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## Living and working conditions in inland navigation in Europe

Rob de Leeuw van Weenen  
Janos Ferencz  
Shirleen Chin  
Wouter van der Geest

Sectoral  
Activities  
Department

**SECTORAL ACTIVITIES PROGRAMME**

**Working Paper**

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**Rob de Leeuw van Weenen, Janos Ferencz, Shirleen Chin, Wouter van der Geest**

Working papers are preliminary documents circulated  
to stimulate discussion and obtain comments

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## Preface

The International Labour Organization is the specialized agency of the United Nations system that is concerned with ensuring decent work for all. Within the ILO, the Sectoral Activities Department (SECTOR) promotes decent work by addressing social and labour issues in specific economic sectors, both at international and national level. ILO's interest in conditions of work in the inland waterways sector dates back more than 90 years to the adoption of the Hours of Work (Inland Navigation) Recommendation, 1920 (No.8).

Today, inland navigation is one of the most important modes of transport in many regions, with its low cost and low environmental impact. However, little is known about the working and living conditions of the crews on board the vessels in the inland navigation sector. The fact that many inland navigation vessels cross borders almost on a daily basis means that crews may be subject to different laws and regulations, and sometimes may even fall through the gaps in the laws and regulations that protect onshore workers from other sectors. Furthermore, the current global economic and financial crisis has led to new trends and developments in this sector which necessitates special consideration of the working and living conditions of these men and women.

This study explores various aspects of the inland navigation sector in the European region, addressing all the essential aspects in relation to the working and living conditions of the crews on board the vessels. It covers the laws and regulations pertaining to the minimum requirements for working on board, conditions of service, occupational safety and health, social security and enforcement issues. The study attempts to analyse fragmented and overlapping regulatory frameworks and institutions involved in this sector, and proposes ways to fill the gaps among the various regulatory frameworks.

We would like to thank Mr. Rob de Leeuw van Weenen (ILO consultant) and his colleagues for their work, as well as to Brandt Wagner, Hyunsoo Yoon and Stewart Inglis (ILO Sectoral Activities Department) for their inputs. We also express sincere gratitude to Mr. Nick Bramley, Mr. Michiel Koning, Mr. Jörg Rusche and Ms. Cécile Tournaye for their valuable comments on the study.

Ms. Alette van Leur  
Director Sectoral Activities Department

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## Terms and descriptions

The table below gives a description of terms used throughout this study.

<b>Term</b>	<b>Description</b>
Barge	A flat-bottomed craft, with or without its own mechanical means of propulsion, used for the transportation of heavy cargo on rivers and canals.
Boatmaster	A person, who has the necessary aptitude and qualifications to navigate a vessel on inland waterways, as well as the general responsibility for the vessel and its navigation.
Boatman	A person working on a vessel operating on inland waterways. He will also be identified as a "crew member" or worker.
Crew member	Any person working on a vessel operating on inland waterways, including the boatmaster.
European Social Dialogue Committee	This Committee was established by the European Commission in 1999. It represents the employers (European Barge Union (EBU) and European Skippers' Organization (ESO)) and the employees (European Transport Workers' Federation (ETF)). Together, they participate in the inland water transport sector's European social dialogue.
Helmsman	A person responsible for steering the vessel.
Mobile worker	Any worker employed as a member of travelling personnel by an undertaking which operates transport services for passengers or goods by inland waterway.
Personal service record	A document containing general information on the qualifications of a crew member, including but not limited to diplomas obtained and medical certificates.
Rhine Patent	A licence needed by at least one of the crew members, in order to sail on the Rhine.
River Commissions	This term refers to the three river commissions in this study: the CCNR, DC and ISRBC.
Self-employed worker	A person, who is not registered as an employee for social security purposes, also known as an owner-operator.
Vessel	Floating craft designed for the carriage of goods or public transport of passengers by navigable inland waterways.
Worker	Any person who undertakes genuine and effective work for which he is paid under the direction of someone else

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## List of abbreviations

AIS	Automatic Identification System
CCNR	Central Commission for the Navigation of the Rhine
CAO	<i>Collectieve Arbeidsovereenkomst</i> (Collective Employment Agreement)
CEVNI	The European Code for Inland Waterways
DC	Danube Commission
EEA	European Economic Area
EBU	European Barge Union
EDINNA	Education in Inland Navigation
ESO	European Skippers' Organisation
ETF	European Transport Workers' Federation
EU	European Union
ITF	International Transport Workers' Federation
ISRBC	International Sava River Basin Commission
IWT	Inland waterway transport
LKR	Local knowledge requirement
NIAIDES	Navigation and Inland Waterway Action and Development in Europe
NELI	Cooperation Network for Logistics and Nautical Education
OSH	Occupational Safety and Health
PLATINA	Platform for the implementation of NIAIDES. A consortium of 23 different players in the inland navigation field from nine different EU member States. Its main objective is to support the European Commission, EU member States and third countries in the implementation of the NIAIDES action programme.
RIS	River Information Services
RIVM	Dutch National Institute for Public Health and Environment
RPR	<i>Rijnvaartpolitie reglement</i> (Police Regulations for the Navigation of the Rhine)
RVIR	Rhine Vessels Inspection Regulations
UNECE	United Nations Economic Commission for Europe
UWV	Uitvoeringsinstituut Werknemersverzekeringen ("Employee Insurance Agency")



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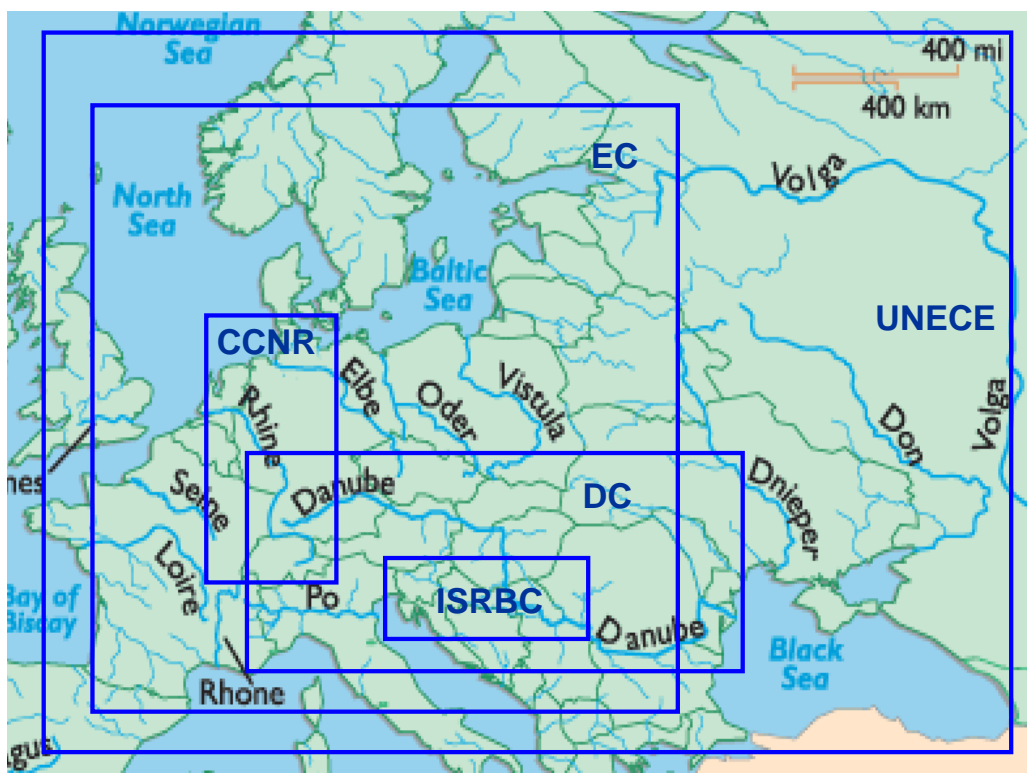
# 1. Introduction

## 1.1. Background

Inland waterway transport (IWT) is cheap, sustainable and reliable. It uses about one-tenth of the energy consumed by trucks and half that used by trains.<sup>1</sup> As a result of increasing globalization, the IWT sector has regrettably undergone some negative changes. In addition, the international, regional and national instruments protecting workers in inland navigation are relatively dispersed and diverse. This fragmentation is the result of different and overlapping jurisdictions governing the international waterways in the European region, such as the Rhine, the Danube and the Sava.

Within Europe, there are a number of bodies that regulate the labour conditions of IWT workers. Among them, the United Nations Economic Commission for Europe (UNECE), the EU, the CCNR, the Danube Commission (DC) and the International Sava River Basin Commission (ISRBC) (see Figure 1).<sup>2</sup>

Figure 1. Map with main river systems in EU, showing coverage of different bodies



## 1.2. Scope of the work

The aim of the present study is twofold: first, it will provide a comprehensive overview of the current laws, regulations and measures governing living and working conditions on vessels engaged in inland navigation in Europe; second, it will highlight gaps in the

<sup>1</sup> International Transport Workers' Federation, "Inland Navigation Section" <[http://www.itf.org.uk/general/section\\_brochures/english/index.htm](http://www.itf.org.uk/general/section_brochures/english/index.htm)> accessed 30 August 2013.

<sup>2</sup> The CCNR, DC and ISRBC will be collectively called "River Commissions".

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various regulatory systems and point to areas and policies that can be improved. The ultimate objective, therefore, is to search for ways to improve the working and living conditions of workers in the IWT sector. The geographical scope of the study will cover, to a large extent, Western Europe and other parts of Europe like Ukraine and the Russian Federation or, in other words, the UNECE countries.

### **1.3. Contents and structure of the report**

The content of this report is structured to give a comprehensive overview of all aspects related to the living and working conditions of workers in inland navigation across Europe. Accordingly, the first chapter will provide a general overview of labour in the European IWT sector, with emphasis on current trends, personnel, vessels and social dialogue. Chapter 3 will focus on the minimum requirements for taking up employment in the IWT sector, particularly the minimum age, medical fitness, education, and professional qualifications. The working conditions will be explored in greater detail within the ambit of Chapter 4. Here, the spectrum of employment agreements, wages, working hours and manning levels will be analysed. Considering that labour in the IWT sector is exposed to a high number of risks, it is also imperative to examine health and safety-related issues. Therefore, Chapter 5 will address the safety standards and health-monitoring issues in European inland navigation, as well as the laws and regulations governing accidents, medical care, accommodation and food. Chapters 6 and 7 have a narrower scope, and are dedicated to the analysis of social security issues and, as a horizontal issue, the ability of the various regulatory bodies to effectively enforce the laws and regulations within their jurisdictions.

The research methodology invoked adopts a two-tiered approach for each of the above-mentioned areas of interest. Firstly, each subsection is built in a way that provides a general overview of the implementation status of the respective frameworks within Europe. Secondly, in order to provide a more detailed approach in the analysis of the issues at hand, the present study examines various levels of regulatory frameworks. These frameworks are divided into international (the UNECE) and regional (the EU and River Commissions) on the one hand and State-level practices on the other.

## **2. General overview**

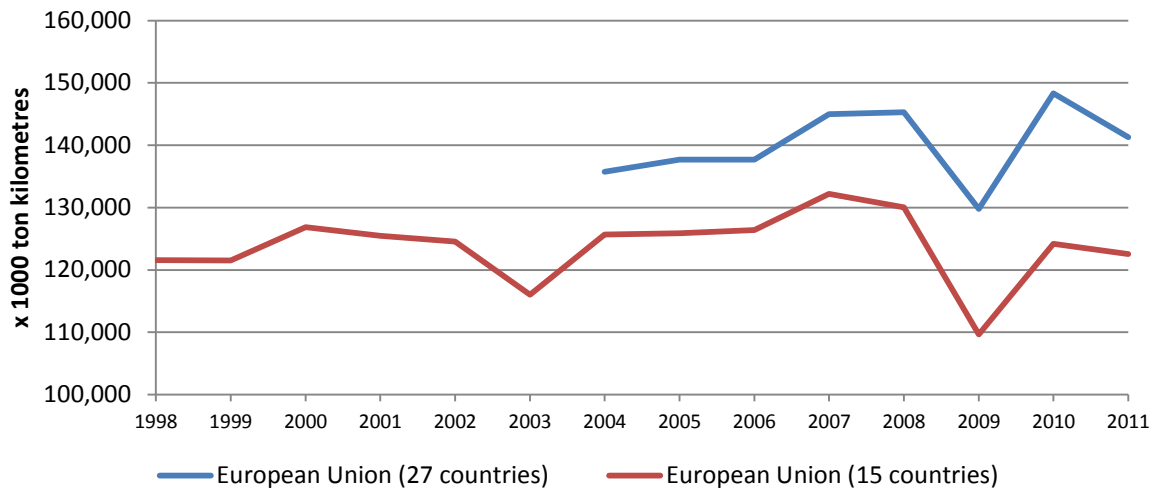
### **2.1. The inland navigation sector in Europe**

In Europe, IWT is an important mode of transport; the total network of inland waterways in the EU is 37,000 kilometres in length.<sup>3</sup> Twenty-one of the current 28 EU member States have inland waterways, and 13 of them are interconnected by inland waterways. In 2011, 141 billion ton-kilometres were transported within the then EU member States, a 23.7 per cent increase since 1995. In 2008, just before the start of the current economic crisis, a total of 145 billion ton-kilometres were transported on the inland waterways of the EU. Compared to 1995, this is an increase of 27.2 per cent. Since the start of the economic crisis, the amount of cargo transported on inland waterways has shown a sharp decline, mainly due to less cargo being imported and exported. However, the sharp increase between 1995 and 2008 was mainly the result of the increasing amount of cargo

<sup>3</sup> European Commission, “Commissioner László Andor Welcomes Social Partner Agreement on Working Time for Inland Waterways”, (press release, 15 February 2012) <[http://europa.eu/rapid/press-release\\_MEMO-12-107\\_en.htm](http://europa.eu/rapid/press-release_MEMO-12-107_en.htm)> accessed 23 August 2013.

transported and the scale increase in inland navigation. Figure 2 shows the annual trend in inland navigation.

**Figure 2. Graph representing annual trend (billion ton-kilometres) in the EU-15 and EU-27<sup>4</sup>**



Source: Eurostat

IWT is only present in some parts of the EU, with the major share concentrated in two areas:

- the countries along the Rhine axis, representing two-thirds of all goods transported within the EU on inland waterways ; and
- the Danube and the main Danube Canal, representing approximately 9 per cent of EU traffic. (In 1999, traffic on the Danube was badly affected by the destruction of several bridges in Serbia, most notably three in Novi Sad, cutting the Danube in half as a transport corridor with traffic only possible on the higher or lower sections. As a consequence, international traffic on the Danube almost came to a halt. Clearing the river of debris and making it fully navigable took many years, and it is only now traffic is regaining strength, but is still less than half of what it was before 1999.)

<sup>4</sup>EU-15: Was the number of member countries in the European Union prior to the accession of ten candidate countries on 1 May 2004. The EU15 comprised the following 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, the United Kingdom. EU-27: Was the number of member countries in the European Union prior to the accession of Croatia on 1 July 2013. The European Union comprises the following 27 countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, the United Kingdom.

**Table 1. European countries' level of transport performance in bn. ton-km 2011 and modal split share of IWT**

Rank	Country	bn tkm (2011)	modal split share	Rank	Country	bn tkm (2011)	modal split share
1	Russian Federation	61,000	2.8%	9	Austria	2,123	4.2%
2	Germany	55,027	11.2%	10	Hungary	1,840	4.0%
3	Netherlands	46,411	36.7%	11	Slovakia	931	2.4%
4	Romania	11,409	21.7%	12	Serbia	726	10.0%
5	Belgium	9,251	18.5%	13	Croatia	692	5.7%
6	France	9,029	3.9%	14	Luxembourg	305	3.2%
7	Ukraine	7,365	1.7%	15	Poland	161	0.1%
8	Bulgaria	4,310	15.0%	16	Czech Republic	42	0.1%

Source: Eurostat data, State Statistics Committee of Ukraine, Russian Federal State Statistics Service and Statistical Office of Serbia.

Table 1 shows the transport performance of IWT in each country, in and outside the EU: 67.2 per cent of the total ton-km was produced within the EU, and 32.8 per cent outside of it (in the Russian Federation, the Ukraine and, to a much lesser extent, Serbia and Croatia). Table 1 also shows the modal split. This can be defined as the amount of cargo transported by inland waterways compared to the amount transported by all inland traffic modes (including roads, rails and pipelines). It can be concluded that there may exist a lot of potential in the Russian Federation as its modal split share is only 2.8 per cent.

## 2.2. Developments in inland navigation

A number of developments can currently be observed in IWT. These can be grouped as follows:

- technical innovations;
- greening of the fleet;
- scale increase.

### 2.2.1. Technical innovations

Labour in inland navigation is progressively influenced by the development of technologically-advanced machinery, which can ease (or even completely replace), the work of crews. For example, what used to be manual steering of a vessel is now being slowly replaced by the River Information Services (RIS). The RIS is a set of traffic management systems designed to optimize traffic and transport processes in inland navigation. By using RIS, the boatmaster is assisted in keeping track of the course and speed of the barge. Furthermore, RIS technology allows steering to be automated – the smallest touch can make a barge move. Even if RIS helps alleviate the boatmaster's job in steering the vessel, it does not eliminate the physical and manual aspect of their work, such as manoeuvring, mooring, loading and unloading. In the EU, framework Directive EC/2005/44 has been introduced to set the minimum requirements to enable cross-border compatibility of national systems *vis-à-vis* RIS.

As well as the RIS system, other vessels and objects can be detected through the Automatic Identification System (AIS) and radar, making IWT much safer.

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### 2.2.2. Greening of the fleet

Vessels are powered by diesel fuel. This produces greenhouse gases and pollutes the air due to the emission of nitrogen monoxide and dioxide (NOx), sulphur and particulate matter (PM), making asthma sufferers vulnerable and exacerbating heart disease and respiratory illness that could result in premature deaths. Therefore, addressing the emission levels of IWT is aimed at significantly reducing premature deaths caused by air pollution.

Some measures and innovations to green the fleet include:<sup>5</sup>

- diesel particle filters;
- catalysts;
- conversion to liquefied natural gas (LNG);
- diesel-electric and gas-electric engines;<sup>6</sup>
- additives to fuel; and
- differentiations in port dues (green vessels get a discount of up to 30 per cent).

As an example of the greening efforts introduced through reliance on LNG, in April 2013, the Dutch tanker *Greenstream* was put into service.<sup>7</sup> The tanker is unique because it is the first inland waterway vessel to be propelled solely by LNG. The use of LNG (instead of diesel) leads to “a reduction of 80 per cent in NOx, 100 per cent in SO<sub>2</sub>, 100 per cent in particles and 20 to 25 per cent in CO<sub>2</sub>”<sup>8</sup>

### 2.2.3. Scale increase

The scale of barges has progressively increased over the years and this trend continues. They once measured 50 metres in length; by today’s standards, such a vessel is considered small. The largest barges now reach 147 metres in length, are more than 20 metres wide and transport over 10,000 tons of cargo. On the Rhine, the largest single units are 135 metres long and 17 metres wide, carrying up to 6,000 tons. The scale increase makes vessels operate more efficiently. Since vessels are capital-intensive, they are used as much as possible and many of the newer ones operate all day. Those that operate round the clock have to meet strict standards of noise pollution. Crew members on board work in multiple shifts and rest according to their allocated times. The law requires that rest times are uninterrupted.

The manning requirements of various European and regional bodies are shown in Annex 2. It can be seen that the larger the vessel, the more crew is needed. However, by calculating the amount of cargo transported by each crew member (by dividing the cargo capacity of

<sup>5</sup> Panteia et al. 2013. *Contribution to impact assessment of measures for reducing emissions of inland navigation*.

<sup>6</sup> According to new vessel-building statistics and information about new vessels, diesel-electric engines are quite important at the moment.

<sup>7</sup> “Greenstream”, reprinted in *Maritime by Holland*, April/May 2013, p. 40.

<sup>8</sup> Ibid.

