Model course

for

Baltic Deep-Sea Pilots

Edition 1.0

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by

Baltic Pilotage Authorities Commission

Document Revisions

Revisions to the document are to be noted in the table prior to the issue of a revised document.

Date	Page / Section Revised	Requirement for Revision

Content

Foreword

The Baltic Pilotage Authorities Commission (BPAC) was established in 1979 and is a governmental organisation and a work forum for pilotage authorities of the Baltic coastal states and Norway. The aim of this work forum is to enhance maritime and shipping safety in the Baltic Sea region.

The services of competent and qualified deep-sea pilots can make an important contribution to the safety of navigation and the prevention of pollution in the sensitive Baltic Sea area. The increase in shipping activities, especially the increase in oil transportation, in the Baltic Sea area in recent years has made the use of qualified deep-sea pilots more important in view of the difficulties in the navigation due to narrow straits, shallow depths, archipelago areas and also ice cover during the winter period.

This model course has been developed by BPAC and is intended to provide specific guidance on the training of Baltic deep-sea pilots. The model course should also be used by competent pilotage authorities when setting the requirements for Baltic deep-sea pilots and for the pilotage service providers when ensuring that the Baltic deep-sea pilot training is delivered according to the requirements.

Assistance may be obtained through BPAC, see www.balticpilotage.org

1. Introduction

This model course should be considered when establishing requirements for deep-sea pilotage training and certification in the Baltic Sea area. The course provides details of the subject areas for knowledge and practical competence required for a Baltic deep-sea pilot trainee to get a Baltic deep-sea pilot licence or certificate (Red Card).

1.1. Purpose of the model course

The purpose of this model course is to assist the training organisations and their teaching staff in the preparation and implementation of Baltic deep-sea pilot training.

The model course should ensure that deep-sea pilots in the Baltic Sea area are adequately qualified and trained to operate in the Baltic Sea.

The purpose is also to harmonize and standardize the training of deep-sea pilotage in the Baltic Sea area.

1.2. Use of the model course

The complete course comprises six modules, each of which deals with a specific subject representing a requirement or function of a Baltic deep-sea pilot. Each module contains a subject framework stating its scope and aims, a subject outline and a detailed teaching syllabus.

The course should provide participants with the opportunity to exercise the role as a Baltic deep-sea pilot in a simulator. Where simulation is not practicable, the theoretical exercises should be designed to represent appropriate situations that may occur when deep-sea pilotage is carried out in the Baltic Sea.

1.3. Implementation

For the course to run smoothly and effectively, considerable attention must be paid to the availability and use of:

- qualified instructors
- support staff
- rooms and other spaces
- equipment
- textbooks, technical papers
- other reference material.

Thorough preparation is the key to a successful implementation of the course.

2. Course Framework

2.1. Scope

The purpose of this model course is to assist maritime training organisations and their teaching staff to organize and introduce training for Baltic deep-sea pilots.

2.2. Objective

Those who have successfully completed this course should be able to demonstrate knowledge according to each module.

2.3. Entry standards

When setting the entry standards for applicants to participate in the model course, the competent pilotage authority should consider

- maritime experience;
- maritime educational level;
- navigational equipment knowledge (such as AIS and ECDIS);
- fulfilment of BRM (Bridge Resource Management) course; and
- medical fitness.

The applicant's personal aptitude and suitability to perform deep-sea pilotage in the Baltic Sea together with the ability to communicate fluently in English should also be assessed.

The model course is based on the assumption that trainees have a good nautical knowledge as well as good working knowledge of relevant IMO conventions such as SOLAS and MARPOL together with the COLREGS. Ideally they should be national licensed pilots or hold a master's certificate. The actual time required for each module may vary, depending on previous experience and the entrance level of the trainee(s).

2.4. Course certificate, diploma or document

On successful completion of the model course, a course certificate should be issued by the training organisation to the course participant.

2.5. Course intake limitations

Class sizes may be limited at the discretion of the competent pilotage authority and/or pilotage service provider in order to allow the instructor to give adequate attention to individual participants. In general it is recommended that a maximum of 12-14 students be the upper limit that a single instructor can be expected to train satisfactorily to the level of competence involved. Larger numbers may be admitted if extra staff and tutorial periods are provided to deal with participants on an individual basis.

