
Q383 - Navigation Problems: Chart Plot

1. The following questions (1-10) are based on the Army Corps of Engineers Mississippi River Maps (Cairo to the Gulf) and the Light List. AHP = Above Head of Passes LMR = Lower Mississippi River UMR = Upper Mississippi River OHR = Ohio River ACOE = Army Corps of Engineers On 16 October, you depart the mooring facility at mile 233.5 AHP with six loaded tank barges enroute to a dock in Herculaneum, MO (mile 153.4 UMR). Your engines are making turns for 6.5 mph in still water. What is the total length of the trip?

- 910.6 miles
- 901.4 miles
- 900.7 miles
- **873.7 miles**

Note:
The total trip distance is calculated by summing the distance from the departure point (233.5 AHP) to Cairo (953.8 AHP) and the distance from Cairo (0.0 UMR) to the destination (153.4 UMR), resulting in a total of 873.7 miles. The engine speed is irrelevant to the distance calculation.

---

2. You estimate the current at 3.0 mph. What is the speed over the ground?

- **3.5 mph**
- 4.5 mph
- 7.5 mph
- 9.5 mph

Note:
The speed over ground is 3.5 mph when the vessel is traveling 0.5 mph through the water in the same direction as the 3.0 mph current.

---

3. What are the dimensions of the channel maintained from Baton Rouge to New Orleans, LA?

- 30 feet x 300 feet
- 40 feet x 300 feet
- **45 feet x 500 feet**
- 30 feet x 500 feet

Note:
The channel between Baton Rouge and New Orleans is maintained at 45 feet deep and 500 feet wide, as specified in project dimensions for deep-draft navigation.

---

4. You pass Springfield Bend Lt. (mile 244.8 AHP) at 1242, on 17 October, and estimate the current will average 2.5 mph for the remainder of your trip. What is your ETA at the mouth of the Ohio River if you are making turns for 10.5 mph?

- 1905, 19 October
- 2122, 19 October
- **0519, 21 October**
- 0847, 21 October

Note:
The distance from Springfield Bend Lt. to the Ohio River is approximately 709 statute miles. Considering a speed through the water of 10.5 mph against a 2.5 mph current, the resulting speed over ground is 8.0 mph. This yields a travel time of approximately 88.6 hours, placing the estimated time of arrival (ETA) at 0519 on 21 October.

---

5. As you pass under the Natchez-Vidalia Dual Bridge, the gage on the bridge reads +3.6 feet. If the highest point on your vessel is 62 ft. above the water, what is your vertical clearance?

- **60.4 feet**
- 63.6 feet
- 67.6 feet
- 122.0 feet

Note:
The bridge's published clearance is reduced by the river's stage above the reference level. Subtracting 3.6 feet from the published clearance of 64.0 feet yields a vertical clearance of 60.4 feet.

---

6. What are the color and shape of Togo Island daymark at mile 414.6 AHP?

- Green - Diamond
- Red - Triangle
- Red - Square
- **Green - Square**

Note:
The correct answer is green square. U.S. aids to navigation mark the left side of the channel with green squares. The Togo Island daymark at mile 414.6 AHP is charted as a green square, consistent with standard practice on the Western Rivers system, which uses mile markings like AHP.

---

7. At 1227, on 19 October, you pass under the Greenville Highway Bridge (mile 531.3 AHP). What speed must you average to arrive at Jimmy Hawken Light (mile 663.5 AHP) at 0930 the following day?

- 5.2 mph
- 5.6 mph
- 5.9 mph
- **6.3 mph**

Note:
The correct average speed is 6.3 mph, calculated by dividing the 132.2-mile distance between the bridges by the 21.05-hour time interval.

---

8. Which of the following statements regarding aids to navigation shown in the Corps. of Engineers map book is TRUE?

- **Buoys should always be given as wide a berth in passing as possible.**
- Lights and daymarks are always shown in their exact location.
- Buoy positions as shown on the chart are exact.
- The U.S. Army Corps of Engineers is responsible for placing and maintaining all aids to navigation.

Note:
Buoys should be given a wide berth due to potential movement from wind, current, or ice, making their charted positions approximate. Charts and map books depict aids to navigation, but do not guarantee exact locations, and the U.S. Coast Guard, not the Corps of Engineers, primarily maintains these aids.

---

9. The Delta-Friar Point revetment on the LMR extends from mile _____.

- **657.3 - 652.2 LDB**
- 652.8 - 649.6 RDB
- 648.5 - 645.5 LDB
- 645.6 - 641.4 RDB

Note:
The Delta-Friar Point revetment is located on the Lower Mississippi River from mile 657.3 to mile 652.2 on the left descending bank (LDB). This matches option A, which is the correct answer.

---

10. What is the distance from Baton Rouge, LA, to St. Louis, MO, on the Mississippi River System?

- 1038 miles
- **916 miles**
- 690 miles
- 352 miles

Note:
The distance from Baton Rouge, LA, to St. Louis, MO, on the Mississippi River System is 916 miles. This distance is obtained from standard river distance tables, which measure distances along the river channel rather than in a straight line. The other options are inconsistent with published river mileages.