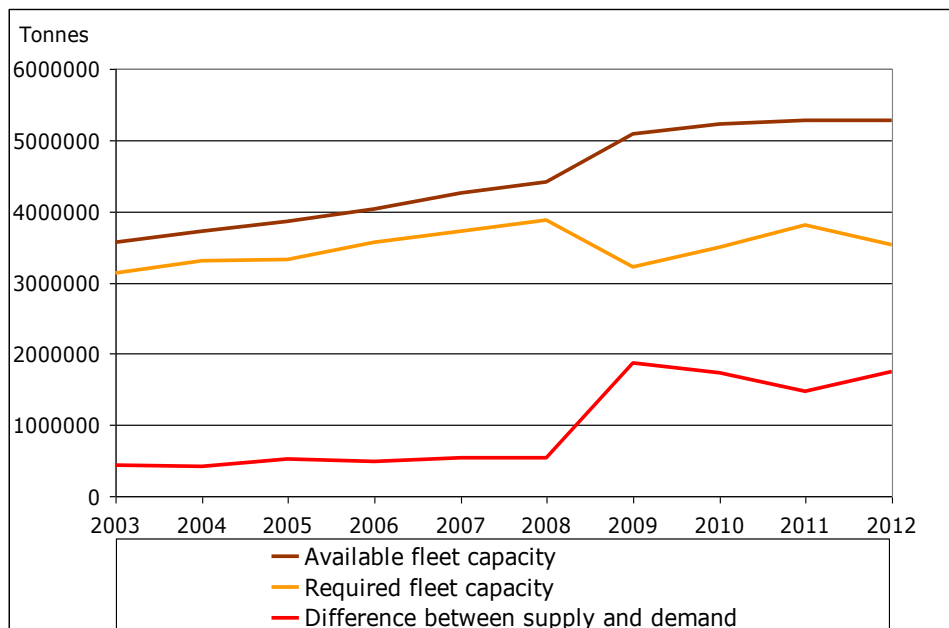


the vessel by the amount of crew members on board), it can be concluded that scale increase makes vessels operate more efficiently. A vessel of 86 metres long can carry about 1,600 tons and can be navigated by only two i.e. 800 tons per crew member. However, a vessel of 110 metres long needs three on board, can carry 3,600 tons of cargo i.e. 1,200 tons per crew member.

### 2.3. Economic crisis

As in other transport sectors, IWT has experienced a recession as a result of the recent economic crisis. This brought new trends in the commercial and financial calculus of IWT. For instance, the fleets that were modernized prior to the crisis are now worth half of the cost of their construction, even with all technology fitted. The economic crisis has also affected the traffic in inland waterways.<sup>9</sup> As new barges have been built, the total capacity of the fleet increased.<sup>10</sup> Figure 3 shows available fleet capacity on the Rhine in relation to the required fleet capacity. Since 2008, the required fleet capacity dropped due to the economic crisis (there was less cargo to be transported, while the fleet capacity increased sharply due to the scale increase and the high number of new vessels put into service in the years 2008 and 2009).

Figure 3. Transport on the Rhine and vessel capacity



Source: Panteia et al., 2013.

Competition within the sector is higher than before as owner-operators of vessels compete for business, thereby driving down prices and resulting in poorer working conditions. Figure 4 shows the decline of profits in the sector. The rise in 2011 was only due to the unusually low water level of the Rhine that year. Low water reduces the cargo capacity of

<sup>9</sup> Hans van der Werf, “Economic outlook of the market of Inland Water Transport” (presentation by the Secretary-General of CCNR 24 April 2013) <[http://www.ccr-zkr.org/files/documents/workshops/wrshp240413/03\\_HvanderWerf\\_en.pdf](http://www.ccr-zkr.org/files/documents/workshops/wrshp240413/03_HvanderWerf_en.pdf)> accessed 30 August 2013.

<sup>10</sup> Panteia, *Markttransparantie en de rol van tussenpersonen in andere sectoren ter inspiratie voor de binnenvaart* 2013.

the fleet and thus more vessels are needed to transport the same amount of cargo, causing prices to rise. In general, vessels longer than 86 metres make no profit at all when this happens. Smaller vessels still make some profits, but these too have declined since the start of the economic crisis.

**Figure 4. Book profits of vessels**



Source: Panteia et al. based on accountancy firm.

## 2.4. Personnel

The IWT market consists of small enterprises; in fact, it is dominated by micro-enterprises with less than 10 employees. In the Netherlands, for instance, a large portion of companies are independent undertakings with only two crew members on every vessel, limiting them to daytime-only or semi-continuous operations, and are most prevalent in the dry-cargo transport. About 90 per cent of companies have only one vessel, and just 5 per cent have more than two vessels. Multi-vessel-owning companies are more common in the more specialized forms of transport (tankers, containers, tugs, and passenger traffic).

Crew members can be divided into two groups: self-employed members and mobile workers. Self-employed members can be described as owner-operators, whether or not registered as employees for social security purposes, or as crew members and other shipboard personnel that are self-employed according to national definitions. Mobile workers are described as any worker employed as a member of travelling personnel by an undertaking that operates transport services for passengers or goods by inland waterway. Table 2 shows an overview of the scope of workers.

**Table 2. Scope of workers**

Employment status		Group of workers	Sub-group
Self-employed			Owner-operators not registered as employees for social security purposes
			Crew-members and other shipboard personnel that are self-employed according to national definitions
	Employees / Mobile workers		Owner-operators registered as employees for social security purposes
		The definition of "worker" ... covers any person who undertakes genuine and effective work for which he is paid under the direction of someone else <sup>a)</sup>	Workers of a member State
			Third country migrant workers

a) European Court of Justice, Case C-66/85.

Workers can either be workers from the State, or third party migrant workers. In the IWT sector, it is common practice to employ non-national workers, either from another European State (mostly from Eastern Europe) or beyond (increasingly from countries such as the Philippines).

In this context, the concept of *exploitant* must also be briefly considered. Under the CCNR framework, an *exploitant* is an entity that commercially operates the vessel, with or without owning it, but having the power to decide on the economic and commercial management of the vessel.<sup>11</sup> In other words, the *exploitant* is an enterprise that ensures the vessels are entrusted with commercial tasks. The domicile of the enterprise will determine which country has taxing rights, and where social security benefits may be claimed by its employees.<sup>12</sup>

### 2.4.1. Functions and profiles

In the IWT sector, there are three main functions. They are:

- boatmaster
- helmsman
- boatman.

Boatmasters are responsible for their vessel and crew; they are accountable for everything on their watch. A large part of their work involves navigating, but does not exclude work such as maintenance of the vessel. Furthermore, during loading and unloading, the boatmaster makes up the cargo schemes, especially for the loading of fluids, containers and heavy bulk (such as iron ore or steel). Schemes allow cargo to be loaded and unloaded without damaging the vessel and also allows for safe navigation.

The helmsman assists with navigation. Normally, they will also have a licence to navigate. However, unlike the boatmaster, they do not have the ultimate responsibility for the vessel and its crew members.

<sup>11</sup> CCNR Administrative Center for Social Security, "Decision Nr. 7", 26 June 2007, operative paragraph 1.

<sup>12</sup> Ibid. See also, for the Netherlands Tax Authority, "Convenant Belastingdienst: Binnenvaart - Annex on Normative Framework", 28 September 2011, p. 11.

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Like the helmsman, a boatman assists during navigation. They take care of the maintenance of the vessel and lend assistance to the boatmaster when the latter is mooring the vessel. Depending on their level of experience, boatsmen can be divided into three categories:

- able crewman/sailor
- ordinary crewman/deckman
- apprentice/cabin boy.

#### **2.4.2. Number of workers involved**

The top five countries with the highest IWT labour force in the EU are: the Netherlands, Germany, France, Luxembourg and Italy (mainly passenger transport). These countries represent around 67 per cent of the total IWT labour force in the EU. Together with Belgium and Romania, these are also the countries with the largest share of mobile workers, representing around 78 per cent of the total estimated in the EU (currently containing 28 countries). An overview of the number of mobile workers per country is presented in Annex 1.

When comparing data with numbers reported in 1997, IWT employment has seen a significant increase, especially in Luxembourg. The overall IWT labour force was around 433 that year. Many inland navigation companies have been shifting their offices and registered labour force to other member States, such as Luxembourg, in order to benefit from lower labour and social security costs: <sup>13</sup> approximately 20 per cent lower than Germany and the Netherlands. At this moment, around 2,500 employees work from Luxembourg.

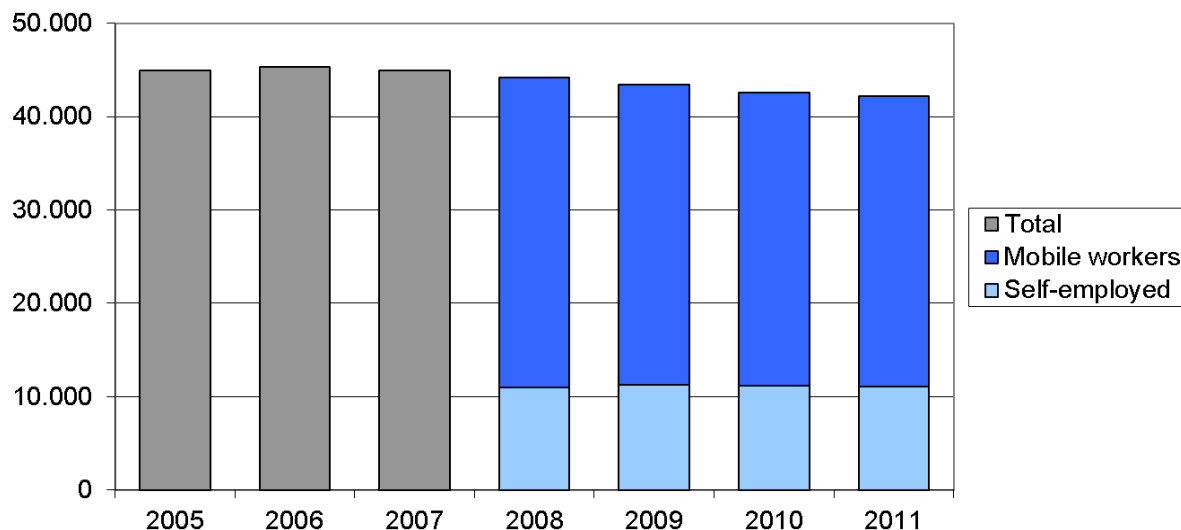
Luxembourg also has an increasing number of vessel registrations operating under its flag due to lower taxes for business and personnel compared to other countries. Its advantageous tax regime provides an incentive to the ship operators to domicile their enterprise there, resulting in a growing number of workers falling under the jurisdiction of Luxembourg. The advantages for the operators include the possibility of accelerated depreciation, tax credits for investments (for instance, in the form of global tax credit for the acquisition price of the vessel), and a low VAT (currently 15 per cent – the lowest in Europe). For the personnel working on board the vessels, the Luxembourg system provides for the taxation of income based on personal circumstances that divide the workers into tax classes. The income tax rate ranges, on a progressive basis, between 0 and 39 per cent, depending on the classification. The classification system is applied to any kind of worker who is resident in Luxembourg, and there is no separate classification for workers in inland navigation. For those who are non-resident, but operate in international traffic, the system provides the benefit of a lump-sum taxation regime.

Figure 5 shows the development of the total IWT employment (freight and passenger) for the period between 2005 and 2011 in the EU. The number of employees in IWT declined between 2008 and 2011. This is mainly the result of the decrease in the total number of mobile workers and could be a consequence of the financial crisis, where operators have less cargo to transport and a decreased demand for nautical personnel. Lower transport demand has also triggered IWT companies to switch the operational mode to one with less

<sup>13</sup> European Foundation for the Improvement of Living and Working Conditions, *Representativeness of the European social partner organizations: Inland Water Transport (IWT Study 2010)*.

operating hours, for example switching from continuous exploitation to semi-continuous mode or from semi-continuous mode to daytime navigation. This has also resulted in a lower demand for mobile workers.

**Figure 5** Development of the total IWT employment from 2005 to 2011 in EU-28, broken down by mobile workers and self-employed from 2008 to 2011



Source: Study on the costs and benefits of the implementation of the European Agreement on working time in inland waterway transport – A comparison with the status quo (Ecorys, 2013).

However, the number of self-employed has increased slightly since 2008. This is partly related to the increase in the number of new vessels ordered before the economic crisis that came into service between 2008 and 2011. Also, the self-employed have become more active in the actual navigation of vessels in order to reduce labour costs for hired nautical staff, to cope with reduced revenues.

Annex 1 provides a detailed overview of the estimated number of mobile workers and self-employed in the freight and passenger IWT sector for the year 2011. The total IWT employment in 2011 was estimated to be around 42,800, of which almost 29,500 were mobile workers in the EU-28.

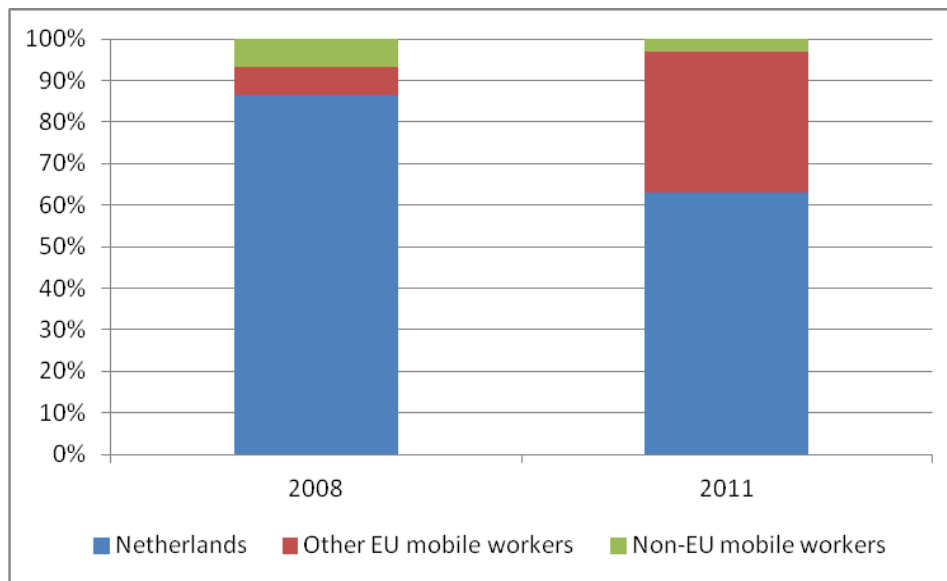
### 2.4.3. Labour force characteristics in the EU-28

Significant differences exist in the age distribution of mobile workers and the self-employed. The aging problem is seen more clearly in the self-employed than in mobile workers who, in general, tend to be younger. The self-employed are usually also the boatmasters. To become a boatmaster requires more experience than other IWT functions. The self-employed also stay longer in the IWT sector compared to the mobile workers, even after 65 years of age.

The share of foreign EU mobile workers in the IWT sector in the Netherlands and Germany has followed an increasing trend during the past years. A decline in the registered IWT employment in most of the Eastern European countries could partly be the result of the migration of Eastern European workers to Western Europe. In recent years, the share of non-EU mobile workers has been decreasing. For example, in the Netherlands, the register of service for non-nationals recorded in 2008 was 13.6 per cent of non-national mobile workers (from other EU countries, as well as non-EU countries). About half of these were non-EU mobile workers. Between 2008 and 2011, the number of non-EU mobile workers

decreased to 3 per cent in the Netherlands, while the number of non-national EU mobile workers increased to 34 per cent (see Figure 6).

**Figure 6. Distribution of area of origin of IWT mobile workers in the Netherlands**



The mobile workers from other EU countries mainly come from Eastern Europe. Nevertheless, it is expected that the percentage of non-EU mobile workers will decrease even further. In 2012, the Dutch Employee Insurance Agency (UWV) announced, in a notice to vessel owners<sup>14</sup>, that it will become more difficult to obtain work permits for workers from outside the European Economic Area (EEA). According to the UWV, employers first have to look for employees from the Netherlands or other EU countries. In addition, as of 1 January 2014, a work permit for employees from the EU member States of Bulgaria and Romania will no longer be required. This will make it easier for Dutch companies to hire personnel from these countries.

#### **2.4.4. Forecast of supply and demand of IWT labour force**

The required number of mobile workers is expected to increase in the long term. On the one hand, the number of smaller vessels is expected to decline, therefore, requiring less mobile workers. On the other hand, due to the increasing demand for transport in the future, more mobile workers will be needed. The IWT performance (in ton-kilometres) is expected to go up. The available labour force is expected to decrease in the long term due to ageing, creating a gap between the required amount of mobile workers and the available amount. Reasons for the gap are ageing and difficulties with the recruitment of young people due to unattractive prospects in the IWT sector.

## **2.5. Vessels**

The number of smaller vessels is expected to decrease in the coming years, and eventually level out at 500 to 1,000 vessels. However, the number of larger vessels will increase. As

<sup>14</sup> UWV, -- <[https://www.werk.nl/pucs/groups/public/documents/image/wdo\\_009695.pdf](https://www.werk.nl/pucs/groups/public/documents/image/wdo_009695.pdf)> accessed 10 October 2013.

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these vessels become more labour intensive, the demand for mobile workers in IWT is expected to grow accordingly.

With the number of small vessels decreasing, and the number of large vessels increasing, living conditions on board may improve as well. Modern vessels fulfil all the needs of a worker and are suitable for navigating all day, without producing too much noise. Regulations determine the amount of noise in the wheelhouse, the bedrooms and the living rooms.

## 2.6. Social dialogue

In general, three types of organizations can be identified:

- nautical organizations, dealing with infrastructure;
- social-organizations, dealing with small companies; and
- socio-economic organizations, dealing with shipping companies.

All of these organizations operate on a national basis. However, there is international collaboration among them. The socio-economic organizations for small companies work together in the European Skippers' Organization (ESO) and the organizations of shipping companies work together in the European Barge Union (EBU). The European Transport Workers' Federation (ETF) ensures the representation of smaller trade unions from 41 countries in Europe affiliated with transport workers in the inland navigation sector. Together, the ESO, EBU and ETF form the Sectoral Social Dialogue Committee.

The main achievements of the social dialogue partners concern working time issues, the creation of a level-playing field, as well as the harmonization of job profiles, occupations and qualifications and manning requirements<sup>15</sup>.

## 2.7. Vessel registration

As in the maritime industry, IWT is also influenced by the increasing tendency to re-flag the vessels, especially in the growing river cruise sector<sup>16</sup>. There are numerous reasons for changing the flag State of register, including: cheap registration fees, low to no taxes, freedom to employ cheap labour and indemnity insurance. In the absence of a genuine link between ownership of vessels and the flags they fly, there are limited possibilities to exert effective regulation in the industry. Accordingly, this results in the demise of legal certainty where a situation may develop into a complex set of legal relationships when the owner of the vessel may not necessarily be the operator, and where there is lack of clarity over the applicable legislation on board and, hence, lack of effective regulatory control. This is a case for concern when it comes to the standard of living and working conditions of IWT crew members.

<sup>15</sup> European Barge Union (EBU), *Annual report 07/08: Inland navigation – a vital part of logistics*, 2008.

<sup>16</sup> While the number in 1990 was 50 re-flagged ships/year, the annual number today stands at 250. Information obtained through communication with Mr. Nick Bramley, Chair ITF Inland Navigation Section, President ETF Inland Waterways Section, 25 November 2013 (available on request).

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Popular flag countries that appear on European inland waterways are Malta and Cyprus.<sup>17</sup> The presence of these flag States complicates the variety of employment regulations even further. Proposals put forth to eliminate this problem include not allowing registration in countries that are geographically not related to inland navigation, like Malta or Cyprus.<sup>18</sup>

## **2.8. Hierarchy among the UNECE, EU, CCNR, DC and ISRBC**

Whilst the UNECE has the biggest geographical scope, its resolutions, like Resolution No. 61, are not binding on its member States. Moreover, it has the lowest level of harmonization. In the EU, the IWT regulatory framework is quite weak. This is because of the rather fragmented legislative and institutional framework both regionally and domestically. Its IWT-related Directives are however binding on all EU member States. The CCNR, although having the smallest geographical scope, has the highest level of harmonization. A reason for this stems from its binding regulations. The DC Recommendations<sup>19</sup> and ISRBC Rules are like UNECE Resolutions – both are non-binding. Not surprisingly, the DC Recommendations usually draw inspiration from UNECE Resolution No. 61. Its provisions even mirror each other to a large extent.