During practical sessions and group activities there may be additional restraints on class size. In particular, where the use of a simulator or similar teaching aid is involved, it is recommended that no more than two students be trained simultaneously on any individual piece of equipment.

2.6. Training staff

All instructors should be appropriately qualified and experienced for the particular types and levels of training or assessment required for this model course.

Additional staff may be required for the maintenance of equipment and for the preparations of materials, work areas and supplies for the practical work.

2.6.1. Instructors

Any person conducting training of personnel qualifying for certification as Baltic deep-sea pilots should:

- have an appreciation of the training programme and an understanding of the specific training objectives for the particular type of training being conducted;
- be professionally and academically qualified in the task for which training is being conducted;
- have an appropriate balance of professional and teaching qualifications;
- if conducting training with the use of a simulator:
    - have received appropriate guidance in instructional techniques involving the use of simulators; and,
    - have gained practical operational experience on the particular simulator being used.
- Any person responsible for the supervision of training personnel should have a full understanding of the training programme and the specific objectives for each element of training being conducted.

2.7. Teaching facilities and equipment

For the theoretical part of the course, a classroom equipped with presentation facilities and audiovisual materials normally is required.

For the workshops, enough space must be available to facilitate chart work, preferably in several rooms. Enough materials should be available to enable groups to present their results (flipchart, overhead, power point or other means of visual presentation).

For the practical exercises of the course, a simulator may be used.

2.8. Teaching aids

In order to assist the instructors, the following teaching aids may be used when preparing and presenting the course:

- Charts and associated publications of the Baltic Sea area
- Relevant international documents
- Interactive simulator including video and audio recording and playing facilities
- Briefing/debriefing area
- Case studies
- Appropriate video films

2.9. International instruments and regulatory references

- Convention on the International Regulations for the Prevention of Collisions at Sea (COLREG), 1972 as amended

- SOLAS, International Convention for the Safety of Life at Sea, 1974, Chapter V Regulation 23 (pilot transfer arrangements), as amended

- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 2010, Chapter VIII, Watchkeeping

- International Safety Management (ISM) Code and Guidelines, 2010 edition

- IMO Resolution A.159(ES.IV) Recommendation on Pilotage, 1968

- IMO Resolution A.960(23) Recommendations on training and certification and on operational procedures for maritime pilots other than deep-sea pilots, 2003
- IMO Resolution A.1081(28) Recommendation on the use of adequately qualified deep sea pilots in the Baltic sea, 2013
- IMO Resolution A.1080(28) Recommendation on the use of adequately qualified deep sea pilots in the North Sea, English Channel and Skagerrak, 2013
- IMO Resolution MSC.138(76) Recommendation on navigation through the entrances to the Baltic Sea, 2002 as amended
- IMO Resolution A.601(15) Provision and Display of Manoeuvring information on board ships, 1987
- IMO Resolution A.889(21) Pilot transfer arrangements, 1999
- IMO Resolution A.893(21) Guidelines for voyage planning, 1999
- IMO Resolution A.918(22) IMO Standard Marine Communication Phrases, 2001
- IMO Resolution A.949(23) Guidelines on places of refuge for ships in need of assistance, 2003
- IMO Resolution A.950(23) Maritime Assistance Services (MAS), 2003
- IMO Resolution MEPC.136(53) Designation of the Baltic Sea area as a Particulary Sensitive Sea Area (PSSA), 2005
- IMO Circular MSC/Circ.568/Rev.1 Pilot transfer arrangements (required boarding arrangements for pilots), 1995
- IMO Circular MSC/Circ.773 Pilot transfer arrangements, 1997
- MO Circulars MSC/Circ.827 – MEPC/Circ.333 Reports on marine casualties and incidents, 1997 as amended
- IMO MSC/Circ.1015 Reporting near misses when implementing procedures, 2001
- IMO publication on Ship´s Routeing (relevant extracts)
- HELCOM Recommendation 25/7 Safety of winter navigation in the Baltic Sea area, 2004
- HELCOM chart Mariner´s Guide to the Baltic Sea
- Admirality List of Radio Signals Volume 6(2)
- Admirality Sailing Directions Baltic Pilot Volume 1,2 3
- The Ice Navigation Manual, Witherby Seamanship International

3. Course Outline and Timetable

The complete course comprises six modules, each of which deals with a specific subject representing a requirement or function of a Baltic deep-sea pilot. The duration in hours is recommended and is based on the assumption that the trainees have no previous or little knowledge of the subject. The actual time required for each module will vary, depending on previous experience and the entrance level of the trainee. The recommended time does not include the time necessary for examinations or tests of proficiency.

