



SAMPLE CHARTWORK - COASTAL SKIPPER QUESTIONS

Updated 28 August 2012

- Unless otherwise specified, all chartwork questions relate to chart SAN 3002.
- Some questions may ask you to use deviation card No1 for your yachts steering compass:

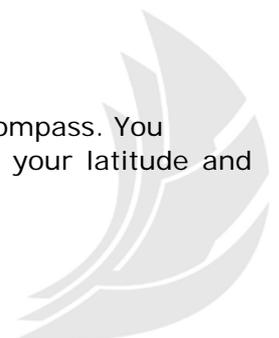
DEVIATION CARD No1						
COMPASS	DEVIATION	MAGNETIC		COMPASS	DEVIATION	MAGNETIC
000°	8° E	008°		180°	8° W	172°
023°	6° E	029°		202°	6° W	196°
045°	4° E	049°		225°	4° W	221°
067°	2° E	069°		247°	2° W	245°
090°	0°	090°		270°	0°	270°
112°	2° W	110°		292°	2° E	294°
135°	4° W	131°		315°	4° E	319°
158°	6° W	152°		337°	6° E	343°
180°	8° W	172°		000°	8° E	008°

INTERCEPTION

1. You are at 34° 00'S and 18° 10'E. Your target is at 33° 50'S and 18° 20'E sailing 270°M at 4 knots. If you can do 7 knots, what is your CTS to intercept the target and how long will it take to meet?
2. You are at 34° 15'S and 18° 45'E. Your target is 34° 10'S and 18° 43'E sailing 260°T at 4 knots. If you can do 6 knots, what is your CTS to intercept the target and how long will it take to meet?
3. Your target is 34° 11'S and 18° 32'E heading 195°T at 3.4 knots. You are 34° 19'S and 18° 40E and can do 4.2 knots. What is your CTS to intercept your target and how long will it take?
4. Your target is 33° 50S and 18° 10E heading 110°T at 3 knots. You are at 34°S and 18° 11E and can do 11 knots. What is your CTS to intercept your target and how long will it take?
5. At 1800 your target is at 34° 20'S and 18° 43'E heading 140°T at 4 knots. You are at 34° 22'S and 18° 37'E and can do 6 knots. What is your CTS to intercept your target and how long will it take?

DIPPING THE LIGHT

6. At 0312 you see Robben Island light dipping at 050°C on your hand held compass. You estimate the height of your eye to be 3.2m. Plot your position. What is your latitude and longitude?



7. At 0422 you see Hangklip light dipping at 095°C on your hand held compass. You estimate the height of your eye to be 3m. Plot your position. What is your latitude and longitude?
8. At 0425 you are sailing 210°C and you see Slangkop light dipping at 027°C on your hand held compass. The height of your eye above water is about 3m. Plot your position. What is your latitude and longitude? Deviation card No. 1 applies to your ship's compass.
9. You are sailing 180°C . at 0300 you see Milnerton Light bearing 131°C on your hand held compass and dipping. You estimate your height of eye to be 3m above sea level. Plot your position. What is your latitude and longitude? Deviation card No.1 applies to your ship's compass.

RULE OF TWELFTHS

10. The bar at the entrance to your marina at Dar es Salaam has charted depth of 1.6m. Your keel has a draft of 2.1m and you require a clearance of 0.5m. What is the latest time before the 1712 LT that you can enter the marina? HT 1000 @ 3.9m. LT 1712 @ 0.3m. Note that the transducer of your echo sounder is installed 0.4m below water level.
11. The bar at the entrance to your marina has a charted depth of 0.9m. Your keel has draft of 1.6m and you require a clearance of 0.5m. What is the earliest time after the 0900 LT that you can enter the marina? LT 0900 @ 0.33m. HT 1512 @ 1.89m. Note that the transducer of your echo sounder is installed 0.4m below water level.
12. Your tide table gives you the following information: LT 0931 0.43m HT 1625 2.11m
What will the height of the tide be at 1200? When will the tide be 1.8m?