Despite the evident overlaps, there is no clear-cut hierarchy among the five regulatory frameworks. The EU member States are bound by EU Directives while CCNR member States are bound by the CCNR Regulations. The CCNR and the EU Commission has a special agreement that establishes the level of cooperation between the two. The 2013 Administrative Arrangement concerning a Framework for Cooperation between the Secretariat of the CCNR and the Directorate-General for Mobility and Transport of the European Commission (DG Move) sets out the areas, forms and contents of cooperation.<sup>20</sup> The expertise of the CCNR is acknowledged by DG Move in so far as it concerns the elaboration and adoption at the technical level of standards in inland navigation. To this extent, the EU relies on the provisions of the CCNR to improve its regulatory framework. Non-EU member States are not bound by EU Directives and are forced to fall back on their own regulations to establish any binding force. This is not to say that the regulatory frameworks in Moldova, the Russian Federation or Ukraine are not in order. Besides having mature IWT regulations in place domestically, these countries can rely on the

<sup>17</sup> European Transport Workers' Federation, "Communication of the Commission on the promotion of inland waterways, NAIADES" (20 April 2006) <[http://www.europarl.europa.eu/meetdocs/2004\\_2009/documents/dv/tran20060420\\_09\\_hertogs\\_pres\\_en/tran20060420\\_09\\_hertogs\\_pres\\_en.pdf](http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/tran20060420_09_hertogs_pres_en/tran20060420_09_hertogs_pres_en.pdf)> (hereinafter "ETF Communication") accessed 16 October 2013.

<sup>18</sup> European Transport Workers' Federation, "Communication of the Commission on the promotion of inland waterways, NAIADES" (20 April 2006). <[http://www.europarl.europa.eu/meetdocs/2004\\_2009/documents/dv/tran20060420\\_09\\_hertogs\\_pres\\_en/tran20060420\\_09\\_hertogs\\_pres\\_en.pdf](http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/tran20060420_09_hertogs_pres_en/tran20060420_09_hertogs_pres_en.pdf)> (hereinafter "ETF Communication") accessed 16 October 2013.

<sup>19</sup> A new Convention might be created soon to make the DC's decisions binding.

<sup>20</sup> See Administrative Arrangement concerning a Framework of Cooperation between the Secretariat of the Central Commission for the Navigation of the Rhine and the Directorate-General for Mobility and Transport of the European Commission (22 May 2013) <[http://www.ccr-zkr.org/files/conventions/Administrative\\_Arrangement\\_CCNR\\_CE\\_en.pdf](http://www.ccr-zkr.org/files/conventions/Administrative_Arrangement_CCNR_CE_en.pdf)> accessed 20 October 2013.



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CCNR, DC and ISRBC to cooperate with each other to achieve harmonization.<sup>21</sup> For example, the CCNR and DC work together to harmonize regulatory documents such as those on navigation rules and the issuance of boatmasters' certificates.

### 3. Minimum requirements

#### 3.1. Minimum age

##### 3.1.1. General introduction

As a general rule, all crew members including the boatmaster, should be of a minimum age in order to pursue a career in inland navigation. This minimum entry level age is 16 years old; earlier entry is possible if enrolled in specific education for IWT. In this instance, those as young as 15 years old may, after having finished secondary school, commence work on board a vessel as cabin boys/apprentices if they are already enrolled in a specific vocational training for inland navigation.

In almost all EU member States, national IWT regulations offer more protection to those less than 18 years old when it comes to night work. However, this is not the case in Italy, Croatia or Poland where minors are not protected against night work.

##### 3.1.2. Status/level of implementation in Europe

Barges longer than 20 metres can only be controlled by individuals with a licence to navigate large vessels. In order to obtain a licence to control such vessels, candidates must be at least 21 years old in Europe. Hence, the minimum age to become an IWT boatmaster is 21 years old. The minimum age under the UNECE, EU, CCNR and DC frameworks is shown in Table 3 below. All the international and regional entities involved in this IWT study agree on the same minimum age of 21 years old, including the ISRBC, which is not shown in the table.<sup>22</sup>

**Table 3. Minimum age for boatmasters**

CCNR	EC	DC	UNECE
21	18/21	21	18/21

Source: Rhine Patent Regulation, Dir 96/50/EC, UNECE Group of Volunteers.

Exceptions to this rule may exist under national legal frameworks.<sup>23</sup> In France and the Netherlands, boatmasters' licences can be obtained at the age of 18 years old. In Slovakia

<sup>21</sup> DC, 'FAQ' <[http://www.danubecommission.org/index.php/en\\_US/faq](http://www.danubecommission.org/index.php/en_US/faq)> accessed 16 October 2013.

<sup>22</sup> Decision 32/07 on Rules on Minimum Requirements for the Issuance of Boatmaster's Licences on the Sava River Basin (adopted 13 November 2007) 1S-8-D-07-8/1-3 (hereinafter "Decision 32/07") art 2.1(1)(a).

<sup>23</sup> UNECE Inland Transport Committee (Working Party on IWT), Recommendations on Minimum Requirements for the Issuance of Boatmaster's Certificates in Inland Navigation with a view to their Reciprocal Recognition for International Traffic, ECE/TRANS/SC.3/184 (hereinafter "UNECE Recommendations on Minimum Requirements on Boatmasters' Certificates") footnote to art 2.2.1(a).

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candidates need to be at least 23 years old to qualify for a boatmaster's licence. In order to participate in international transport, a boatmaster may need to meet the requirements of other countries.<sup>24</sup> This means that Dutch and French boatmasters, who are 18 years old, can only navigate in their own countries until they fulfil the minimum age requirements for the acquisition of licences issued under other countries' domestic laws.

### **3.1.3. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

The UNECE indicates that an applicant for a boatmaster's licence "must not be less than 21 years of age".<sup>25</sup> Under certain circumstances, this minimum age can be reduced to 18 years of age.<sup>26</sup> All other crew members can take up employment between 15 and 18 years of age.<sup>27</sup> In a 2009 revision of the UNECE Resolution No. 31, it recognized the diversity of the existing UNECE, EU and River Commission requirements on minimum age.<sup>28</sup>

The minimum age for boatmasters within the EU is 21 years old.<sup>29</sup> There is also provision to allow for those 18 years or older to become a boatmaster subject to national exceptions. The recognition of a licence issued by a member of the CCNR, who is also an EU member State, may be subject to the same minimum age conditions of the recognizing member State, who is also a member of the CCNR.<sup>30</sup> While the minimum age for other crew members may not be harmonized at the EU level, Council Directive 87/540/EC provides for the mutual recognition of formal qualifications for occupations on board vessels in the IWT sector.<sup>31</sup> The Directive sets the obligation to mutually recognize the diverse set of rules that apply to workers of inland navigation to the extent that it promotes the effective exercise of the right to establishment.

Under the CCNR framework, the minimum age for a person to obtain a boatmaster's certificate is 21 years old.<sup>32</sup> The youngest crew member allowed on board a vessel is the apprentice/cabin boy at 15 years old, while the minimum ages of other crew members can

<sup>24</sup> Council Directive 96/50/EC on the harmonization of the conditions for obtaining national boatmasters' certificates for the carriage of goods and passengers by inland waterway in the Community [23 July 1996] OJ L235/31 (hereinafter "Directive 96/50/EC") art 5.

<sup>25</sup> UNECE Recommendations on Minimum Requirements on Boatmasters' Certificates art 2.2.1(a).

<sup>26</sup> Ibid.

<sup>27</sup> See Res 61, 23-2.3.1 – 23-2.3.10.

<sup>28</sup> This convergence is also confirmed for requirements on professional experience, professional knowledge and physical and mental fitness of the candidates.

<sup>29</sup> See Council Directive 96/50/EC art 5.

<sup>30</sup> Directive 96/50/EC art 5.

<sup>31</sup> See Council Directive 87/540/EC on access to the occupation of carrier of goods by waterway in national and international transport and on the mutual recognition of diplomas, certificates and other evidence of formal qualifications for this occupation [9 November 1987] OJ L 322/20.

<sup>32</sup> *Reglement betreffende het Scheepvaartpersoneel op de Rijn* art 7.01, para 4.

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range from 16 years old (ordinary crewman/deckman) to 17 or 19 years old (able crewman/sailor).<sup>33</sup>

The Recommendations on the Establishment of Boatmasters' Licences on the Danube specifies that a person must be at least 21 years old to become eligible for a boatmaster's licence to navigate on the Danube.<sup>34</sup> All other crew members must be at least 16 years old and appropriately qualified to work on a vessel in inland navigation.<sup>35</sup>

As in all the other legal regimes, the Sava Commission also stipulates 21 years old as the minimum age to be eligible for a boatmaster's licence.<sup>36</sup> The minimum age to work on board a vessel on the Sava River is 17 years old in the position of an ordinary crewman with the possibility to become a helmsman or boatmaster.<sup>37</sup>

### 3.1.4. National laws and practices

Under German law, the applicant for a boatmaster's licence should be at least 21 years old, with the exception of applicants for a *Klasse E* (vessels of not more than 25 metres in length) licence at 18 years old.<sup>38</sup> Under Austrian law, those between 15 years old (apprentice/cabin boy) and 19 years old (sailor) can apply for a job as a crew member on board a vessel, provided they meet the required technical education or training requirements.<sup>39</sup> Hungarian law requires that each worker on a vessel must be at least 16 years old. Furthermore, labour during night time is prohibited for minors (i.e. not being 18 years old), except in cases of emergency.

In the Russian Federation, there are certain legal IWT provisions that will have to be adopted by countries whose vessels seek to enter their inland waterways.<sup>40</sup> As regards the minimum age for boatmasters, the Russian Federation does not recognize licences issued to anyone under 18 years old (their minimum age for a boatmaster's licence). Their stringent position in this matter is justified by the need to ensure safe navigation on waterways equipped with complex hydraulic works. However, anyone as young as 16 years old is allowed to work on board a vessel as a crew member as long as they have obtained the appropriate professional education in swimming, are certified as fit, and have passed the

<sup>33</sup> Ibid, Art 3.02.

<sup>34</sup> *Grundsätzliche Bestimmungen für die Schifffahrt auf der Donau und besondere Empfehlungen für die Anwendung der grundsätzlichen Bestimmungen für die Schifffahrt auf der Donau durch die zuständigen Behörden der Donaustaaten* § 1.09(4).

<sup>35</sup> Ibid, at § 1.09(1).

<sup>36</sup> Decision 32/07 art 2.1(1)(a).

<sup>37</sup> Decision 33/07 on Rules on Minimum Manning Requirements for the Vessels on the Sava River Basin (adopted 13 November 2007) IS-8-D-07-9/1-3 (hereinafter "Decision 33/07") art 2.2(5)(a).

<sup>38</sup> *Verordnung über Befähigungszeugnisse in der Binnenschifffahrt* § 10(1).

<sup>39</sup> Bundesministerium für Verkehr, Innovation und Technologie, 'Schifferdientsbuch' <[http://www.bmvit.gv.at/verkehr/schifffahrt/binnen/downloads/sdb\\_pdf.pdf](http://www.bmvit.gv.at/verkehr/schifffahrt/binnen/downloads/sdb_pdf.pdf)> accessed 12 September 2013.

<sup>40</sup> Evgueni Kormyshov, 'Russian Market of Inland Water Transport' (Speech at the ECMT/UNECE/CNNR/DC Workshop, Paris 22-23 September 2005) <<http://www.internationaltransportforum.org/IntOrg/ecmt/waterways/Paris2005/Kormyshov.pdf>> accessed 10 September 2013.

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necessary qualification tests approved by the Ministry of Transport of the Russian Federation.<sup>41</sup>

### **3.1.5. Conclusion**

It is not sufficient to be 21 years old to qualify as an IWT boatmaster in many European regions and countries. Candidates also have to pass the necessary health checks, achieve the minimum level of education and possess the minimum amount of working experience and/or technical training. While some countries allow 18 year olds to become boatmasters, this does not automatically qualify them elsewhere. Efforts to harmonize crew qualifications are already in place, but it should be noted that Council Directive 87/540/EC only provides for the *mutual recognition* of formal qualifications for occupations on board vessels in the IWT sector. It does not prevent EU member States from imposing their own requirements on minimum age. Lastly, it is debatable if 15 years of age apprentices/cabin boys, who are allowed to work on board IWT vessels, are actually gaining the necessary experience for their education or are, in fact, being forced to engage in adult labour.

## **3.2. Medical examination and fitness**

### **3.2.1. General introduction**

Work in the IWT sector is both physically and mentally demanding. It requires outstanding audio and visual faculties, physical strength and mental clarity to ensure that the vessel, cargo and all those on board are looked after during the voyage. It is, therefore, imperative that the boatmaster and crew members undergo stringent medical fitness examinations. The present subsection will analyse, on a comparative basis, the medical fitness requirements under the various regulatory frameworks.

### **3.2.2. Status/level of implementation in Europe**

Similar to a sea captain, the inland waterway boatmaster is responsible for navigating the vessel to its destination and one mistake can compromise the entire voyage. Every boatmaster should be in possession of a valid health certificate when operating a vessel. A candidate for a boatmaster's licence should be physically healthy, including their eyesight, hearing and ability to distinguish colours, all of which must be certified by a doctor recognized by the competent authority. The same rules apply to other crew members.

Under the regimes of the EU, CCNR and DC a candidate for a boatmaster's licence is specifically required to undergo a mental fitness examination as well as a physical one. The CCNR in particular is very specific in its requirements, more so than any of the other entities. The ISRBC does not include a mental fitness examination for boatmaster licence candidates. An overview of the various requirements as per the UNECE, EU, CCNR and DC is provided in Table 4 below.

<sup>41</sup> Russian Federation Government Decree of 31 May 2005 No. 349 "On approval of the Regulation on Certification of Crew Members on Inland Vessels": Regulations on Certification of Crew of Inland Vessels (hereinafter "Russian Government Decree No. 349") art 9.

**Table 4. Physical fitness requirements for boatmasters**

CCNR	EC	DC	UNECE
<p><b>I. Eyesight</b></p> <p>1. Eyesight at daylight: with or without visual aids, at least 0,8 with both eyes or with the best eye. Seeing with one eye only is allowed.</p> <p>2. Night blindness: to be investigated only in case of doubt. Mesotest without blinding at an intensity level of 0,032 cd/m<sup>2</sup>, result: contract 1:2,7.</p> <p>3. Adaptation to darkness: to be investigated in case of doubt only. The result may not deviate more than one log unit of the normal curve.</p> <p>4. Sight range: anomalies in the sight range of the best eye are not allowed. In case of doubt, a perimetric investigation is to be carried out.</p> <p>5. Colour distinction: the colour distinction capacity shall be considered sufficient when the candidate meets the Farnsworth Panel D15 test or a recognised test with colour panels. In case of doubt, to be tested with an anomaloscope, where the Anomal quotient at a normal trichromasy must be between 0,7 and 1,4 or with another equivalent test. Recognised tests are: Ishihara according to panels 12 till 14, Stilling/Verhagen, Boström, HRR (result at least "mild", TMC (result at least "second degree", Holmer-Wright B (result 8 failures at most at "small").</p> <p>6. Motility: unrestricted agility of both eyes, no cross-eyedness.</p> <p><b>II. Hearing</b></p> <p>Hearing is considered sufficient when the average hearing loss of both ears at the frequencies 500, 1000, 2000 and 3000 Hz does not exceed 40 dB(A). If the 40 dB value is exceeded, the hearing capacity may still be considered adequate, when conversational speech at 2m distance is still being understood clearly using a hearing aid.</p> <p><b>III.</b></p> <p>There may be no other findings from medical checks that rule out physical fitness. In case any of the following diseases or physical disorders occur, this may give rise to doubts regarding the physical fitness of the applicant:</p> <ol style="list-style-type: none"> <li>1. Illnesses that involve consciousness or balance disorders;</li> <li>2. Illnesses or lesions of the central or peripheral nervous system, showing clear functional disorders; in particular organic illnesses of the brain or the spine and the respective side effects, functional disorders after skull or brain damage, cerebral blood circulation disorders;</li> <li>3. Mental illnesses</li> <li>4. Diabetes with considerable, not well controllable fluctuations of the blood sugar levels;</li> <li>5. Manifest endocrine disorders;</li> <li>6. Serious illnesses of the blood-producing organs;</li> <li>7. Asthmatic bronchitis with seizures;</li> <li>8. Illnesses or changes in the heart or blood circulation resulting in a decreased condition</li> <li>9. Illnesses or effects after an accident that lead to a considerable mobility impairment, loss or strong reduction of strength in one of the limbs that are important for the work to be carried out;</li> <li>10. Chronic alcoholism, as well as drug addiction, or other types of addiction.</li> </ol>	<p>The applicant shall provide proof of physical and mental fitness by passing a medical examination carried out by a doctor recognised by the competent authority. That examination shall cover in particular visual and auditory acuity, colour vision, motricity of the upper and lower limbs and the neuro-psychiatric state and cardiovascular condition of the applicant.</p>	<p>Applicant must satisfy the requirements on physical and mental fitness, including eyesight, hearing and the ability to distinguish colours, and present a medical certificate issued by a doctor, appointed by a competent body.</p>	<p>Proof of physical fitness by passing a medical examination which tests amongst other things eyesight, hearing and the ability to distinguish colours.</p>

Source: Rhine Patent Regulation, Dir 96/50/EC, UNECE Group of Volunteers.

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### 3.2.3. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)

Under UNECE Resolution No. 61, all crew members working on board inland vessels of any of the UNECE countries must be certified fit by a designated doctor recognized by the competent authority.<sup>42</sup> This certification shall be renewed periodically.<sup>43</sup> The physical fitness required for the crew member of a vessel includes adequate eyesight and hearing and the capacity to lift a weight of 20 kg unaided.<sup>44</sup> A boatmaster's licence candidate may need to have an additional and/or regular medical examination if they are of a certain age at the time of applying for a licence.<sup>45</sup>

At present, the requirements for physical and mental fitness are not harmonized at the EU level. A public consultation regarding the recognition and modernization of professional qualifications in inland navigation was held between March and June 2013.<sup>46</sup> The goal of this consultation was to work towards the creation of fair conditions for competition within the IWT sector, in particular the free movement of labour across the EU. Ultimately, the initiative will accomplish a single market in inland navigation and is, as such, also included in the Staff Working Document – Towards NAIADES II. This project will lay the groundwork for a new legal framework going beyond and expanding the scope of Directive 96/50/EC on the harmonization of the conditions for obtaining a national boatmaster's licence for the carriage of goods and passengers by inland waterway in the EU.<sup>47</sup> The proposals include harmonization on medical examination and fitness. The exact requirements are not yet known, as studies on this topic are still in progress.

Under the CCNR framework, all medical certification should be in accordance with strict standards (Table 4 above) set by the CCNR and should not be older than three months upon the first assessment of the crew's qualifications.<sup>48</sup> The examinations, to be conducted by a competent doctor, recognized by the designated authorities, include visual tests (general eyesight in daylight, night-blindness, habituation to darkness, field of view, colour-blindness and motility) and audio tests (average hearing loss of no more than 40 dB in both ears or hearing ability of at least two metres with a hearing aid).<sup>49</sup> A boatmaster's licence candidate, who has a history of, *inter alia*, mental illness, unregulated diabetes, endocrine disorders or chronic alcoholism, may be deemed unfit to command a vessel and could potentially fail the physical and mental examination.<sup>50</sup> It is not until much later in the boatmaster and crew member's lives that a more regular physical and mental examination

<sup>42</sup> UNECE, Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels: Resolution No. 61 (hereinafter "Resolution No. 61") Rev 1, 23-3.1.

<sup>43</sup> *Ibid.*, 23-3.3.

<sup>44</sup> *Ibid.*, 23-3.2.

<sup>45</sup> UNECE Recommendations on Minimum Requirements on Boatmasters' Certificates art 2.2.1(b).

<sup>46</sup> European Commission, "Public consultations: Recognition and modernization of professional qualifications in inland navigation", <[http://ec.europa.eu/transport/media/consultations/2013-06-21-inlandnavigqualifications\\_en.htm](http://ec.europa.eu/transport/media/consultations/2013-06-21-inlandnavigqualifications_en.htm)> accessed 4 September 2013.

<sup>47</sup> *Ibid.*

<sup>48</sup> *Reglement betreffende het scheepvaartpersoneel op de Rijn*, art 3.03(1)(a).

<sup>49</sup> *Ibid.*, Annex B1.

<sup>50</sup> *Ibid.*

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will be required, ranging from every five years to annually, starting from the age of 50 and 65 respectively.<sup>51</sup>

According to the DC, a candidate for a boatmaster's licence has to fulfil all the requirements on physical and mental fitness, including, but not limited to, adequate eyesight, hearing and the ability to distinguish colours. There is no indication of when health certificates for boatmasters navigating the Danube should be renewed (see Table 5 below).

