



HARBOUR

MASTER'S

SCHEME

The Nautical Institute

Harbourmaster's Certificate Scheme

Welcome to the Harbourmaster Certificate Scheme. The work of the Harbourmaster covers many disciplines. Not all subjects relevant to Harbourmasters can be covered in this scheme, but finishing all the assignments and the case study will help to prepare the candidate for any future work as a Harbourmaster. It will give a better understanding of their duties including regulatory, management, financial, planning and development, customer and commercial relations and human resources. Some guidance for these topics is contained in the publication - The Work of the Harbourmaster that accompanies this scheme and has been posted to you.

There are seven sections to the scheme. All questions are compulsory and must be submitted to HarbourMaster@nautinst.org in sequence:

Section	Task	Submission	Minimum length (words) Excludes references
One	Complete all task	Within three months of receiving the	5,000
Two	Do any one task in four		3,000
Three	Do any one task in four		3,000
Four	Do any one task in four		3,000
Five	Do any one task in four		3,000
Six	Do any one task in four		3,000
Case study	Compulsory	Within a year	10,000-12,000

Learning Outcomes:

Section 1: This first compulsory assignment is to ensure that you have an understanding of the statutory requirements and limitations of the position in the context of the country or region where the Harbourmaster position is situated.

Section 2: After completing this section you should have a better understanding of pilotage and the statutory requirements of practical marine operations in the port.

Section 3: This is to ensure that you understand the requirements and need for capital expenditure in ports.

Section 4: This section requires a practical understanding of possible emergencies and response options that could occur in your port.

Section 5: This learning outcome is to ensure that you have a good general knowledge of the pertinent safety legislation in your jurisdiction and a basic understanding of investigation procedures.

Section 6: This outcome is to show that you have knowledge of media management, public relations and communication.

Case Study: This will indicate that you have the ability to research a subject in greater depth and to succinctly explain and describe in detail the outcome of your research.

Careful thought should be given to both content and presentation including references. Many seagoing officers may not have much opportunity to observe the work of Harbourmasters. However every opportunity should be taken to visit and observe the work of Harbourmasters when possible so essay topics can be properly researched. Further guidance and assistance may be obtained from the Institute if necessary please e mail HarbourMaster@nautinst.org with your request.

Guidance on the submission of essays and case studies

All essays and projects should be structured in a format that includes:

1. Title
2. Table of contents
3. Introduction
4. Main body of the work which should be sub-divided into headings or chapters
5. Conclusion(s)
6. List of references/sources of information
7. Pages should be numbered
8. A word count is required for all assignments

In preparing your essays access as wide a source of references as possible from local, national and international sources. This could include but not be limited to: technical books, periodicals, newspapers, magazines, including specialist publications, the Internet, handbooks, legislation (national and international) and company reports. Every effort should where possible be made to consult with industry professionals including Harbourmasters in an adjacent ports, marine surveyors, pilots and naval architects.

Submit up-to-date information for all subjects, concentrating on recent developments.

Reference can be made to historical aspects.

Do not copy verbatim from other publications. If, in support of your own work, you wish to quote directly from another publication, highlight the quoted texts in italics or quotation marks and acknowledge the source of the reference

Further guidance:

Run a spell and grammatical check (for English United Kingdom) on your completed work. Before submission read through your work and check for errors.

Candidates should illustrate their work where possible. The inclusion of graphs, charts, diagrams, photographs, newspaper articles and checklists is encouraged.

Candidates are encouraged to present their own opinions on the subject being addressed. If possible provide information relevant to your own organisation such as the application of specific legislation, operational practices or management systems used in your own work environment.

Section 1: Compulsory question – minimum 5,000 words

A. Having identified the jurisdiction in which you operate, or will operate as Harbourmaster, describe in detail the national, regional and local legislation and statutory obligations of the Harbourmaster. Consider primary powers (i.e. principal legislation) and other legislation such as environmental and safety.

Section 2: Pilotage and VTMS – minimum 3,000 words (Answer any one)

A. You are Harbourmaster of a medium size multi-modal port handling vessels of up to 180m LOA. You wish to recruit new pilots. Describe the steps you would take from advertising the positions to awarding pilot licences or warrants.

B. Your advice has been sought by the Harbourmaster of a neighbouring port which plans to issue pilot exemption certificates for the first time. You are asked to devise an exam for the Masters of a new ferry/passenger service and to sit on the examination panel for the issue of pilotage exemption certificates. Outline and list the items for consideration, including the main tasks and subjects you would recommend.

C. Discuss the various forms of VTS systems available including the advantages they offer to a port and the division of responsibility between the VTS operator and the ship.

D. You are Harbourmaster of a medium size multi-modal port handling vessels of up to 180m LOA. The port jurisdiction extends 8nm seaward of the breakwaters with the main berthing facilities 4nm inland accessed via a tidal channel with a navigable channel width of 150m at its narrowest point. You are required to upgrade the seaward and estuarial navigational aids, communications and establish a minimum VTS service. Describe what you would consider suitable.

