LEGEND: Blue = information provided. Red = table values, etc.
Black = calculated values. Green = ANSWER

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

USCG 16738-NP-5 STEPS

The following questions are to be answered using chart 13205 TR, Block Island Sound, and supporting publications.

Your height of eye is 36 feet and your vessel's draft is 16 feet. The gyro error is 2° E. There is a light haze.

Use 15° W variation where required.

DEVIATION TABLE

HDG. MAG.	DEV.	HDG. MAG.	DEV.	HDG. MAG.	DEV.
000°	2.0° E	120°	1.0° E	240°	3.0° W
030°	3.0° E	150°	1.0° W	270°	1.5° W
060°	4.0° E	180°	2.0° W	300°	0.0°
090°	2.0° E	210°	3.5° W	330°	1.5° E

At 2212 your position is LAT 40° 51' N, LONG 71° 53.5' W.

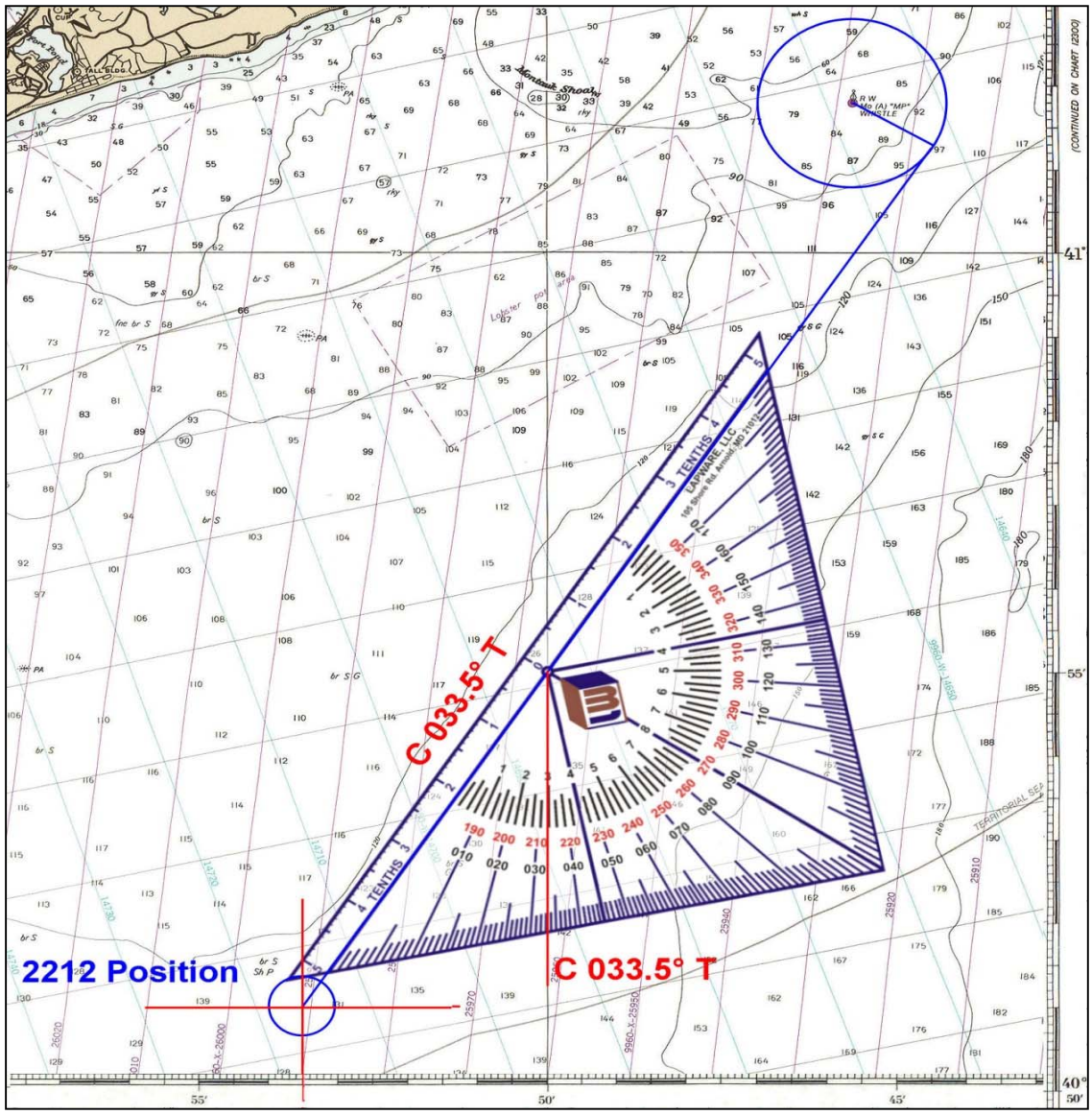
1) **What is the course to steer, per gyrocompass from your 2212 position, to leave Montauk Point Buoy "MP" abeam to port at 1 mile if easterly winds are causing 3° of leeway?**

SOLUTION:
Given:
Lay down your 2212 position. Draw an arc or circle one mile around Buoy MP.
Lay down your course to steer from 2212 to a point 1 miles EAST of buoy MP.
You should get approximately 033.5° T.
Now apply your Gyro Error provided and detremine your Course To Steer PGC.
Apply your leeway to determine your final course to steer.

