



SAMPLE CHARTWORK - COASTAL SKIPPER ANSWERS

Updated 28 August 2012

INTERCEPTION

1. Course 048°M. Distance 8.9nm. Time = $8.9/7 \times 60 = 76$ min
2. Course 301°T. Distance 8.1nm. Time = $8.1/6 \times 60 = 81$ min
3. CTS = 280°T Distance to intercept = 8.6nm Time to intercept = $8.6/4.2 \times 60 = 123$ m = 2h03m
4. CTS = 010° Distance to intercept = 9.2m Time to intercept = $9.2/11 \times 60 = 50$ min
5. CTS = 108° Time = $9.6/6$ hrs = 96 min = 1h36.

DIPPING THE LIGHT

6. Dist = 18.0nm. Position 34° 05.0'S and 018° 12.8'E
7. Dist = $2.08 \times (\sqrt{3} + \sqrt{34}) = 15.7$ nm. Position 34°28.2'S and 018° 31.7'E
8. Slangkop = 027°C - 24°W = 003T. Range = $2.8 \times (\sqrt{41} + \sqrt{3}) = 16.9$ nm.
Position 34° 25.85'S and 018° 18.2'E
9. Range = $2.08 \times (\sqrt{28} + \sqrt{3}) = 14.6$ M. And 131°C - 24°W = 107°T
Position 33° 48.6'S and 018° 12.6'E

RULE OF TWELFTHS

10. Latest time = 1512. See worked example.
11. Depth required = $1.6 + 0.5 = 2.1$. Charted depth = 0.9m So tide required = 1.2m:

0900	33
1002	46
1104	72
1206	111
1308	150
1410	176
1512	189

Earliest time = $1206 + 62 \times 9/39 = 1206 + 14$ m = 1220



12. From your tide table: At 1200 you have $85 + 42 * (11/69) = 85 + 7 = 92$ cm of tide.

For 1.8m of tide, the time = $1407 + 69 * (11/28) = 1407 + 27 = 1434$

0931	43
1040	57
1149	85
1258	127
1407	169
1516	197
1625	211

CHART APPRECIATION

13. a. Expected deviation in 2020 = $23^{\circ} 32' + 21 \times 2' = 24^{\circ} 14'$
b. Yes you can plot directly – because it says so. The horizontal datum is the Clarke 1880 Spheroid.
c. Set = $317^{\circ}T$ and rate = 0,2 knots
14. Charted depth 3,9m. At MLWN depth $3.9 + 0.7 = 4.6m$

GENERAL

15. a. Position $34^{\circ} 12.7'S$ and $18^{\circ} 46.7'E$
b. CTS = $222^{\circ}M$. Distance = 18.1 ETA $18.1/8 = 2.26h = 2h 0.26 \times 60m = 2h 16m = 13h16$
c. Set = $115^{\circ}T$. Drift = 1.6nm Rate = 3.2 knots
d. CTS = $275^{\circ}C$ SOG = $3.1 \times 2 = 6.2$ knots
16. a. Position = $34^{\circ}22.7'S$ and $018^{\circ} 43.9'E$
b. CTS = $017^{\circ}T + 24^{\circ}W = 041^{\circ}M - 4^{\circ}E = 037^{\circ}C$. Distance = 12.0 nm. Time = $12.0/8 = 01h30m$. ETA 12h30.
c. Log = $15.7 - 11.3 = 4.4$ nm Set = $286^{\circ}T$ Drift = 1.6 nm Rate = 3.2 knots
d. CTS = $047^{\circ}T + 24^{\circ}W = 071^{\circ}M - 2^{\circ}E = 069^{\circ}C$. SOG = 8.8 knots. ETA = $11h30 + (60 \times 8.0/8.8) = 12h25$
17. a. Position = $33^{\circ} 48.6'S$ and $018^{\circ} 20.2'E$
b. CTS = $198^{\circ}T + 24^{\circ}W = 222^{\circ}M + 4^{\circ}W = 226^{\circ}C$. Distance = 14.4 nm. Time = $14.4/9 = 1h36m$. ETA = 12h36.
c. Set = $310^{\circ}T$ Drift = 1.9 nm Rate = 2.8 knots
d. CTS = $172^{\circ}T + 24^{\circ}W = 196^{\circ}M + 6^{\circ}W = 202^{\circ}C$. SOG = 7.0 knots



18. a. Position $34^{\circ} 25.9'S$ and $018^{\circ} 23.1'E$
 b. CTS = $358^{\circ}C$. Distance = 17.5 nm Time = $17.5/11 = 1h35m$. ETA 12h35
 c. Set = $279^{\circ}T$. Drift = 2.1 nm Rate = 3.1 to 3.2 knots
 d. CTS = $027^{\circ}C$ SOG = 9.8 knots. Time = $9.0/9.8 \times 60 \times 55$ min. ETA = 12h35

Worked example: Question 20

Draft	2.1
Plus required clearance	0.5
Required depth	2.6
Less charted depth	1.6
Required tide	1.0

Tidal interval = 7h 12m = 432m

Tidal hour = $432 / 6 = 72m = 1 \text{ h } 12m$

Tidal range = 3.6m

One twelfth = 0.3m

Using the rule of twelfths :

1000	3.9
1112	3.6
1224	3.0
1336	2.1
1448	1.2
1600	0.6
1712	0.3

Last time by calculation = $1448 + 72 \times (0.2/0.6) = 1448 + 24 = 1512$

For those who are not comfortable with interpolating by calculation, using a rough graph drawn by hand to interpolate is more than adequate