The ISRBC sets rather strict medical requirements for boatmaster licence candidates. In particular, they must be able to demonstrate their physical fitness by passing a medical examination which includes tests of their visual and auditory acuity, colour vision, motility of the upper and lower limbs and neuro/psychiatric state and cardiovascular condition.<sup>52</sup> These conditions also apply to those who wish to become crew members on board a vessel.<sup>53</sup> Certification of fitness shall be renewed periodically as the competent authorities see fit. Upon reaching the age of 65, renewal of health certificates shall be conducted annually.<sup>54</sup>

### **3.2.3. National laws and practices**

There are differences among European countries on the age at which physical and mental fitness certificates are to be renewed (see Table 5 below). Whereas every country examines a boatmaster's physical and mental fitness at the start of their career, slight differences exist on the regularity of health certification later in their career. In Lithuania and the United Kingdom, the medical and physical fitness of a boatmaster is tested once every five years or three to five years respectively after entering the profession.<sup>55</sup> Belgium, Germany, the Netherlands and Romania require a renewal of health certificates once every five years upon the boatmaster turning fifty years old. In the Czech Republic, renewal of health certificates also starts at the age of fifty, but a second renewal is not required until ten years later. Once boatmasters turns 65 years old, they are required to be tested every year (as per the CCNR and EU framework). Austria, Belgium, France, Germany, the Netherlands and Romania abide by this requirement. In the Russian Federation, a more stringent set of rules apply to the medical certification of boatmasters. There are two periods for the boatmaster's health check, divided depending on age: boatmasters between 18 and 21 years old must have their health checked once every year, while boatmasters above the age of 21 years old will be checked once every two years.<sup>56</sup>

<sup>51</sup> Ibid., art 3.04.

<sup>52</sup> Decision 32/07 art 2.1(1)(c).

<sup>53</sup> Decision 33/07 art 1.2(1).

<sup>54</sup> Ibid. art 1.2(3).

<sup>55</sup> Two health certificates apply in the United Kingdom: the ENG1 (includes seafarers) and ML5. ENG1 is valid for three years, ML5 for five years.

<sup>56</sup> UNECE Inland Transport Committee (Working Party on Inland Water Transport), Minutes of the 1<sup>st</sup> meeting of the UNECE Group of volunteers on the mutual recognition of boatmasters' licences, Information document SC.3 No. 1 (2008) 3.

**Table 5. Renewal of health certificates for boatmasters**

	After entering the profession	After 50 years of age	After 65 years of age
CCNR	-	Every 5 years	Every year
EC	-	-	Every year
DC	-	-	-
UNECE	-	-	-
Austria	-	-	Every year
Belgium	-	Every 5 years	Every year
Bulgaria	NA	NA	NA
Czech Republic	-	Every 10 years	Every 10 years
Finland	-	-	-
France	-	-	Every year
Germany	-	Every 5 years	Every year
Hungary	-	-	-
Italy	NA	NA	NA
Lithuania	Every 5 years	Every 5 years	Every 5 years
Netherlands	-	Every 5 years	Every year
Poland	NA	NA	NA
Portugal	NA	NA	NA
Romania	-	Every 5 years	Every year
Slovakia	NA	NA	NA
United Kingdom	Every 3-5 years	Every 3-5 years	Every 3-5 years

Source: Rhine Patent Regulation, Dir 96/50/EC, UNECE Group of Volunteers, national authorities. NA: no information.

### **3.2.4. Conclusion**

Requirements for physical fitness vary among the regulatory frameworks and among the countries. The CCNR regime imposes a comprehensive and stringent set of physical fitness requirements, focusing especially on eyesight and hearing. It further enlists certain diseases or physical disorders that may impair the physical fitness of a boatmaster. Such diseases or disorders include, among others, illnesses of the central or peripheral nervous system, functional and balance disorders, and serious illnesses of blood-producing organs. The requirements under the UNECE, EU and DC frameworks are less stringent and require only a proof of medical fitness issued by a doctor appointed by a competent authority. In the national level, regularity of health certification is the main differences among European countries. Whereas many countries require more frequent renewal of certificate when the boatmaster turns into 50 and 65 years old respectively, the Russian Federation requires the boatmaster in their age between 18 and 21 years old to be checked every year.

## **3.3. Education, training and recruitment**

### **3.3.1 General introduction**

Job profiles for IWT are insufficiently harmonized across Europe. This lack of harmonization can lead to the endangerment of safety on board and the limitation of labour mobility in Europe.<sup>57</sup> Fortunately, work is currently underway to harmonize IWT education and training requirements. For instance, the IWT educational network, Education in Inland Navigation (EDINNA), an international organization on education in inland, shipping and navigation founded as part of Work Package 3 of PLATINA, has

<sup>57</sup>PCE Delft and others, “Medium and Long Term Perspectives of IWT in the European Union” (Report commissioned by the European Commission, DG MOVE) (December 2011) (hereinafter “CE Delft”) 165.



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introduced the Standards of Training and Certification in Inland Navigation (STCIN), which focuses on harmonizing professional competences in the IWT sector. This is a set of standards developed by EDINNA. PLATINA is a Seventh Framework Programme project created to promote the NAIADES action programme, an initiative by the European Commission to stimulate IWT to unfold its full potential.

The following subsection will elaborate on the various education and training programmes available across Europe.

### **3.3.2. Status/level of implementation in Europe**

Education and training for inland navigation personnel is organized at the national level and contrasts strongly between countries, ranging from the acceptance of learning-by-doing standards to education at university level. There are no minimum standards of IWT education.

In several countries, having been convicted of a criminal offence, related to inland waterways, automatically prevents a worker from entering (or keeping) a profession in the IWT sector. This is especially the case for boatmasters with Rhine Patents, needed in order to sail on the Rhine. Also, the DC specifies that a candidate for a boatmaster's licence must be able to lead the crew (by example). Persons who have been convicted of any infringement on human life, someone else's property or custom requirements, while carrying out their duties, are deemed unfit to lead a crew and therefore unsuitable for recruitment.

### **3.3.3. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

Under the UNECE framework, all crew members must have a personal service record.<sup>58</sup> This contains general information about them, such as diplomas obtained, medical certificates and their qualifications, and specific information on voyages made or positions held aboard vessel(s) they have worked on.<sup>59</sup> Upon successful recruitment, the service record will be presented to the boatmaster, certified at least once in a course of a 12-month period,<sup>60</sup> and preserved until the crew is discharged.<sup>61</sup> Crew members also have the right to request for the return of their service record at any time and without delay.<sup>62</sup>

In general, the educational level of EU workers in IWT is relatively low. For example, most people, who start vocational training in the German IWT sector, have only attained a lower or medium-level school education.<sup>63</sup> Currently, a person who has undergone basic vocational training, ranging from 1 to 4 years (depending on the requirements of each

<sup>58</sup> UNECE Resolution No. 61 Rev 1, 23-4.1.

<sup>59</sup> Ibid.

<sup>60</sup> Ibid., 23-4.2.

<sup>61</sup> Ibid.

<sup>62</sup> Ibid.

<sup>63</sup> CE Delft 159.

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member State) is qualified to be a boatman.<sup>64</sup> Again, like the requirements for medical examination and fitness, the requirements for education, training and recruitment are also not harmonized at the EU level. The foreseeable groundwork for harmonization will occur upon the launch of NAIADES II for the period 2014–2020. At present, Council Directive 87/540/EC provides for the mutual recognition of diplomas, certificates and other credentials on professional competence issued by member States as sufficient proof.

Under the CCNR, the *Reglement betreffende het scheepvaartpersoneel op de Rijn* (Regulation concerning the Rhine crew) provides a range of possibilities for a person to become a crew member on board a vessel on the Rhine. For instance, a cabin boy, normally the youngest member of the crew (15 years old) needs to be enrolled in a school for boaters or in a programme recognized by the competent authority, in order to be eligible. Also, to become a *volmatross* (able crewman), a person needs to have either passed the relevant examination, undergone specific training or acquired sufficient on-the-job experience as a *matross* (ordinary crewman).

With respect to the DC, the non-binding 2010 DC “Recommendations on the organization of the education of inland navigation personnel (deckhands)” recommends a three-year vocational training prior to working on board a vessel.<sup>65</sup> Among the recommended knowledge and skills to be acquired during this vocational training are: knowledge on labour law and collective bargaining, safety and health at work, rules on inland navigation and practical navigation skills.<sup>66</sup>

Vocational IWT programmes differ from country to country. Some countries, especially in the Western European region, follow an integrative approach, i.e. the skills needed for a deckhand are included in the education of a boatman. The reason for this can be found in the reference to the manning requirements, which acknowledge integrated crewman for deck as well as for engine room functions.<sup>67</sup> Romania and other countries of the Danube basin have a more specialized educational system that differentiates between IWT deck licences, certificates of proficiency for deck ratings and licences for engine room personnel.<sup>68</sup>

In the context of the ISRBC, Decision 33/07 on the Rules on Minimum Manning Requirements for the Vessels on the Sava River Basin, specifies that boatmasters and their crew alike must have had obtained either the necessary aptitude and qualifications, relevant licences, working experience on board a vessel, vocational training and/or passed an examination recognized by the competent authority.<sup>69</sup> Proof of these qualifications must be included in the personal service record, which is presented to the boatmaster, and kept up

<sup>64</sup> Ibid.

<sup>65</sup> CE Delft 160; see also Donaukommission, ‘Empfehlungen zur Organisierung der Berufsausbildung von Binnenschiffen’ Dok DK/TAG 75/21, s 2: ‘Zur Ausbildung werden Bewerber mit dem Abschluss einer allgemeinbildenden Mittelschule zugelassen. Die Ausbildung dauert mindestens drei Jahre.’

<sup>66</sup> Ibid., s. 3.

<sup>67</sup> Ibid.

<sup>68</sup> Ibid.

<sup>69</sup> Decision 33/07, art 2.2.

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to date and carefully preserved by the latter until discharge. Again, a crew member has the right to request the return of the service record at any time and without delay.<sup>70</sup>

### **3.3.4. National laws and practices**

According to Russian Federation law, the education requirements for crew members on board a vessel can range from basic vocational education in the relevant specialty (for example engine minders) to “higher, secondary, primary or appropriate continuing professional education received as a result of professional retraining programs” (for example boatmaster). Endorsements of diplomas should be carried out in accordance with the manner prescribed by the Ministry of Transport of the Russian Federation. To keep their qualifications up to date, crew members are required to undergo training courses approved by the Ministry of Transport after five years of working in their respective professions.

On the more regional front, Austria, Croatia, Hungary, Romania, Slovakia, Serbia, Bulgaria and Ukraine participated in a three-year EU co-funded project called Cooperation Network for Logistics and Nautical Education (NELI) focusing on IWT in the Danube corridor supported by innovative solutions. By the end of the project (in early 2012), a Danube Knowledge Network was created connecting all IWT specialized education and training institutions in the eight participating countries. In particular, the consortium managed to agree on the harmonization of three major courses in RIS; logistics, inland navigation and ports. The initiative is made possible through an e-learning platform that was adopted by five countries (Serbia, Bulgaria, Slovakia, Croatia and Hungary). Also, four information and training centres have been set up to further harmonize IWT education and training among these countries. These centres are located in Austria, Romania, Croatia and Hungary.

### **3.3.5. Conclusion**

The lack of harmonized requirements for a level of education, training and general qualifications makes it difficult for the mutual recognition of qualifications among European countries engaged in IWT. As already mentioned, differences and gaps in qualifications may lead to dangerous situations: for instance, communication problems. However, with growing regional efforts, the qualification gaps could be narrowed, provided these efforts are sufficiently harmonized.

## **3.4. Certificates and qualifications**

### **3.4.1. General introduction**

There are indications that mobility barriers persist among workers in the European IWT sector. This affects the attractiveness of professions within the sector and its overall competitiveness. The underlying problem can be summarised as follows: labour mobility in inland navigation is restricted by the existence of multiple national or transnational rules and regulations on the professional qualifications necessary to work in a certain region or on a certain river.

An effort is currently underway to promote the mutual recognition and modernization of professional qualifications in inland navigation within the EU. The goal is to remove the

<sup>70</sup> Ibid., art 2.3.

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barriers between EU member States to exercising a profession in IWT, thus subscribing to the main goal of the EC common transport policy, i.e. the free movement of persons and goods across the EU.

### **3.4.2. Status/level of implementation in Europe**

An initiative on the recognition and modernization of professional qualifications for all functions and crew members in IWT is one of the measures required to accomplish the single market and is, as such, also included in the recent Staff Working Document – Towards NAIADES II. The scope of this initiative covers both freight and passenger transport on EU waterways open to inland navigation and follows the definition, as included in Directive 96/50/ECFP<sup>71</sup>. This aims mainly at facilitating free access to the labour market and free movement of labour across the EU, i.e. labour mobility. The policy field affected by this initiative is partially regulated by Directive 96/50/EC on the harmonization of the conditions for obtaining national boatmasters' licences for the carriage of goods and passengers by inland waterway and by Directive 2005/36/EC on the recognition of professional qualifications applicable to all IWT professions not covered by specific sector EU legislation. To a great extent, the new initiative can build upon work already carried out under NAIADES I, in particular, by the PLATINA Joint Working Group on professional qualifications, which elaborated standards of professional competencies, in inland navigation.

A comparison of the various regulatory frameworks reveals the following discrepancies in professional experience requirements (see Table 6 below):

- requirement for professional experience varies between two to four years under the EU, CCNR and DC frameworks;<sup>72</sup>
- the definition of a “year” relevant to professional experience varies (for example under the Rhine Patent system, the days registered in the service booklets are counted differently – 180 effective working days count as one year, whereas in the maritime sector 250 days count as one year) while the other frameworks do not specify how “one year” is calculated;
- both the CCNR and the DC include provisions on local knowledge (normally requiring 16 trips on the stretch in question); and
- absence of past infractions – both the CCNR and DC include such a requirement while the EU and UNECE do not.

Clearly, the professional experience requirement is much lower for UNECE-based certificates (two years instead of four years of professional experience). In practical terms, however, nearly all UNECE countries, with the exception of Belarus, also fall under either the EU, CCNR and/or DC frameworks. Additionally, the UNECE explicitly allows for the reduction of professional working years if a person has previously worked in the maritime sector.

<sup>71</sup>Please note that in Directive 96/50/EC only the function of boatmaster is addressed.

<sup>72</sup>According to Nick Bramley, Section Chairperson of the ITF, one of the major criticisms on minimum requirements concerns the qualification of candidates at level of entry. You can qualify as a boatman just by accumulating three years of sailing time. However, there is no requirement for any training content in those three years, no log of the work carried out and no test or examination at the end. Similarly a boatman can acquire a “patent” for a certain river stretch, but could go for years on land and still sail.

**Table 6. Professional experience required by the different international authorities**

CCNR	<p>(a) 4 years, including at least 2 years of inland navigation as rating or engine-minder, or at least 1 year as leading crewman.</p> <p>(b) The navigation time must be done on a self-propelled vessel for which a Rhine Patent is required.</p> <p>(c) The navigation time is calculated as 180 days of navigation per calendar year.</p> <p>(d) The required 4-year experience may be reduced as follows: – By a maximum of 3 years for the time spent in a training programme – By a maximum of 2 years for the maritime experience (minimum 250 days of navigation needed per calendar year) – The experience must be proved by a service record delivered by the Rhine authorities or a valid administrative document as described in article 2.09 of the Rhine Patent Regulation.</p>
DC	<p>(e) 4 years as a crew member, including at least 1 year as rating or helmsman on a self-propelled vessel.</p> <p>(f) Maritime experience counts for a maximum of 2 years. Professional training counts as professional experience.</p> <p>(g) Definition of navigation time</p> <p>(h) The requirement is considered to be satisfied if candidates have a certificate confirming their nautical knowledge and skills, delivered by the DC member states or other Danube countries</p>
EC	<p>(i) 4 years' professional experience as a member of the deck crew on an inland waterway vessel.</p> <p>(j) Must be validated by the competent authority of the Member State by being entered in a personal service record.</p> <p>(k) May be reduced by a maximum of 3 years: – Where the applicant has a diploma recognized by the competent authority which confirms specialized training in inland navigation comprising practical navigation work; – Professional experience acquired on a sea-going vessel as a member of the deck crew (reduction of 3 years requires 4 years' experience in maritime navigation) – Passing a practical examination in sailing a vessel; the certificate shall in that case cover only vessels with nautical characteristics similar to those of the vessel which underwent the practical examination.</p>
UNECE	<p>(l) 2 years' professional experience, acquired in the deck department on board an inland navigation vessel, at least as a rating.</p> <p>(m) Must be validated and/or approved by the Administration.</p> <p>(n) The minimum duration may be reduced if:</p> <ul style="list-style-type: none"> <li>– The Administration requires special training considered as equivalent</li> <li>– The candidate possesses a diploma of specialized inland navigation training, comprising a period of mandatory on-board service</li> <li>– The Administration decides to take into account the maritime experience.</li> </ul>

Source: UNECE group of volunteers on Boatmasters' Licences.

### **3.4.3. Local knowledge requirements**

Local knowledge requirements (LKR) constitute a significant barrier to labour mobility in the European IWT sector. In order to navigate on certain stretches of river in Europe, States may impose the requirement to obtain a certificate attesting to the boatmaster's knowledge of the local situation<sup>73</sup>. An overview of LKR in Europe is presented in Table 7 below.

<sup>73</sup> Directive 96/50/EC art 8(2); *Reglement Betreffende het Scheepvaartpersoneel* art 2.05.

**Table 7. LKR in Europe**

Country	Stretch	Required knowledge / experience	Procedure
Austria	Danube River (three stretches)	16 trips on the respective stretch (8 upstream, 8 downstream)	Experience is shown through service booklet
Belgium	None		
Bulgaria	None		
Czech Rep.	None		
Finland	None		
France	None <sup>74</sup>		
Germany	Rhine (Iffezheim - Spijksche Veer);	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years) plus local conditions and regulations.	Experience is shown through service booklet and take exam
	Elbe (Schöna - Hamburg Port); Weser (Hannover-Münden - Oberweser); Danube (Vilshofen -Straubing); Untere Havel-Wasserstraße (Plaue - Havelberg), if water at Unterpegel Rathenow is above 130 cm; Oder (Ratzdorf - Widochowa); Saale (Elbe - Calbe).	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years).	Experience is shown through service booklet
Hungary	All	16 trips on the respective stretch (8 upstream, 8 downstream) plus local conditions and regulations.	Experience is shown through service booklet and take exam
Italy	Unknown		
Lithuania	None		
Luxembourg	None		
Netherlands	None		
Poland	There are some stretches on Vistula and Oder affected		
Portugal	None		
Romania	None		
Slovakia	Unknown		

<sup>74</sup> There are no LKR in France, except a 18 km stretch of the Rhine at the border with Germany between Iffezheim and Lauterbourg.

**Table 7. LKR in Europe (continued)**

Country	Stretch	Required knowledge / experience	Procedure
United Kingdom	Tidal River Thames (Putney Bridge - eastern limit of the Thames Barrier Control Zone)	6 months / 60 days of service, including work in different directions, in varying conditions and darkness Local conditions and regulations	Show experience through service booklet and take exam
	Portsmouth Harbour Isles of Scilly	6 months / 60 days of service Local conditions and regulations	Show experience through service booklet and take exam
	Padstow Harbour	6 outward, 6 inward journeys under supervision of a Harbour Authority representative Local conditions and regulations	Show experience through service booklet and take exam
	Bristol Port Caernarfon and Menai Strait Dee Conservancy Dover Harbour Fowey Harbour Gloucester Harbour Port of Liverpool Teignmouth	Local conditions and regulations	Take exam

Source: Europe Economics (2009)

Directive 96/50/EC also vests the member States with the power to unilaterally change the LKR, subject only to a non-binding consultation with the Commission.<sup>75</sup> The most relevant river stretch requiring the possession of a local knowledge certificate is the German sector of the Rhine between Iffezheim and Spijksche Veer. For this sector, the Rhine Patent Regulation expressly mandates that without an appropriate certificate, no boatmaster may navigate a vessel.<sup>76</sup> This diversity across Europe on the different certificates to attest to local knowledge effectively hinders the mobility of the IWT labour force.<sup>77</sup>

In addition, language becomes a barrier when boatmasters seek to obtain local knowledge certificates. This is apparent on the Rhine where, in order to obtain a local knowledge certificate, an exam must be passed that is held only in the official languages of the CCNR (i.e. German, Dutch or French). The exam is designed to test the candidates' knowledge of the navigability conditions of the relevant Rhine stretch, as well as their knowledge of certain local laws and regulations. As a result, boatmasters, who do not have knowledge of the relevant language, will not be able to sit the exam required for a local knowledge certificate.

While local knowledge is an added advantage, and a basic requirement, it does constitute a barrier to foreign companies/personnel, as they will either have to hire a pilot to guide them until they have the required experience or (in the case of foreign nationals), they will have to work through the ordinary procedure from the beginning for each river stretch they choose to work in.

