Week 6

1

IRPCS – How's it going?

What do the rules say about keeping a lookout?

Rule 5: Look-out
'Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.'

2

IRPCS – How's it going?

Vessels are required to proceed at a Safe Speed.
What factors should be considered in determining a Safe Speed?

By all vessels:
(i) the state of visibility;
(ii) the traffic density including concentrations of fishing vessels or any other vessels;
(iii) the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions;
(iv) at night the presence of background light such as from shore lights or from back scatter of her own lights;
(v) the state of wind, sea and current, and the proximity of navigational hazards;
(vi) the draught in relation to the available depth of water.

RYA Training Centre

3

IRPCS – How's it going?

How would you determine whether "danger of collision exists", visually and by using radar?

Visually – Vessel is on a constant bearing and the range decreases.

Radar – by the same method.

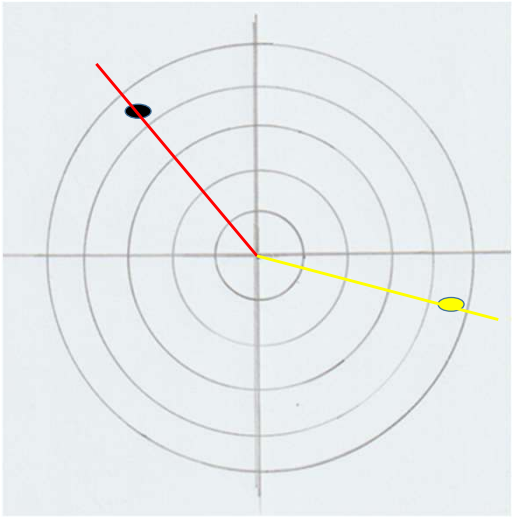
RYA Training Centre

4

5

Radar – Danger of Collision

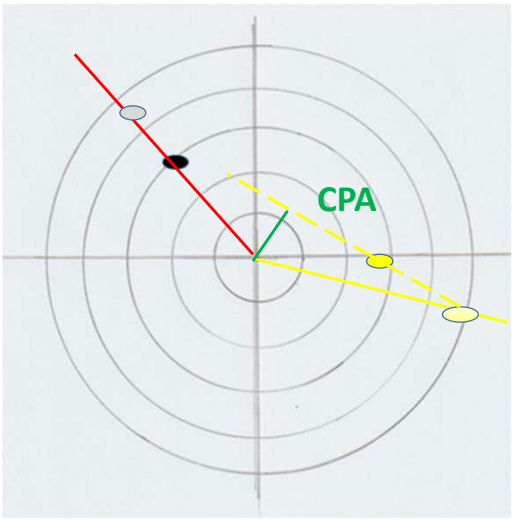
Head up
Rings at 1 nm intervals



t = 0 min

6

Radar – Danger of Collision



t = 6 min

Head up
Rings at 1 nm intervals

7

TIDAL HEIGHTS

At

Standard Ports

8

Tidal Levels Table (p12)

Tidal levels table

PORT	HAT	MHWS	MHWN	MLWN	MLWS
VICTORIA	6.3	5.6	4.4	2.0	0.7
Bramhope Creek	6.7	5.9	4.5	2.1	0.7
DUNBARTON	4.6	4.2	3.5	1.8	0.8
Suzy Bay Marina	4.3	4.0	3.4	1.6	0.8
PORT FRASER	4.6	4.2	3.4	1.1	0.4
Stevenstown	4.2	4.0	3.6	1.3	0.4
NAMLEY HARBOUR	4.4	4.0	3.4	1.1	0.4
Itchenham	4.1	3.8	3.3	1.0	0.3
Emsburne	4.0	3.7	3.3	1.1	0.3
Whale Bay Marina	4.2	3.9	3.5	1.3	0.4
Pawmarsh Marina	4.0	3.8	3.5	1.3	0.5
Port Rampton	5.1	4.5	3.6	1.7	0.6
Farlow	5.4	4.7	3.7	1.8	0.6
Walton Bay	4.5	4.2	3.5	1.9	0.7
Parvin Sound	4.1	3.9	3.5	1.7	0.7
Endal Marina	5.1	4.6	3.5	1.5	0.4
Rozelle Cove	5.0	4.4	3.2	1.6	0.6
India Harbour	4.2	4.0	3.6	1.8	0.7
HAMILTON SOUND	6.2	5.8	4.7	1.5	0.6
November Bay	6.0	5.6	4.6	1.4	0.6
Edenfield	5.7	5.4	4.5	1.2	0.5
Sweetwater	6.4	6.0	4.8	1.6	0.7
COLVILLE	5.1	4.8	3.9	1.4	0.5
Jackson Bay	5.6	5.2	4.1	1.6	0.7
Sandquay	5.7	5.2	3.8	1.6	0.7
S.Kilda	5.1	4.9	4.2	2.3	0.5
Dawson Harbour	8.3	7.6	5.6	2.4	1.0
PORT FITZROY	7.0	6.4	5.4	1.4	0.5
Blackmill	6.8	6.2	5.2	1.4	0.5
Port Slade	7.3	6.6	4.5	1.1	0.6

