



# COURSE MANUAL

**OPERATION OF THE CRAFT**  
*MANAGEMENT LEVEL*



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**AUTHOR:** GO! De Scheepvaartschool - Antwerp  
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# PREFACE

To assist education and training entities to meet the requirements of the Standards of competence for inland navigation personnel, required by Directive (EU) 2017/2397 on the recognition of professional qualifications in inland navigation, and Delegated Directive (EU) 2020/12 supplementing Directive (EU) 2017/2397 as regards the standards of competences and corresponding knowledge and skills, for the practical examinations, for the approval of simulators and for medical fitness, the transnational Course Manual on Operation of the Craft for Management Level Personnel was developed.

This Course Manual will be a useful transnational training tool for conducting the 'Train the Trainer' session and is intended to assist education and training providers and their teaching staff in organising and introducing new education & training programmes, or in enhancing, updating and supplementing existing didactical materials with the ultimate end results of raising quality and effectiveness of the education & training programmes.

Since education & training systems as well as the cultural background of inland navigation topics differ considerably from one country to another, the Course Manual on Operation of the Craft at Management Level has been designed so as to support the preparation, organisation and planning of effective teaching and training and to be used as a part of the quality assurance of the education and training institutes.

Technical content and levels of knowledge and abilities are in line with the applicable Delegated Directive (EU) 2020/12 supplementing Directive (EU) 2017/2397 as regards the standards of competences and corresponding knowledge and skills, for the practical examinations, for the approval of simulators and for medical fitness, being an essential tool for crew members at Management Level, to apply knowledge of inland waterway shipbuilding and construction methods to the operation of various types of craft and have basic knowledge of the technical requirements for inland waterway vessels, as referred to in Directive (EU) 2016/1629 of the European Parliament and of the Council and to control and monitor the mandatory equipment as mentioned in the applicable craft certificate.



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# 1. GENERAL INFORMATION

<b>1 Aim</b>	Provide training to assist in the implementation of Directive (EU) 2017/2397 on the recognition of professional qualifications in inland navigation and ES-QIN - Standards of competence - Operation of the Craft at Management Level.
<b>2 Objective</b>	Provide training and practical guidance for trainees in order to be able to apply knowledge of inland waterway shipbuilding and construction methods to the operation of various types of craft and have basic knowledge of the technical requirements for inland waterway vessels, as referred to in Directive (EU) 2016/1629 of the European Parliament and of the Council and to control and monitor the mandatory equipment as mentioned in the applicable craft certificate.
<b>3 Entry standards</b>	See Directive (EU) 2017/2397 - Annex 1.
<b>4 Course certificate</b>	On successful completion of the course, a document may be issued, stating that the holder graduated this learning module.
<b>5 Course intake limitation</b>	Admittance may be limited by the capacity of the educational infrastructure used for this learning module (i.e. in the simulation room max. 4 trainees, on board of the real/training craft 12 trainees, etc.).
<b>6 Staff requirements</b>	The trainer should meet the requirements of Directive (EU) 2017/2397, Art. 18.
<b>7 Training facilities, equipment and teaching aids</b>	For the theoretical part of the course a classroom is required with video presentation equipment, teaching aids, etc. For the practical part of the course a real/training craft or full mission ship-handling simulators are mandatory.
<b>8 Learning outcomes</b>	<p><i>The boatmaster shall be able to apply knowledge of inland waterway shipbuilding and construction methods to the operation of various types of craft and have basic knowledge of the technical requirements for inland waterway vessels, as referred to in Directive (EU) 2016/1629 of the European Parliament and of the Council and to control and monitor the mandatory equipment as mentioned in the applicable craft certificate.</i></p> <p>At the end of the course the trainee shall be able to:</p> <ul style="list-style-type: none"><li>• Respect the principles of inland waterway shipbuilding and construction;</li><li>• Distinguish construction methods of craft and their behaviour in the water, especially in terms of stability and strength;</li><li>• Understand structural parts of craft and damage control and analysis;</li><li>• Take action to protect the craft's watertight integrity;</li><li>• Understand functionalities of craft equipment;</li><li>• Respect specific requirements for transport of cargo and passengers.</li></ul>
<b>9 Assessment &amp; evaluation</b>	Minimum requirements for assessment & evaluation of the trainees for passing the learning module (i.e. minimum score for theoretical evaluation, for practical evaluation, etc.). I.e. Online training record book as a pathway for the course.

## 2. INSTRUCTOR MANUAL

This instructor manual provides guidance on the material that is to be presented during the Operation of the Craft course Management Level, and has been arranged under the two Learning Outcomes (competences) identified in the course outline. The reference material indicated may be supplemented by additional texts or material at the discretion of the instructor.