<sup>75</sup> Directive 96/50/EC art 8(2); *Reglement Betreffende het Scheepvaartpersoneel* art 2.05.

<sup>76</sup> *Ibid.*

<sup>77</sup> European Commission, "Roadmap: Recognition and Modernisation of Professional Qualifications in Inland Navigation" (04 March 2013), p. 2.

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#### **3.4.4. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

Under the UNECE framework, all crew members must be able to substantiate their qualifications and fitness by means of a service record at all times,<sup>78</sup> with the exception of those who hold a boatmaster's licence.<sup>79</sup> This service record is for the sole purpose of recording the sectors covered when a crew member's certificate, or proof, is not valid on them and when they wish to obtain the relevant document.<sup>80</sup>

While the boatmaster must be in possession of a boatmaster's licence issued in accordance with Resolution No. 31 of 12 November 1992,<sup>81</sup> all other crew members shall possess no less than one year's experience in inland navigation, relevant training and/or have passed the relevant examination for their position.<sup>82</sup> Apprentices need only to have an apprentice contract.<sup>83</sup> There is no indication of qualification for a deckhand other than that they must be no less than 16 years of age.<sup>84</sup>

Under the EU framework<sup>85</sup>, Directive 91/672/EEC provides for the mutual recognition by the member States of each other's boatmasters' licences. Directive 96/50/EC lays down harmonized minimum conditions for issuing national licences (essentially an examination programme). Currently, there is no unified EU boatmaster's licence, but the EC is considering further harmonization in this field. Boatmasters' licences based on Directive 96/50/EC are currently not valid for navigation on the Rhine, but the 7th Additional Protocol to the Act of Mannheim will make it possible for the CCNR to recognize them, as well as the licences of non-EU countries.<sup>86</sup>

As far as the CCNR is concerned<sup>87</sup>, the Rhine Patent Regulation allows it to recognize boatmasters' licences of countries other than its member States as "equivalent".<sup>88</sup> To date,

<sup>78</sup> This means that the service record shall be kept on board and in the care of the boatmaster.

<sup>79</sup> Res 61, Appendix 5 on "Particulars and guidelines concerning the keeping of a Service Record", 246.

<sup>80</sup> *Ibid.*

<sup>81</sup> UNECE Resolution No. 61, 23-2.3.1.

<sup>82</sup> *Ibid.*, 23-2.3.2 – 23-2.3.10.

<sup>83</sup> *Ibid.*, 23-2.3.5.

<sup>84</sup> *Ibid.*, 23-2.3.6.

<sup>85</sup> Economic and Social Council, Exchange of Information on Measures aimed at promoting Transport by Inland Waterways (Report by Working Party on Inland Water Transport 28 January 2005) UNTS TRANS/SC.3/2005/1 (hereinafter "Working Party on IWT Report 2005") 13.

<sup>86</sup> UNECE Inland Transport Committee (Working Party on IWT), Elaboration of Harmonized Procedure for Consideration of Applications for Recognition of Ship's Certificates and Boatmasters' Licences, ECE/TRANS/SC.3/WP.3/2008/6 (21 December 2007) (hereinafter "UNECE on Harmonization of Boatmasters' Licences") 2.

<sup>87</sup> Working Party on IWT Report 2005, 13.

<sup>88</sup> UNECE on Harmonization of Boatmasters' Licences 3; See generally, *Reglement Rijnpatenten* 1998.



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it has done so with Austrian, Czech, Hungarian and Polish licences. Holders of such recognized licences can obtain the Rhine Patent through a simplified examination, the only subjects of which are knowledge of the regulations in force on the Rhine and of the navigational conditions on that river. In addition, the CCNR also requires that some boatmasters be specially certified, if their work concerns the transportation of dangerous goods on the Rhine.

On the Danube,<sup>89</sup> the regime concerning boatmasters' licences is similar to the one on the vessel's certification. The DC has adopted Recommendations on the Establishment of Boatmasters' Licences on the Danube. It is uncertain to what extent the DC member States actually follow the Recommendations, but they are required to mutually recognize each other's national licences.<sup>90</sup>

Under the ISRBC, the minimum requirements to navigate on the Sava River are all dependent on: proof of necessary aptitude and qualifications; relevant licences; work experience on board a vessel; vocational training and/or having passed an examination recognized by the competent authority. The work experience needed to be a crew member ranges from one to three years.<sup>91</sup>

### **3.4.5. National laws and practices**

In Austria, every crew member has to adequately demonstrate their qualifications and suitability in a personal service record. Among the information in this is at least a one year work experience in the IWT sector and training certification from special courses or technical colleges. Under Russian Federation law, the boatmaster of a Russian Federation vessel, apart from having the necessary licence to navigate and the compulsory navigational knowledge, has to be a citizen of the Russian Federation.<sup>92</sup> As a result, foreign workers cannot be employed as boatmasters, chief engineers, or radio operators, among others.<sup>93</sup> Exceptionally, foreigners may gain access to the IWT labour market when they fulfil the conditions stipulated by the respective federal laws, in particular, the Order of the Ministry of Transport No. 14 of January 2001.<sup>94</sup> Access conditions under the Order include, *inter alia*, necessary knowledge, level of professional training, and competence.<sup>95</sup> The Regulation on Certification of Crew on Inland Vessels of the Russian Federation provides that crew members have to undergo qualification tests that are approved by the

<sup>89</sup> Working Party on IWT Report 2005, 14.

<sup>90</sup> UNECE on Harmonization of Boatmasters' Licences 3.

<sup>91</sup> Decision 33/07, art 2.2.

<sup>92</sup> Code of Inland Water Transport of the Russian Federation (hereinafter "Russian IWT Code")art 30(1).

<sup>93</sup> *Ibid.*

<sup>94</sup> Order of the Ministry of Transport (Russia) No. 14 of 25.01.2001 "Adoption of the conditions being the basis for admission of foreign citizens and stateless persons for work as the crew members of vessels flying the State flag of the Russian Federation other than fishing vessels".

<sup>95</sup> *Ibid.*

Ministry of Transport of the Russian Federation.<sup>96</sup> Apart from this, certificates issued to crew members are valid for five years from the date of their receipt.<sup>97</sup> This qualification is to be followed up thereafter by participating in training courses approved by the Ministry of Transport.<sup>98</sup> In Moldova, the recognition of a boatmaster's licence is governed by bilateral agreements. As a consequence, not all licences are automatically recognized.<sup>99</sup>

Table 8 below compares the required local knowledge in Austria, France, Germany, Hungary and the United Kingdom (see also the previous Table 7 on LKRs).

**Table 8. Comparing local knowledge in Austria, France, Germany, Hungary and the United Kingdom**

Country	Stretch	Required knowledge / experience	Procedure
Austria	Danube (three stretches)	16 trips on the respective stretch (8 upstream, 8 downstream)	Experience is shown through service booklet
France	None <sup>100</sup>		
Germany	Rhine (Iffezheim - Spijsche Veer);	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years) plus local conditions and regulations.	Experience is shown through service booklet and take exam
	Elbe (Schöna - Hamburg Port); Weser (Hannover-Münden - Oberweser); Danube (Vilshofen - Straubing); Untere Havel-Wasserstraße (Plaue -Havelberg), if water at Unterpegel Rathenow is above 130 cm; Oder (Ratzdorf - Widochowa); Saale (Elbe - Calbe).	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years).	Experience is shown through service booklet

<sup>96</sup> Government Decree (Russian Federation) of 31 May 2005 No. 349 “On approval of the Regulation on Certification of Crew Members on Inland Vessels”: Regulations on Certification of Crew of Inland Vessels, art 3.

<sup>97</sup> Ibid., art 4.

<sup>98</sup> Ibid.

<sup>99</sup> UNECE on Harmonization of Boatmasters’ Licences 5.

<sup>100</sup> There are no LKR in France, except a 18 km stretch of the Rhine at the border with Germany between Iffezheim and Lauterbourg.

**Table 8. Comparing local knowledge in Austria, France, Germany, Hungary and the UK (continued)**

Country	Stretch	Required knowledge / experience	Procedure
Hungary	All	16 trips on the respective stretch (8 upstream, 8 downstream) plus local conditions and regulations.	Experience is shown through service booklet and take exam
United Kingdom	Tidal River Thames (Putney Bridge - eastern limit of the Thames Barrier Control Zone)	6 months / 60 days of service, including work in different directions, in varying conditions and darkness Local conditions and regulations	Show experience through service booklet and take exam
	Tidal River Thames (Putney Bridge - eastern limit of the Thames Barrier Control Zone)	6 months / 60 days of service, including work in different directions, in varying conditions and darkness Local conditions and regulations	Show experience through service booklet and take exam
	Portsmouth Harbour Isles of Scilly	6 months / 60 days of service Local conditions and regulations	Show experience through service booklet and take exam
	Padstow Harbour	6 outward, 6 inward journeys under supervision of a Harbour Authority representative Local conditions and regulations	Show experience through service booklet and take exam
	Bristol Port Caernarfon and Menai Strait Dee Conservancy Dover Harbour Fowey Harbour Gloucester Harbour Port of Liverpool Teignmouth	Local conditions and regulations	Take exam

Source: Transportes, Inovacao e Sistemas, S.A., "Impact Assessment and Evaluation of Proposals for a Legal Instrument on the Legislative Harmonization of Boatmasters' Certificates in IWT" (PowerPoint presentation).

### **3.4.6. Conclusion**

The harmonization of IWT national legal and administrative regulations among European countries is of great importance in creating fair conditions for competition within and between the different transport modes. Judging by the existing efforts to harmonize certification and qualifications, certainly there are still gaps to be filled, especially if some of these efforts are non-binding. Some have recognized the deficiencies posed by NAIADES I. Therefore, its successor, NAIADES II, will attempt to address some of these issues and incorporate them into the 2014–2020 plan of action. With this in mind, it looks as if the goal to remove the barriers between EU member States on exercising professions in IWT is still a work in progress.

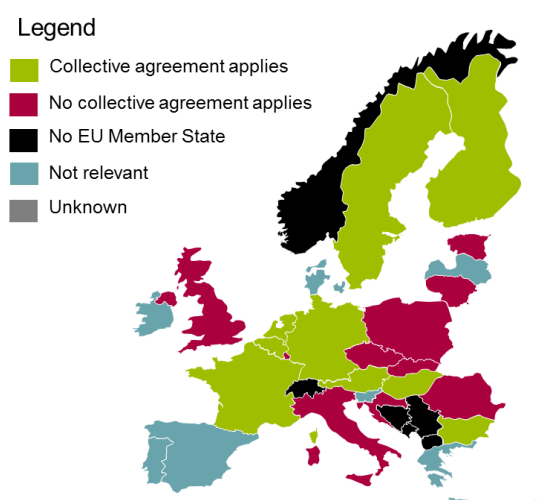
## 4. Conditions of service

### 4.1. Employment agreements

#### 4.1.1. General introduction

Although job conditions, including minimum wages and working time, are negotiated through sector dialogue in some countries (see Figure 7), the actual employment agreement is made between the worker and the employer. This agreement must meet, at least, the conditions stated in the collective agreement. It provides, *inter alia*, information about working times, annual leave and wages. In the IWT sector, the regulation of employment agreements has economic and social implications. As such, it customarily falls under the domestic ambit of every State. In this regard, it is best dealt with at the national level and not regionally.

Figure 7. Collective agreements in Europe



Source: Study on the costs and benefits of the implementation of the European Agreement on working time in inland waterway transport – A comparison with the status quo (Ecorys, 2013).

#### 4.1.2. Status/level of implementation in Europe

In most countries, working time in the IWT sector is regulated by collective agreements. Exceptions to this practice exist in seven of the “newer” EU member States (among them Romania, the Slovak Republic and Poland), Italy, Luxembourg (where, according to the social partners<sup>101</sup> collective agreements are typically concluded at company level) and the United Kingdom. In countries where collective agreements do not regulate working time, national laws do. This is the case in the countries in Eastern Europe, the United Kingdom and Luxembourg.

<sup>101</sup> FEDIL: Business Federation Luxembourg, FCPT-SYPROLUX, Fédération nationale des Cheminots, Travaileurs du Transport Fonctionnaires et Employés Lyxembourgeois (FNCTTFEL), Lëtzebuerger Chrëschtliche Gewerkschaftsbond (LCGB), Onofhängege Gewerkschaftsbond Lëtzebuerg (OGB-L)

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### **4.1.3. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

The UNECE does not have the authority to regulate the working agreements of workers in the IWT sector. To date, there are also no guidelines on this.

Although the 1954 Agreement about Working Conditions of the Rhine Boatmen is not a CCNR instrument, it is an international agreement lodged with the ILO, governed by a tripartite body whose secretariat can be found in the CCNR Secretariat.<sup>102</sup> As such, “Rhine boatmen” are entitled to reasonable working hours with sufficient rest times, fair wages, including overtime, annual leave and also special allowances.<sup>103</sup> However, Switzerland has questioned the sufficiency of the protection accorded by this Agreement.<sup>104</sup> It complained that the Agreement is outdated. In the Swiss Federal Council’s response to this inquiry, it specified that the working conditions of the Swiss boatsmen on the Rhine are covered by Swiss law, particularly Article 319 of the Swiss Civil Code.<sup>105</sup>

The DC and ISRBC follow the frameworks of UNECE very closely and because the UNECE does not regulate on this matter, neither does the DC and ISRBC.

### **4.1.4. National laws and practices**

In the United Kingdom, workers engaged in inland navigation have the right to assign the representation of their interests to trade unions that will be involved in the negotiation of collective agreements on their behalf.<sup>106</sup> The most relevant trade unions for IWT in the United Kingdom are Unite,<sup>107</sup> Unison,<sup>108</sup> and National Union of Rail, Maritime and

<sup>102</sup> The Agreement is still used as a legal basis in a number of countries. However, the governing body has not met since the 1970s. Neither have there been any annual reports since then and attempts to revise and/or modernize it have failed. It is essentially an obsolete instrument as many of its provisions cannot be observed due to changes in modern technology and operating patterns. This refers to, *inter alia*, night-work and rest at night on a barge which is not moving. In 1954 there was no radio and no radar.

<sup>103</sup> See *Abkommen über die Arbeitsbedingungen der Rheinschiffer* (“Agreement about Working Conditions of the Rhine Boatmen”) 1954, arts 7-23.

<sup>104</sup> Susanne Leutenegger Oberholzer, “Arbeitsbedingungen in der Rheinschiffahrt bzw. europäischen Binnenschiffahrt” (“Working conditions in the Rhine and inland navigation in Europe”) (interpellation submitted 10 June 2013) <[http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch\\_id=20133412](http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch_id=20133412)> accessed 28 September 2013.

<sup>105</sup> *Schweizerischen Zivilgesetzbuches* 1911 (Swiss Civil Code) art 319.

<sup>106</sup> European Foundation for the Improvement of Living and Working Conditions, “Representativeness of the European Social Partner Organisations: Inland Water Transport”, Dublin 2010, p. 8.

<sup>107</sup> Unite – the Union, available at: <http://www.unitetheunion.org> The recently established Unite (i.e., 2007), represents a wide range of workers, including those operating in inland waterways and on docks.

<sup>108</sup> Unison, available at: <http://www.unison.org.uk/about/UT> Unison represents workers in the transport sector more generally.

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Transport Workers (RMT).<sup>109</sup> These unions also maintain a close affiliation with the relevant European labour agencies, such as the ETF. In the United Kingdom, collective agreements are defined under Section 178 of the Trade Union and Labour Relations Act as: “any agreement or arrangement made by or on behalf of one or more trade unions and one or more employers or employers’ associations”. This may take a written or unwritten format, and relates to matters, including terms and conditions of employment, duties of employment, allocation of work and wages.<sup>110</sup> In essence, there are two types of collective agreements: (a) procedural agreements that govern the relationship between the parties; and, (b) substantive agreements that cover the core aspects relevant to working conditions, such as wages and working times.<sup>111</sup> An important aspect of these agreements relates to their enforceability. In the United Kingdom, employment agreements concluded between employers and trade unions are not considered legal contracts, which means they are not enforceable by judicial means, and will be binding “in honour” only.<sup>112</sup>

Unlike the United Kingdom, collective bargaining agreements play a significant role in the Netherlands. The so-called *Collectieve Arbeidsovereenkomst* (Collective Employment Agreement, abbreviated as CAO), is the machinery used for collective labour agreements.<sup>113</sup> These are agreements negotiated, on a one or two year basis, between the labour unions and employers’ organizations. The major Dutch trade unions involved in IWT are the Nautilus – FNV Bondgenoten<sup>114</sup> and CNV Bedrijven Bond.<sup>115</sup> The CAO is also registered at the Ministry of Social Affairs and Employment. On a substantive level, they are detailed agreements, covering a wide range of aspects, *inter alia*, remuneration, employment conditions, working hours, holidays, and pension schemes.<sup>116</sup> Unlike the United Kingdom, the CAO creates legally enforceable rights and obligations to both employers and employees in the Netherlands. Accordingly, the CAO is considered as law governing the working conditions of those in the IWT sector.<sup>117</sup>

#### 4.1.5. Conclusion

Employment agreements are determined by the nature of a crew’s work on a vessel: seasonal, self-employed or a strictly contract-basis. Therefore, different rules may apply.

<sup>109</sup> National Union of Rail, Maritime and Transport Workers (RMT), available at: <http://www.rmt.org.uk> RMT represents railways, shipping, and road transport workers.

<sup>110</sup> Eurofound, “Collective Agreement: United Kingdom”, available at:

<http://www.eurofound.europa.eu/emire/UNITED%20KINGDOM/COLLECTIVEAGREEMENT-EN.htm>

<sup>111</sup> Ibid.

<sup>112</sup> Ibid.

<sup>113</sup> Houthoff Buruma, “Guide to Doing Business in the Netherlands”, 2012, p. 94.

<sup>114</sup> FNV Bondgenoten, available at: TU <http://www.fnvbondgenoten.nl>

<sup>115</sup> CNV Bedrijven Bond, available at: TU <http://www.cnv.nl>

<sup>116</sup> Ibid.

<sup>117</sup> Ibid.

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Nonetheless, collective agreements represent an important machinery for the determination of working conditions of IWT employees. A central role in negotiating these agreements is allocated to trade unions who use collective bargaining in order to efficiently advance the interests of workers. Employment agreements can include a wide array of aspects, ranging from wages and employment conditions to pension schemes and disability benefits. Enforcement of the employment agreements are generally carried out through judicial means, since they can create legally binding rights and obligations.

## **4.2. Wages**

### **4.2.1. General introduction**

Wage distinctions in the IWT sector are generally made on the basis of a worker's position on board a vessel, the amount of experience gathered and their age. In general, net wages in the western part of Europe are much the same. Considering the current economic crisis in Europe, unfavourable market conditions may result in a shortage of labour in the long term as the IWT sector may look unattractive to young people. However, this could also mean higher wages for those already working in the sector or who are considering entering it.<sup>118</sup>

This section will provide information on the wages for each function, based on information from collective agreements and input from social partners.

### **4.2.2. Status/level of implementation in Europe**

There is a marked regional difference in the potential earnings of a worker in European inland navigation. Crews in the ITW sector in Western Europe can expect to earn between €14,000 (ordinary seaman) to €35,000 (boatmaster) per year.<sup>119</sup> In general, workers in Eastern European countries earn less than their Western European counterparts (see Figure 8 and Figure 9).<sup>120</sup> In Figure 8, it can be seen that workers from the Czech Republic still earn about 10–15 per cent less than their Western European colleagues. In a 2010 report by the CCNR, many Hungarian inland navigation vessel operators went abroad to Western Europe to earn higher wages.<sup>121</sup> There is a shift from the East to the West as more workers seek higher wages.

Although the wage of a non-national or migrant worker is nearly commensurate with a domestic worker, their working and social conditions are not;<sup>122</sup> these non-national workers are primarily employed in lower positions.

<sup>118</sup> CE Delft 23.

<sup>119</sup> CE Delft 158.

<sup>120</sup> Take for instance in Romania where the average annual earnings is €7,000.

<sup>121</sup> CCNR, "Inland Navigation in Europe: Market Observation" <[http://www.ccr-zkr.org/files/documents/om/om10II\\_en.pdf](http://www.ccr-zkr.org/files/documents/om/om10II_en.pdf)> accessed 2 November 2013.

<sup>122</sup> CE Delft 156.

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### **4.2.3. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

Workers in the IWT sector are paid mainly by their direct employers or manning agencies. In some countries, wages are determined by the sheer strength of the trade unions' bargaining power.