The value of HAT may be inferred for a Secondary Port by extrapolating beyond the given differences for a tide that reaches the appropriate level at the Standard Port.

9

TIDAL HEIGHT CALCULATIONS

- Finding the height of tide at a certain time - normally used when anchoring or to find out when the boat will refloat having run aground!
- Finding the time at which the tide will reach a certain height - used to find when one can cross the cill of a marina or cross a sand bank etc.

10

FINDING THE HEIGHT OF TIDE AT A CERTAIN TIME

On 17th May at 1800 (DST), a yacht is approaching the anchorage in the Nutworth Channel in Namley Harbour. The skipper wants to anchor there for the night. The yacht has a draught of 1.5m and the skipper wants to keep at least 1m of water under the keel at low water.

What depth should he anchor in at 1800?

11

12

INFORMATION REQUIRED

For Friday 17 May at Namley Harbour -

HW before 1800 = 1446 UT / 1546 DST

Height of HW = 3.6 m

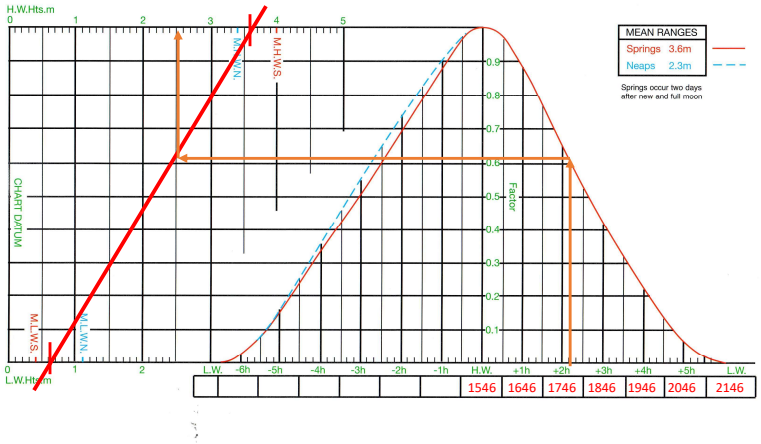
LW after 1800 = 2039 UT / 2139 DST

Height of LW = 0.6m

Range = 3.6 - 0.6 = 3.0 m Midway

13

Tidal Curve



14

TO FIND THE DEPTH IN WHICH TO ANCHOR AT 1800

Height of tide at 1800 from the curve = 2.5m

Between 1800 and LW, the tide will fall

2.5 - 0.6 = 1.9m

Depth required at time of anchoring =

Fall + Draught + Safety clearance

= 1.9 + 1.5 +1.0

= 4.4m

15

TO FIND THE TIME AT WHICH THE TIDE WILL REACH A CERTAIN HEIGHT

A yacht is kept on a drying mooring in Itchenham Reach. The mooring dries to 0.8m above CD and the yacht has a draught of 1.1m.

What will be the earliest time that the yacht will float on the rising tide on the afternoon of Saturday 6 April?