The course outline and provisional timetable also provide guidance on the time allocation for the course, because the time actually taken for each subject area may vary especially in respect of time allocated to practical activities. The detailed teaching syllabus must be carefully studied and appropriate lesson plans or lecture notes compiled. A template of a lesson plan is presented (see 2.1 of this chapter).

Each lesson should commence with a statement of the learning outcomes it is intended to achieve. At the end of each lesson, the participants should be told which associated portions of the reference material they should read and any activity they should undertake. Questions arising from such readings and activities must be given priority at an appropriate time.

The presentation of the various subject areas should be done in such a way that those taking part in the course are involved in an interactive participation during the lessons and learning process.

Questions from the course participants should be encouraged, as should answers to such questions from other course participants.

The lessons should aim at conveying as much practical instruction and practice as possible to the participants, in order to develop their knowledge of and their skills in the tasks they will be expected to carry out. Course materials for additional study must be prepared and distributed online or offline if required.

### 2.1 Lesson plan

This lesson plan is just a template to give the teachers/trainers a general idea on how to create their lessons for the various competences. This template can be used for every competence and adjusted as suitable for the institute to use.

### 2.2 Background material

Bibliographical materials, reference documents, and other didactical materials are presented in Annex 1 of this Course Manual.

#### Competence 1.1.2 Ability to operate craft according to their dimensions and applicable construction legislation

Learning objective

Learning outcomes

Required equipment

#### Lesson structure

Learning activity	Didactical method (ABC method)	Materials	Time

## 2.3 Practical activities

This practical training links the theoretical content of the lessons to their practical use.

### (Simulator) exercises

Practical exercises on board a (training) vessel or in an applicable IWT ship handling simulator can be undertaken in order to give the candidates the opportunity to deepen and enhance their theoretical knowledge into practical skills. This practical training links the theoretical content of the lessons to their practical use.

### Case studies

Theoretical subjects are elaborated by the candidates autonomously in case studies. The candidate should deepen his or her knowledge in defined theoretical subjects by elaborating on a variety of facts and figures about this topic and present them in front of his or her classmates afterwards.

### Discussions and reflection, interactive learning

Possible solutions to theoretical and practical subjects can be discussed within (parts of) the learning group. Different views and opinions on a defined subject are exchanged and discussed by the participants in order to broaden the view of the individual on this problem and show different possible solutions and their respective advantages and disadvantages. A discussion should be monitored and steered (stimulated or consolidated) if necessary, in order to secure that every participant actively participates.

### Team work

Assignments can be individual as well as group assignments, depending on the objective. An individual assignment should stimulate and show the competences of the individual. In team work assignments the participants will have exposure to a wide range of experiences from quick problem-solving involving synergy to experiences which may relate to such items as interpersonal difficulties in a group setting. Depending on the purpose of the assignment the team should be defined in advance and the assignment and the rules of the working process, if there are any, should be communicated to the group in a very clear and formal manner.

**Annex 2** of this Course Manual presents: a few exercises, case studies and practical scenarios which are useful for practical training and examination of the trainees.

The ETRB is the tool by which the students can be tested.

## 2.4 Classroom facilities and educational tools

For the theoretical part of the course, a classroom is required with video presentation equipment, teaching aids, etc.

For the practical part of the course, a real/training craft or full mission ship-handling simulators are mandatory.

## 2.5 Examination & assessment

According to Directive (EU) 2017/2397, Article 17, Assessment of competences:

The Commission shall adopt delegated acts in accordance with Article 31 to supplement this Directive by laying down the standards for competences and corresponding knowledge and skills in compliance with the essential requirements set out in Annex II.2. Member States shall ensure that persons who apply for the documents referred to in Articles 4, 5 and 6 demonstrate, where applicable, that they meet the standards of competence referred to in paragraph 1 of this Article by passing an examination that was organised:

- (a) under the responsibility of an administrative authority in accordance with Article 18 or;
- (b) as part of a training programme approved in accordance with Article 19.

The essential requirements set out in Annex II of Directive (EU) 2017/2397 for Operation of the Craft Management Level are:

The boatmaster shall be able:

- To apply knowledge of inland waterway shipbuilding and construction methods to the operation of various types of craft and have basic knowledge of the technical requirements for inland waterway vessels, as referred to in Directive (EU) 2016/1629 of the European Parliament and of the Council;
- To control and monitor the mandatory equipment as mentioned in the applicable craft certificate.

