COURSE MANUAL

CARGO HANDLING, STOWAGE AND PASSENGER TRANSPORT

MANAGEMENT LEVEL

PROJECT: COMPETING
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AUTHOR: STC Group – Rotterdam
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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 Cargo handling, stowage and passenger transport 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 Cargo handling, stowage and passenger transport for 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 be able to plan and ensure safe loading, stowage, securing, unloading and care of cargoes during the voyage, to plan and ensure the stability of the craft and to plan and ensure safe transport of and care for passengers during the voyage including providing direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV to Regulation (EU) No 1177/2010.

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1. GENERAL INFORMATION

1	**Aim**	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 – Cargo handling, stowage and passenger transport at Management Level.
2	**Objective**	Provide training and practical guidance for trainees in order to be able to plan and ensure safe loading, stowage, securing, unloading and care of cargoes during the voyage, to plan and ensure the stability of the craft and to plan and ensure safe transport of and care for passengers during the voyage including providing direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV to Regulation (EU) No 1177/2010.
3	**Entry standards**	See Directive (EU) 2017/2397 - Annex 1.
4	**Course certificate**	On successful completion of the course, a document may be issued, stating that the holder graduated this learning module.
5	**Course intake limitation**	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.).
6	**Staff requirements**	The trainer should meet the requirements of Directive(EU) 2017/2397, Art. 18.
7	**Training facilities, equipment and teaching aids**	The theoretical part of the course requires a classroom 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.
8	**Learning outcomes**	The Boatmaster shall be able to plan and ensure safe loading, stowage, securing, unloading and care of cargoes during the voyage, to plan and ensure the stability of the craft and to plan and ensure safe transport of and care for passengers during the voyage including providing direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV to Regulation (EU) No 1177/2010. At the end of the course the trainee shall be able to: • understand relevant national, European and international regulations, codes and standards concerning the operation of transporting cargoes; • compose stowage plans including knowledge of loading cargoes and ballast systems in order to keep hull stress within acceptable limits; • control loading and unloading procedures with regard to safe transport; • differentiate various goods and their characteristics in order to monitor and ensure safe and secure loading of goods as laid down in the stowage plan; • respect the effect on trim and stability of cargoes and cargo operations; • check the effective tonnage of the craft, use stability and trim diagrams and stress calculating equipment, including ADB (Automatic Data Base) to check a stowage plan; • understand relevant national, European and international regulations, codes and standards concerning the transportation of passengers; • arrange and monitor regular exercises on safety as laid down in the (safety) muster list in order to guarantee safe behaviour in potential situations of danger; • respect impacts on stability of the passenger vessel in relation to weight distribution of passengers, behaviour and communication with passengers; • define and monitor onboard risk analysis of limited access for passengers as well as compile an effective onboard protection system in order to prevent unauthorised access; • analyse reports given by passengers (i.e. unforeseen occurrences, defamation, vandalism) in order to react appropriately.
9	**Assessment & evaluation**	Minimum requirements for assessment & evaluation of the trainees for graduating from 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 Cargo handling, stowage and passenger transport at Management Level course, and has been arranged under the eleven 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 under point 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 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.

Competence 3.1.1 Understand relevant national, European and international regulations, codes and standards concerning the operation of transporting cargoes			
Learning objective			
Learning outcomes			
Required equipment			
Lesson structure			
Learning activity	Didactical method (ABC method)	Materials	Time

Competence Chapter 1: 3.1 The Boatmaster shall be able to plan and ensure safe loading, stowage, securing, unloading and care of cargoes during the voyage	
Learning objective	• national and international regulations • create stowage plans and be aware of limitations • securing cargo • measure the cargo weight • communication with different partners
Learning outcomes	The student is able to handle the cargo operations in accordance with the regulations and is able to inform all partners during the operation. The student knows how to act in a responsible and leading manner.
Required equipment	Classroom Presentation options Internet options
Practical objective	ERTB-ML, cargo handling and stowage

