

U.S.C.G. Merchant Marine Exam
Apprentice Mate Steersman
Q415 Navigation Problems – Near Coastal
(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions.

1. You are steering $173^{\circ}T$, and a light is picked up dead ahead at a distance of 13.9 miles at 0054. You change course to pass the light 4.5 miles off abeam to port. If you are making 21 knots, what is your ETA at the position 4.5 miles off the light?
- A. 0122
B. 0125
C. 0131
D. 0134

Correct answer: C

2. On 15 October 2023, you will be docking on the Southern Branch Elizabeth River, VA at the second high tide. The berth is located between NOAA reference tidal station #8638660 and reference station #8639348. What time (LST) will you be docking? See illustration # D063NG.
- A. 2136
B. 2238
C. 2132
D. 2140

Correct answer: A

3. You swung ship and compared the magnetic compass against the gyrocompass to find deviation. Gyro error is $2^{\circ}E$. The variation is $8^{\circ}W$. Find the deviation on a gyro heading of 037° .

NP-0124

HEADING	
PSC	PGC
030.5°	020°
061.5°	050°
092.0°	080°
122.5°	110°
152.0°	140°
181.0°	170°
210.0°	200°
239.5°	230°
269.0°	260°
298.0°	290°
327.5°	320°
358.5°	350°

- A. $1.0^{\circ}W$
B. $1.5^{\circ}W$
C. $1.5^{\circ}E$
D. $2.0^{\circ}E$

Correct answer: A

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4. You wish to make good a course of $053^{\circ}T$ while turning for an engine speed of 16 knots. The set is $345^{\circ}T$, and the drift is 2.4 knots. What speed will you make good along the track line?
- A. 14.1 knots
 - B. 15.2 knots
 - C. 16.1 knots
 - D. 16.8 knots

Correct answer: D

5. On 7 April in DR position LAT $27^{\circ}42.0'N$, LONG $114^{\circ}03.0'W$, you observe an amplitude of the Sun. The Sun's center is on the celestial horizon and bears $076^{\circ}psc$. The chronometer reads 02h 10m 17s and is 01m 52s slow. Variation in the area is $8^{\circ}E$. What is the deviation of the standard magnetic compass?
- A. $1.8^{\circ}W$
 - B. $2.3^{\circ}E$
 - C. $6.2^{\circ}E$
 - D. $7.8^{\circ}W$

Correct answer: A

6. On 10 November 2023 at 2030, you are inbound at Charleston Harbor Entrance Buoy "10" (ACT6611). What is the direction and velocity of the current you are encountering as you pass Buoy "10"? See illustration D058NG.
- A. 0.4kts at $280^{\circ}T$
 - B. 0.4kts at $104^{\circ}T$
 - C. 2.1kts at $335^{\circ}T$
 - D. 2.1kts at $172^{\circ}T$

Correct answer: B

7. On 12 June at 0919 zone time, your position is LAT $26^{\circ}52'N$, LONG $84^{\circ}34'W$.

The chronometer reads 03h 17m 00s. Chronometer error is 01m 40s slow. At that time, an azimuth of the Sun is obtained. The bearing is 089.5° per standard magnetic compass. Variation for this area is $4.5^{\circ}E$.

What is the deviation of the standard magnetic compass?

- A. $9.5^{\circ}E$
- B. $9.5^{\circ}W$
- C. $5.2^{\circ}E$
- D. $5.2^{\circ}W$

Correct answer: D

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8. Your vessel is proceeding up a channel, and you see a pair of range lights that are in line ahead. The chart indicates that the direction of this pair of lights is 196°T , and the variation is 7°E . If the heading of your vessel at the time of the sighting is 192° per standard magnetic compass, what is the deviation?
- A. 3°E
 - B. 3°W
 - C. 4°E
 - D. 4°W

Correct answer: B

9. Your vessel is on a course of 207°T at 13 knots.

At 0539 a light bears 180.5°T , and at 0620 the light bears 162°T .

At what time and at what distance off will your vessel be when abeam of the light?