To assess the progress and level of understanding of the students, it is necessary to test the students in a formative way. The main goal of these tests is to give feedback to the student.

A standard for practical examination for Boatmaster is developed in CESNI QP.

Examples of assessments for the separated competences for 'Operation for the Craft' at Management Level can be found on the Illias platform.

### 3. REGULATION AND CERTIFICATION

According to Chapter 2, Union Certificates of Qualification, Article 4, Obligation to carry a Union certificate of qualification as a deck crew member of Directive (EU) 2017/2397:

1. Member States shall ensure that deck crew members who navigate on Union inland waterways carry either a Union certificate of qualification as a deck crew member issued in accordance with Article 11 or a certificate recognised in accordance with Article 10(2) or (3).
2. For deck crew members other than boatmasters, the Union certificate of qualification and the service record book as referred to in Article 22 shall be presented in a single document.
3. By way of derogation from paragraph 1 of this Article, certificates held by persons involved in the operation of a craft, other than boatmasters, issued or recognised in accordance with Directive 2008/106/EC, and therefore in accordance with the STCW Convention, shall be valid on sea-going ships operating on inland waterways.

*In Directive (EU) 2017/2397, Annex I sets out the following minimum requirements for certification as a boatmaster:*

Every applicant for a Union certificate of qualification shall:

(a)

- Be at least 18 years of age;
- Have completed an approved training programme as referred to in Article 19, which was of a duration of at least three years and which covered the standards of competence for the management level set out in Annex II;
- Have accumulated navigation time of at least 360 days as part of this approved training programme or after completion thereof;
- Hold a radio operator's certificate;

or

(b)

- Be at least 18 years of age;
- Hold a Union certificate of qualification as a helmsman or a certificate as a helmsman recognised in accordance with Article 10(2) or (3);
- Have accumulated navigation time of at least 180 days;
- Have passed an assessment of competence by an administrative authority as referred to in Article 18 to verify that the standards of competence for the management level set out in Annex II are met;
- Hold a radio operator's certificate;

or

(c)

- Be at least 18 years of age;
- Have accumulated navigation time of at least 540 days, or have accumulated navigation time of at least 180 days, if the applicant can also provide proof of work experience of at least 500 days that the applicant acquired on a sea-going ship as a member of the deck crew;
- Have passed an assessment of competence by an administrative authority as referred to in Article 18 to verify that the standards of competence for the management level set out in Annex II are met;
- Hold a radio operator's certificate;

or

(d)

- Have a minimum of five years' work experience prior to the enrolment in an approved training programme, or have at least 500 days' work experience on a sea-going ship as a member of the deck crew prior to the enrolment in an approved training programme, or have completed any vocational training programme of at least three years' duration prior to the enrolment in an approved training programme;
- Have completed an approved training programme referred to in Article 19, which was of a duration of at least one and a half years, and which covered the standards of competence for the management level set out in Annex II;
- Have accumulated navigation time of at least 180 days as part of that approved training programme and at least 180 days after completion thereof;
- Hold a radio operator's certificate.

## 4. LESSON MATERIALS

The lesson materials referred to in this course manual are for inspiration and are free to use for the teachers of the educational institutes. The lesson materials will be available on the Edinna website (<https://www.edinna.eu/>).

As already mentioned in Chapter 2, background materials and practical activities can be found in Annex 1 and Annex 2 of this course manual. The background materials referenced can be used as additional documentation for the teachers to create their lessons and/or add more details. Annex 2 consists of suggestions and examples of exercises, case studies and/or practical scenarios.

Thematic content of the Course Manual for Operation of the Craft - ML is presented in Annex 4 of this document, which is linked to the European Standard for Qualifications in Inland Navigation (ES-QIN), Part I, Chapter 2, Point 2 Operation of the craft<sup>1</sup>.

## COMPETENCE 2

### Competences of Operation of the Craft - ML

The numbering of the chapters is in accordance with the Standards for Competences for the Management Level - 2. OPERATION OF THE CRAFT.

The competences of Operation of the Craft are:

### 2.1 The boatmaster shall be able to apply knowledge of inland waterway shipbuilding and construction methods to the operation of various types of craft and have basic knowledge of the technical requirements for inland waterway vessels, as referred to in Directive (EU) 2016/1629.