Competence Chapter 3: 3.3 The Boatmaster shall be able to plan and ensure safe transport of and care for passengers during the voyage, including providing direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV of Regulation (EU) No 1177/2010	
Learning objective	Regulations specific to passenger transport Safety regulations for the crew and passengers Medical first aid Standard communication for passenger transport Leadership
Learning outcomes	The student is able to act as responsible Boatmaster in passenger transport. This course part is a specialisation for passenger transport which is needed to work on these types of vessels.
Required equipment	Classroom Presentation options Internet options
Practical objective	ERTB-ML, passenger transport

2.2 Background materials

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

2.3 Practical activities

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

(Simulator) exercises
Practical exercises on board of a (training) vessel or in an applicable IWT ship cargo 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 presenting 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 participates actively.

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 teamwork 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 on which the students can be tested.

2.4 Classroom facilities and educational tools

The theoretical part of the course requires a classroom 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 Cargo handling, stowage and passenger transport - Management Level are:

The Boatmaster shall be able:

- to plan and ensure safe loading, stowage, securing, unloading and care of cargoes during the voyage;
- to plan and ensure the stability of the craft;
- to plan and ensure safe transport of and care for passengers during the voyage including providing direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV to Regulation (EU) No 1177/2010.

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.

The Illias platform provides examples of assessments for the separate competences for Cargo handling at Management Level.

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 in Annex I, the minimum requirements for certification as a boatmaster are as follows:

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 respectively. 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 CARGO HANDLING - ML is presented in Annex 4 of this document if necessary, which is linked to the European Standard for Qualifications in Inland Navigation (ES-QIN), Part I, Chapter 2, Point 3 Cargo handling, stowage and passenger transport[1].

COMPETENCES OF CARGO HANDLING – ML

The numbering of the chapters is in accordance with the Standards for competences for Management level - 3. CARGO HANDLING, STOWAGE AND PASSENGER TRANSPORT.

ML 3 Cargo handling, stowage and passenger transport

4.1 The Boatmaster shall be able to plan and ensure safe loading, stowage, securing, unloading and care of cargoes during the voyage

Competence	Knowledge and skills
1. The Boatmaster shall be able to understand relevant national, European and international regulations, codes and standards concerning the operation of transporting cargoes.	1. Knowledge of the national, European and international regulations involving loading, unloading and transport operations. 2. Ability to apply relevant rules and standards for logistics and multimodal transport.
2. The Boatmaster shall be able to compose stowage plans including knowledge of loading cargoes and ballast systems in order to keep hull stress within acceptable limits.	1. Knowledge of the operational and design limitations of dry cargo (e.g. container) craft and tanker vessels (N, C, G). 2. Ability to interpret limits for bending moments and shear forces. 3. Knowledge of use of stowage and stability software. 4. Ability to compose stowage plans, including the use of stowage and stability software.
3. The Boatmaster shall be able to control loading and unloading procedures with regard to safe transport.	1. Knowledge of the operational and design limitations of dry cargo (e.g. container) craft and tanker vessels (N, C, G). 2. Ability to interpret limits for bending moments and shear forces. 3. Knowledge of use of stowage and stability software. 4. Ability to compose stowage plans, including the use of stowage and stability software. 5. Knowledge of the possible detrimental effects of inadequate cargo handling. 6. Ability to use the technical means for handling cargoes in/from craft and ports, and labour safety measures during their use.
4. The Boatmaster shall be able to differentiate various goods and their characteristics in order to monitor and ensure safe and secure loading of goods as laid down in the stowage plan.	1. Ability to establish procedures for safe cargo handling in accordance with the provisions of the relevant safe working regulations. 2. Knowledge of effective communication and working relationships with all partners involved in loading and unloading procedures.

4.2 The Boatmaster shall be able to plan and ensure the stability of the craft

Competence	Knowledge and skills
1. The Boatmaster shall be able to respect the effect on trim and stability of cargoes and cargo operations.	1. Knowledge of watertight integrity and stability for all types of cargo and craft. 2. Ability to use instruments to correct trim and stability.
2. The Boatmaster shall be able to check the effective tonnage of the craft, use stability and trim diagrams and stress calculating equipment, including ADB (Automatic Data-Base) to check a stowage plan.	1. Knowledge of dedicated software to calculate stability, trim and stress. 2. Ability to determine stability, trim and stress tables, diagrams and stress-calculating equipment.