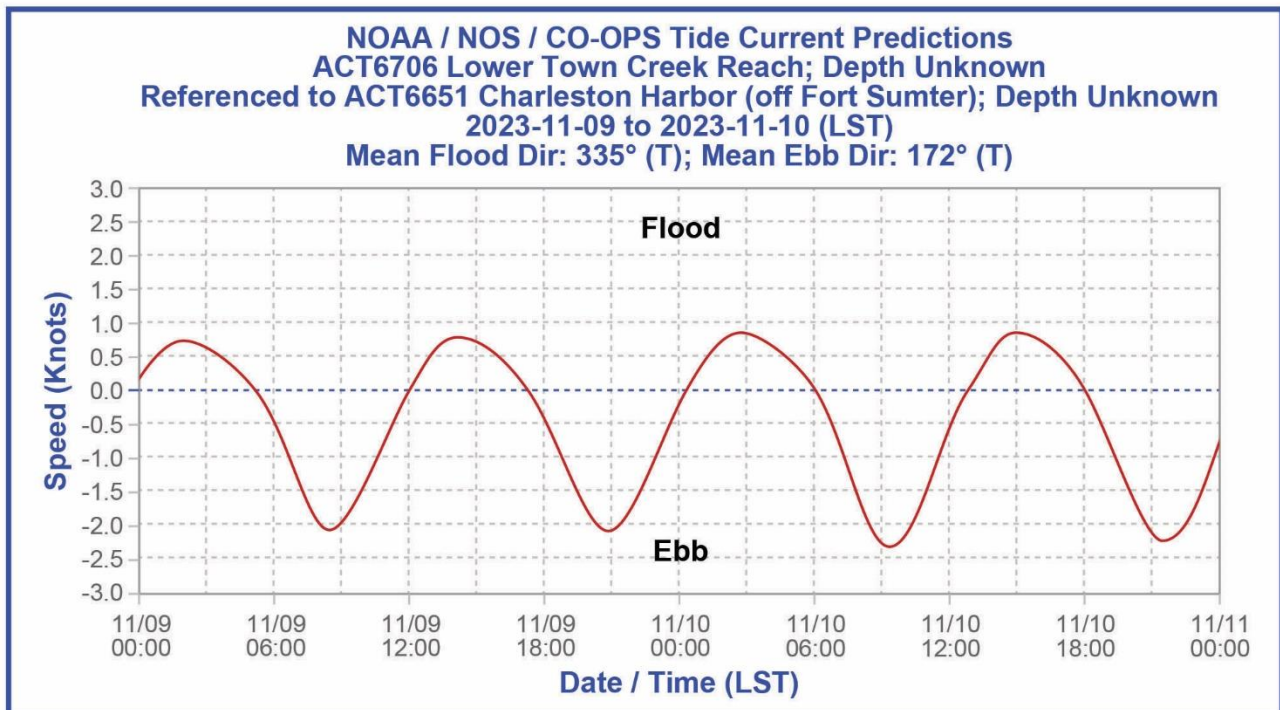
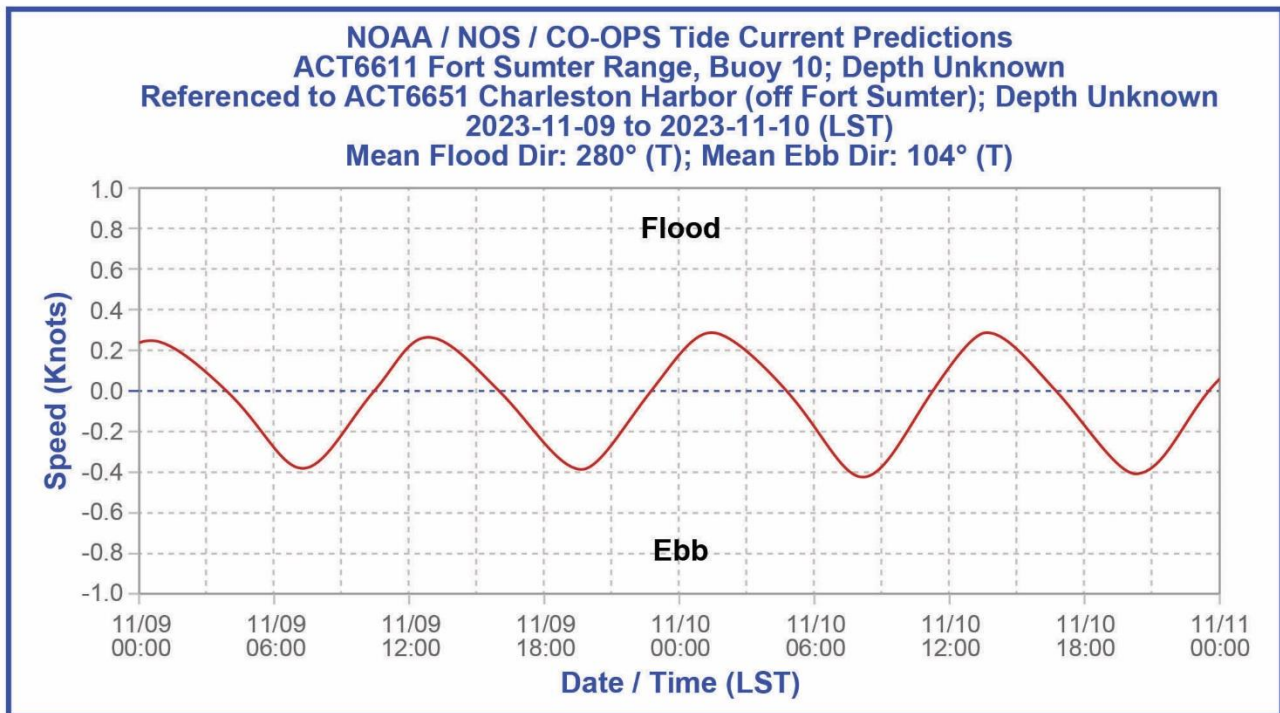
- A. 0633, 5.9 miles
- B. 0701, 8.9 miles
- C. 0653, 7.6 miles
- D. 0641, 6.5 miles