See the plot on the next page.

TRUE	033.5°	T
Leeway	3.0°	Easterly Winds - Sets you West - Steer Right
	036.5°	T with Leeway Accounted For
Gyro Error	2.0°	E
Gyro	034.5°	Course To Steer PGC

034.5° pgc



Select the closest answer.

A) 027° pgc
B) 030° pgc
C) 032° pgc
D) 035° pgc ⟵ ANSWER

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

USCG 16739-NP-5 **STEPS**

2) What is the earliest time you should sight Montauk Point Light (nominal range - 24 miles) if you are turning for 9.2 knots? Visibility is 5 nautical miles.

SOLUTION:

Given:

Using your Luminous Range Diagram, plot your line vertically from your given Nominal Range of 24 miles to your 5.0 nautical miles range of visibility.

Plot your line horizontally to determine your range of visibility.

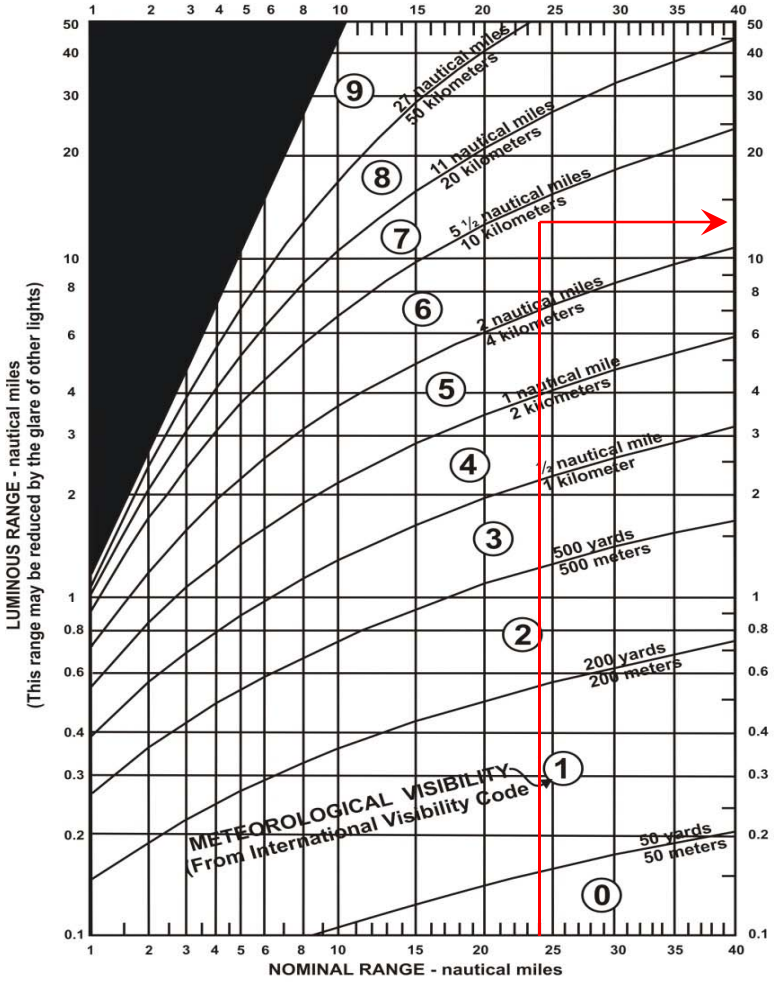
Determine the time you will be within that range.

your 2212 position to the **Montauk Point Light House.**

If the distance is less then your Luniminous Range you should be able to see the light now.

Distance to the Light House at 2212 is: 13.0 miles APPROXIMATELY.

See plot on the next page.