4.3 The Boatmaster shall be able to plan and ensure safe transport of and care for passengers during the voyage including providing direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV of Regulation (EU) No 1177/2010

Competence	Knowledge and skills
1. The boatmaster shall be able to understand relevant national, European and international regulations, codes and standards concerning the transportation of passengers.	1. Knowledge of the applicable regulations and conventions regarding passenger transport. 2. Ability to ensure safe embarking and disembarking of passengers and their care during the voyage, with special attention to persons needing assistance, and direct assistance to disabled persons and persons with reduced mobility in accordance with the training requirements and instructions of Annex IV of Regulation (EU) No 1177/2010. 3. Ability to control proceedings in the case of leakage, fire, man over board, collision and evacuation, including crisis and crowd management.
2. The boatmaster shall be able to arrange and monitor regular exercises on safety as laid down in the (safety) muster list in order to guarantee safe behaviour in potential situations of danger.	1. Knowledge of responsibilities under international and national regulations affecting the safety of the vessel, passengers and crew. 2. Ability to implement shipboard personnel management and training with respect to safety. 3. Apply medical first aid on board vessel.
3. The Boatmaster shall be able to respect impacts on stability of the passenger vessel in relation to weight distribution of passengers, behaviour and communication with passengers.	1. Knowledge of and compliance with the limitation of the number of passengers according to the passenger vessel certificate. 2. Knowledge of safety and security systems preventing unauthorised access. 3. Ability to organise watchkeeping.
4. The Boatmaster shall be able to define and monitor on-board risk analysis of limited access for passengers as well as compile an effective on-board protection system in order to prevent unauthorised access.	1. Knowledge of and compliance with the limitation of the number of passengers according to the passenger vessel certificate. 2. Knowledge of safety and security systems preventing unauthorised access. 3. Ability to organise watchkeeping (i.e. night watch) systems with respect to safety and security.
5. The Boatmaster shall be able to analyse reports given by passengers (i.e. unforeseen occurrences, defamation, vandalism) in order to react appropriately.	1. Knowledge of passenger rights and complaints from passengers, and of risks connected to passenger transport for the environment. 2. Ability to prevent environmental pollution by passengers and crew. 3. Ability to handle complaints and conflict management. 4. Ability to communicate with shipboard personnel and all interacting parties.

5. EFFECT ON THE HUMAN ELEMENT ON SUSTAINABLE SHIPPING

The human activities of deck crews on board of ships have a direct relation with the 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.

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.

