIGH WATER + CHART DATUM) - REQUIRED DEPTH (i.e. the total depth from the seabed at high water less the required depth from the seabed gives the amount by which the depth has to fall from high water to reach the required depth) OR (WHERE DRYING HEIGHT OR SILL) HIGH WATER - (DRYING HEIGHT OR HEIGHT OF SILL ABOVE CHART DATUM + REQUIRED DEPTH) i.e. HW (measured from chart datum of course) can only fall by that amount which leaves your required depth plus the drying height or height of sill above chart datum.
B: TOTAL FALL OF TIDE/12		(HIGH WATER - LOW WATER)/12
A/B GIVES NO. OF 12THS		USE RULE OF 12THS TO GIVE TIME AFTER LOW WATER WHEN REQUIRED DEPTH WILL BE ACHIEVED (ONLY SUITBALE WHERE NORMAL TIDAL CURVE)
TIME AFTER WHICH YOU NO LONGER HAVE REQUIRED DEPTH		1/12 = 1 HR AFTER HIGH WATER, 3/12THS = 2 HRS, 6/12THS=3 HRS, 9/12THS = 4 HRS, 11/12THS = 5 HRS, 12/12THS = 6 HRS (SEE TABLE BELOW)

TO PLOT THE ABOVE ON A TIDAL CURVE GRAPH YOU NEED FIGURES FOR LW, HW AND THE RISE OR FALL OF TIDE (WHICH ADDED TO LW (RISE) OR TAKEN FROM HW (FALL) WILL GIVE YOU THE HEIGHT OF TIDE YOU NEED TO PLOT TO GET A TIME READING OFF THE GRAPH). YOU ALSO NEED THE TIMES FOR HW AND LW. **THE 12THS RULE IS VERY APPROXIMATE AND YOU SHOULD ALWAYS USE THE APPROPRIATE TIDAL CURVE GRAPH TO GET A MORE ACCURATE FIGURE, ESPECIALLY WHERE THERE IS A LARGE TIDAL RANGE.**