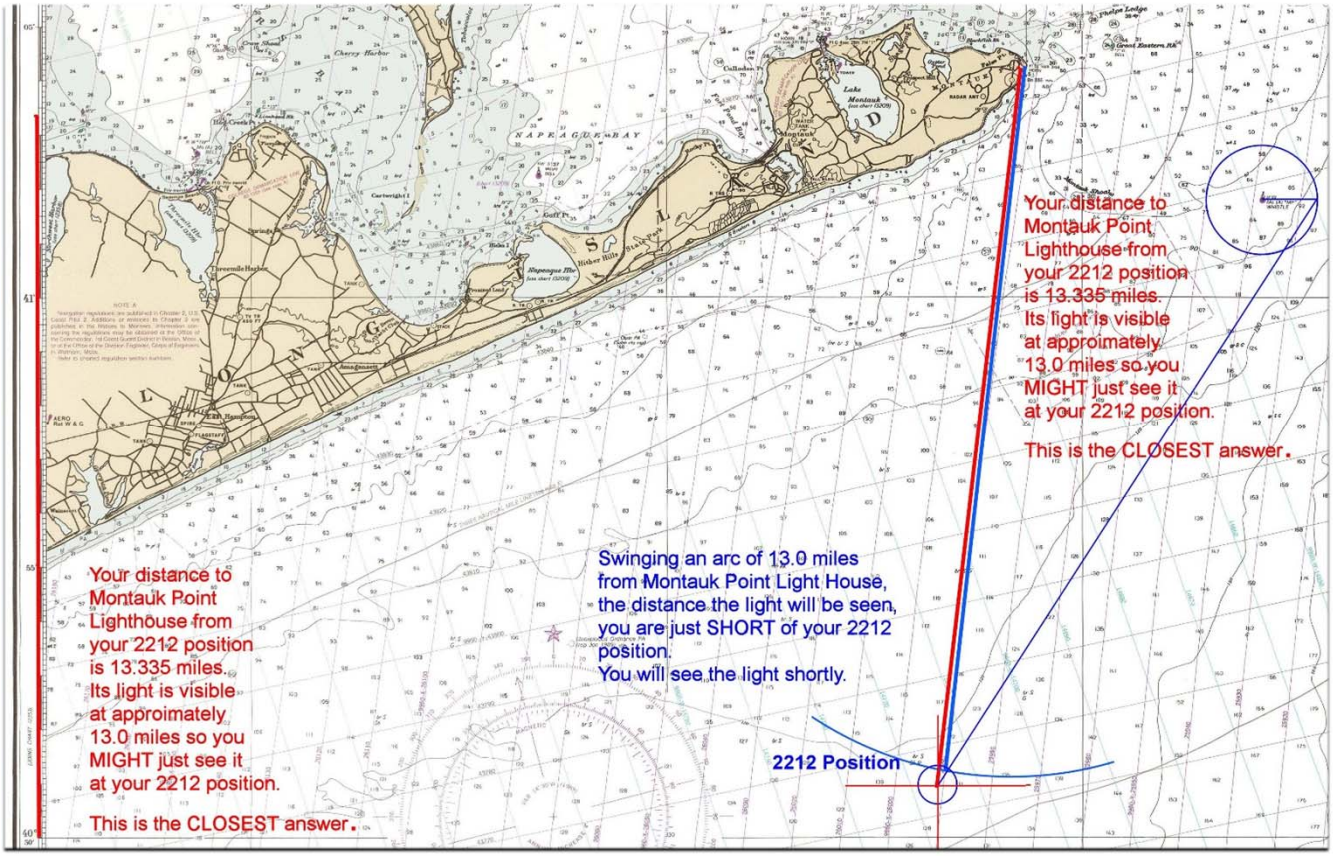


Luminous Range Diagram

Select the closest answer.

A) The light is visible at 2212 ← **ANSWER**
B) 2221
C) 2243
D) You will not sight the light on this course.

LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**



Distance = 12.3 miles
Since the Luminous Range is approximately 13.0 miles you should see the light from near your 2212 position.

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

USCG 16740-NP-5 STEPS

3) At 2245 visibility improves and Montauk Point Light bears 355° pgc. At 2314 Montauk Point Light bears 331° pgc, and at 2329 the light bears 311° pgc. Based on your 2329 running fix which statement is TRUE?

SOLUTION:
Given:

	2245	2314	2329
Montauk Point Light	355.0° pgc	331.0° pgc	311.0° pgc
	2.0° GE	2.0° GE	2.0° GE
	357.0° T	333.0° T	313.0° T

Distance = Speed x Time

Distance = 9.2 x (2314-2245)/60

Distance = 9.2 x 29/60

Distance = Speed x Time

Distance = 9.2 x (2329 - 2245)/60

Distance = 9.2 x 44/60

Advance your 2245 bearing line 4.45 mmiles along your track.

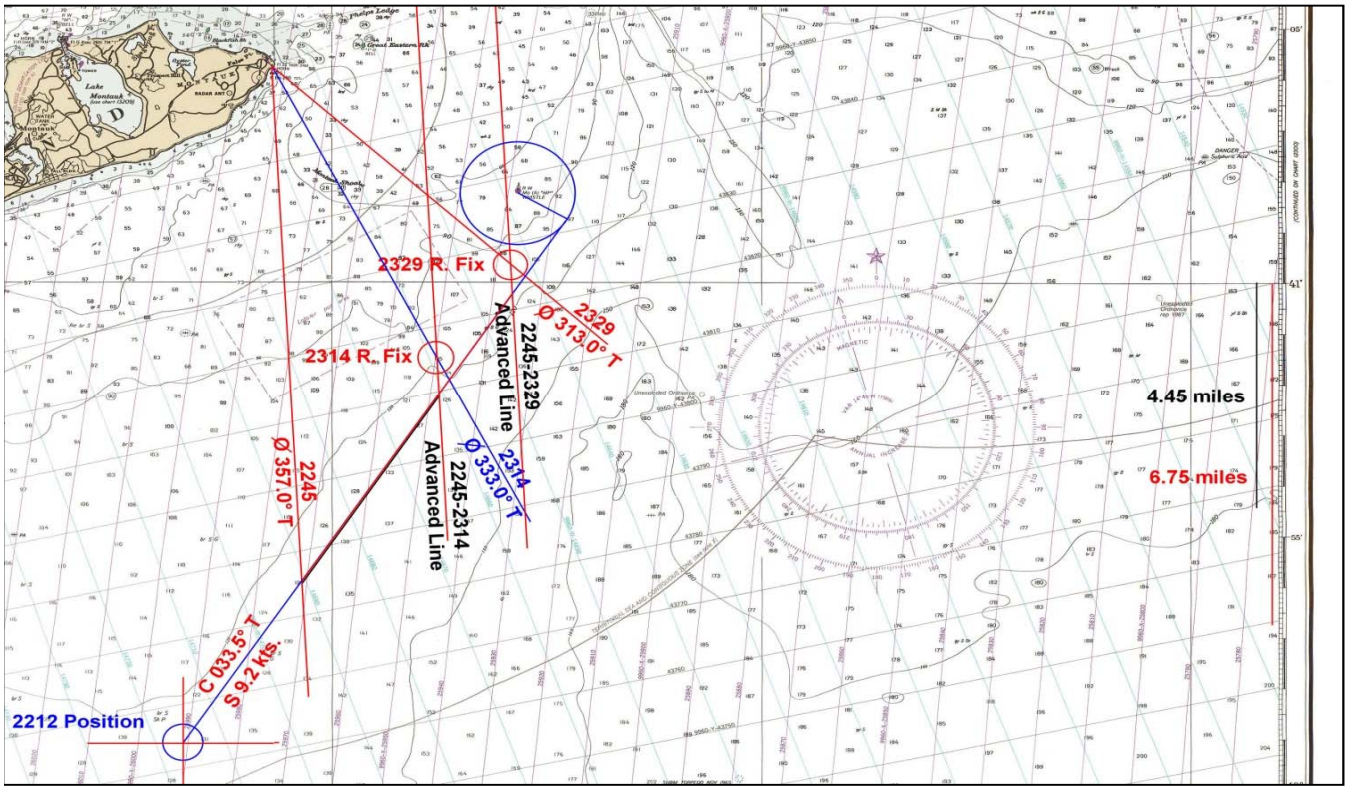
Advance your 2245 bearing line 6.75 miles along your track.
Where it intersects your 2329 position is your 2329 Running Fix.
Now review the questions below and see which is most accurate.