Competence	Knowledge and skills
1. The boatmaster shall be able to respect the principles of inland waterway shipbuilding and construction.	<ol style="list-style-type: none"> <li>1. Knowledge of importance and impact of craft dimensions and dimensions of inland waterway craft according to applicable rules.</li> <li>2. Ability to operate craft according to their dimensions and applicable construction legislation.</li> <li>3. Ability to supervise the compliance of craft with the applicable legislation taking into account construction work.</li> </ol>
2. The boatmaster shall be able to distinguish construction methods of craft and their behaviour in the water, especially in terms of stability and strength.	<ol style="list-style-type: none"> <li>1. Knowledge of craft features as laid down in construction drawings of various types of craft and of the effect of the construction on the craft behaviour and its stability and strength.</li> <li>2. Knowledge of the craft's behaviour in various conditions and environments.</li> <li>3. Ability to supervise the craft's stability and to give instructions accordingly.</li> </ol>
3. The boatmaster shall be able to understand structural parts of craft and damage control and analysis.	<ol style="list-style-type: none"> <li>1. Knowledge of key elements of craft and different types of craft including basic knowledge on the technical requirements for inland navigation vessels, as referred to in Directive (EU) 2016/1629.</li> <li>2. Ability to monitor the craft's core elements for the different types of transport and give instructions accordingly.</li> <li>3. Knowledge of the longitudinal and transversal structure and local reinforcements in order to prevent and analyse damage.</li> <li>4. Ability to understand and control the functions of the equipment and usage of different holds and compartments in order to prevent and analyse damage.</li> </ol>
4. The boatmaster shall be able to take action to protect the craft's watertight integrity.	<ol style="list-style-type: none"> <li>1. Knowledge of the craft's water tightness.</li> <li>2. Ability to supervise the craft's watertight integrity and give instructions accordingly.</li> </ol>

<sup>1</sup> <https://www.cesni.eu/en/standards-and-explanatory-notice/#02>

**2.2 The boatmaster shall be able to control and monitor the mandatory equipment as mentioned in the applicable craft certificate.**

Competence	Knowledge and skills
<p>1. The boatmaster shall be able to understand functionalities of craft equipment.</p>	<p>1. Knowledge of mandatory equipment of the craft. 2. Ability to use and control all equipment in relation to their functionalities according to applicable legislation, and give instructions and supervise accordingly.</p>
<p>2. The boatmaster shall be able to respect specific requirements for transport of cargo and passengers.</p>	<p>1. Knowledge of the specific requirements relating to craft construction and equipment needed for the transport of different cargoes and passengers with different types of craft according to applicable legislation. 2. Ability to give instructions and supervise accordingly. 3. Ability to give instructions and supervise the correct application of the requirements of the certificate.</p>

## 5. EFFECT ON THE HUMAN ELEMENT ON SUSTAINABLE SHIPPING

The human activities of deck crews on board of ships have a direct relation with sustainability in Inland Shipping. Due to the uniformisation of training and conformity with Directive (EU) 2017/2397 there will be an increase of navigational safety.

Different factors affect the development of sustainability in shipping, from regulatory to socio-economic factors, market related aspects and human factors, which all together contribute in different ways to the development of these three pillars. Since many different stakeholders are involved in the process, it follows that one of the main factors in supporting Sustainable Shipping is the understanding of all parties' concerns, needs and expectations.

