

Translation. Only the Danish document has legal validity.

Order no. 1078 of 17 December 2001 issued by the Danish Maritime Authority

Order on the training of mechanists for adult skilled ship's assistants

In pursuance of section 2 of act no. 350 of 1 July 1988 on the training of engineer officers, the following provisions are laid down:

Chapter 1

Purpose and structure of the training programme

Section 1. The purpose of the training programme is to provide adult skilled ship's assistants having the relevant crafts training and professional experience with competence as mechanists.

Section 2. The goal of the training programme is that, after having completed the training programme in accordance with regulation III/2 of the STCW-95 Convention, the mechanist shall be able to form part of the crew as a chief engineer officer holding a certificate as a mechanist 1st class on merchant vessels with a propulsion power of up to 2999 kW. The mechanist shall be able to take care of tasks as a foreman on board merchant vessels in consideration of the regulations and standards in force as regards conditions of a social, safety-related, environmental and occupational health-related nature.

Section 3. The training programme is a full-time training programme and has an official duration of 1 student year. 1 student year is the work carried out by a full-time student for 1 year and corresponds to 60 points in the European Credit Transfer System (ECTS).

Subsection 2. The training programme consists of 4 modules and includes 3 school modules with full-time teaching, each of 3 months' duration, as well as a work-experience module of 3 months' duration. The work-experience module shall be completed before the last school module.

Section 4. The training programme shall, when completed, entitle the student to use the title "ship's mechanist".

Chapter 2

Admission

Section 5. It is a condition for starting the training programme that the student:

- 1) holds a training certificate or journeyman's certificate in a subject approved by the Danish Maritime Authority or an approved sector within the iron and metal industries;
- 2) have at least 2 years' relevant professional experience after having completed one of the training programmes mentioned under item 1, including at least 9 months' service as a ship's assistant or service in the engine room in sea-going ships; and
- 3) hold a health certificate for seafarers that is valid for serving in the engine room.

Section 6. For ship's assistants (advanced level) who do not meet the requirement of section 5, item 1, for a journeyman's certificate, a supplementary training programme may be offered prior to admission to the training programme. This programme shall consist of 20 weeks' workshop course and subsequently at least 6 months' work-experience at sea. The workshop course shall be completed by a test, and during the work-experience an approved training record book shall be kept.

Chapter 3 *Contents of the training programme*

Section 7. The training programme contains the following fields and subjects:

A. Technical skills I (14 ECTS)

- 1) *Engine theory* where the student shall acquire the knowledge about diesel engines and associated systems necessary to enable him to take care of the operation and maintenance of diesel engine systems in a proper way so that the system operates reliably and economically within presenting a risk to the surroundings and in full consideration of the environment.
- 2) *Boiler theory* where the student shall acquire the knowledge about auxiliary boilers necessary to enable him to take care of the operation and maintenance of such systems in a proper way so that they operate reliably and economically within presenting a risk to the surroundings and in full consideration of the environment.
- 3) *Hydraulics and pneumatics* where the student shall acquire fundamental knowledge about hydraulic and pneumatic systems necessary to enable him to operate and maintain these systems and components in a proper way.

B. Technical skills II (14 ECTS)

- 1) *Electrotechnology* where the student shall acquire electrotechnological knowledge to such an extent that he is able to take care of the operation and maintenance of electrical systems. The student shall be capable of operating the electrical equipment during both normal and abnormal operating conditions as well as of carrying out simple fault finding tasks.
- 2) *Auxiliary and service systems* where the student shall acquire knowledge about fuel oil systems, tank and bilge pumping systems, sanitary systems, fire-extinction systems, inert gas systems, stern tube systems, ventilation systems and freshwater systems so that he is able to operate and maintain these systems under both normal and abnormal operating conditions in a proper way in terms of safety environmental protection as well as to carry out general fault finding tasks.
- 3) *Automation* where the student shall acquire such knowledge about data-collection, data-logging, control engineering and steering engineering that he is able to act rationally and correctly when monitoring and operating ship control systems.
- 4) *Mechanical refrigeration* where the student shall acquire knowledge about both normal and abnormal operating conditions for refrigerating systems with single stage compression, including cargo refrigerating systems, refrigerating/freezing containers and provision refrigerating/freezing systems with associated systems and in a proper way be able to carry out completion, start, stop and stripping of such systems and be able to carry out simple fault finding, repair and maintenance tasks.