Module 5 Personal Attributes may be an optional module when a participant may be an active pilot and this already has been considered in a recent recruitment process.

Module 6 Ice/Ice-breaking assistance is an optional module for the course.

Course outline

Module/Subject	Content	Time duration
1. Route planning	• Main routes in the Baltic • Limitations of Baltic Sea entrances and other narrow passages • Routeing systems (TSS etc.) • Ship Reporting Systems and VTS areas • Pilot procedures in the Baltic • Port operations and other allied services	10 hrs
2. Communication co-ordination	• General communication skills incl. language • Bridge Resource Management (BRM) (refresher) • Reporting obligations • Log and record keeping	8 hrs
3. Environmental awareness	• Dangerous or polluting goods • Environmental sensitivity of the Baltic Sea • Baltic as a PSSA • Pollution Response Organisation in the Baltic	4 hrs
4. Emergency situations	• Maritime Safety Information (MSI) • Search and Rescue (SAR) in the Baltic • Maritime Assistance Service (MAS) • Emergency towing procedures	4 hrs
5. Personal attributes (other than BRM)	• Human relation skills • Interaction with others • Responsibility and reliability	2 hrs
6. Ice navigation/Ice-breaking assistance	• Ice-classes • Provisions on ice restrictions and limitations • Procedures for ice-breaking assistance • Ice navigation and manoeuvring	2 hrs
	Total time:	30 hrs

3.1. Module 1 – Route planning

3.1.1 Subject framework and aim of module 1

The main aim for completing module 1 - Route planning, is that the trainee should possess skills and thorough knowledge of the main routes used in the Baltic Sea area to effectively make a safe and efficient route plan for the voyage. The trainee should also have a good understanding of national and international regulations.

Content/Subject area	Aims
Main routes in the Baltic Sea	- Thorough knowledge of the main routes used in the Baltic - Sufficient knowledge of traffic patterns and normal sailing/route plans to maintain a safe and efficient passage - Skills to effectively make a safe and efficient route plan for the voyage
Limitations of Baltic Sea entrances and other narrow passages	- Knowledge of maximum draught permissible for transit through the Sound, the Belts and the Kiel Kanal in order to plan for a safe passage - Knowledge about restrictions in the north Quark and Sea of Aaland
Ship Routeing systems (TSS etc.)	- Knowledge and understanding of national and international regulations in the Baltic concerning ship´s routeing - Knowledge of maximum draught permissible for transit through the deep-water routes - Knowledge of existing routeing measures in the Baltic - Knowledge regarding Ice Info
Ship Reporting Systems (SRS) and VTS	- Knowledge of SRS operational areas and reporting procedures in order to advice the master of the applicable rules - Knowledge of national VTS areas and where to find its regulations and procedures in order to advice the master of the applicable rules
Pilot procedures in the Baltic Sea	- Knowledge and understanding of pilot embarkation and debarkation procedures and their applicable rules - Sufficient knowledge of pilot ordering procedures in the Baltic - Knowledge of procedures when embarking/debarking in ice
Port operations and other allied services in the Baltic Sea	- Sufficient knowledge of relevant port operations and other allied services, such as e.g. tugs, within the Baltic

3.1.2 Detailed teaching syllabus of module 1 – Route planning

The detailed teaching syllabus has been written in a learning objective format in which the objective describes what the trainee should be able to do to demonstrate that knowledge and understanding has been transferred regarding route planning.

