

Pixi Book

for
Training Officer
for Ship Mechanics



DanskeRederier

Contents

Preface	5
Purpose of the Programme	6
Competence Objectives of the Programme	8
The Traineeship	13
Objectives of the Traineeship	14
Traineeship Declarations	16
Bridge Watchkeeping during the Traineeship Period.....	18
Engine Room Service.....	18
The Ship Assistant’s Qualifications.....	18
Study Activities during the Traineeship	19
Logbook	20
The Training Record Book	21
What are the Training Officer’s Responsibilities?.....	23
Further Reading	24
Questions?	24
Annex 1 “Logbook”	26



Preface

The Pixi book for training officers for ship's mechanics is primarily comprised of excerpts from the "Executive order on the ship's mechanic vocational training programme", "Training scheme for the ship's mechanic programme" and Traineeship declaration for the ship's mechanic vocational specialty". The excerpts have been selected according to their relevance to training officers. The Pixi book has been written to serve as a brief introduction to the responsibilities of training officers.

The ship's mechanic programme is a vocational programme and therefore starts with a one-year foundation course. Once the student starts on the main programme, they are working as an employee at the shipping company. The main programme lasts 2 years and 8 months. The training alternates between theory and traineeships. There are 4 traineeship periods. In total, the traineeship periods take 2 years to complete. This Pixi book briefly describes the purpose, contents and competence objectives of the programme as well as the contents and objectives of the traineeship components, including study activities. The responsibilities of the training officer - who is responsible for the training of the student - are described at the end.

The ship's mechanic programme also overlaps with the ship's assistant programme, which is why this Pixi book will also refer to the ship's assistant programme. The excerpts in this handbook come from the Danish "Executive order on the basic maritime programme" and "Training Record Book for Seagoing Service: Ship's Assistant, Watchkeeping Officer's Examination, Home Trade Master's Examination, Master's Examination Limited and Master's Examination Unlimited".

Purpose of the Programme

The overall purpose of the ship's mechanic vocational programme is for students to attain knowledge and skills within the following general areas of competence:

- Installation, repair and maintenance of the ship's technical systems.
- Use of equipment for cutting, shaping and joining in connection with repairs and maintenance of the ship's technical systems and structure.
- Use of information technology (IT) in connection with everyday tasks, including searching for and retrieving relevant technical information.
- Communication and cooperation with customers, colleagues and domestic & foreign stakeholders on topics concerning the assignments of the programme.
- Maritime assignments that can be handled by ship's assistants.



Competence Objectives of the Programme

01

The student must be able to participate in project-oriented work groups and other forms of cooperation with colleagues.

02

The student must be able to communicate using relevant technical terms at all levels of the enterprise (the ship).

03

The student must be able to demonstrate quality in their work and demonstrate knowledge of an enterprise's quality management systems.

04

The student must be able to work in a manner that takes into account energy conservation and the environment in relation to all assignments falling under the job areas of the programme, demonstrating an understanding of sustainability.

05 The student must be able to demonstrate an understanding of the influence of globalisation on working processes in a typical company in the industry.

06 The student must be able to demonstrate knowledge of how to establish and operate their own business.

07 The student must be able to demonstrate innovative competences in their work relating to the job areas of the programme.

08 The student must be able to demonstrate knowledge of production management and the ability to structure, plan and assess possible solutions to their own assignments.

09 The student must be able to use information technology (IT) in connection with the job areas of the programme, including searching for and retrieving relevant technical information.

10 The student should be able to produce and read simple drawings with the help of electronic tools as well as perform calculations and create documentation in accordance with applicable norms and standards.

11 The student should be able to carry out assignments relating to the ship's technical systems in accordance with applicable quality requirements and when using technical specifications in Danish and English.

12 The student should be able to repair and maintain small ship hydraulic systems in cooperation with other professional groups.

13 The student should be able to repair and maintain less complicated electric systems in cooperation with other professional groups.

14 The student should be able to repair and maintain diesel engines in cooperation with other professional groups.

15 The student should be able to repair and maintain support systems in cooperation with other professional groups.

16 The student should be able to perform various welding methods with different materials in relation to an installation or manufacturing process, taking into account applicable norms and standards.

17 The student should be able to use equipment for cutting and shaping in connection with manufacturing and repair tasks, taking into account applicable norms and standards.

18 The student should be able to use equipment for machine or manual work in connection with manufacturing and repair tasks, taking into account applicable norms and standards.