C. Safety (11 ECTS)

- 1) *Fire-fighting* where the student shall acquire the practical and theoretical skills necessary to operate and maintain the ship's fire-extinction and smoke-diver equipment in accordance with the guiding manuals provided. Furthermore, the person in question shall be able to function as a fire manager on board.
- 2) *Health care* where the student shall acquire the skills and knowledge necessary to provide advanced first-aid in a safe way in case of accidents and sudden illness.
- 3) *Maritime safety, occupational safety and environmental protection* where the student shall acquire the practical and theoretical skills necessary to take care of his responsibility for safety and environmental issues when functioning as a mechanist.
- 4) *Maritime safety* where the student shall acquire such knowledge about the ship's safety organisation and safety bills (boat, fire and MOB bills) that he can form part of the bills at the functional level. The student shall be able to use personal life-saving appliances and survival techniques and shall, furthermore, be able to use and main the ship's safety equipment, including lifeboats and liferafts, under professional guidance.

B. Ship technical skills and administration (10 ECTS)

- 1) *Ship technical skills* where the student shall acquire such knowledge about the construction of ships and about conditions relating to ships' stability, buoyancy, draught, trim and hull effects that he is able to function as responsible for the operation and maintenance of a small ship's machinery.
- 2) *Maritime law and ship administration* where the student shall acquire the knowledge of national legislation and international conventions as well as administrative, safety-related and environmental-related issues necessary for him to have knowledge of his duties and responsibilities as a mechanist.
- 3) *Watchkeeping* where the student shall acquire the skills within the subject of watchkeeping duty and watchkeeping teams necessary for him to take care of the function as a watchkeeping mechanist independently.
- 4) *Maritime English* where the student shall acquire the qualifications that will enable him to communicate in English both orally and in writing so that he can function as a mechanist on a merchant vessel on international voyages.
- 5) *Information technology* where the student shall acquire the Danish skills necessary for his use of computer equipment both during the training programme and for professional use.

F. Work-experience (12 ECTS)

During the work-experience, the student shall acquire practical knowledge about the function as a mechanist. During the work-experience a training record book shall be kept providing guidance about the practical training programme and documenting the carrying out of it. The training programme during the work-experience shall be certified in the training record book by the chief engineer officer or, in ship without a chief engineer officer, by the master of the ship.

Subsection 2. The teaching of the school modules shall, furthermore, include training of basic subjects to the extent necessary to provide the student with the skills required for the remaining subjects of the training programme.

Section 8. The Danish Maritime Authority shall, in consultation with the Marine Engineering Education Council, decide on a training plan describing intermediate goals for the various subjects as well as requirements for equipment and teacher qualifications.

Subsection 2. The Danish Maritime Authority shall, in consultation with the Marine Engineering Education Council, determine the contents of the training book.

Chapter 4 *Examination and evaluation*

Section 9. The final examination shall have the form of an oral hearing carried out as an operative interview controlled by the Danish Maritime Authority. The examination shall be held when the entire training programme, including the work-experience, has been completed.

Subsection 2. The training institution shall be in charge of evaluations and tests in accordance with the training plan, cf. section 8(1), and register the student for the final examination with the Danish Maritime Authority.

Section 10. As regards examinations and evaluations, including the criteria for having passed them, the general provisions on the maritime training programmes shall apply.

Examination certificate

Section 11. The training institution shall issue the examination certificate when the entire training programme has been completed and the final examination has been passed.

Chapter 5 *Approval and quality control*

Section 12. The training institution shall have been approved for offering the training programme by the Danish Maritime Authority.

Subsection 2. The training institution's planning, implementation, control and evaluation shall be in accordance with the general provisions of the Danish Maritime Authority on the approval, quality control, inspection and documentation of the maritime training programmes.

Chapter 6 *Entry into force*

Section 13. This Order shall enter into force on 1 January 2002.

Danish Maritime Authority / 17 December 2001

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