16

INFORMATION REQUIRED

LW Namley	1236 UT / 1336 DST	1.3m
HW	1851 UT / 1951DST	2.9m
RANGE	2.9 - 1.3 = 1.6m Neaps	

BOAT WILL FLOAT WHEN HEIGHT OF TIDE IS -

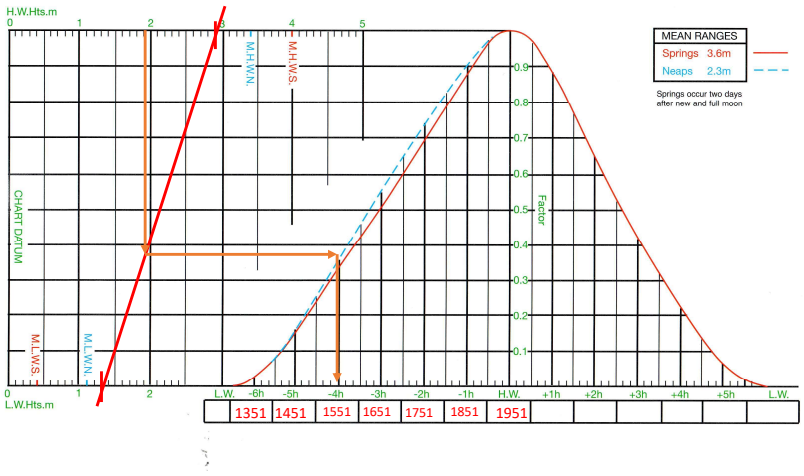
DRYING HEIGHT + DRAUGHT

= 0.8 + 1.1

= 1.9 m

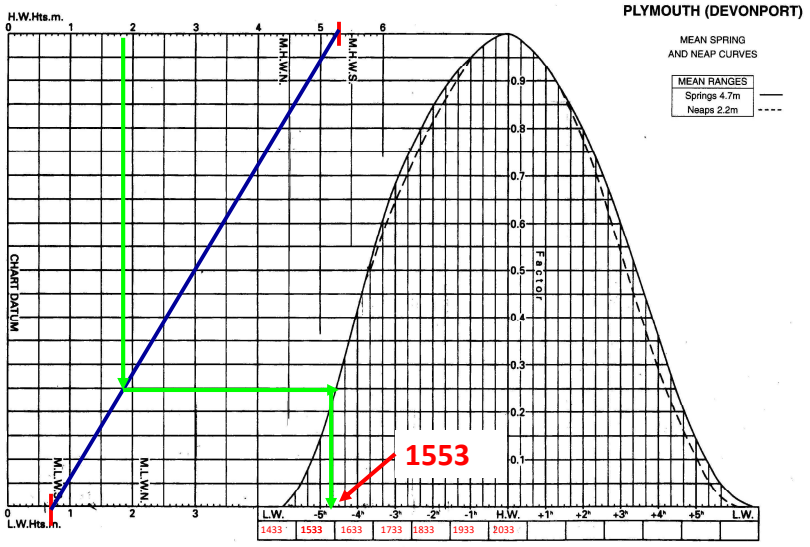
17

Tidal Curve



18

Tidal Curve



19

Two to try:

1. At 1430 (local time) on Friday 9 August, the skipper of a yacht is approaching the anchorage at the north end of Victoria Harbour (Training almanac p32). The skipper expects to remain at anchor until 2100 the same day. The yacht has a draught of 1.8m and the skipper wants a clearance depth of 1.0m under the keel at low water. What depth of water should he anchor in at 1430 to ensure this? (Use the Spring tide curve.)

Answer – 5.3m

2. A yacht with a draught of 1.2m is secured to a drying mooring in Port Fraser Harbour (Training almanac p46). The mooring dries to a height of 1.6m above chart datum. What is the latest time that the boat could be moved from the mooring during the day on Sunday 21 July and what is the earliest time that it could return that evening? (Use the Neap tide curve.)

Leaving – 1210 DST
Returning – 1951 DST

20

Coffee Time

21

Fix by Transferred Position Line

The running fix

22

Information required

- Bearing to a fixed point, time bearing taken and log reading.
- A second bearing to the fixed point taken after a suitable time interval. Ideally, this bearing should be 40 to 50 degrees different from the first bearing. The time of taking this second bearing and the log reading at that time are recorded.
- The course steered between taking the two bearings.
- The tidal set and drift for the period between taking the two bearings.