### **4.2.4. National laws and practices**

In the Russian Federation, a unified labour remuneration system exists for IWT, pursuant to the Labour Code of the Russian Federation. Labour remuneration methods, base salaries and their structure, all kinds of financial rewards, compensations and wage premiums are defined by employers (i.e. vessel owners) and are stated in a collective wage agreement or in a local regulatory document. There are no maximal limits for financial rewards, compensations and wage premiums.

The hotel industry is a growing area of employment for crew from Eastern and Central Europe. According to the ETF, the level of wages and the quality of employment practices for hotel and catering staff, mainly women from south eastern and Eastern Europe on seasonal contracts, are especially questionable.<sup>123</sup> However, this wage differential is reported to have decreased over the past years.<sup>124</sup> For example, the average gross wage in Czech IWT was €738 a month in 2005. At the present time, their wages approximate to the levels in Western Europe (see Figure 8).

Very often, the trend is to employ skilled crew members from new EU member States and non-EU mobile workers to fill labour shortages. These workers, often employed by manning agencies, are not usually remunerated at the wage level of the old member States. Rather, they are remunerated at market rates.<sup>125</sup> They are not strictly held to contracts as they work on a near casual basis, moving from one vessel to another after working for a few weeks, often with no rest periods. This is especially the case on the Danube with Croatian, Serbian and Ukrainian crew.

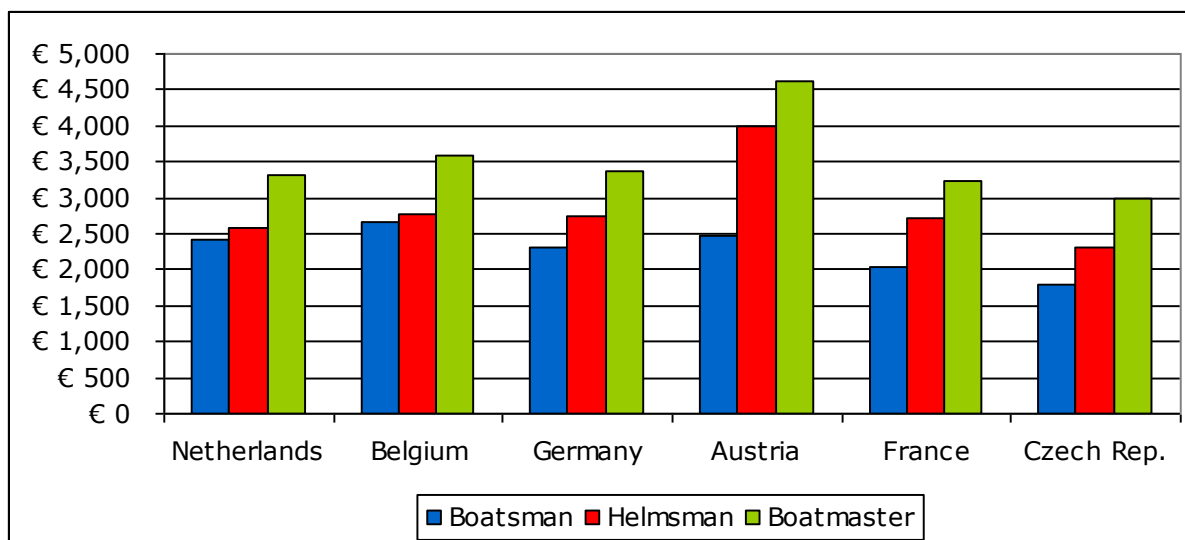
<sup>123</sup> ETF, "Communication of the Commission on the promotion of inland waterways, NAIADES" (20 April 2006)  
<[http://www.europarl.europa.eu/meetdocs/2004\\_2009/documents/dv/tran20060420\\_09\\_hertogs\\_pres\\_en/tran20060420\\_09\\_hertogs\\_pres\\_en.pdf](http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/tran20060420_09_hertogs_pres_en/tran20060420_09_hertogs_pres_en.pdf)> accessed 19 September 2013 (hereinafter "ETF Communication 2006").

<sup>124</sup> CE Delft 158.

<sup>125</sup> ETF Communication 2006.

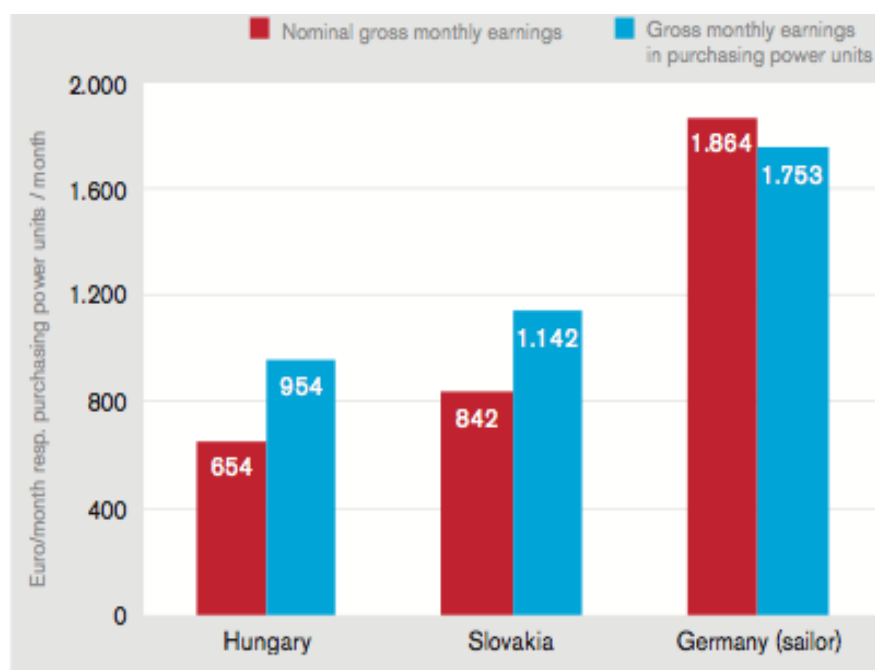


**Figure 8. Gross wages in IWT per month**



Source: CCNR Market Observation 2013, corrected for social security costs (Eurostat data).

**Figure 9. Comparison of monthly earnings in inland navigation**



Source: Calculation by the CCNR secretariat (2011) based on Eurostat data, the German Inland Navigation Employers' Federation, statistical offices of Hungary and Slovakia. \* Germany: Sailor's basic salary.

#### 4.2.5. Conclusion

It is not easy to ascertain a deserving minimum wage for IWT crews. As mentioned above, some workers change vessels so often as to suggest their primary concern is not so much the wage itself, but the experience and quality of working conditions. Again, rules on wages are primarily a domestic issue and outside the scope of any international or regional jurisdiction.

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## 4.3. Working time

### 4.3.1. General introduction

Unfavourable market conditions in the IWT sector, particularly during an economic crisis, could lead to a shortage of qualified personnel. In turn, crew members may have to work longer hours. This may increase risks on board and the occurrence of accidents. The International Labour Organization (ILO) instrument that regulates working hours is Recommendation No. 8 of 1920 on the Limitation of Hours of Work in Inland Navigation.

In theory, IWT operators, who are able to let their employees work long hours, have a cost advantage enabling them to attract more business. However, long working hours make the sector less attractive in the labour market. According to interviews with German and Dutch employers' organizations, the attractiveness of the sector for jobseekers is a matter of joint concern to employers and trade unions. Another reason the sector is not always attractive is that crew members are usually absent from home due to working periods with continuous journeys. This limits the possibilities to interact with family and friends and also restricts their leisure activities. However, frequent times off the vessel are not necessarily in the interest of workers. For example, workers, who are employed in a country far away from their family home, might need a significant amount of travel time to and from home. It can, therefore, be of mutual interest to employers and workers to organize long periods of rest after long periods of work.

### 4.3.2. Status/level of implementation in Europe

Working time consists of a number of aspects, including:

- average weekly working time over a longer period;
- maximum weekly working time in any week;
- maximum daily working time/minimum daily rest in any day (or any 48 hours);
- minimum uninterrupted rest in any day.

Most of these aspects vary from country to country across Europe. However, most national regulations agree on a maximum average working time of 48 hours within a varying period. For the majority of Eastern European countries, this period is four months. In this period, a worker may not work more than 48 hours a week on average. However, these reference periods vary from two weeks (Finland) up to a year (Hungary). Collective agreements derogate from national law in some countries, either specifying a longer period or a lower maximum average. In Belgium and the Netherlands, collective agreements extend the reference period. In Germany and France, lower average weekly working hours are provided by the collective agreement. In Bulgaria and Hungary, a higher average working time is defined for a shorter reference period than in national law, whereas in the Netherlands a lower average working time is defined for a longer reference period.

The maximum average working time per week over a longer period gives employers some flexibility to compensate longer working time in one week with more off-work time in another week. However, fatigue comes from longer working hours in a short period. Most member States have regulated maximum working time in any day.

Although the average weekly working time, over a longer period, is 48 hours for almost all member States, the maximum in any week ranges from 50 hours in Austria to 112 in the Netherlands and Romania. This does not mean that mobile workers in the Netherlands and

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Romania are allowed to work more hours in a year, but it does mean that employers and mobile workers have greater flexibility in working long weeks compensated by long rests in other weeks. In fact, many workers work with so-called 2:1 systems (2 weeks on, 1 week off). They work more hours (even as high as 63 hours a week), leaving rest periods to be considered on a day-for-day basis.

As a rule, maximum working time in any week (or in any day) is not regulated by collective agreements. They cannot derogate from national law on this aspect of working time as opposed to the reference period for the average working time over a longer period. In France, social partners<sup>126</sup> agreed on a lower maximum working time. In all the other countries, general law applies on maximum working times per day.

#### **4.3.4. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

Under the UNECE framework, rest periods for boatman are different for each operation mode.<sup>127</sup> In operation mode A1 (daytime navigation of no more than 14 hours), all members of the crew shall have eight hours of uninterrupted rest outside sailing time. In operation mode A2 (semi-continuous navigation for no more than 18 hours), all members of the crew shall have eight hours' rest, including six hours of uninterrupted rest outside sailing times. In operation mode B (continuous navigation for 24 hours or more), all members shall have a 24 hours' rest time per 48-hour period, including two six-hour periods of uninterrupted rest. Nonetheless, "the provisions of labour regulations and in collective agreements concerning larger rest periods shall remain valid".<sup>128</sup> It is important to note that the boatmaster himself "shall not be impaired as a result of fatigue or intoxication".<sup>129</sup>

The sectoral social partners of IWT in the EU,<sup>130</sup> namely EBU, ESO and ETF have signed an agreement concerning certain aspects of the organization of working time in IWT. They have agreed to lay down specific rules, albeit with some exceptions,<sup>131</sup> for working time on passenger or cargo transport vessels in inland waterways across the EU. With this agreement, the Working Time Directive (2003/88/EC) will no longer apply. The minimum rules in this agreement include:

- total working time may not exceed 48 hours per week, though this may be averaged over up to 12 months;

<sup>126</sup> CAF and CNBA.

<sup>127</sup> UNECE Resolution No. 61, Revision 1, art 23-6.

<sup>128</sup> Ibid., 23-6.2.

<sup>129</sup> *Code Européen des Voies de la Navigation Intérieure* (CEVNI) (European Code for Inland Waterways) (2009) ECE/TRANS/SC.3/115/Rev.4 art 1.02(6).

<sup>130</sup> European Commission, "Sectoral social partners sign agreement on working time for inland waterway transport" (16 February 2012), <<http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=1197&furtherNews=yes>> accessed 23 August 2013.

<sup>131</sup> Exceptions include extra working time to ensure the safety of the vessel until the normal situation is restored, overtime and the postponing of weekly rest days so long as the minimum standards are observed.

- total night working time may not exceed 42 hours per week;
- a right to at least four weeks' paid annual leave, and to paid annual health checks;
- a right to at least ten hours' rest every day (at least six hours must be uninterrupted) and at least 84 hours' rest in total every week.

#### 4.3.5. National laws and practices

In most European countries, working time in the IWT sector is regulated under national laws. In some countries, it is possible to derogate from the general law by means of a collective agreement. However, in the Czech Republic, Poland and the United Kingdom, the general law applies even if a collective agreement agrees on changes in working times.

National regulations may apply to vessels sailing under the flag of a different State despite the seat of the operator of the vessel or the geographical position of a vessel. For instance, Romanian law applies to all vessels sailing under the flag of Romania, even though the vessel could be in Germany. Dutch law, however, only applies to vessels sailing in the Netherlands. The criteria used to determine the applicability of IWT regulations can be found in Table 9 below.

**Table 9. Applicability of IWT regulations<sup>132</sup>**

Criterion	National regulations	Collective agreements
Flag of vessel	EE, FI, HU, IT, LT, RO, SE	AT*, BG, FR, HU
Seat of operator	BE, LU	AT, DE, HU, NL
Nationality of employer		BG, HU
Nationality of worker		BG***, FR
Residence of worker	PL	
Geographical position of vessel	BE, DE, NL, PL, UK	
Port visit	SE	
Other	AT, BG, FI, SK	BE**
Unspecified / unknown	CZ, HR	FI****, SE
		EE,CZ,HR,IT,LT,LU,PL,RO,SK*****,UK (10)
Not relevant	CY, DK, ES, IE, GR, LV, MT, PT, SI (9)	

\*AT: (Austrian) employers are accountable for violations of working time regulations and unless enforcement regulations provide otherwise, only for perpetrations in Austria.

\*\* BE: Belgian law applies to Belgian employers and employers operating in Belgium.

Various Belgian collective agreements exist of which the applicability is determined by different criteria.

\*\*\* BG: The flag of the vessel is the criterion and operators are required to fly the national flag.

\*\*\*\* FI: Applies to Finnish vessels in Finnish waters, where Finnish operators must fly the national flag.

\*\*\*\*\* SK: Applicability only to the territory of the Slovak Republic and the operators established in Slovakia

But, the inclusion of self-employed and indirectly hired personnel varies in the EU. The self-employed are fully included in the regulations in four countries and partially in the Netherlands. In Sweden, the regulations of working time apply to all persons in a navigational or watch-keeping function (thus including self-employed) and in the United Kingdom, self-employed masters on passenger vessels (but not freight vessels) are included. A crew, hired via a manning agency, is generally included in the scope, but not in Belgium, Croatia, Italy, Lithuania and Romania. The same applies for temporary agency workers for a slightly different list of countries.

<sup>132</sup> The country abbreviations follow the ISO standards on country codes. The full list of these codes and the country names which they designate is available at:

[http://www.iso.org/iso/country\\_codes/iso\\_3166\\_code\\_lists/country\\_names\\_and\\_code\\_elements.htm](http://www.iso.org/iso/country_codes/iso_3166_code_lists/country_names_and_code_elements.htm)

In seven out of the 19 EU member States with IWT, the maximum daily working time is 14 hours (see Table 10 below). In Austria, Belgium, France and Germany, the maximum working time in any 24 hours is less than 14 hours. In Hungary, the Netherlands, Romania and the United Kingdom, more than 14 hours working time in any 24 hours are allowed. The Dutch Working Hours Act specifies that no deviation on working hours is allowed when it concerns workers on board inland navigation vessels.<sup>133</sup> However, this only applies within the Netherlands. Regardless, a worker in the IWT sector may work a maximum of 12 hours per shift, at no more than 60 hours per week. The guideline also provides that a worker must have between 7 to 11 hours of rest after a working day. At any given rate, after five and a half hours of work, a worker is entitled to at least a 30 minute break.

**Table 10. Working times**

Country	National regulations		Source	Collective agreements	
	Hours	Ref period		Hours	Ref period (source)
AT	48	17/26/52 weeks	AZG §9		TMV does not regulate this aspect
BE	40/45	3/12 months	Labour code §9+26bis	38/40.5	1 year (cao 26/11 and 31/12/2012)
BG	40/---	8 months	Decree 226/2003	55	3 months
CZ	48	26/52 weeks	Act 262/2006 §93		---
DE	48	24 weeks	AZG §2+11, § 7	38/40	24 weeks (§29)
EE	48/52	4 months	Labour code, T§ 46		---
FI	50	2 weeks	Act 248/1982 T§ 1,8,9		
FR			(to be completed)	46	12 weeks (Tconv.coll.T T3293 T§3T)
HR			(to be completed)		---
HU	42	1 year	Labour code	48	1 month
IT	48	4/6/12 months	Decree 66/2003 §4		---
LT	48	4 months	Labour code Art.149		---
LU			(to be completed)		---
NL	48	13/52 weeks	Atb vervoer §5.5:6	48	52 weeks (cao §12.2)
PL	48	4 months	Labour code Art.131		---
RO	48	4 months	Labour code Art.114		---
SE	48	12 months	Act 1998:958, § 3		
SK	48	4 months	Act 462/2007 § 3.2		---
UK	48	17/26/52 weeks	S.I. 2003/3049		---

BG: The Ordinance for labour and immediately associated relations between the crew and vessel owner (226/2003) specifies that the captain is required to take all measures to avoid or minimize overtime of the crew. Crew members have the right to refuse overtime except in emergencies (§25 and 26).

Collective agreement: 720 hours per three months divided by 13 weeks = 55.

DE: Collective agreement: 40 hours per week for navigational staff and 38 hours per week for non-navigational staff (e.g. catering).

EE: 52 hours per week if the agreement is not unreasonably harmful to the employee and the employee can cancel the agreement at any time by giving two weeks' notice.

HU: 2000 hours per year, the consultants divided this by 48 weeks.

<sup>133</sup> See Ministerie van Sociale Zaken en Werkgelegenheid, The Working Hours Act "Information for employers and employees"  
<[http://www.inspectieszw.nl/images/160\\_working%20hours%20act\\_febr10\\_tcm335-313872.pdf](http://www.inspectieszw.nl/images/160_working%20hours%20act_febr10_tcm335-313872.pdf)>  
accessed 23 August 2013.

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Another specific issue for long international voyages along the Rhine and Danube, is how to deal with hours worked in another member State before the vessel entered national territory. For example, when workers have worked six hours in the Netherlands and then continue to work ten hours in Germany, adherence to German working time regulation depends on how the six hours in the Netherlands are accounted for. Along the Rhine, this issue is settled by a regulation of the CCNR. Belgium, France, Germany, the Netherlands and Switzerland are member States of the CCNR and their regulation is also recognized in Luxembourg. Depending on the mode of travel, a maximum of 14 or 18 hours working time in any 24 hours applies, or 24 hours working time in any 48 hours for continuous travel. On the Danube, mutual agreements apply along parts of it, in particular where it is a border river.

A further issue is worth noting at this point, namely, the repercussions and health risks caused by night labour. Night work is generally defined as working time that includes at least one hour of work in night time. For example, night time is defined as 22:00 to 05:00 hours in Austria. Then work from 04:00 till 12:00 is called night work. Five out of the EU member States limit the length of night work to eight or ten hours. In Bulgaria and Romania, night work only entitles the worker to extra pay. In Italy and the United Kingdom, night work entitles the worker to regular free health checks and for example, a transfer to day work if necessary. In four other countries (Finland, Lithuania, the Netherlands and Sweden), night work is prohibited for under age workers. The Netherlands and Sweden make an exception if night work is part of training. Estonia does not regulate night work of mobile workers. With the exception of Poland, all European countries with significant IWT specify health-related conditions for night workers.

#### **4.3.6. Conclusion**

The regulation of working time in inland navigation is dispersed at best. Indeed, there is a general EU Directive on working time, but there are also sector-specific regulations that apply. To further compound the matter, most countries have their own laws on working time. This is coupled with the fact that some countries have unions to help workers bargain collectively. Until such a time that EU Directive 2003/88/EC has direct effect, workers will have to bear with fragmented definitions and regulations of working hours.

### **4.4. Manning levels**

#### **4.4.1. General introduction**

Manning levels on vessels refer to the amount of workers needed in any given operation mode. In general, the bigger the vessel, the more workers needed. The amount of workers can also be determined by the operation mode. There are four modes of operation:

- manning the vessel alone;<sup>134</sup>
- operation of the vessel 14/16 hours a day (A1);
- operating of the vessel 18 hours a day (A2);
- operation of the vessel 24 hours a day (B).

<sup>134</sup> Only possible in the Netherlands, Belgium and France for vessels smaller than 55 metres.

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Accordingly, there are four categories of vessels for which different manning levels are required. These are:

- vessels shorter than 55 metres;
- vessels between 55 and 70 metres long;
- vessels between 70 and 86 metres long;
- vessels longer than 86 metres.