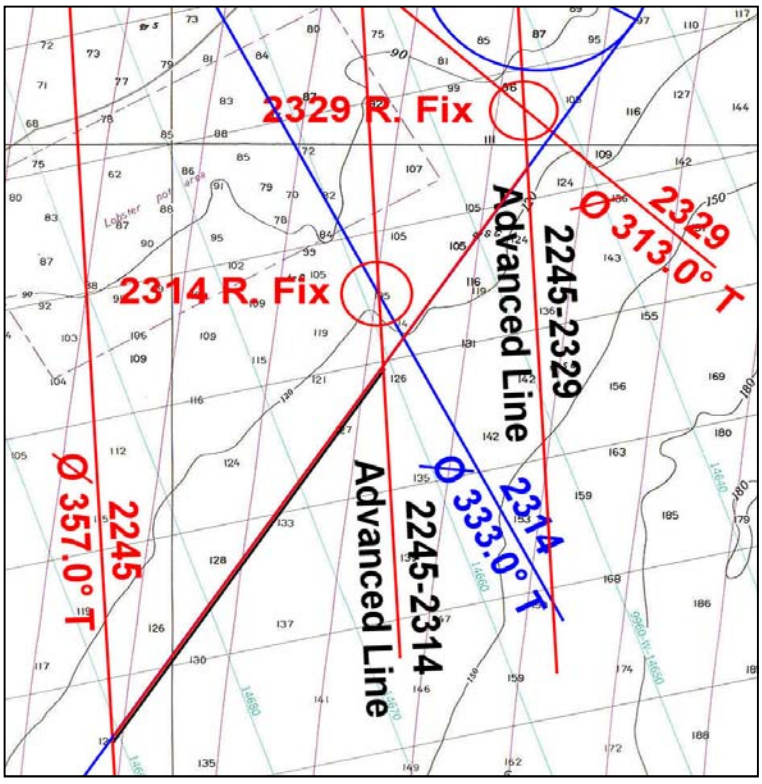
See the plot on the next page.

Select the closest answer.

A) You are shoreward of the 90 foot curve.
B) Your fathometer reads about 136 feet.
C) You are being set to the left of the track. ← **ANSWER**
D) You allowed too much leeway for the easterly winds.

LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**





You are being set to the left.

LEGEND: Blue = information provided. Red = table values, etc.
Black = calculated values. Green = ANSWER