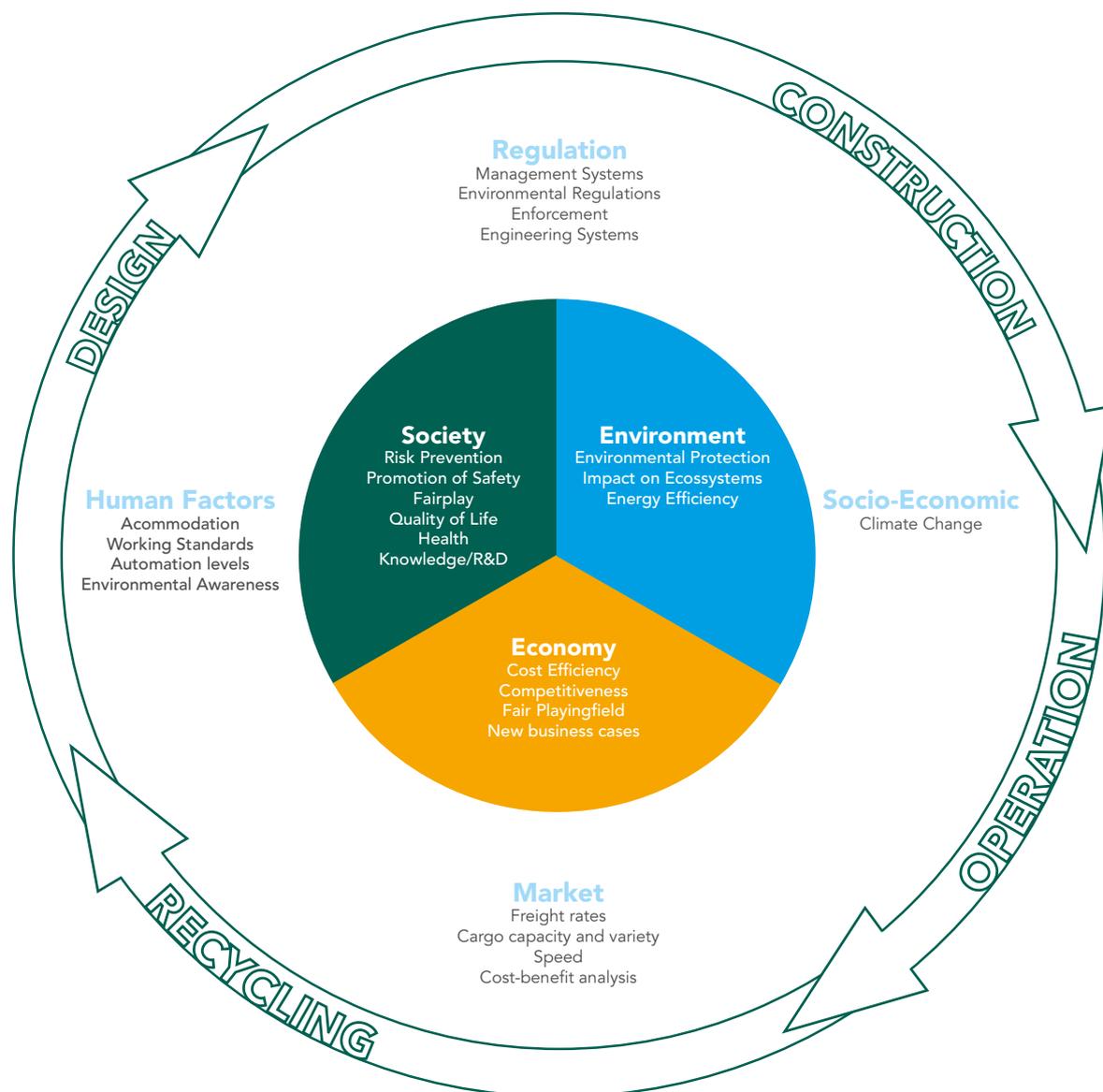


Figure 1 <https://www.maintworld.com/R-D/Application-of-European-Qualification-Framework-EQF-in-Maintenance>

The shipping industry is run by people, for people. People design ships, build them, own them, crew them, maintain them, repair them and salvage them. People regulate them, survey them, underwrite them and investigate them when things go wrong. While these people vary in all sorts of ways, they are all, nevertheless, people – with the same basic set of capabilities and vulnerabilities.

Humans are not simply an element like the weather. They are at the very centre of the shipping enterprise. They are the secret of its successes and the victims of its failures. It is human nature that drives what happens every day at work – from the routine tasks of a ship's rating, right through to policy decisions.

The eight aspects of human nature are:

#### **1. People actively make sense of things**

What's obvious to you may be far from apparent to somebody else. We explain how it is that most of what you see and understand is down to you and your expectations, rather than a response to "what's out there". The key problem is ensuring that the sense you make of things is enough for you to deal effectively with the reality of a continuously unfolding situation – a situation that you must also share with your colleagues.

#### **2. People take risks**

Everybody takes risks all the time. In a world that is essentially uncertain, this is not only normal but inescapable. We explain how the human perception of risk is quite different from the probability with which events actually occur. The key problem is in ensuring that your own perception of risk maps well onto the world with which you are interacting.

#### **3. People make decisions**

We explain the difference between how people think they make decisions and how they actually do it – and how experts' decision making is quite different from the way they did it when they were learning. We also explain why experience does not always lead to expertise, but that expertise always requires experience – and lots of it. The key problem is to understand what the components of a good decision are, and how to recognise when you are about to make a bad one.

#### **4. People make mistakes**

A fundamental human strength depends directly on the ability to make, and then recover from, mistakes. Without error there can be no learning or development. And without these, organisations cannot achieve their goals. The important aspect is in ensuring that potentially harmful or expensive mistakes are prevented, caught or minimised before they have a chance to get far enough to matter. We explain how this depends as much on organisational culture as on individual competence.

#### **5. People get tired and stressed**

We explain the causes and consequences of fatigue and stress, and explain what you can do to avoid them or lessen their impact. We also explain why workload turns out to be as much to do with your own experience, as the actual demands placed on you by the job.