All detailed learning objectives are understood to be prefixed by the words: *"After completing this course the trainee will be able to ..."*

Content/Subject area	Detailed teaching syllabus (learning objectives)
Main routes in the Baltic	- Demonstrate a sufficient knowledge of traffic patterns and normal sailing/route plans to maintain a safe and efficient passage - Present a personal Bridge Book for the main routes and other relevant parts of the Baltic Sea area
Limitations of Baltic Sea entrances and other narrow passages	- Describe the maximum draught permissible for transit through the Belts, the Sound and the Kiel Kanal - Describe the maximum air draught possible for transit under the Belt bridge, the Sound bridge, the Öland bridge and the Kiel Kanal
Ship Routeing Systems (TSS etc.)	- Demonstrate knowledge of existing traffic separation schemes, deep-water routes and other routeing systems in the Baltic Sea area - Demonstrate good skills in collision avoidance regulations (COLREGs)
Ship Reporting Systems (SRS) and VTS areas	- Demonstrate knowledge on where ship reporting systems and vessel traffic services exist - Explain the normal procedures in a SRS/VTS area - Identify the publications where SRS and VTS rules are published
Pilot procedures in the Baltic	- Describe how pilot embarkation and debarkation procedures are performed in a safe manner
Port operations and other allied services	- Describe how reporting to relevant authorities and national SafeSeaNet-systems and ISPS are fulfilled

3.2. Module 2 – Communication co-ordination

3.2.1 Subject framework and aim of module 2

The main aim for completing module 2 – Communication co-ordination, is that the trainee should possess skills and knowledge of the basic principles of communication and coordination to effectively communicate messages and intentions without misunderstandings both on the bridge and between ship to ship and ship to shore

The trainee should also have a good knowledge of the English language and its composition and structure in respect of maritime terminology and the SMCP to avoid any misinterpretation in the communication.

Content/Subject area	Aims
General communications skills incl. language	- Skills and knowledge of basic principles of communication to enhance effective communication on the bridge as well as on the radio (including SMCP, verbal and non-verbal communication and interpersonal communication)
Bridge Resource Management (BRM) (refresher)	- Skills and knowledge of closed loop communication and Pilot/ Co-pilot systems including Integrated Bridge Systems (IBS) - Sufficient understanding of the roles and responsibilities between ship masters, (deep-sea) pilots and shore-based operators (e.g. VTS-operators) to avoid misunderstandings
Reporting obligations	- Knowledge of how to report apparent anomalies on board according to Art. 23 of Directive 2009/16/EC - Sufficient knowledge of reporting requirements regarding SafeSeaNet and ISPS

3.2.2 Detailed teaching syllabus of module 2

The detailed teaching syllabus has been written in a learning objective format in which the objective describes what the trainee should be able to do to demonstrate that knowledge and understanding has been transferred regarding communication co-ordination.

All detailed learning objectives are understood to be prefixed by the words: *"After completing this course the trainee will be able to ..."*

Content/Subject area	Detailed teaching syllabus (learning objectives)
General communications skills incl. language	- Demonstrate the basic principles of communication and coordination such as active listening skills, interpersonal communication and effective team communication - Demonstrate verbal and non-verbal communications - Demonstrate the use of the Standard Marine Communication Phrases (SMCP) in English
Bridge Resource Management (BRM) (refresher)	- Maintain an effective working relationship between the pilot and the bridge team - Demonstrate skills and knowledge of closed loop communication and Pilot – Co-pilot systems (incl. IBS) - Effectively conduct the (deep-sea) pilot/master information exchange - Describe the roles of a master, (deep-sea) pilot and a VTS-operator

Reporting obligations	- Report apparent anomalies on board according to Art. 23 of Directive 2009/16/EC

3.3. Module 3 – Environmental awareness

3.3.1 Subject framework and aim of module 3

The main aim for completing module 3 – Environmental awareness, is that the trainee should possess skills and thorough knowledge of.

The trainee should also have a good understanding of national and international regulations concerning dangerous or polluting goods.

Content/Subject area	**Aims**
Dangerous or polluting goods	- Sufficient knowledge and understanding of the IMDG-code
Baltic as a PSSA	- Sufficient knowledge about discharge restrictions to vessels operating in a PSSA and other relevant rules and regulations regarding maritime environment. - Understanding of the environmental sensitivity of the Baltic Sea and the consequences regarding an oil-spill or other pollution
Pollution Response Organisation in the Baltic	- Understanding of HELCOM Response and contact ways to authorities, Coast Guard etc.