Manning the vessel alone is restricted to barges shorter than 55 metres and only allowed in France, Belgium and the Netherlands, on certain rivers and canals. For safety reasons, it is not allowed to man the vessel alone on the Scheldt,<sup>135</sup> in the Netherlands, Belgium or in Paris (France).

The higher the operation mode, the more crew there should be on board. See Annex II for the various organizations' manning requirements.

#### **4.4.2. Status/level of implementation in Europe**

A study by Europe Economics<sup>136</sup> about the manning requirements in the different member States of the EU, showed that they do not differ substantially across the member States. Europe Economics concluded that no harmonization was needed since they are nearly the same on the Danube and the Rhine. In general, manning requirements are the strictest on the Rhine, meaning that most vessels could easily travel on to other waterways as well. It concluded that the different manning requirements in Europe did not prevent companies from entering other markets.

#### **4.4.3. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

Under the UNECE framework, rules on manning requirements are specified in Chapter 23 of Resolution No. 61. The structure of these requirements is almost identical to the CCNR rules.<sup>137</sup> The only difference is the UNECE does not distinguish between S1 and S2-equipped vessels.<sup>138</sup>

<sup>135</sup>The Scheldt is a 350 km long river in northern France, western Belgium and the south-western part of the Netherlands.

<sup>136</sup> Europe Economics 2009.

<sup>137</sup> Ibid p 4.

<sup>138</sup> The Danube Commission's amended text of UNECE Resolution No. 61 on Chapter 23 establishes two subcategories, S1 and S2, for the equipment of vessels sailing with a minimum crew. The main difference between S2, the higher standard of equipment and S1, the basic equipment, lies in an additional requirement for category S2, to the effect that the vessel or pushed convoy should be equipped with an active bow-rudder and mechanical winches if it is to push other vessels or convoys. Consequently, where a vessel is equipped in accordance with subcategory S2, the minimum crew requirements in sections 23-10 to 23-12 are less strict.

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There is currently no EU legislation that deals with manning requirements in inland waterways.<sup>139</sup> Although Directive 2006/87/EC (as amended by Directive 2006/137/EC) comes close to the Rhine Vessels Inspection Regulations (RVIR), it only provides rules on manning requirements for S1 and S2-equipped vessels.

Detailed rules on manning can be found in Chapter 23 of the RVIR. Rules on the size and composition of crews vary with the length of the vessel, its mode of exploitation (14, 18 or 24 hours/day) and the quality of its technical equipment.<sup>140</sup>

On the Danube, there is no uniform regime regarding the size and composition of crews; this falls within the competence of the individual DC member States.<sup>141</sup> However, the DC uses UNECE Resolution No. 61 as a recommendation on manning requirements for its member States.

The minimum requirements on the Sava are almost identical to UNECE Resolution No. 61. These requirements are defined in Decision 33/07 and are binding on the navigable parts of the Sava.<sup>142</sup>

#### **4.4.4. National laws and practices**

In the Netherlands, exemptions to the number of crew on board a vessel are allowed as long as conditions are met. This exemption can be requested from *Inspectie Leefomgeving en Transport* (Inspectorate of Environment and Transport). Exemptions may be granted in cases where a crew member has fallen ill and their absence poses no risks to persons, property or the environment.<sup>143</sup>

#### **4.4.5. Conclusion**

Boatmasters and their crew are responsible for the safe passage of the vessel. It is, therefore, essential that all persons working on board a vessel meet the minimum requirements for education, training and experience. In addition to this, there must also be a sufficient number of crew available at any time in order to navigate safely. At both international and regional levels, the minimum requirements for crew are adequately harmonized and there is an ongoing initiative at the EU level to further harmonize crew qualifications. As regards the minimum number of crew per vessel of different operation modes, there are also sufficiently harmonized regulations in place both internationally and regionally.

<sup>139</sup> Ibid p 2.

<sup>140</sup> Working Party on IWT Report 2005 p 15.

<sup>141</sup> Ibid.

<sup>142</sup> Europe Economics 2009 p 3.

<sup>143</sup> Inspectie Leefomgeving en Transport, “Koopvaardij”  
<<http://www.ilent.nl/onderwerpen/transport/koopvaardij/bemannings>> accessed 23 October 2013.



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## 5. Safety, health and well-being

### 5.1. Occupational safety, accidents and health

#### 5.1.2. General introduction

Inland navigation has a long history of providing safe transport of passengers and cargo, including hazardous goods. Statistics show that it is one of the safest modes of transport that buttresses the IWT sector's low external costs. However, when accidents do occur they can be fatal and cause injury and damage to the environment, property and navigation infrastructures. Vessels may collide or they could also strike navigation infrastructures, such as fixed or moveable bridges, locks, other vessels or groundings. Navigation-related accidents are especially prevalent in the areas with high traffic, but in general they can occur throughout the inland navigation waterways. In light of the above, accidents can be divided into two groups:

- navigation-related accidents;
- work-related accidents.

The EU adopted a Framework Directive (Directive 89/391 EEC), aimed at improving the safety and health conditions at work.<sup>144</sup> The purpose of the Directive is to encourage member States to improve their practices in this domain, and lay down principles that facilitate the prevention and foster the protection of workers against occupation-related accidents and illnesses.

#### 5.1.3. Navigation-related accidents

Navigation-related accidents include collisions between vessels, groundings and collisions with locks, bridges and other infrastructure. It remains difficult to determine the exact number of accidents and their corresponding injuries and deaths. In the Netherlands, two deaths and 18 injured were reported in the period 1998–2002. An analysis of the number injured shows that eight were injured as a result of a collision between two vessels: near-misses caused two, and collisions with objects (such as bridges and locks) caused six. Two people were injured as a result of unilateral accidents.

Per thousand ton kilometres, 0.039 people are injured and 0.004 crew members die due to navigation-related accidents. This shows that IWT is a safe mode of transport compared to road or rail.

The chance of an accident happening due to communication mistakes because of misunderstanding, or other causes (apart from using the wrong channel on a mariphone), is 2.19 times greater for non-CCNR boatmasters than it is for CCNR boatmasters.<sup>145</sup> Considering the amount of ton kilometres transported by vessels flying non-CCNR flags, the number of accidents, due to miscommunication per ton kilometre, is 5.5 times greater

<sup>144</sup> Framework Directive 89/391 EEC on the introduction of measures to encourage improvements in the safety and health of workers at work.

<sup>145</sup> Data from Rijkswaterstaat, registration of accidents in waterways in the Netherlands. Data analysed by Panteia.

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than for CCNR vessels.<sup>146</sup> Furthermore, the number of accidents due to operational errors per 1,000 ton kilometres is 2.55 times greater than for CCNR vessels.

#### **5.1.4. Work-related accidents**

Not all accidents are navigation related; during navigation, the crew carries out maintenance work and this is not without risk. The probability of a worker being involved in a work-related accident is:<sup>147</sup>

- CCNR 8 accidents per 10,000 workers per year:
- non-CCNR, but EU 14 accidents per 10,000 workers per year;
- non-EU 41 accidents per 10,000 workers per year.

Some accidents are the result of miscommunication. These happen while loading or unloading, when vessels are moored or when two people are working together. The risk of workers from non-CCNR countries (most of them originating from Eastern Europe) being victims of work-related accidents, due to miscommunication, is 3.01 times greater than for workers from CCNR countries.<sup>148</sup>

Other accidents are the result of a lack of knowledge about safety standards or an unwillingness to pay attention to them. They occur while loading or unloading, when vessels are moored or when two people are working together. The risk of workers from non-CCNR countries (most of them originating from Eastern-Europe) is 2.26 times greater than for those from CCNR countries.<sup>149</sup>

#### **5.1.5. Number of casualties**

An analysis of work-related accidents in the period between 1998 and 2009 shows that 24 people died while operating on board a vessel in the Netherlands,<sup>150</sup> 69 people suffered permanent injuries and 70 people recoverable injuries. For 41 people, the impact of their injury could not be ascertained and 156 people had to be taken to hospital as a result of their injuries.

Not all the reported injured were crew members. Out of the 204 reported incidents, 45 were boatmen, boatmasters were involved 30 times and helmsmen 19. All the other injured were operators on the shore (crane operators or those unloading the vessel). In addition, specialists, such as electricians, were reported injured.

<sup>146</sup> Ibid.

<sup>147</sup> Ibid.

<sup>148</sup> Ibid.

<sup>149</sup> Ibid.

<sup>150</sup> RIVM data. The Netherlands covers 30% of all Inland Water Transport in Europe.

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Most injuries reported were as a result of:

- entrapment (28 times);
- a fall (26 times);
- striking objects (15 times).

Most deaths were the result of drowning (13 times), and falling off the vessel and contact with swinging objects led to two deaths.

The age distribution of the casualties is shown in Table 11 below. As the minimum age to start working in the IWT sector is 15 years old, the age group 10–19 contributes disproportionately.

**Table 11. Amount of work-related casualties**

Age group	Casualties	No. of workers	Casualties per 10,000 workers per year
10–19	13	650	3.33
20–29	41	1733	1.97
30–39	51	2477	1.72
40–49	41	2817	1.21
50–59	45	2143	1.75
60–69	8	1099	0.61
70–79	1	7	11.21

Source: Dutch National Institute for Public Health and Environment (RIVM).

The RIVM reports that most injuries were fractures (80), concussions (44), amputations (31), internal injuries (29) and bruises (28). The majority of accidents occur during ordinary operations, when walking on a vessel and losing balance. Out of all the reported drowning accidents (13), eight were the result of not wearing a life jacket.

## **5.1.6. Status/level of implementation in Europe**

### **5.1.6.1. Standards on vessels**

In order to navigate on the Rhine, vessels must meet the requirements of the CCNR and the EU. These institutions give requirements on the stability and strength of a vessel. Furthermore, navigation aids such as lanterns, radars and turn indicators must meet requirements as well in order to achieve safe navigation.

From 2018 onwards, only double-hull tankers will be allowed to transport dangerous goods on inland waterways within the EU.<sup>151</sup> This will increase safety, as vessels are less likely to sink after a collision and the potentially dangerous cargo is protected from damaging the environment.

<sup>151</sup> Germanischer Lloyd, “Inland Waterway” <<http://www.gl-group.com/en/inland-waterway.php>> accessed 3 October 2013.

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#### 5.1.6.2. Safe working

Boatmasters are responsible for the safety of their crew. In the Netherlands, a boatmaster is obliged to identify any risks and make an assessment of them so that crew members know what to anticipate and how to react in case of an emergency.<sup>152</sup>

The carriage of hazardous goods or dangerous cargoes is tightly regulated. There are high safety requirements and hence there are very low accident rates.

#### 5.1.7. Comparison with other sectors

The transportation of cargo in IWT may look safe, but other conclusions could be drawn about the safety of workers. Working outside with machinery can be dangerous.

Comparing IWT with the construction industry, the amount of casualties reported is 1.65 times higher in IWT.<sup>153</sup> The amount of fatalities in IWT compared with the amount reported for truck drivers in the Netherlands, shows that the risk to workers is 2.5 times greater for IWT.<sup>154</sup>

#### 5.1.8. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)

The European Code for Inland Waterways (CEVNI), sets out some core uniform rules on the technical and safety requirements applicable to IWT. Unfortunately, not all UNECE member States use CEVNI as a reference point.<sup>155</sup> The Code draws inspiration from the provisions of the RPR and has been used by the DC as a basis for its elaboration on the “Basic Provisions relating to Navigation on the Danube”. The content of CEVNI evolves with the evolution of the River Commissions’ regulations to ensure harmonization between these documents. A comparative analysis of the different legal regimes takes place on a regular basis, the findings of which will be used as a basis to revise CEVNI. The most recent revision took place between 2008 and 2009. Chapter 1 describes, in very general terms, the duties of crew members, including the boatmaster, in ensuring safe and orderly navigation along waterways. On the vessel, the boatmaster carries the biggest responsibility. In the event of an accident endangering persons on board, or another vessel, they must use every means at their disposal to save them. The onus is also on them to inform the nearest competent authority of the accident as soon as possible.

It is reported that, within the EU, there are high safety requirements and high standards of inspection, training and licencing that contribute to IWT’s exemplary safety record. Directive 89/391 or the Occupational Safety and Health (OSH) Framework Directive on Safety and Health at Work adopted in 1989, represented a milestone in improving the status quo. It establishes minimum requirements across the EU while leaving room for member States to adopt more stringent measures. In addition, there is Directive 92/29/EEC on the minimum safety and health requirements for improved medical treatment on board vessels. While this Directive recognizes the wide range of risks on board a vessel, it does

<sup>152</sup> RI&E, “Bent u RI&E plichtig?” <<http://www.rie.nl/wetgeving>> accessed 10 November 2013.

<sup>153</sup> RIVM, report Bouwnijverheid.

<sup>154</sup> Eurostat.

<sup>155</sup> The United Kingdom, the Nordic countries, Spain, Italy and the Balkans, with the exception of Croatia have their own regulations.

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not apply to inland navigation vessels.<sup>156</sup> There is also Directive 2008/68/EC that establishes a common regime for all aspects of IWT in so far as it concerns dangerous goods. This means that it does not apply to vessels carrying normal cargo. Another directive, Directive 2000/34/EC, was intended to regulate IWT against health and safety risks resulting from long working hours.<sup>157</sup> However, a study conducted by the Dutch Ministry of Traffic and Public Works found that the effectiveness of the Directive is questionable in so far as there is no clear definition of working time. In research conducted by the NEA,<sup>158</sup> adjustments to the Directive will inevitably force businesses to change their business models to fit the working times of the crew.<sup>159</sup> This is said to lead to higher costs, especially in businesses that employ workers for an average of 48 hours per week.

Chapter 11 of the RVIR provides the minimum standards on safety on board a vessel. It is exhaustive to the extent that it covers the required technical specifications of the vessel to ensure a safe working environment. Similarly, the provisions on live-in facilities covered in Chapters 12 to 14, on the dimensions of working space, hallways and their accessibility, are meticulously specified. Article 11.02 establishes, in particular, the provisions on protection against falling.

Chapter 11 of the DC's Recommendations on Laying Down Technical Requirements for Inland Waterway Vessels also covers the safety aspects of working on board a vessel.

The ISRBC does not have its own legislation on technical and safety requirements. However, it refers explicitly to UNECE's Resolution No. 61 and EU Directive 2006/87/EC for guidance.

### **5.1.9. National laws and practices**

In Slovakia, vessels can only operate after they have passed the inspection of the *Štátna plavebná správa* (State Navigation Administration (SNA)).<sup>160</sup> The person responsible for observation of work safety on land is the operator of the public port.<sup>161</sup> On the vessel itself, the onus is on the boatmaster. They are required to report incidences of accidents to the authorities, be it the police or the SNA.<sup>162</sup> The person responsible for reporting to the authorities is then obliged to submit all relevant details regarding the accident, including its cause(s) and consequences. After an investigation has been made, the authorities will issue a report of their findings and recommend measures to prevent the same type of accident

<sup>156</sup> Directive 2000/34/EC of the European Parliament and of the Council of 22 June 2000 amending Council Directive 93/104/EC concerning certain aspects of the organization of working time to cover sectors and activities excluded from that Directive, OJ L 195, art 1(a).

<sup>157</sup> Europe Economics 2009 p 5.

<sup>158</sup> For a description of the abbreviation NEA, refer to section called "Abbreviations".

<sup>159</sup> Vaart, "Arbeidstijdenbesluit beperkt werktijd binnenvaartpersoneel tot 48 uur gemiddeld" <<http://www.vaart.nl/actueel/artikel/1000008874>> accessed 23 October 2013.

<sup>160</sup> 338/2000 *Zákon o vnútrozemskej plavbe a o zmene a doplnení niektorých zákonov* ("Act 338/2000 on the Inland Waterway and Amending Certain Laws") (hereinafter "Act 338/2000") s 22(2).

<sup>161</sup> Act 338/2000 s 6(2).

<sup>162</sup> Act 338/2000 s 34.

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from happening again. Slovakia seems to have a reasonably sophisticated system in place to deal with waterway-related accidents.

In the Netherlands, only 2–3 per cent of vessels (per year) in the Dutch fleet are involved in accidents. From this percentage, only 0.4–0.7 per cent are involved in accidents related to working times and fatigue. In the Russian Federation, the boatmaster is responsible for insuring crew members against possible harm to their health and life in the performance of their duties.<sup>163</sup> There is a specific regulation in Ukraine that governs IWT accidents. As in Slovakia, this regulation also provides rules on investigation and recording of IWT traffic accidents.

Pursuant to Article 34.1 of the Inland Water Transport Code of the Russian Federation, which was introduced by the Federal Law No. 131-FZ of July 2012, owners of vessels registered under the State (other than small craft, pleasure craft and sport sailing vessels) shall develop and implement the safety management system of vessels (SMS). The SMS documentation consists of a number of provisions for safe working conditions of crew members. It was put in place to ensure safe navigation and to hold those on board accountable in the event of any hazardous or emergency situations. The owner of the vessel shall obtain a Document of Conformity and for each vessel a safety management certificate shall be issued.

#### **5.1.10. Conclusion**

The occupational safety aspects of inland navigation are by and large regulated by a set of regimes that are sufficiently harmonized. However, despite this legal harmonization, large differences have been observed while analysing accidents with both vessels and workers. A first analysis by Panteia of accident data from Rijkswaterstaat and RIVM indicates that non-national vessels and workers seem to run a higher risk of being involved in an accident in the Netherlands.<sup>164</sup>

## **5.2. Medical care, accommodation and food**

### **5.2.1. General introduction**

The inland waterway vessel, unlike the fishing vessel, operates along riverbanks. As described in the previous section, the occurrence of injuries and fatalities is quite low in the IWT sector. Despite this, first-aid kits must always be available on the vessel.

The long working hours on an IWT vessel warrants the need for adequately comfortable resting quarters and the provision of food, if not cooking facilities. As for the first-aid kits, the provisions on accommodation and food are meticulously spelled out in the various frameworks in this study.

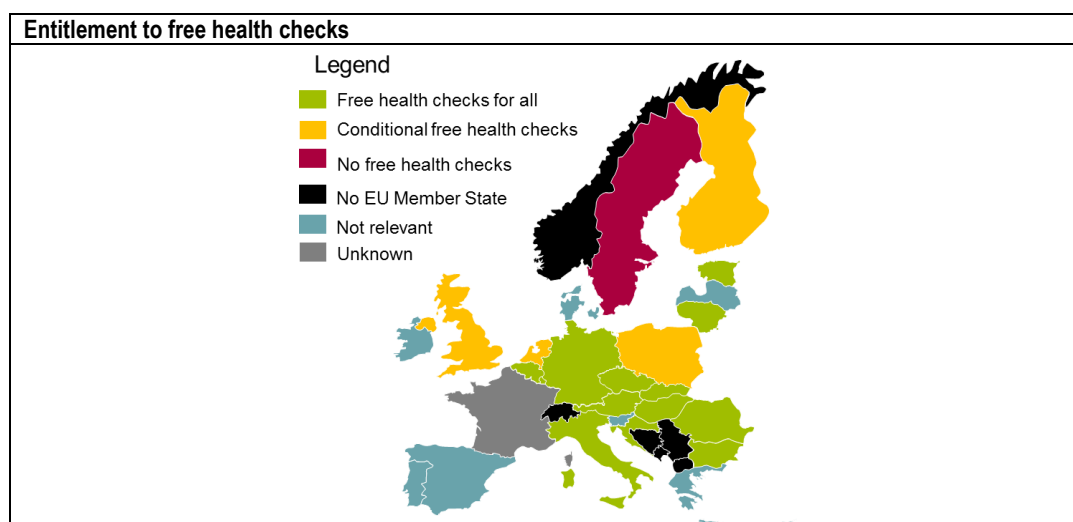
<sup>163</sup> Russian Federation IWT Code art 4.

<sup>164</sup> Analysis performed within the context of an on-going impact assessment for the EC on measures of an EU legal instrument on the recognition of professional qualifications and training standards in inland navigation.

### 5.2.2. Status/level of implementation in Europe

Medical care in the case of post-navigation/work-related accidents is normally covered under a worker's social security entitlements. As an illustration, Figure 10 shows the entitlement of workers to free health checks for countries in the EU. Medical care on board a vessel, however, is reinforced with the provision of first-aid kits. Facilities on board a vessel, such as galleys, accommodation and sanitary spaces are subject to fairly high standards in terms of dimensions and fittings. There are elaborate yet very harmonized rules across Europe in this regard. However, questions have been raised as to whether these standards apply uniformly among vessels of different uses, such as passenger vessels.

