



034-83 - MCA/SQA Officer of the Watch Unlimited

Navigation Syllabus

(Used from March 2025 exams onwards)

1. Stages of making a passage plan

- a. Explains appraisal, planning, execution and monitoring of a passage plan.

2. Following a passage plan

- a. Describes the procedures for monitoring the progress and executing a passage plan of a vessel on a pre-planned track.
- b. Applies passage planning principles to navigate through specialised areas, such as, Traffic Separation Schemes and Offshore Renewable Energy Installations
- c. Identifies charted objects suitable for position fixing.
- d. Identifies chart symbols and abbreviations.
- e. Explains the precautions to be taken when making landfall.

3. Routeing instructions and guidelines

- a. Describes content and use of IMO Ships Routeing Guide.
- b. Interprets IRPCS Rule 10.
- c. Explains use of Mariners Routeing Guides, such as, Admiralty chart 5500 and Admiralty Routeing charts

4. Adjusts vessels course and speed to take account of passage plan requirements.

- a. Plots the position of the vessel on a chart using latitude and longitude, or position lines derived from charted objects or from celestial observations including running fix and horizontal angles.
- b. Determines the effect of tidal stream by construction on a chart.
- c. Determines the effect of wind on ship's track.
- d. Applies leeway to find course to steer.
- e. Determines course to steer to counteract tidal stream by construction on a chart.

- f. Determines speed made good by measurement on the chart and calculates ETA.
- g. Determines speed required to make ETA at a passage plan waypoint by measurement on the chart.
- h. Applies standard and/or gyro compass errors to convert True to Compass and vice versa for ship's head and bearings.
- i. Calculates adjustments to course for a change in standard or gyro compass error.

5. The Sailings (Plane, Parallel and Mercator)

- a. Describes the navigational properties of a Mercator chart.
- b. Calculates course and distance by Plane, Parallel or Mercator sailing formula.
- c. Calculates ETAs (including the use of time zones if required) and average speed/speed required.

6. Bridge Watchkeeping procedures and communications

- a. Demonstrates a knowledge of current national and international regulations and guidelines for bridge watchkeeping procedures.
- b. Lists occasions for calling the Master.
- c. Specifies operational tests to shipboard navigational equipment.
- d. Calculates Compass error by Azimuth/Amplitude/Polaris.
- e. Explains the need to keep accurate bridge records.
- f. Describes routine and emergency internal communication procedures in the following scenarios: steering checks, telegraph checks, engine failure, steering failure, total power failure.

7. Navigation in the proximity of ice

- a. Lists the signs indicating the proximity of ice.
- b. Describes methods of avoiding or reducing ice accumulation and accretion
- c. List the navigational factors to consider when navigation in the proximity of ice.

8. Causes of tides and definitions

- a. States the causes of spring and neap tides.
- b. Defines chart datum, height of tide, HAT, LAT, MHWS, MLWS, MHWN, MLWN, range of tide, drying height, height of charted objects, charted elevation, vertical clearances, and air draught.

9. Finding the tidal information at standard ports – Worldwide

- a. Finds the height and time of high and low water using tide tables.
- b. Calculates the height of tide at a given time using tide tables and tidal curves.
- c. Calculates the time the tide will reach a given height using tide tables and tidal curves.
- d. Discusses the reliability of tidal predictions.
- e. Calculates the correction of soundings to chart datum.

Notes

1. Formula sheets will be provided to candidates for the examination.