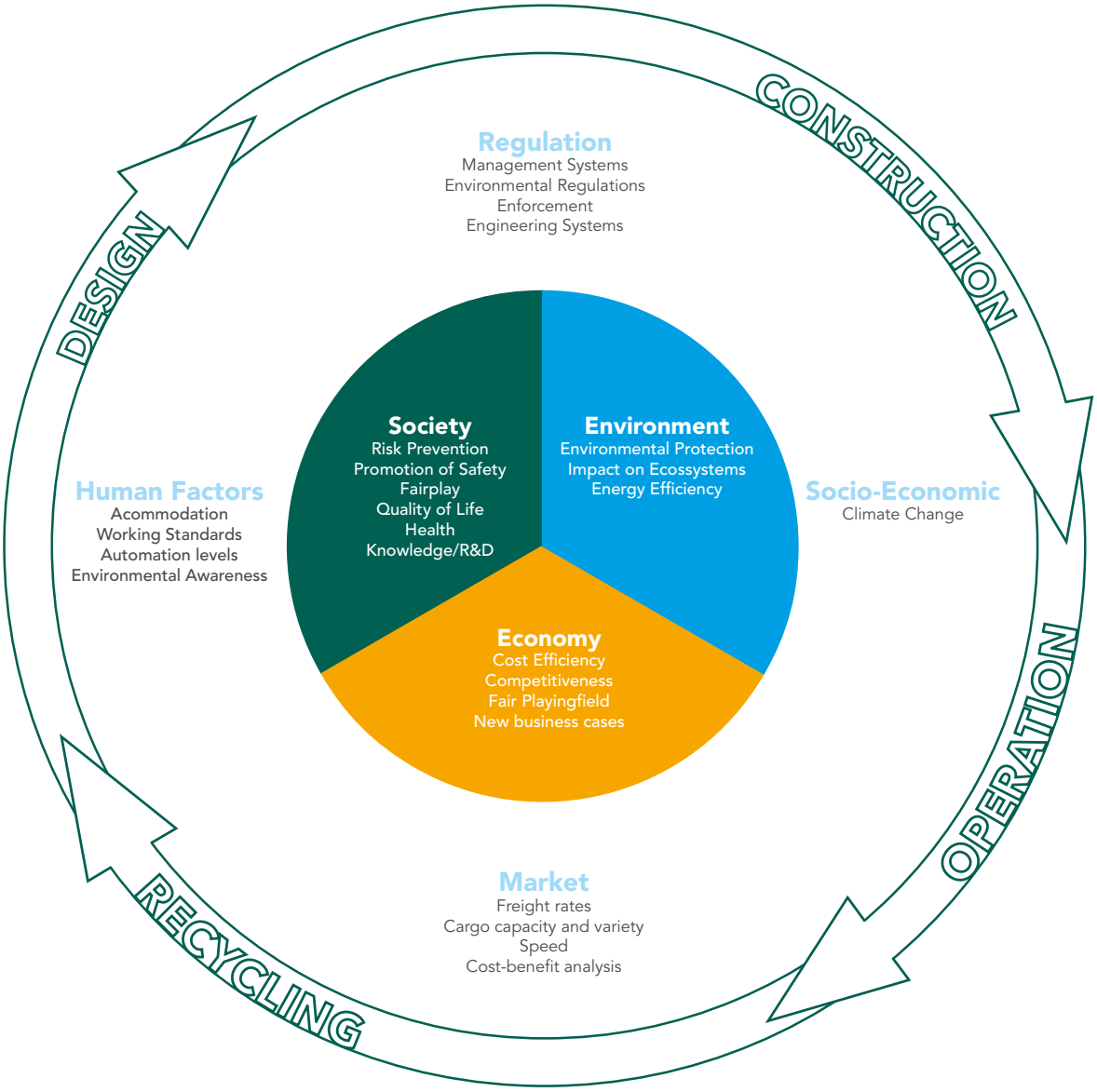

Figure 1 https://www.emsa.europa.eu/implementation-tasks/environment/sustainable-toolbox.html?start=10

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 the decision making of experts 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 help 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

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.[1]