RYA Training Centre

23

Process

- Lay off a position line on the first bearing from the fixed object.
- From any point on this line, construct an EP using the water track, distance run and tidal information.
- Transfer the first bearing to give a transferred position line through this EP.
- Lay off the second bearing from the fixed object.
- Intersection of this second line with the transferred position line gives the “fix” at the time the second bearing was taken.

RYA Training Centre

24

Running Fix Example

From a Power Boat's Log

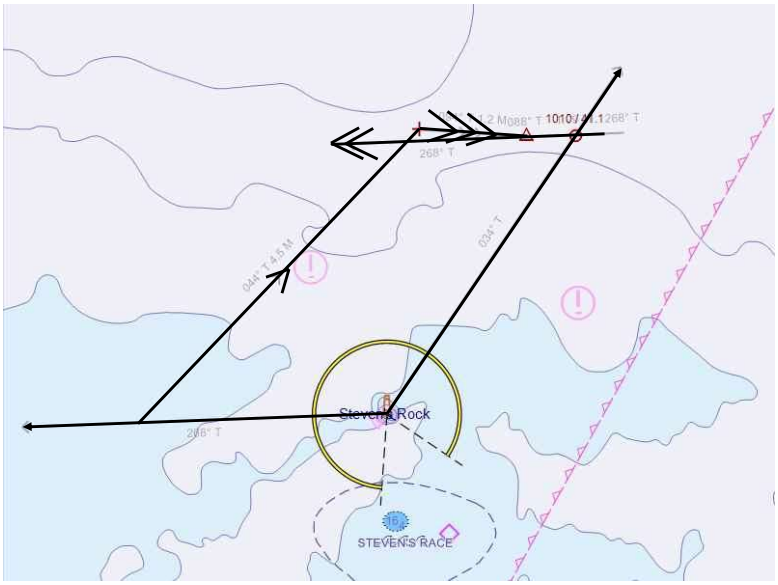
Time	Log	Co	Wind	L'way	Narrative
0940	25.3	044T	W3		Steven's Rock Lighthouse bears 085T
1010	29.8	044T	W3		Steven's Rock Lighthouse bears 214T

Tide stream between 0940 and 1010 = 094T / 2.4 knots.

What is the boat's position at 1010?

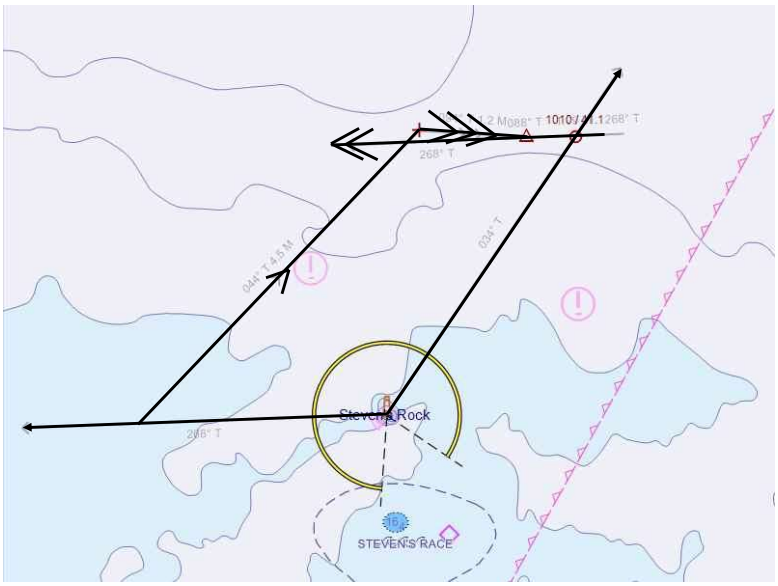
25

The Chartwork



26

The Chartwork



27

One to try!

Take variation as 6W and use the deviation curve in the Training Almanac

Taken from a yacht's log.

Time	Log	Co	Wind	L'way	Narrative
1500	27.7	265C	NE3	-	South Head Lt bears 342M
1530	31.2	265C	NE3/4	-	South Head Lt now bears 068M (Tidal stream 1500 -1530 is 125T / 1.2 knots)

Find the yacht's position at 1530.

28

Homework

Reading:

IRPC Book Chapters 4 and 5

CN pp 20

CN pp 37

Exercise “Techniques for Visual Fixing” for return week 7.

29