#### **6. People learn and develop**

People learn all the time. They can't stop themselves. The main problem is in ensuring that they learn the right things at the right time. People also have aspirations which can be managed by an organisation to further its own safety and profitability. However, in the absence of good management, people's aspirations will either be ignored or permitted to dominate – with potentially disastrous consequences either way. We explain the enormous power that effective, well-timed training can give to an organisation.

#### **7. People work with each other**

Working with each other sometimes requires us to work as individuals in pursuit of our own goals, and at other times as members of a team with a common purpose. The key problem is in ensuring that we have effective 'people' skills, as well as technical task skills. We explain what these other skills are, why they are important and what can go wrong when they are absent.

#### **8. People communicate with each other**

Successful communication involves the clear transmission of a message. We explain what has to happen for communication to be successful. We explain the responsibilities of both listener and messenger.

These are eight things we do that help to make us human. They are inescapable and will not go away. Understanding a little more about their nature, and how you can deal with them more effectively, will change your behaviour – and, maybe, that of those around you.

## 6. REFERENCE TO NQF, EQF, ECTS (REQUIREMENT FROM AF)

Nowadays, the European Union (EU) consists of 27 member states, and each state has a different education system. The European Commission (EC) therefore prepared the European Qualifications Framework (EQF) because it wanted to:

- Make national qualifications more readable across Europe;
- Harmonise national qualification systems of different countries in a common European reference framework;

- Promote workers' and learners' mobility between the countries of the EU and to facilitate their lifelong learning.

The EQF system has got eight reference levels (figure 1), each level describes what a learner has to know, understand and be able to do<sup>2</sup>.

EQF LEVEL 8	ACADEMIC LEVEL	DOCTORATE	MAINTENANCE MANAGERS AND SUPERVISORS VOCATIONAL TEACHERS
EQF LEVEL 7		MASTER	
EQF LEVEL 6	POST UPPER SECONDARY LEVEL	BACHELOR	
EQF LEVEL 5		HIGHER NATIONAL DIPLOMA	
EQF LEVEL 4	UPPER SECONDARY LEVEL	HIGHER NATIONAL CERTIFICATE, UPPER SECONDARY DIPLOMA	MAINTENANCE MECHANICS
EQF LEVEL 3	SECONDARY LEVEL	SECONDARY DIPLOMA OR VOCATIONAL DIPLOMA	
EQF LEVEL 2	PRIMARY LEVEL	SECONDARY SCHOOL WITH NO DIPLOMA	
EQF LEVEL 1		PRIMARY SCHOOL	

**Figure 2** EQF levels compared with achieved education and maintenance personnel positions

<sup>2</sup> <http://www.maintworld.com/R-D/Application-of-European-Qualification-Framework-EQF-in-Maintenance>, 1 December 2016

Inland waterway transport (IWT) plays a relevant role in the EU in cargo exchange. Especially in the international scale on the network of the European waterways. On the one hand the transport is still more economical than any other mode of transport for many types of cargo, particularly such as bulk, general, liquid cargo and containers. On the other hand, it is the friendliest mode to the environment.

The field of IWT includes various job positions that are related to its segments such as vessels, ports and waterways. Project IWTCOMP focused on EQF and the job qualifications in IWT in 4 countries (Germany, the Netherlands, Romania and Slovakia) because each country uses a different education system.

In all the countries involved in the project there are websites and organisations dedicated to the use of EQF in the national context. Below you will find an overview of these organisations.

The IWTCOMP project outlined the fact that regarding international sectoral qualifications there is (still) not an agreement on the approach and international process of comparing the EQF levels via the National QF's (NQF's). Some member states do not want to adjust their procedures and this means all member states all still have their own NQF procedure.

Slovakia used to have two vocational schools which prepared students for the job positions in IWT but they were closed because of low interest of young people to work in this field. Nowadays, the Transport Authority examines the candidates for lower job positions in IWT such as skipper, captains, boatmen (EQF 2 and 4). Before the exams it organises the courses for applicants. The exam has got oral and written forms and consists of various areas if IWT. The Department of Water Transport at the University of Zilina educates students for higher job positions (EQF 6, 7, 8) in IWT.

Germany		<a href="http://www.dqr.de">www.dqr.de</a>
The Netherlands		<a href="http://www.nlqf.nl">www.nlqf.nl</a>
Romania		<a href="http://www.anc.edu.ro">www.anc.edu.ro</a>
Slovakia		<a href="http://www.trexima.sk/new">www.trexima.sk/new</a>

**Table 1** Overview of national organisations in the EQF context

The curricula are approved by the Ministry of Education, Science, Research and Sport of the Slovak Republic and its control body (Accreditation Commission). They are prepared according to the requirements of practice and standards of higher education in Slovakia.