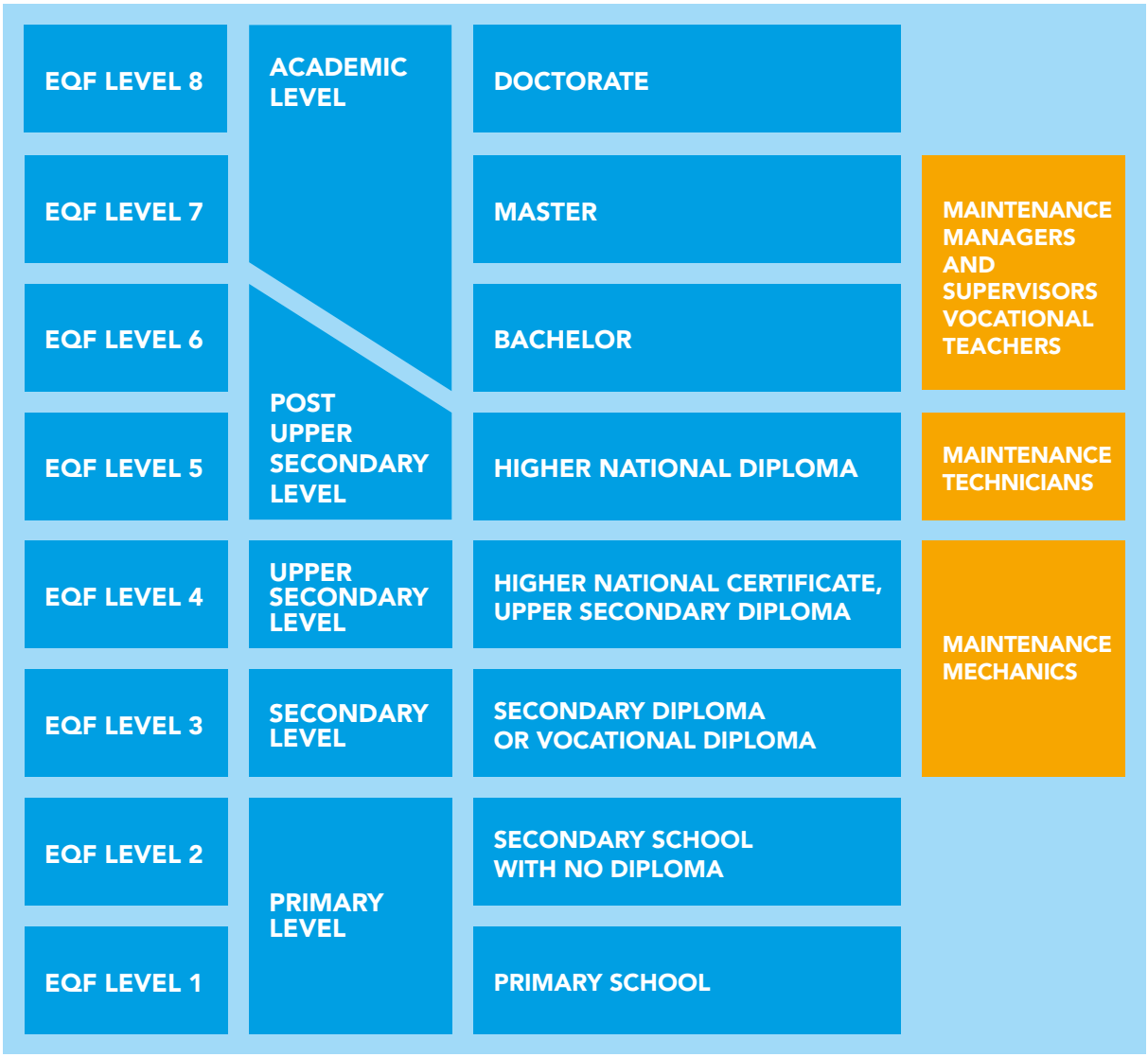

Figure 1 EQF levels compared with achieved education and maintenance personnel positions

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

Inland waterway transport (IWT) plays an important role in the EU in cargo exchange. Especially at the international level in the network of the European waterways. On the one hand, IWT 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 jobs 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.

Germany	DQR Deutscher Qualifikationsrahmen für lebenslanges Lernen	www.dqr.de
The Netherlands	NLQF Nationaal Coördinatiepunt	www.nlqf.nl
Romania	anc Autoritatea Națională pentru Calificări	www.anc.edu.ro
Slovakia	TREXIMA PEOPLE . PROFESSION . PROSPERITY	www.treXima.sk/new

Table 1 Overview of national organisations in the EQF context

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 QFs (NQFs). 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 jobs 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 oral and written forms and consists of various areas of IWT. The Department of Water Transport at the University of Zilina educates students for higher job positions (EQF 6, 7, 8) in IWT. 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 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 at 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 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

Cargo handling and stowage

- Chapter 1 of the integrated report Cargo handling and stowage
- PowerPoint presentations, ILIAS platform
- Question pool OL, ILIAS platform
- Film material, ILIAS platform
- ERTB OL: Cargo handling and stowage
- CESNI (21) 25
- CESNI/QP (21) 20 rev. 23 September 2021
- INeS: www.ines-danube.info / www.ines.info

Passenger transport

- Chapter 2 of the report Cargo handling and stowage
- PowerPoint presentations, ILIAS platform
- Question pool OL, ILIAS platform
- Film material, ILIAS platform
- ERTB OL: Assist the management of the craft in providing services to passengers

ANNEX 2

Practical scenarios

Scenario 1

1.1.1.2 During loading or unloading operations of the ship, you have to take care that this operation is done in a safe way and that the ship is stable and safe.