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

USCG 16741-NP-5 **STEPS**

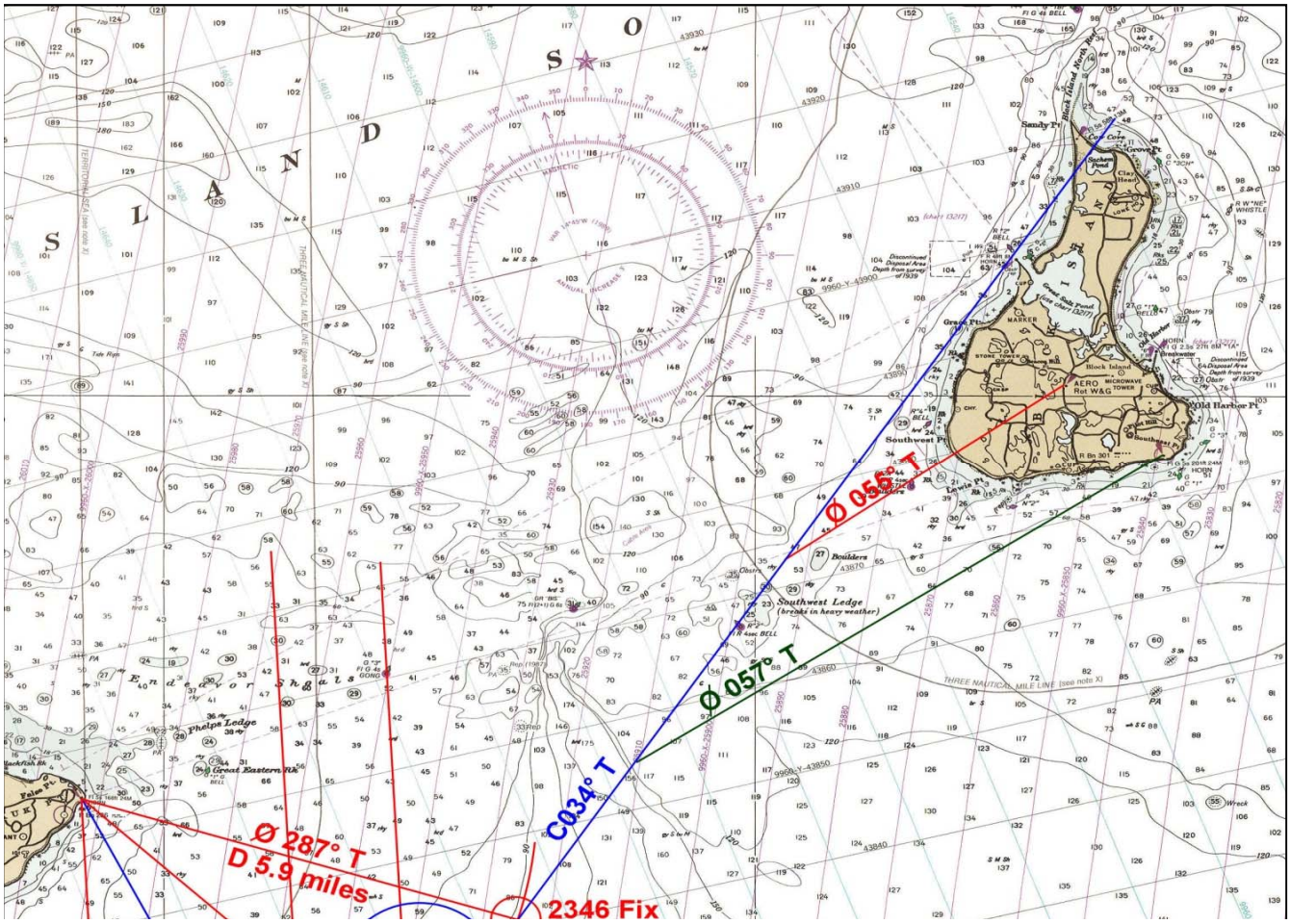
4) At 2346 Montauk Point Light bears 285° pgc, and the radar range to Montauk Point is 5.9 miles. You are steering to make good 034° T. In order to remain westward of Southwest Ledge you should _____.

SOLUTION:

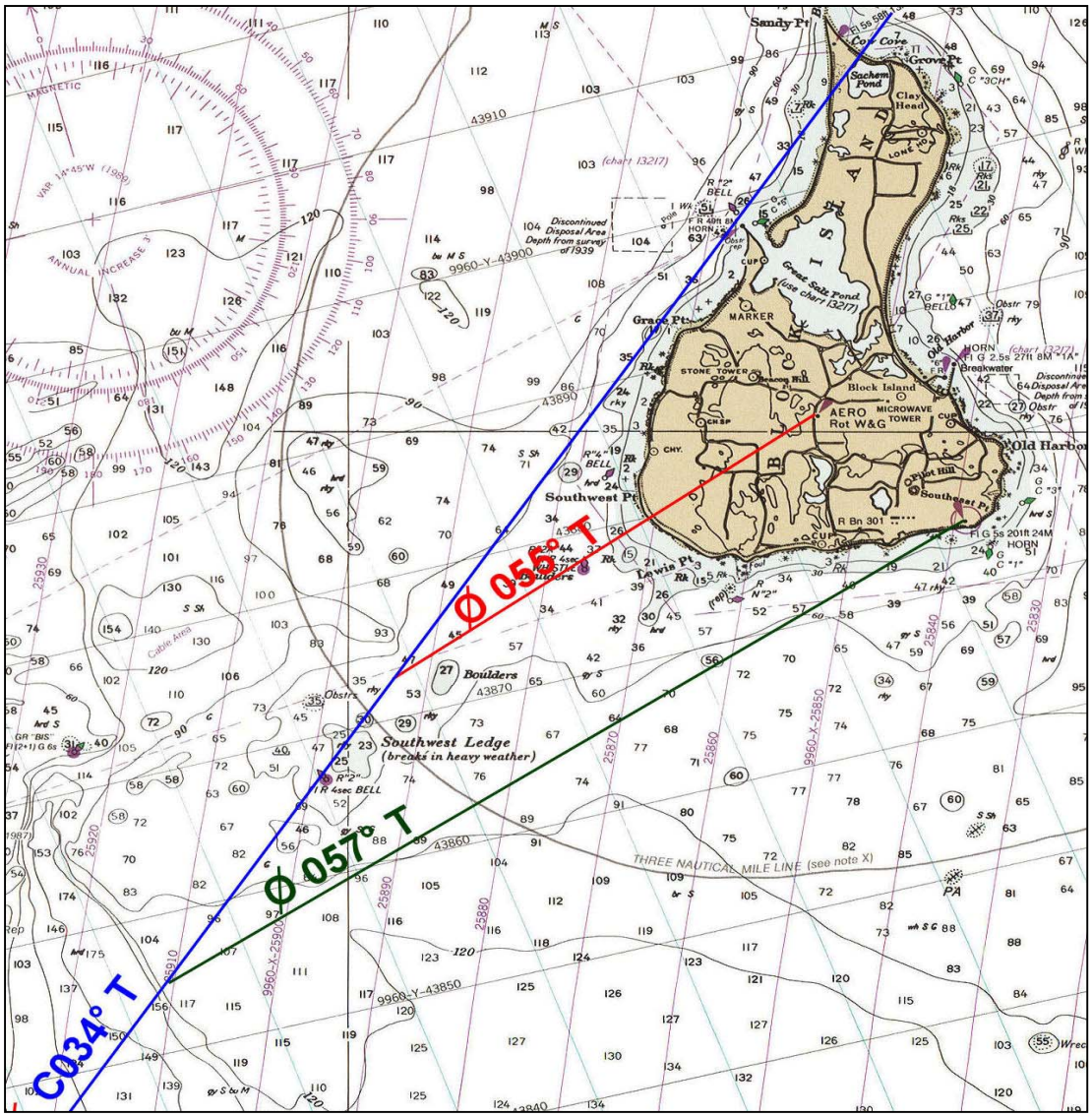
Given:

Montauk Point Light	
285.0° pgc	
2.0° GE	
287.0° T	at 5.9 miles at 2346

Plot your position, lay down your course, and determine your best answer.



LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**



A) CORRECT - changing course to the left when the bearing is 057 true keeps you west.
B) INCORRECT - remaining on your present course runs over SW Ledge.
C) INCORRECT - this puts you East of SW Ledge.
D) INCORRECT - you would be pass over SW Ledge to get to this point.

Select the closest answer.

A) come left when South East Point Light bears 057° true ← **ANSWER**
B) remain on your present course and you will clear Southwest Ledge
C) keep Block Island North Light bearing 033° T or less
D) alter course to the right when Block Island Aerobeacon bears 055° T

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

USCG 16742-NP-5 **STEPS**

5) At 2352 you hear a MAYDAY call from a vessel reporting her position as 1.5 miles due east of Block Island Southeast Point Light. What is the course to steer, per gyrocompass to the distress site, if you change course at midnight and allow 1° leeway for easterly winds?

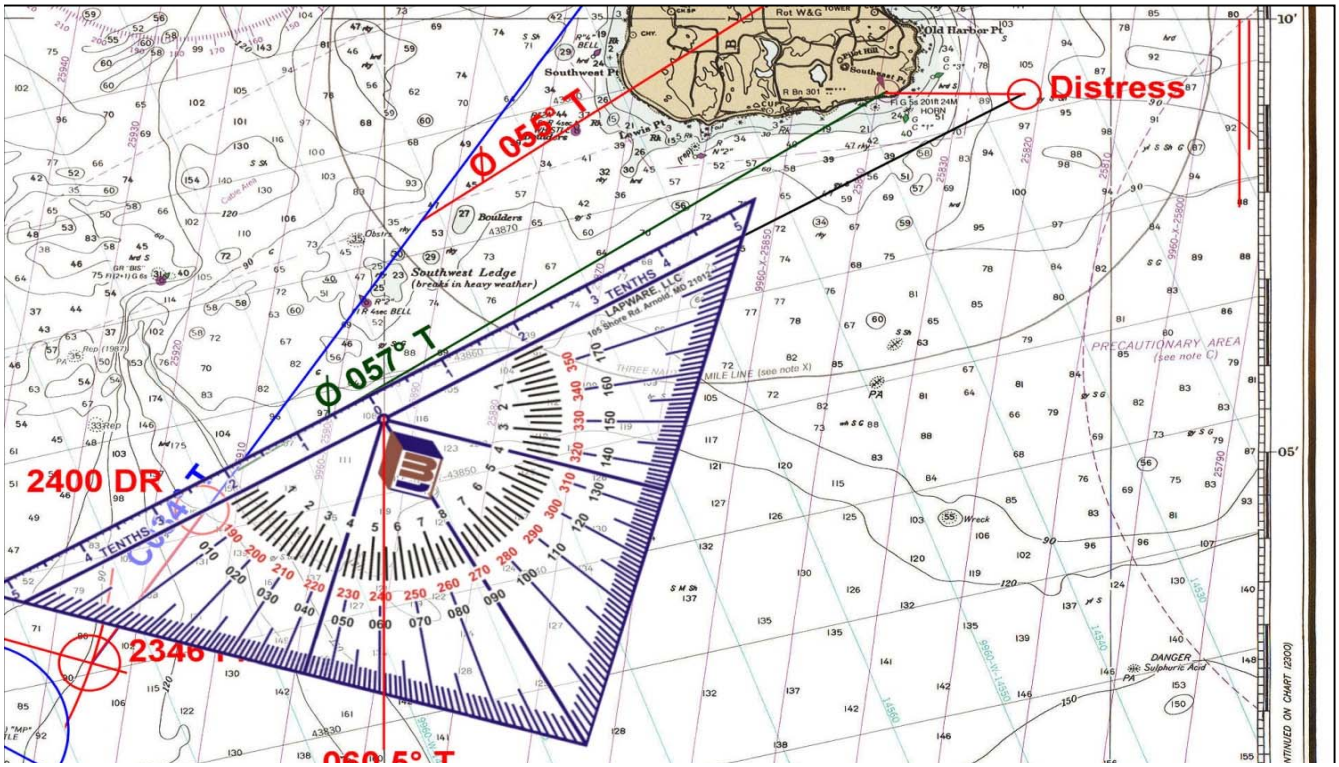
SOLUTION:
Given:
Plot the position of the vessel in distress.
Advance your position to 2400 when you desire to change course.
Determine your course PGC to steer to the vessel in distress allowing for leeway.