19 The student should be able to participate in bridge watchkeeping, watchkeeping in port and engine room watchkeeping as well as possess insight into the current surveillance systems on ships in accordance with applicable rules.

20 The student should be able to carry out mooring tasks and prepare the loading and unloading of ships in accordance with applicable rules.

21 The student should be able to connect relevant theory to the organisation, execution and evaluation of specific assignments from the traineeship.



The Traineeship

The traineeship entails the organising of trainee assignments based on the daily operation of the ship, with an increasing level of difficulty. The traineeship objectives for the period are presented below to make it easier to organise these tasks for the student. Not all the trainee objectives need to be covered over the course of every traineeship. However, all the objectives must have been achieved by the end of the final traineeship period in order to be eligible for approval.



Objectives of the Traineeship



Installation of the Ship's Technical Systems

The student should be able to carry out assignments relating to the ship's technical systems in accordance with applicable quality requirements and when using technical specifications in Danish and English.

Repair and Maintenance of the Ship's Technical Systems

Manufacturing and use of drawings with the help of electronic tools (e.g. CAD/CAM systems)

Repair and maintenance of small ship hydraulic systems

Repair and maintenance of less complicated electrical systems

Repair and maintenance of diesel engines

Repair and maintenance of support systems

Welding with different materials in relation to an installation or manufacturing process

Cutting and shaping in connection with manufacturing and repair tasks

Machine or manual work in connection with manufacturing and repair tasks

Professional Communication

Professional communication in Danish

Professional communication in English

Maritime tasks

Bridge watchkeeping, watchkeeping in port and engine room watchkeeping

Use and operation of surveillance systems in connection with Engine room watchkeeping

Traineeship Declarations

A traineeship declaration must be prepared after each of the 4 traineeship periods. The purpose of the traineeship declaration is to serve as a tool for dialogue between the traineeship placement, school and student. The traineeship declaration should state whether the traineeship period can be approved (i.e. that the student has passed) and at which level the traineeship can be approved.

Each traineeship objective must be assessed in a checklist on the declaration (see illustration of the traineeship declaration below). The traineeship declaration can be retrieved from the website for the Educational Secretariat for Industry.

Praktikmål, som eleven skal have opnået ved uddannelsens afslutning	Oplæring er ikke startet	Oplæring er i gang	Praktikmålet er nået
A. Montage af skibets tekniske anlæg Eleven kan udføre arbejdsopgaver på skibets tekniske anlæg i overensstemmelse med gældende kvalitetskrav og ved anvendelse af tekniske specifikationer på dansk og engelsk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B: Reparation og vedligeholdelse af skibets tekniske anlæg			
2. Fremstilling og anvendelse af arbejdstegninger ved hjælp af elektroniske værktøjer (fx. CAD/CAM anlæg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Reparation og vedligeholdelse af mindre skibshydrauliske anlæg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Reparation og vedligeholdelse af mindre kompliserede el-styringer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The purpose is for the student to commence new training on the basis of competences they have already acquired in the subsequent traineeship period.



Because the programme also overlaps with the ordinary ship's assistant programme, the ship's mechanic apprentice must also work with the objectives that apply to ship's assistants. The learning objectives have been outlined and described in the Training Record Book for ship's assistants.

The traineeship time should be organised so as to give the student the opportunity to meet the requirements relating to the entire ship's mechanic programme and to allow for training progression. The seafarer also shares part of the responsibility to ensure that their time at sea is utilised in the best possible manner.

Bridge Watchkeeping during the Traineeship Period

Over the course of the introductory traineeship, students must be involved in bridge watchkeeping under the supervision of a qualified officer in order to attain the navigational watchkeeping certification in accordance with Regulation II/4 of the STCW Convention. Over the course of the entire traineeship, students must undergo a minimum of 2 months of bridge watchkeeping under the supervision of the shipmaster or a qualified officer in accordance with Regulation II/4 of the STCW Convention.

The bridge watchkeeping service should be organised so as to give the student the opportunity to keep watch while the ship sails through trafficked waters and during manoeuvres. Considerable importance should be attached to the student's understanding of the necessity of maintaining good discipline on the bridge, in compliance with Chapter VIII of the STCW Convention.

Engine Room Service

The traineeship must include engine room service to ensure familiarisation with the engine room and practical skills for ensuring the operation of minor parts of the machinery in vessels where there is no requirement for a machinery crew.

The Ship Assistant's Qualifications

The traineeship should be implemented in a way that enables the student to acquire the knowledge, skills and competences for carrying out the duties of a ship assistant, including experience in the practical application of the workmanship-related qualifications.