3.3.2 Detailed teaching syllabus of module 3

The detailed teaching syllabus has been written in a learning objective format in which the objective describes what the trainee should be able to do to demonstrate that knowledge and understanding has been transferred regarding environmental awareness.

All detailed learning objectives are understood to be prefixed by the words: *"After completing this course the trainee will be able to ..."*

Content/Subject area	**Detailed teaching syllabus (learning objectives)**
Dangerous or polluting goods	- Explain different classes of dangerous goods and its meaning according to the IMDG code
Baltic as a PSSA	- Describe the discharge restrictions of the Baltic Sea - Explain the environmental sensitivity of the Baltic Sea and the consequences of an oil-spill or other pollution
Pollution Response Organisation in the Baltic	- Describe how to contact authorities in the event of an oil-spill or other pollution

3.4. Module 4 – Emergency situations

3.4.1 Subject framework and aim of module 4

The main aim for completing module 4 –Emergency situations, is that the trainee should possess skills and thorough knowledge of the measures and available resources in cases of an emergency. The trainee should also have a good understanding of national and international regulations.

Content/Subject area	Aims
Maritime Safety Information (MSI)	- Knowledge and skills in different methods of collecting information regarding weather warnings, dangers to navigation, and failure of navigation devises. i.e. Navtex - Knowledge of how to collect Ice Info
Search and Rescue (SAR) in the Baltic	- Knowledge of SAR-contact ways in different SAR-regions, e.g. MRCC. Knowledge and understanding of the OSC (On Scene Coordinator) responsibilities and obligations - Knowledge of hypothermia
Maritime Assistance Service (MAS)	- Sufficient knowledge of contact ways to MAS function of different countries
Emergency towing procedures	- Knowledge and understanding of emergency towing procedures and risks there to

3.4.2 Detailed teaching syllabus of module 4

The detailed teaching syllabus has been written in a learning objective format in which the objective describes what the trainee should be able to do to demonstrate that knowledge and understanding has been transferred regarding emergency situations.

All detailed learning objectives are understood to be prefixed by the words: *"After completing this course the trainee will be able to ..."*

Content/Subject area	Detailed teaching syllabus (learning objectives)
Maritime Safety Information (MSI)	- Demonstrate different ways to receive weather information and navigational warnings
Search and Rescue (SAR) in the Baltic	- Demonstrate SAR procedures, OSC and contact ways to different MRCC stations
Maritime Assistance Service (MAS)	- Understand function of MAS and possible places of refuge
Emergency towing procedures	- Demonstrate different ways of emergency towing and the risks involved in the operation

3.5. Module 5 – Personal attributes (other than BRM)

3.5.1 Subject framework and aim of module 5

The main aim for completing module 5 – Personal attributes, is that the trainee should possess knowledge of and the ability to conduct the duties in a manner which conforms to accepted principles and procedures established.

Content/Subject area	Aims
Human relation skills	- Knowledge and understanding of different cultural aspects
Interaction with others	- Knowledge and understanding of leadership and management roles
Responsibility and reliability	- Understanding of personal health awareness

3.5.2 Detailed teaching syllabus of module 5

The detailed teaching syllabus has been written in a learning objective format in which the objective describes what the trainee should be able to do to demonstrate that knowledge and understanding has been transferred regarding personal attributes.

All detailed learning objectives are understood to be prefixed by the words: *"After completing this course the trainee will be able to ..."*

Content/Subject area	Detailed teaching syllabus (learning objectives)
Human relation skills	- Understand difference between different cultural backgrounds
Interaction with others	- Show skills regarding leadership and management.
Responsibility and reliability	- Show knowledge of what responsibilities lies on the Pilot versus the Master of the vessel

3.6. Module 6 – Ice/Ice-breaking assistance

3.6.1 Subject framework and aim of module 6

The main aim for completing module 6 – Ice/Ice-breaking assistance, is that the trainee should possess skills and knowledge of the how to proceed in the Baltic Sea in a safe and effectively way in case of ice. This module together with ice-experience is a requirement. The trainee should also have a good understanding of national and international regulations on ice classes. (The BPAC recommends the instructors to use the Ice Navigation Manual that is published by Witherby Seamanship International as a tool in the different contents/subject areas)