Distance = Speed x Time

Distance = 9.2 x (2400 - 2346)/60

Distance = 9.2 x (14/60)

Distance = 2.15 miles



LEGEND: Blue = information provided. Red = table values, etc.
Black = calculated values. Green = ANSWER

True Course	060.5°	T
Leeway	1.0°	Easterly winds set you to the west
	061.5°	Steer to the right
Gyro Error	2.0°	E
Course Gyro	059.5°	Pgc

Select the closest answer.

A) 049.5° pgc
B) 052.5° pgc
C) 055.5° pgc
D) 059.0° pgc ← ANSWER

6) At 0040 you are south of Lewis Point when you receive word that the distress is terminated. You alter course to head for The Race. At 0052 you take the following relative bearings because the starboard gyro repeater is inoperative. Your heading at each bearing was 285° pgc. What is your 0052 position?

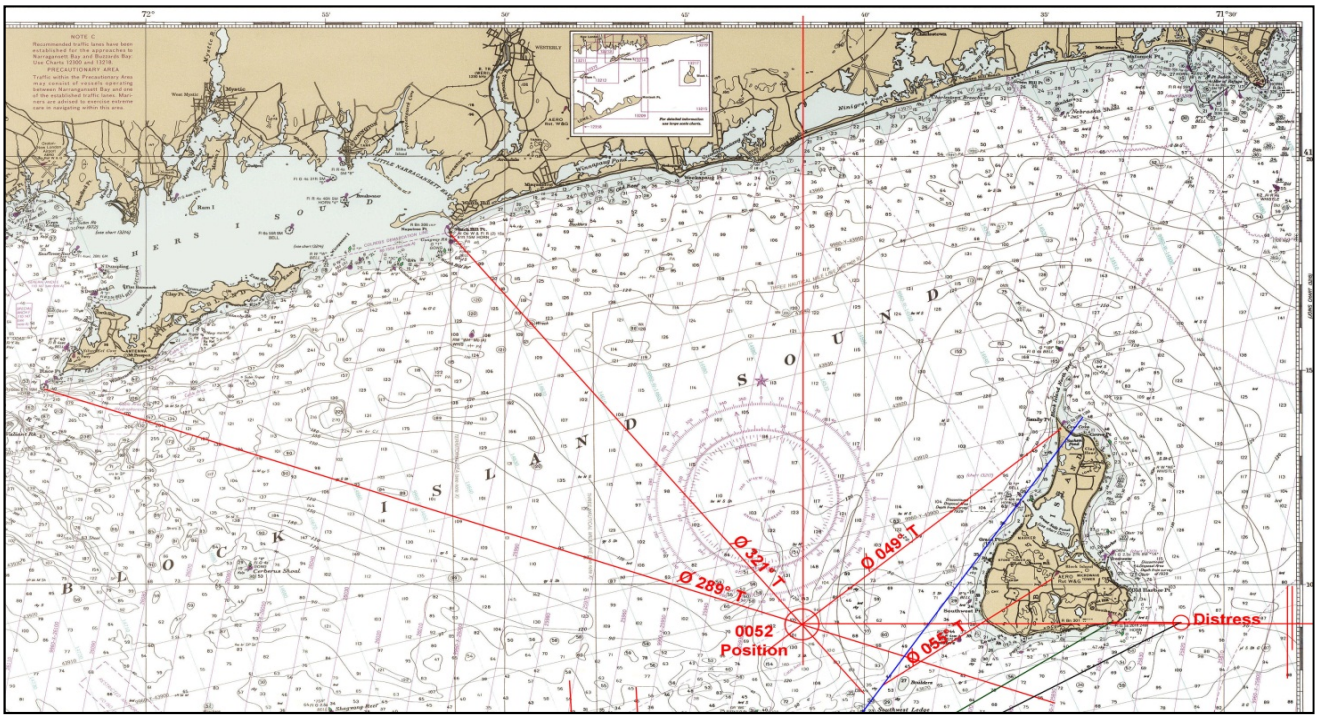
Race Rock Light 002°
Watch Hill Light 034°
Block Island North Light 122°