CHART APPRECIATION

13. On chart SAN 3002
 - a. What would you expect the compass variation to be in False Bay in degrees and minutes in 2020?
 - b. Can GPS position be plotted directly or do they need to be adjusted first? How do you know? What horizontal datum have they used for the chart?
 - c. What is the set and rate if the tidal stream at diamond D 3 hours before spring high tide?
14. On chart SAN 2003, what is the charted depth at Anvil Rock off Cape Point? What would the depth be at MLWN?

GENERAL

15. You have zero deviation on your compass.
 - a. You are sailing 240°C . At 1100 Steenbras river mouth bears 086°C and Rooielsberg bears 171°C on your hand held compass. Plot your fix. What is your position?
 - b. You immediately decide to change course to get to waypoint A which is $34^{\circ} 30'\text{S}$ and $18^{\circ} 40'\text{E}$. Assuming a speed of 8 knots, what is your compass CTS and your ETA at your waypoint?

- c. At 1130 you fix your position by GPS at $34^{\circ} 17.2'S$ and $18^{\circ} 47.1'E$. What has the set, drift and rate of the current been since 1100?
- d. Your skipper wants to get back onto your original course to waypoint A by 1200. Assuming the current remains the same and your speed through the water remains 8 knots, what is your compass CTS and your expected SOG?
16. Deviation card No1 applies to your steering compass.
1. You are sailing $340^{\circ}C$ on your steering compass. At 1100 your log reads 11.3nm and you fix your position using your hand bearing compass:
 - Hangklip light bear $120^{\circ}C$
 - Klein Hangklip bear $071^{\circ}C$
 Plot your fix. What is your position?
 2. You decide to change course to get to the waypoint A at $34^{\circ} 11'S$ and $18^{\circ} 48'E$. What is your compass course to steer? What is your ETA at A assuming a speed of 8 knots?
 3. At 1130 you fix your position by GPS at $34^{\circ} 18.0'S$ and $18^{\circ} 43.5'E$ and your log reads 15.7nm. What has the set, drift and rate of the current been since 1100?
 4. You still want to get to your waypoint A. What is your CTS assuming the current remains the same? What is your expected SOG and your ETA at A, assuming your speed through the water will be 10 knots.
17. Deviation card no 1 applies to your ships steering compass.
1. You are sailing $170^{\circ}C$. At 1100 Robben Island light bears $122^{\circ}C$ and Green Point light bears $172^{\circ}C$, both taken on your hand held compass. Plot your fix. What is your position?
 2. You decide to change course to get to the waypoint A which is 4 nm due West of Karbonkelberg peak. Your speed is 9 knots. What is your compass course to steer? What is your ETA at A?
 3. At 1140 you fix your position by GPS at $33^{\circ} 53.0'S$ and $18^{\circ} 16.2'E$. What has the set, drift and ate of the current been since 1100?
 4. What is your CTS to get to waypoint A, assuming the current remains the same and your speed through the water remains 9 knots? What is your expected SOG?
18. You have zero deviation on your steering compass.
1. You are sailing $240^{\circ}C$ on your steering compass. At 1100 you zero your log and fix your position with a bearing of $075^{\circ}C$ taken on your hand held compass and a radar range of 7.2 nm on Cape Point light. Plot your fix. What is your position?
 2. You immediately decide to change course to get to waypoint A which is $34^{\circ} 10'S$ and $18^{\circ} 14'E$. Assuming a speed of 11 knots, what is your compass CTS and your ETA at A?
 3. At 1140 your log reads 7.4 nm and you fix your position with your hand held compass. The radio mast at Die Eiland bears $045^{\circ}C$ and the wreck at Hoek van Bobbejaans bears $111^{\circ}C$. What has the set, drift and rate of the current been since 1100?
 4. You still want to get to waypoint A. Assuming the current remains the same and your speed through the water of 9 knots, what is your compass CTS, your expected SOG and your ETA at A?