Content/Subject area	Aims
Ice classes	- Knowledge and understanding of the different ice classes
Provisions on ice restrictions and limitations	- Knowledge of how to receive ice-information, ice-restrictions and ice routes. Understanding of stability demerit when icing of the ship occurs
Procedures for ice-breaking assistance	- Knowledge of how to find information regarding ice breakers, and how the ice breaking system in the Baltic works - Knowledge of how to communicate with ice-breakers

3.6.2 Detailed teaching syllabus of module 6 – Ice/ice-breaking assistance

The detailed teaching syllabus has been written in a learning objective format in which the objective describes what the trainee should be able to do to demonstrate that knowledge and understanding has been transferred regarding ice and ice-breaking assistance.

All detailed learning objectives are understood to be prefixed by the words: *"After completing this course the trainee will be able to ..."*

Content/Subject area	Detailed teaching syllabus (learning objectives)
Ice classes	- Describe the system with ice classes - Compare the recognized ice classes for the Baltic - Explain the consequences and measures for transiting with different ice classes
Provisions on ice restrictions and limitations	- Explain and understand the basic risks related to ice navigation, including risks of icing for the ship in cold weather - Explain how to get information on the present ice situation - Understand the consequences of different ice conditions - Understand and take appropriate action concerning ice routes during winter period
Procedures for ice-breaking assistance	- Describe how the ice-breaking system in the Baltic works - Describe how to order ice-breaking assistance - Explain and have basic knowledge of different manoeuvring with ice-breakers - Recognize different measures in the assistance of an ice breaker

4. Guidance for instructors

4.1. General

Baltic deep-sea pilots are appropriately qualified persons performing pilotage tasks on board vessels trafficking the Baltic Sea area. It is essential that education and training be aimed at minimising incidents due to mistakes or errors of judgement. This model course is designed to meet the requirements for Baltic deep-sea pilot trainees to obtain a course certificate leading to a Red Card certificate.

It is important to keep in mind the close relationship of all subjects in the Baltic deep-sea pilot course. In particular, instructors should continuously monitor the additional personal attributes of participants and, when appropriate, draw their attention to the need to meet the subjects of that module.

Onboard vessels new techniques and equipment are developed quickly. This makes it necessary for instructors to keep up to date in new techniques and in national and international rules and regulations. Instructors should also be encouraged to teach relevant new developments and techniques not mentioned in this syllabus.

4.2. Curriculum

The course outline is not set out in a teaching order and the instructors are not obliged to follow the order in which they appear, but should treat them in the order that is considered to be the most effective for the trainees.

The success of the course will depend, to a large extent, upon detailed co-ordination of the individual subjects into a coherent teaching scheme. It is important that an experienced instructor acts as course co-ordinator to plan and supervise the implementation of the course.

The teaching schemes should be reviewed carefully to ensure that all of the listed subjects are covered, that repetition is avoided and that essential pre-requisite knowledge at any stage has already been covered.

Course providers should hold regular reviews concerning the progress of trainees and any problems that have become apparent. Modifications of the teaching scheme should be made where necessary to ensure that trainees are attaining the required levels of competence.

4.3. Lesson plans

The instructor should draw up lesson plans based on each section of the syllabus and include references to textbooks and teaching material suggested for the course. Where no adjustment has been found necessary in the subject areas, the lesson plans may simply consist of the syllabus with keywords or other reminders added to assist the instructor in making his presentation of the material.

In preparing a teaching scheme and lesson plans, the instructor may use any teaching method or a combination of methods that will ensure that the trainees can meet the stated objectives.

If the course is held as a refresh-course the lesson plans can be modified and might be reduced in time and content if necessary.

4.4. Evaluation or assessment

To evaluate trainee progress regular assessment should be undertaken. All completed modules and tasks should be recorded by the instructor, together with any comments.

These assessments should be additional to any examination required for the purpose of issuing a course certificate which may lead to a Red Card.