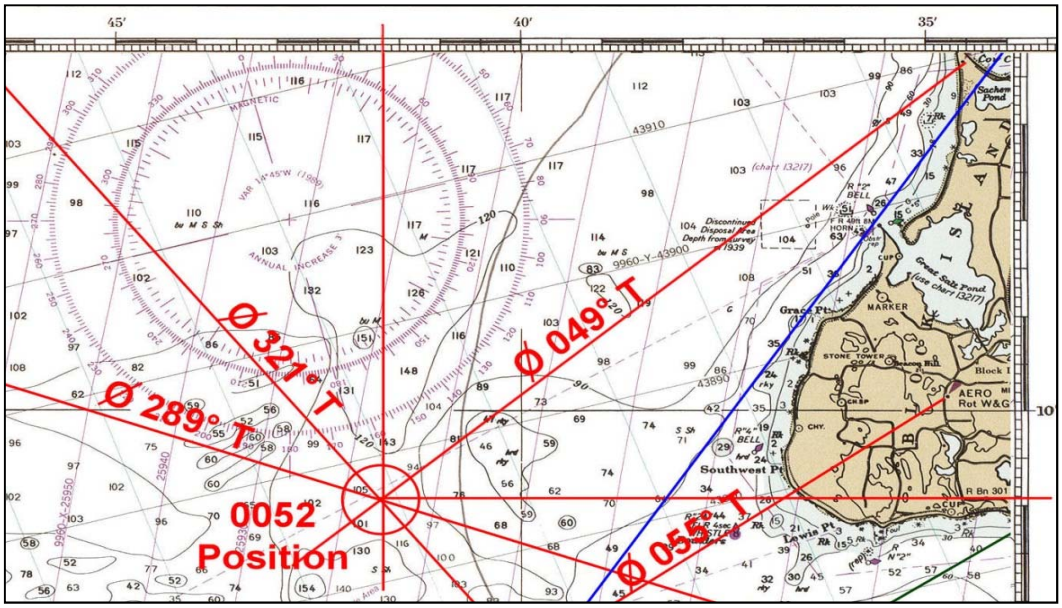
SOLUTION:
Given:
Do not plot your 0040 position.
Plot your 0052 position based upon the RELATIVE BEARINGS while steering 285° pgc.

	Heading PGC	GE	Relative	True Bearing
Race Rock Light	285°	2.0° E	002°	289.0° T
Watch Hill Light	285°	2.0° E	034°	321.0° T
Block Island North Light	285°	2.0° E	122°	049.0° T

(34) **Block Island North Light** (41°13.7'N., 71°34.6'W.), 58 feet above the water, is shown from a black tower on a gray granite dwelling on Sandy Point at the north end of the island.

LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**





41° 09.1' N, 71° 41.7' W

Select the closest answer.

A) LAT 41° 08.8' N, LONG 71° 41.4' W
B) LAT 41° 09.0' N, LONG 71° 42.3' W
C) LAT 41° 09.0' N, LONG 71° 41.1' W
D) LAT 41° 09.1' N, LONG 71° 41.7' W ⟵ **ANSWER**

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

7) You continue to steer 285° pgc from your 0052 fix. Your speed is 9.2 knots. What is the course per standard magnetic compass?

SOLUTION:
Given:
No need to plot this. Just solve for your PSC course by applying Deviation and Variation.

Course	285.0° PGC
Gyro Error	2.0° E
Course True	287.0° T
Variation	15.0° W
Magnetic	302.0°
Deviation	0.0°
Per Standard Course	302.0° Psc

Select the closest answer.

A) 273.5°
B) 276.0°
C) 298.0°
D) 302.0° ← ANSWER

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

8) At 0100 Race Rock Light bears 001° relative, and at 0110 it bears 000° relative. Based on this you know you _____.

SOLUTION:
Given:

Course	**285.0° PGC**	
Gyro Error	**2.0° E**	
Course	**287.0° T**	
0100	**001°**	**Relative**
0110	**000°**	**Relative**

Common sense will tell you that your first bearing was 1° on your bow and the second bearing is dead ahead. For this to occur you must be setting to the RIGHT.

A) CORRECT - you are being set to the right of your track.
C) INCORRECT - nothing about speed can be determined on bearings almost dead ahead.
D) INCORRECT - not enough information provided to make this selection.

Select the closest answer.

A) are being set to the right of the track ← ANSWER
B) are making good more than 9.2 knots
C) are making good less than 9.2 knots
D) have an unknown gyro error

Terrestrial Observations

Chart Plot - Block Island Sound - Management Level

9) In order to check your compasses, you sight Race Rock Light in line with New London Harbor Light bearing 336° per gyrocompass. The helmsman reports the vessel was heading 275.0° pgc and 290.5° per standard magnetic compass at the time of the observation. Which statement is TRUE?

SOLUTION:

Given:

Race Rock Light in line with New London Harbor Light bears	336.0° PGC
True bearing at this point must be determined on the chart. It is:	336.0° T
Gyro Error Calculated to be:	0°
Heading	275.0° PGC
Gyro Error	0.0° E
True Heading	275.0° T
Variation	15.0° W
Magnetic	290.0°
Deviation	0.5° W
Compass	290.5° PSC

A) INCORRECT - The Gyro Error is 0° but previously was 2° E.
B) CORRECT - For a heading of 290° Magnetic the Deviation Table shows 0.5° W.
C) INCORRECT - Questionable as this can always be done BUT the Deviation Table does appear to be accurate so why swing the vessel?
D) INCORRECT - Compass Error is Variation + Deviation or about 15.5° W. However, the Deviation is 0.5° W - a distracter to the proper answer.

Select the closest answer.

A) The gyro error is now 2° E.
B) The deviation table is correct for that heading. ← **ANSWER**
C) The vessel should be swung to check the deviation table.
D) The compass error is 0.5° W.

LEGEND: **Blue = information provided.** **Red = table values, etc.**
Black = calculated values. **Green = ANSWER**