The Practical Assignment assesses all the necessary knowledge and skills of the competence to take care of the operation process of loading or unloading:

Practical assessment on taking care of the process of loading an inland dry cargo vessel with a bulk cargo (coals or ore)

What are the things that will need your attention during the process
Inform and check that the ship's crew know exactly what to do during the process.
Make a plan for the process, how to load the ship with regard to stability and stresses on the hull.
Make sure your ship is able to load the cargo (is your ship equipped for the cargo).
Check that the process is in compliance with laws and regulations.
Check that the process is done safely for humans and the environment.
Take care of filling in the papers/forms that are needed during the process.
Inform and keep up the communication with the loading master.

Scenario 2

1.1.1.2 During loading or unloading operations of the ship, you have to take care that this operation will be done in a safe way and that the ship is stable and safe.

The Practical Assignment assesses all the necessary knowledge and skills of the competence to take care of the operating process of loading or unloading:

Practical assessment on taking care of the process of unloading an inland container vessel with containers with dangerous goods.

What are the things that will need your attention during the process
Inform and check that the ship's crew know exactly what to do during the process.
Make a plan for the process, how to unload the ship with regard to stability and stresses on the hull.
Check if the process will be carried out in compliance with laws and safety regulations.
Check that during the operation the ship's stability and stresses to the hull are within acceptable limits.
Be in control of the whole process, including checking the ship's crew and their work on the process and their safety.
Take care of the administration of the process that the right containers are unloaded to shore or to other vessels.
If necessary, stop the process when needed (too much stress on the ship, instability) and take action to avoid dangerous situations).
If a container is damaged or leaking, tell the crew to wear the correct and safe protective equipment and inform the authorities.
Inform and keep up communications with the loading master and the personnel responsible for unloading the ship to shore or to another vessel.

Scenario 3

1.1.1.2 During loading or unloading operations of the ship, you have to take care that this operation will be done in a safe way and that the ship is stable and safe.

The Practical Assignment assesses all the necessary knowledge and skills of the competence to take care of the operating process of loading or unloading:

Practical assessment on taking care of the process of loading an inland tanker vessel.

What are the things that will need your attention during the process
Make a plan for the complete process, ensuring that at all times the process is in compliance with the law, regulations and safety procedures.
Instruct and inform the ship's crew about the operation and what task they have in the process.
After landing on the Jetty report to the control room and arrange the terms for the loading process and record it on paper.
Check if your pipelines, valves and tanks are connected in the right way to start loading.
Check if the connection from the Jetty to the ship's manifold has been made and that it is safe and sound to start loading.
Check that the ship's crew is outfitted with and using the correct personal protective equipment.
Take care that at all times there is communication with the loading master on the Jetty and the crew on board.
Be in control of the complete process and check that the crew is taking care of their tasks. Ensure that the stability and stresses to the ship are within the acceptable limits.
Take care of the administration of the complete process.

Scenario 4

1.1.1.2 Before loading the ship, you have to take care that this next cargo can be placed in the cargo hold and that your cargo hold is ready for this “new” product.

The Practical Assignment assesses all the necessary knowledge and skills of the competence to take care of preparation for the next freight

Practical assessment on taking care of the process of preparing to load the new cargo.

What has to be arranged before the ship can be loaded with the new cargo.
Check if your ship is built and outfitted for the cargo; can you load this particular cargo.
Check the characteristics of the former load and the new load and check them as to compliance with the law, regulations, safety and environmental rules.
Check if the cargo hold/hatches needs/need to be washed or cleaned to load the new cargo.
Make a plan for the cleaning method of the cargo hold/ hatches and further preparation of the vessel for the new cargo.
Inform the crew about cleaning the cargo hold/hatches and start the operation.
Check and monitor if the cleaning operation is carried out correctly and safely. Put away the cleaning materials and apparatus.
When the process is done, check the cargo hold/hatches and when this is done, report to the loading master or Client that you are ready.
Take care of the administration of the complete cleaning operation.
Compliment the crew with the work that they have done.