In Germany there is a combined system of education at school and in a shipping company ending in centralised exams held by the chamber of commerce. Both schools and companies have to follow the curricula, but they are not responsible for the exams. The exams consist of two parts, one focussing on knowledge and one focussing on the skills. Therefore both school and shipping company contribute to the education of the students enabling them to pass the centralised exams.

In Romania there are dedicated programmes for IWT boatman (EQF 2). There are vocational schools for boatmen in Galati and Orsova, offering courses for boatmen qualification.

In the Netherlands there are qualifications set for the different levels of education within the IWT sector. For each educational level there is a set of qualifications given by the national contact point in cooperation with the work field and educational institutes. The Netherlands government decided to place the Captain/Manager IWT qualification in NQF level 5 (EQF5), but in a later stage it was withdrawn and placed in NQF level 4 (EQF4).

In conclusion, although the EQF system in the field of inland water transport has been accepted in all EU countries, this EQF system is not used by all countries. This is due to the fact that some institutes have to focus on the professional competences based on national and international legislation. The curricula at schools, universities and training centres are prepared according to the international or national standards in the cooperation with the international or national authorities (the Rhine Commission, the Danube Commission, the Ministries of Education), shipping companies and other authorities that work in the field of IWT in the Rhine or Danube Regions. It depends on the level of general education (higher or lower) per country.

# ANNEX 1

## Bibliographical materials, reference documents, didactical materials

- Directive (EU) 2017/2397 of the European Parliament and of the Council of 12 December 2017 on the recognition of professional qualifications in inland navigation and repealing Council Directives 91/672/EEC and 96/50/EC & Final drafts of competences and practical exams, 2017;
- ES-QIN, European Standard for Qualifications in Inland Navigation, CESNI 2019;
- Course Manuals for Inland Navigation ML. Example educational material; competence 1.1, 1.2, 1.3, 1.4, 1.5 (CMINET);
- Course Manuals for Inland Navigation ML. Example educational material; competence 1.6 (CMINET);
- Inland Navigation and Ports, NELI;
- Ship manoeuvring for inland convoy, NELI;
- Logistics course, NELI, 2011;
- RIS course, NELI;
- Train the Trainer course for Inland Navigation training, Leonardo da Vinci Program;
- Train the Trainer course Competency Based Training and Assessment Inland Waterway Transport Didactical manual, IWTCOMP, 2019;
- Manual on the Sava River Navigation, International Sava River Basin Commission, Zagreb 2018;
- Assessment of the effectiveness of the use of simulations with respect to education, assessment and examination, Prominent, July 2017;
- Digital tools to support the further integration of IWT knowledge to general logistics education and training, Prominent, July 2017;
- Prototype of digital education and training tools, Prominent, October 2017.

### Online e-learning

- INeS: [www.ines-danube.info](http://www.ines-danube.info) / [www.ines.info](http://www.ines.info)
- MOK: [www.mok.anewspring.nl](http://www.mok.anewspring.nl)

## Practical scenarios

### Planning of a trip

Every trip requires thorough planning and preparation. The better the planning and preparation of the trip, the more likely the execution will run smoothly

These practical scenarios can take place in a classroom or on board the vessel. The test is written, but there can be additional need for oral clarification.

### Checklist for the planning of the journey

You are provided with the following information:

- Type of vessel;
- All relevant measurements of the vessel;
- Type of cargo and its characteristics;
- Location of departure and destination;
- Method of exploitation;
- Standards the vessel is equipped with;
- Type of fuel, bunkering capacity, average consumption of fuel;
- Average speed when fully loaded.

### Checklist documents

- Which certificates and documents in relation to the crew need to be kept on board the vessel?
- Which certificates and documents in relation to the cargo need to be kept on board the vessel?
- What information needs to be taken into consideration regarding the validity of these documents?
- Which administrative tasks do you need to perform during the day-to-day running of the ship?

### Checklist on board appliances and equipment

- What determines which technical equipment is required on board for your journey?
- What equipment will you have on board?
- What maintenance of check-ups of technical equipment might be required during the trip?
- What needs to be taken into consideration regarding the use of wires and cable on board?

### Checklist itinerary and navigation

Describe the itinerary. Keep in mind economical and ecological points of interest.

- Which waterways will you use?
- Which state borders will you pass?
- What police regulations are applicable to the different parts of the waterway?
- What maximum width and length of the vessel are allowed on the chosen waterways?