Study Activities during the Traineeship

This section contains a brief description of the study activities the student must complete during the traineeship. In addition to the study activities, the student should not forget to do the following:

- to complete the Training Record Book's "particulars of the trainee" form,
- to complete the training forms regarding safety and shipboard familiarisation as soon as possible upon joining the ship once sufficient experience has been achieved,
- to complete the form "Particulars of the Ship" during the first period on board,
- that 2 months of bridge watchkeeping duties must be registered in order to obtain a Bridge Watchkeeping Certificate,
- to read the instructions from the shipping company,
- to have the training forms endorsed with date/signature as well as remarks once sufficient experience has been achieved,
- to present the Training Record Book to the senior officers at least once a month and to obtain endorsement,
- completing the 5 written assignments that briefly describe the execution of a given task (if, after completing their training, the ship's mechanic apprentice wishes to pursue the able ship's assistant programme).

Logbook

The student has the option to work with a logbook during their traineeship, which is generally considered helpful. In the logbook, the student should be able to demonstrate the progression that has taken place during their traineeship as well as demonstrate how they have worked on the different traineeship objectives. Annex 1 “Logbook” contains an example of the layout of such a logbook. The logbook can be used initially for planning (green lettering) and subsequently for evaluating work on a given subject (black lettering). Another option is to give the student a copy of the annex to complete.

Some students will prefer to make entries in a digital logbook (e.g. in OneNote), which allows them to insert links to websites, attach images for documentation, etc. or simply use an ordinary notepad.





The Training Record Book

During the traineeship, the student must work with the Training Record Book as well as the activities described therein. The Training Record Book must be presented to the school the student is admitted to if the student wishes to pursue further education to become an able ship's assistant.

The Training Record Book contains training forms intended to serve as a record of training objectives that must be signed off on by the ship's officer once the training objective has been satisfactorily achieved. Once an objective has been completed, the student must continue to learn about the subject.



What are the Training Officer's Responsibilities?

The training officer is the seafarer's contact person on board the ship. Among other things, this means that the training officer organises the training on board the ship together with the senior officers so that particular consideration is given to the seafarer's background, time at sea, age, experience, etc.

The training officer must ensure that the guidelines of the Training Record Book are adhered to by all parties (see also the Training Record Book).

The training officer must ensure that a traineeship declaration is completed after each traineeship period and forwarded to the vocational school.

If the ship's mechanic apprentice wishes to pursue the able ship's assistant programme after completing their studies, the student must complete at least five out of the six described assignments in the Training Record Book. The training officer must supervise the student in completing the assignments. It is recommended that the training officer evaluates and comments on the seafarer's written work.

It is recommended that on each ship, the officers put together a special checklist with items specific to that ship. Such a list will be of great use when officers are replaced, as it makes it easier for the replacement to determine each seafarer's training status and what to focus on next.

Further Reading

If you want to read the excerpts in context, you can read the following:

The Technical Committee for Maritime Engineering Programmes (2017) *Uddannelsesordning for uddannelsen til Skibsmekaniker*.

The Danish Metal Industry's Training Committee (2015), *Praktikerklæring for specialet skibsmekaniker*.

The Danish Ministry of Higher Education and Science (2014) *Training Record Book for Seagoing Service: Ship's Assistant, Watchkeeping Officer's Examination, Home Trade Master's Examination, Master's Examination Limited and Master's Examination Unlimited*.

Danish Ministry of Higher Education and Science (2015), *Executive order on the ship's mechanic vocational programme*

The Danish Ministry of Higher Education and Science (2017) *Executive order on the basic maritime programme*

Questions?

Contact Danish Shipping's Shipboard Training Office if you are looking for training material or if you have any questions about the role of training officer.

Danish Shipping's Shipboard Training Office:

Anne Panknin Kristensen

Maritime Training Coordinator

T: +45 33 48 92 46

M: +45 81 77 77 07

apk@danishshipping.dk



Annex 1 "Logbook"

Period (dates):

Subject:

Questions for reflection:

- What competences do I want to achieve?
- What competences did I employ? How?
- Which traineeship objectives do I need to work on?
- Which traineeship objectives have I already worked on?

Further questions:

- Which assignment was I most successful at?
Why was I successful at that assignment?
- What has been the most challenging part?
- What will I be attentive to when working in this area
in the future?

At which Level did I Achieve the Traineeship Objectives?

Enter the number of the traineeship objective in the circle where you assess your current level is at.