Correct answer: B

10. You desire to make good a true course of 279° . The variation is 8°W , magnetic compass deviation is 3°E , and gyrocompass error is 1°E . A north-northwesterly wind produces 3° leeway. What is the course to steer per standard magnetic compass (psc) to make the true course good?
- A. 287°psc
 - B. 290°psc
 - C. 284°psc
 - D. 281°psc

Correct answer: A

D058NG

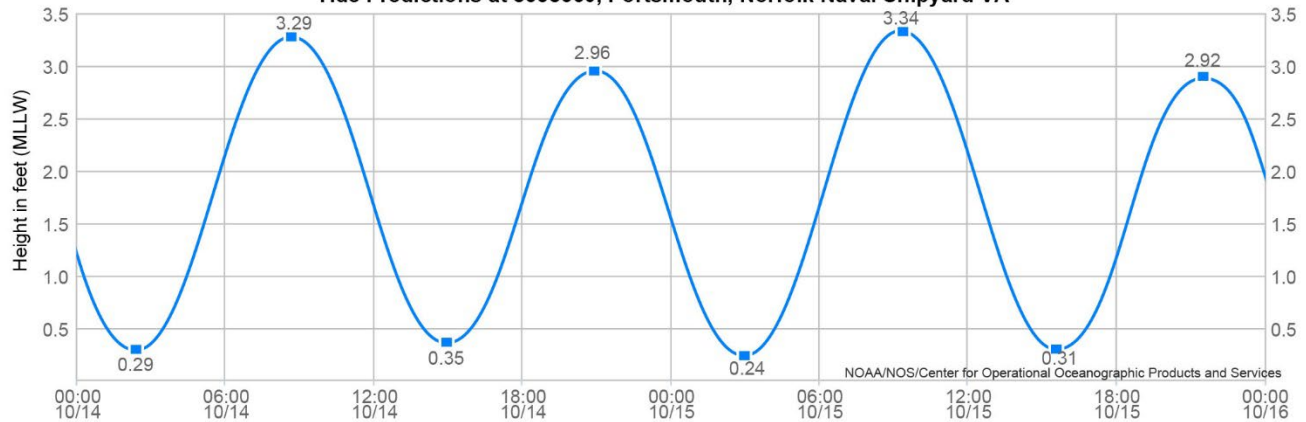


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D063NG

NOAA/NOS/CO-OPS

Tide Predictions at 8638660, Portsmouth, Norfolk Naval Shipyard VA



High/Low Tide Prediction Data Listing

Station Name: Portsmouth, Norfolk Naval Shipyard, VA

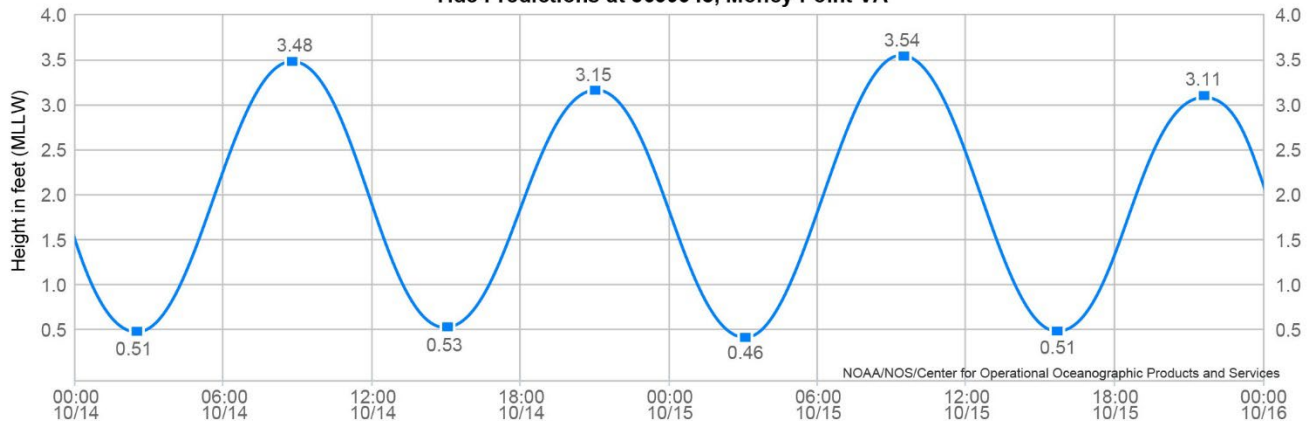
Action: Daily
Product: Tide Predictions
Start Date & Time: 2023/10/14 00:00
End Date & Time: 2023/10/15 23:59

Source: NOAA/NOS/CO-OPS
Prediction Type: Harmonic
Datum: MLLW
Height Units: Feet
Time Zone: LST

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2023/10/14	Sat	02:25	0.29 L	08:40	3.29 H	14:58	0.35 L	20:53	2.96 H
2023/10/15	Sun	03:00	0.24 L	09:17	3.34 H	15:37	0.31 L	21:32	2.92 H

NOAA/NOS/CO-OPS

Tide Predictions at 8639348, Money Point VA



High/Low Tide Prediction Data Listing

Station Name: Money Point, VA

Action: Daily
Product: Tide Predictions
Start Date & Time: 2023/10/14 00:00
End Date & Time: 2023/10/15 23:59

Source: NOAA/NOS/CO-OPS
Prediction Type: Harmonic
Datum: MLLW
Height Units: Feet
Time Zone: LST

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2023/10/14	Sat	02:25	0.51 L	08:48	3.48 H	15:00	0.53 L	21:02	3.15 H
2023/10/15	Sun	03:01	0.46 L	09:25	3.54 H	15:40	0.51 L	21:40	3.11 H

Note: The interval is High/Low, the solid blue line depicts a curve fit between the high and low values and approximates the segments between.
Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

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Tide Predictions,

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