- How much time do you estimate it will take to sail the different sections of the waterway?
- What is the clear height of the bridges on your itinerary? Are there other factors you need to consider when sailing under the bridges?
- Determine the draught of your vessel. What influence do the weather conditions of the last few days have?
- What is the depth of the waterway?
- Will you find yourself in standing water? What is the significance of that?

### Checklist cargo

Describe how you will make maximum use of your cargo hold. Make sure that the vessel's trim is to its advantage.

- How do you calculate the max. cargo you can transport?
- Calculate the vessels optimum trim;
- How and where should the cargo be stowed?
- Which factors do you need to take into account regarding the cargo?
- Which factors do you need to take into account while loading and unloading cargo?
- What effect does the water level have on the process of loading? What measures should be taken when the water level drops considerably?

### Checklist crew

- How do you put together a crew (how many, categories)?
- What is the maximum allowed shift on board? When should they have a break or rest? How long should every rest break be?

### Checklist life on board, health and safety

- Which briefings do you need to give to your crew?
- Which regulations do you follow regarding
  - access to the vessel?
  - the use of dangerous substances?
  - the maintenance of closed compartments?
- Which precautions do you take regarding possible emergency situations on board?
- Which measurements need to be taken to prevent water seeping? What do you need to do should this occur?
- Which environmental measures do you need to consider?
- How will you organise the crew's meals on board the vessel?

### Checklist fuel

- How much fuel will the vessel use on the trip?
- What will be the fuel consumption on a part of the river with stowage or a canal in comparison to free flowing river parts?
- Where will you bunker? How much?
- What precautions need to be taken while bunkering?

Practical planning exercises on the inland navigation simulator can be added.

### Possible scenarios for the execution of the planned trip

#### Before leaving

You are leaving from a location without current, a large lock or from a large mooring place in a harbour. You prepare your vessel for departure.

You activate the AIS/Inland Ecdis before departure and adjust these navigational instruments correctly. You gather the local navigational and itinerary information. You perform a final check of vessel and cargo.

#### Departure

You cast off the ropes. You communicate with the crew on deck, other vessels and the Vessel Traffic Service (VTS) or harbour authorities and/or lock operator. You start with a simple manoeuvre and sail for a short distance.

#### While sailing

You pass a bridge. You overtake other vessels. You cross vessels coming from the opposite direction. You need to enter a small lock.

#### Additional difficulties

You need to anticipate failing equipment or installations. You sail to a safe spot. You might have to anchor. It is possible that you need to cross the waterway and its traffic. You correctly use the blue sign. You communicate appropriately with the crew and the quayside partners.

#### Arrival

Your journey ends in a traffic situation with multiple vessels. The space provided for mooring is limited.

## Standards for practical examination for obtaining a certificate of qualification as a boatmaster - module 2 - operation of the craft

Standards for practical examination for obtaining a certificate of qualification as a Boatmaster was adopted by Commission Delegated Directive (EU) 2020/12 supplementing Directive (EU) 2017/2397 of the European Parliament and of the Council as regards the standards for competences and corresponding knowledge and skills, for the practical examinations, for the approval of simulators and for medical fitness. Standards for practical examination for obtaining a certificate of qualification as a Boatmaster are included in **Annex II, Chapter IV** of this aforementioned Delegated Directive, and referred to under:

### 1. Specific competences and assessment situations

The examination comprises two parts: one on journey planning and, a second one, on journey execution.

### Journey planning

The part of the examination on journey planning comprises the elements listed in the table below, elements related to the Operation of the Craft Module, such as:

No.	Competences	Examination elements	Category I - II
6.	2.1.1	Respect the principles of inland waterway shipbuilding and construction;	II
7.	2.1.2	Distinguish construction methods of craft and their behaviour in the water, especially in terms of stability and strength;	II
8.	2.1.3	Understand structural parts of craft and damage control and analysis;	II
9.	2.1.4	Take action to protect the craft's watertight integrity;	I
10.	2.2.1	Understand functionalities of craft equipment;	II
11.	2.2.2	Respect specific requirements for transport of cargo and passengers.	I

Elements are grouped in categories I and II according to their importance.

### Journey execution

Applicants are required to demonstrate that they are capable of executing a journey.

The individual elements to be tested and elements related to the Operation of the Craft Module can be found in the table below:

No.	Competences	Examination elements
6.	2.2.2	Check that the craft is ready for the journey in accordance with the regulations, and that the cargo and other objects have been stowed safely in accordance with the regulations;



# COMPETING

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