Section 3: Port Operations – minimum 3,000 words (answer any one)

- A. You are to procure a new 18m LOA harbour workboat suitable for pilotage, towage and hydrographical surveying. Outline the various options available and describe in detail the steps and considerations from concept to final commissioning for your choice.
- B. You are Harbourmaster of a medium size multi modal port handling vessels of up to 180m LOA. The port, situated in a marine environmentally sensitive area, is subject to storm event siltation requiring frequent dredging. Your current dredging contract will end soon and you need to compile a new dredging contract specification. Describe the various considerations to include in the dredge prospectus and the methodology needed to bring the project to the market place.
- C. The port is going into the container business and has to purchase a container handling crane for vessels up to 140m LOA. What, as Harbourmaster, would you consider and what advice would you give to the port's Chief Executive?
- D. As Harbourmaster in a port at the mouth of a river, explain how you resolve the conflicts between commercial shipping, commercial fishing and recreational users.

Section 4: Emergency Planning, Environmental, Security and Dangerous Goods – minimum 3,000 words (answer any one)

- A. Outline the arrangements needed to respond effectively to an oil pollution incident in a port under the Oil Pollution Preparedness, Response and Cooperation Convention (OPRC).
- B. Identify a country of operation and, using this as an example, discuss the environmental considerations that a Harbourmaster needs to address in the operation of a port.
- C. In addition to your Harbourmaster duties you are also the designated Port Facility Security Officer. Under the International Ship and Port Facility Security Code (ISPS) what are the main duties and function that you must consider to comply with the Code? Detail the obligations and powers of a Port facility Security Officer.
- D. Describe the regulations that govern the movement of dangerous goods within port areas as specified in the International Maritime Dangerous Goods Code (IMDG). Identify the authority for enforcement of these regulations.

Section 5: Safety – minimum 3,000 words (answer any one)

- A. Identify a jurisdiction or port of operation and using this as an example (a) outline from the legislative perspective how general employment safety is applied and (b) describe in detail how it is implemented in the port, ashore and afloat.
- B. As a Harbourmaster and a senior manager describe the measures you would implement to promote safety and improve the safety culture in your organisation from the top down.
- C. A port stevedore has died in the hold of a vessel discharging a steel cargo. Describe your immediate actions as Harbourmaster. Outline the considerations for your initial investigation. Write up your report including recommended mitigation measures.
- D. As Harbourmaster you are concerned about the operational practice of a particular Stevedore for the discharge of break bulk cargoes. Outline your actions to remedy your concerns.

Section 6: Communications – Media Management – minimum 3,000 words (answer any one)

- A. Write a media response plan in the event of a serious oil spill in the port. List in order the actions to be taken by the Harbourmaster who will be the on-scene commander and give reasons for the order of the actions.
- B. You are Harbourmaster in a medium sized city port. The port operates on a 24/7 basis and is located adjacent to an environmentally sensitive and high amenity area. Outline your recommendations for dealing with the many vested interest groups in order to build a more harmonious, trusting and cooperative relationship with them.
- C. The port is devising a new development strategy. Describe the communications programme that the port will use to promote the strategy to the various interest groups including political, regulatory, industry, the general public and sectional interests.
- D. Describe measures you would take as Harbourmaster to develop better inter-port communications between management and staff to improve port promotions the port and improving industrial relations.

Case study

The case study should be of approximately 10,000 to 12,000 words in length. The candidate should show objectivity, ability to carefully research a subject and competence in communicating in a clear, succinct manner. The study should also be original and well illustrated, with an extensive bibliography. The candidate should notify the Institute of the subject chosen as approval of this subject is required in advance from the examiner. Contact **HarbourMaster@nautinst.org** if further guidance on the case study is needed.

Choose **ONE** from the six options below:

1. The requirement for a VTS

You are Harbour Master of a medium size port contemplating the installation of a VTS. Discuss all the factors, including design, financial, procurement, planning/approvals, environmental, trialling and commissioning, you have to consider before deciding on the final form of your system.

2. Legislation as it relates to the marine functions of harbour authorities

What are the implications on privatised ports or ports operating under national legislation from the harbourmaster perspective in the regulation and control of safety of navigation and port operations; Give examples from your own country.

3. At many ports, dredged spoil is dumped at sea. Because of the spoil's composition, it is increasingly being classified as a pollutant and environmentalists object to the practice Are these objections valid and what alternatives are possible? Suggested alternatives should be validated or identified with recent examples or live projects.

4. Port development

Discuss the development of a major port of your choice. Consider all elements from concept, positioning with national policy, shipping and customer demand, justification, design shore side/afloat/navigation & safety, planning and legislative issues, environment, construction and financial engineering.

5. Emergency planning

Discuss all aspects of planning for emergencies in a medium size port catering for passengers, oil cargoes, hazardous goods and large car carriers.

Produce a draft document on the subject for approval by the board and detail the objectives that may need to be tested as part of a major port authority/interagency exercise for an incident with a tanker alongside.

6. Your own choice

If you have an alternative to all the above, you may propose it by e mailing **HarbourMaster@nautinst.org**. Approval will be given if considered suitable.