Scenario 5

1.1.1.2 During loading and unloading the ship, you have to take care that the containers can be loaded or unloaded and that the containers are freely reachable for the crane.

The Practical Assignment assesses all the necessary knowledge and skills of the competence to take care of the process of loading/unloading the containers:

Practical assessment on taking care of the process of loading/unloading the container.

What are the things that you will need to do while loading/unloading containers.
Remove the stackers or twistlocks from the corner castings after removing the container on top to give access for the (crane) spreader.
Check mooring lines during the process of loading/ unloading.
Place the stackers or twistlocks for the containers to be loaded.
Check if the containers are not damaged, leaking or polluted when they are loaded/unloaded on board.
Check if the right container is removed or loaded according to the plans and the place in the cargo hold.
Pass the identification numbers of the containers on to the skipper so he/she can enter the numbers in the computer.
Check the stability and the stresses of the ship during the process of loading and unloading.
Check that during this process the ship will not be damaged by bumping containers against the cargo hold, cargo floor, hatches or the bulb.
Keep in mind to work safely.

ANNEX 3

Standards for practical examination for obtaining a certificate of qualification as a boatmaster - module 3 - cargo handling

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 the 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 Cargo handling module, such as:

No.	Competence	Examination elements	Category I - II
12.	3.1.1	understand relevant national, European and international regulations, codes and standards concerning the operation of transporting cargoes;	II
13.	3.1.2	compose stowage plans including knowledge of loading cargoes and ballast systems in order to keep hull stress within acceptable limits;	I
14.	3.1.3	control loading and unloading procedures with regard to safe transport;	I
15.	3.1.4	differentiate various goods and their characteristics in order to monitor and ensure safe and secure loading of goods as laid down in the stowage plan;	II
16.	3.2.1	respect the effect on trim and stability of cargoes and cargo operations;	I
17.	3.2.2	check the effective tonnage of the craft, use stability and trim diagrams and stress calculating equipment, including ADB (Automatic Data-Base) to check a stowage plan;	I
18.	3.3.1	understand relevant national, European and international regulations, codes and standards concerning the transportation of passengers;	I
19.	3.3.2	arrange and monitor exercises on safety as laid down in the (safety) muster list in order to guarantee safe behaviour in potential situations of danger;	II
20.	3.3.3	communicate with passengers in emergency situations;	I
21.	3.3.4	define and monitor on board risk analysis of limited access for passengers as well as compile an effective on board protection system in order to prevent unauthorised access;	II
22.	3.3.5	analyse reports given by passengers (i.e. unforeseen occurrences, defamation, vandalism) in order to react accordingly.	II

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

Annex II, Chapter V of the aforementioned Delegated Directive includes Standards for the additional module on supervision in the context of the practical examination for obtaining a certificate of qualification as a Boatmaster.
Candidates who have neither completed an approved training programme based on the standards of competence for the operational level, nor passed an assessment of competence by an administrative authority aimed at verifying that the standards of competence for the operational level are met, have to pass this module.
The requirements below need to be met in addition to those referred to under the standards for the practical examination for obtaining a certificate of qualification as a Boatmaster.
The individual elements to be tested, elements related to the Cargo handling module, can be found in the table below:

No.	Competence	Examination elements	Category I - II
10	0.3.3	use methods to determine the amount of cargo loaded or discharged;	II
11	0.3.3	use methods to determine the amount of cargo loaded or discharged.	II

ANNEX 4

A. Competences of Cargo handling, stowage and passenger transport

The aim of this annex is to set out the thematic content of the competences of Cargo handling, stowage and passenger transport at Management Level as indicated in Chapter 4, if necessary.

COMPETING

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