Figure 10. Entitlement of workers to free health checks in the EU



Source: Study on the costs and benefits of the implementation of the European Agreement on working time in inland waterway transport – A comparison with the status quo (Ecorys, 2013).

### 5.2.3. International and Regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)

There are no elaborate provisions on medical care in UNECE's Resolution No. 61, but reference is certainly made to the provision of at least one first-aid kit, its location within the vessel (i.e. in an accommodation room or in the wheelhouse) and also its dimension (i.e. side length of at least 10 cm).<sup>165</sup> Chapters 12, 13 and 14 of UNECE Resolution No. 61, provide provisions on crew accommodation, fuel-fired heating, cooking and refrigerating equipment and liquefied gas installations for domestic purposes respectively. One thing that stands out in the Resolution is Article 12-2.1.1 that specifies: “[n]o accommodation shall be located ahead of the plane of the collision bulkhead”. Under EU Directive 2006/87/EC and the RVIR, this provision is not found. However, the same provision can be found in the DC's Recommendations on Laying Down Technical Requirements for Inland Waterway Vessels (mainly because the Recommendations are similar to Resolution No. 61). There is great emphasis on the spatial dimensions, ventilation, piping and gas line installations of crew members' quarters. Clearly, the underlying reason for the various specifications on accommodation is for the comfort and safety of crew members.

Within the EU, all IWT vessels are required to meet certain minimum standards. Similar to Resolution No. 61, EU Directive 2006/87/EC also does not elaborate on its provision of medical/health/emergency care on board vessels. In fact, the few articles that deal with the

<sup>165</sup> UNECE Resolution No. 61 Art 10-2.1.

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provision of first-aid kits resemble those in Resolution No. 61. Article 12.01 of the Directive, provides that accommodation “shall be so designed, arranged and fitted out as to meet the health, safety and comfort needs of those on board.” Befittingly, the accommodation should also be adequately insulated against both heat and cold. It is recommended to have one toilet per accommodation or per six crew members<sup>166</sup> Galleys are provided for the preparation of food and communal meals. As such, at least one cooker, a sink, a refrigerator and sufficient storage and working space should be made available to those on board. The Directive also imposes strict requirements regarding the installation of heating, cooking and refrigeration equipment to safeguard against accidental hazards such as overheating. A recognized inspection body will be appointed to ensure that the provisions on accommodation and live-in facilities are met.<sup>167</sup>

There are no provisions on first-aid kits in the CCNR’s RVIR. The accommodation and food requirements under the CCNR framework mirror that of Directive 2006/87/EC. In fact, their chapters correspond with each other: Chapter 12 regulating the provisions on Accommodation; Chapter 13 on Fuel-fired heating, cooking and refrigerating equipment; and, Chapter 14 on Liquefied gas installations for domestic purposes.<sup>168</sup> The chapters are also similar to that of UNECE’s Resolution No. 61, but contain several nuances when it comes to the order and specificity of certain aspects.

The specificity on the provision of first-aid kits under the DC framework is rudimentary. It only states that they shall be available in sufficient numbers.<sup>169</sup> Details as to where these kits should be located or their dimensions are not given. As regards the technical requirements for live-in facilities on board a vessel, the DC seems to have used Directive 2006/87/EC as its basis.<sup>170</sup> The provisions contained in DC’s Recommendations on Laying Down Technical Requirements for Inland Waterway Vessels are identical to the Directive’s.

#### **5.2.4. National laws and practices**

In accordance with the legislation of the Russian Federation, the boatmaster is responsible for providing crew members, *inter alia*, safe working conditions, regular supply of food and water and adequate facilities, such as sanitary, recreation and medical.<sup>171</sup> Apart from this, the Russian Federation is held to the standards set by the UNECE.

<sup>166</sup> Council Directive 2006/87/EC on laying down technical requirements for inland waterway vessels and repealing Council Directive 82/714/EEC [12 December 2006] OJ L 389/1 art 12.03.

<sup>167</sup> *ibid* arts 12.01(3); 14.13.

<sup>168</sup> See *Reglement Onderzoek Schepen op de Rijn* (“Rhine Vessel Inspection Regulation”) 2011 (hereinafter “RVIR”).

<sup>169</sup> *Empfehlungen über die technischen Vorschriften für Binnenschiffe* (“Recommendations on laying down technical requirements for inland waterway vessels”) 2011 (hereinafter “Recommendations on Technical Requirements”) Art 15-8.9

<sup>170</sup> See Recommendations on Technical Requirements.

<sup>171</sup> Russian Federation IWT Code art 4.



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### **5.2.5. Conclusion**

Inland navigation vessels operate very close to land. As a result of this, it is not necessary to have elaborate rules on the provision of medical care. The same applies to the provision of food. However, the comfort of the workers' quarters and their dimensions in relation to safety is of high importance. These technical details are quite harmonized across Europe as the rules developed by the River Commissions mirror one another to a large extent. However, it is still left to the national authorities to implement these rules. In other words, national authorities have some leeway in defining the standards at the national level.

## **6. Social security**

### **6.1. Social security**

#### **6.1.2. General introduction**

Many issues faced by workers in the IWT sector are similar to those of workers in the international shipping sector. Social security is one of these issues; workers are faced with difficult questions as to which labour law applies to them.

#### **6.1.3. Status/level of implementation in Europe**

According to the ITF, the effects of globalization and the entry of large multinational companies into the IWT sector has led to an increase in the number of owner-operators.<sup>172</sup> Boatmasters are encouraged to own and run their own vessels like small businesses on behalf of large companies. In the past, they would have been employed by these large companies. The consequences of this trend have led to increased competition between owner-operators, thereby creating a race-to-the-bottom situation as prices decline and standards deteriorate. Large companies are able to circumvent their obligations to crew members because they do not actually employ them anymore as they are now directly employed by the owner-operators.

#### **6.1.4. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

International rules on social security are few and, when existing, limit themselves to designating the national legislation applicable and coordinating, as opposed to harmonizing, the social coverage and benefits available in various countries. Accordingly, rules on social security are mainly regulated under the auspices of domestic legislations. The first mechanisms of social security coordination were put in place under the auspices of the ILO for the benefit of Rhine boatmen. The Agreement concerning the social security of Rhine boatmen was adopted by an ILO Conference in 1949. It was the first multi-lateral European instrument for social security that instituted a system for coordinating social security legislation among the countries concerned with the interests of Rhine boatmen, who represent a special class of migrant workers. The Agreement concerning the social security of Rhine boatmen (Rhine Agreement), was revised in 1979 (entering into force on 1 December 1983), in order to include the improvements introduced in the interim by

<sup>172</sup> ITF, "The Industry Today" <[http://www.itfglobal.org/files/extranet/-1/227/inland\\_navigation.pdf](http://www.itfglobal.org/files/extranet/-1/227/inland_navigation.pdf)> accessed 10 October 2013.

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Regulation 1408/71 of the Council of the European Community concerning migrant workers.

Efforts have also been made to coordinate social security issues on a European level. The European Agreement concerning the Social Security of Boatmen engaged in IWT was adopted in 1993. However, it remains powerless since it was only ratified by Bulgaria (in June 2001) and it requires six ratifications to come into force (including three from CCNR member States and three Danube countries).

The EU Regulation 1408/71 applies to all IWT personnel apart from those already covered by the Rhine Agreement. This situation has changed with the adoption of EU Regulation 883/2004, which replaces Regulation 1408/71, and limits the application of the Rhine agreement. As a result, as of the entry into force of the new Regulation 883/2004, the Rhine Agreement no longer applies in signatory States that are also members of the EU (i.e. Belgium, Germany, France, Luxembourg and the Netherlands), nor in Switzerland (since 1 April 2012), when this State decided to apply Regulation 883/2004. The Rhine Agreement continues to apply to non-EU nationals, who do not reside in the EU (for example boatmen from the Philippines or Indonesia), as they are not covered by the EU Regulation 883/2004.<sup>173</sup>

The EU Regulation 883/2004 was questioned within the Sectoral Social Dialogue Committee. In a 2009 joint sectoral contribution to the Commission's consultation on the future of transport, the Committee expressed its concern that the Regulation does not take into account the specificities of the IWT sector, particularly its "trans-national nature of [...] daily work". The Joint Declaration that followed, included a statement on the Regulation being impracticable and difficult to realize because, unlike the Rhine Agreement, none of its provisions recognizes the cross-border character of IWT, thus creating uncertainty.<sup>174</sup>

In consideration of the long-standing tradition, and the special character of navigation on the Rhine, the signatory States of the Rhine Agreement, who are also members of the EU, therefore, concluded a derogation agreement within the framework of EU Regulation 883/2004, on the basis of Article 16 of the said regulation. The "Agreement on determination of legislation applicable to Rhine boatmen, concluded on the basis of Article 16(1) of Regulation (EC) 883/2004",<sup>175</sup> derogates from Articles 11 to 13 of Regulation 883/2004, and provides that Rhine boatmen are governed by the social security scheme applicable to them in the country where the *exploitant*, i.e. the commercial operator, is seated.

### **6.1.5. National laws and practices**

In the Hungarian IWT sector, crew members are covered by both the ordinary social security scheme and certain additional protections specifically available to this category of

<sup>173</sup> The countries affected are Belgium, Germany, France, Luxembourg and the Netherlands.

<sup>174</sup> EBU, ESO-OEB & ETF, "Joint Declaration concerning Social Security Provisions in Inland Waterway Transport" (14 August 2009)  
<[http://ec.europa.eu/employment\\_social/dsw/public/actRetrieveText.do?id=8783](http://ec.europa.eu/employment_social/dsw/public/actRetrieveText.do?id=8783)> accessed 16 October 2013.

<sup>175</sup> Agreement on determination of legislation applicable to Rhine boatmen, concluded on the basis of Article 16(1) of Regulation (EC) 883/2004 (Derogation Agreement concerning legislation applicable to Rhine boatmen), 23 December 2010, available at < [http://www.ccr-zkr.org/files/cass/AccordDerogatoire\\_nl](http://www.ccr-zkr.org/files/cass/AccordDerogatoire_nl)> accessed 25 November 2013.

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worker. Every employer, who operates a vessel registered in Hungary, must conclude both a life and accident insurance for all their employees operating on vessels. Furthermore, employees in the IWT sector, retired IWT workers and their relatives are entitled to transportation allowances.

In the Russian Federation, the social security regime is governed by a complex set of legislation.<sup>176</sup> The social security of Labour Union members is provided by the representatives of the technical inspection and the legal inspection of the Labour Union. These inspections act on the basis of corresponding regulations adopted by the Labour Union and on the basis of Article No. 370 of the Labour Code. The duties of the inspections include monitoring of adherence to social security norms, and other laws and legal acts, as well as local normative acts.<sup>177</sup> The calculation procedure for the periods of work for retirement pensions for crew members of sea-going and river-going ships was cancelled by the Government. After many years of confrontation the preferential terms for the crew members were restored. Currently a supplement was introduced in the Calculation procedure for periods of work being accounted for early granting the old-age retirement pension. This supplement specifies the full navigation period as the full calendar year related to the accumulated work period of crew members.<sup>178</sup>

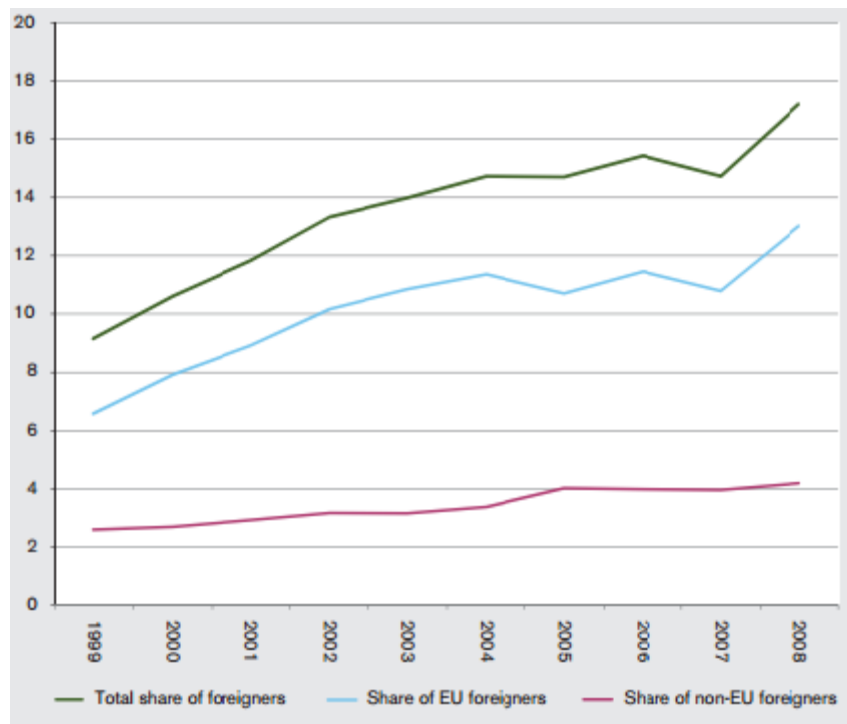
Furthermore, it is interesting to note the extent to which foreign IWT workers are covered by social security when navigating abroad; they fall under the social security scheme of the country where they are employed. This means that in the EU, the coverage of social security schemes will diverge due to different national laws. Germany is a good example to illustrate this point: workers coming from Central and Eastern Europe (most notably from Poland, Hungary, Bulgaria and Romania), are entering the German labour market (also for IWT). From outside the EU, Turkish and Ukrainian workers are also entering the German labour market. Figure 11 shows the proportion of foreign IWT workers covered by social security in Germany at the end of 2008. It indicates that the overall proportion of coverage for foreigners was merely 17 per cent. Furthermore, it shows that non-EU foreign workers have a significantly lower degree of coverage than their EU counterparts.

<sup>176</sup> This includes, Labour Code of the Russian Federation (Federal Law No. 197-FZ of 30.12.2001), the Inland Water Transport Code of the Russian Federation (Federal Law No. 24-FZ of 07.03.2001), Sectoral agreement in the sphere of river transport for 2012–2014 between the Water transport labour union, the Association of shipping companies, the Association of ports and shipowners of river transport and the Association of communication officers of maritime and river transport, etc.

<sup>177</sup> Information obtained from the Russian Federation Delegation to the UNECE on 31 October 2013 (information available on request).

<sup>178</sup> Ibid.

Figure 11. Proportion (values in %) of foreigners among workers covered by social security in German inland navigation



Source: Bundesagentur für Arbeit; Reprinted in CCNR Market Observations of 2009.<sup>179</sup>

### 6.1.6. Conclusion

In conclusion, the central issue, related to the social security aspect of the IWT sector studied, focuses on the problem of identifying the applicable law governing the social security regime of the different workers. The interactions and the harmonization efforts between the EU and the CCNR is a step forward. Regulation 883/2004 ensures protection in the areas of health care, accident-related benefits, pensions and unemployment benefits for both EU citizens and foreign workers living in the EU. It must be noted, however, that the CCNR has limited competence in harmonizing the social security of workers. The CCNR Secretariat merely acts as an administrative body for the running of the Rhine Agreement, which remains distinct from the CCNR.

<sup>179</sup> CCNR, “Inland Navigation in Europe: Market Observation No. 9: Supply and Demand in 2008 and Analysis of the Situation as of Mid-2009”, 2009, Figure 24, p. 40.

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## 7. Enforcement

### 7.1. Enforcement

#### 7.1.2. General introduction

According to the ITF, the few international regulations protecting workers in inland navigation, as well as regional and national regulations, are enforced in such an irregular manner that abuses in the system become evident; for instance, the use of open registries.<sup>180</sup> Periodic checks or random inspections depend on national practices.

River police check vessels quite often for compliance with their regulations on inland navigation. Checks are done on all documents, communication methods and equipment, such as service records of the crew, the service book of the vessel and inflatable life jackets.

#### 7.1.3. Status/level of implementation in Europe

Stringent enforcement of the various IWT legislations may prove to be a difficult and costly process. The multi-layered institutional landscape of Europe's IWT sector lacks the strength to attract sufficient political attention to develop it.<sup>181</sup> As a result, harmonization will continue until minimum standards are achieved.

Cross-border transport makes up over 75 per cent of inland navigation in the EU.<sup>182</sup> To reap the full benefits of the EU internal market, much harmonization is needed. Despite progress achieved under NAIADES I, there are many areas not yet harmonized (hence, the introduction of NAIADES II). This makes rules more difficult to observe and enforce. Naturally, this allows for operators to “shop” around for the rules that suit them best (to illustrate this, see the Box below).

<sup>180</sup> ITF, “The Industry Today” <[http://www.itfglobal.org/files/extranet/-1/227/inland\\_navigation.pdf](http://www.itfglobal.org/files/extranet/-1/227/inland_navigation.pdf)> accessed 10 October 2013.

<sup>181</sup> European Framework for Inland Navigation (EFIN) Group, *Report: A New Institutional Framework for the European Inland Navigation* (October 2004) p 30.

<sup>182</sup> European Commission, “Towards quality inland waterway transport” (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 19 September 2013) OJ L 255, p 10.

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**Box 1. Fraud Issues and illegal employment**

Are forged documents and illegal employment a serious issue in inland navigation?

AQUAPOL<sup>183</sup>: They really are. Often we see the combination of both.

What are the immanent dangers of fraud in the sector?

AQUAPOL: one danger is that crew is not qualified. Another danger is that crew members are exploited in such a way that they have very long working hours (in this context the German press wrote about “modern slavery in inland shipping”). Criminal investigations in the Netherlands have led to convictions of persons of criminal organizations, who organized illegal (extremely cheap) labour from the Philippines on Dutch inland vessels. In this way, organized crime can infiltrate and influence the inland shipping business. Language problems often create risk; accidents have happened because of this. The total mess in relation to the existing documentation really facilitates fraud.

Source: Panteia interview with Mr. Ad Hellemons, Director of AQUAPOL, 13th November 2012.

#### **7.1.4. International and regional laws and practices (UNECE, EU, CCNR, DC, ISRBC)**

As mentioned above, the UNECE has an initiative called CEVNI, the purpose of which is to achieve uniform rules on technical and safety requirements. It was largely inspired by the CCNR’s RPR. Together, the UNECE, CCNR, DC and ISRBC are working on the development of a joint document to further enhance the harmonization of police rules.<sup>184</sup> This process will most probably take several years to complete. A group known as the CEVNI Expert Group is entrusted with the power to monitor the implementation of the CEVNI code by governments and River Commissions. A successful example of the work by the CEVNI Expert Group is the harmonization of rules in line with the CEVNI code achieved by the DC and ISRBC.<sup>185</sup>

Both the EU and the CCNR recognize that enforcement is a challenge. Nevertheless, in a communication from the EU Commission to the relevant institutions, it expressed its intention to improve, among others, international cooperation, the regulatory framework for inland waterways and to facilitate enforcement.<sup>186</sup>

In terms of enforcement, the CCNR and the DC have their own “river police” to enforce compliance with their regulations on inland navigation. Police navigation rules are drawn up by the CCNR Police Regulations Committee. The main areas of responsibility of the CCNR’s river police include safety of navigation, operation of vessels and behaviour of river traffic. The provisions on these areas are defined in the RPR. The CCNR river police’s mandate is limited to monitoring vessels’ observance of the safety and technical requirements. Every few years, the river and navigation police authorities of the member

<sup>183</sup> AQUAPOL is the self-governing Association of maritime- and inland navigation related law-enforcement authorities from EU member States and from Switzerland. More information on AQUAPOL can be found at [www.aquapol-police.com](http://www.aquapol-police.com).

<sup>184</sup> CCNR, “Police of navigation/traffic rules” <<http://www.ccr-zkr.org/12020100-en.html>> accessed 9 October 2013.

<sup>185</sup> UNECE Inland Transport Committee (Working Party on IWT), “Administration of CEVNI”, ECE/TRANS/SC.3/2013/4, p 2.

<sup>186</sup> CCNR, “Police of navigation/traffic rules” <<http://www.ccr-zkr.org/12020100-en.html>> accessed 9 October 2013.

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States to the CCNR meet to discuss the progress on harmonization of traffic rules and to exchange notes on the practical application of these rules.<sup>187</sup>

### **7.1.5. National laws and practices**

In Slovakia, the State is responsible for enforcing *Zbierka zákonov č. 338/2000* (Act 338/2000) on Inland Waterways. The Act covers, among others: the rights and obligations of crew members; investigation of accidents; the competence of State administration and State supervision in inland navigation; and, sanctions concerning any non-compliance with the Act. It observes a number of EU legislations.<sup>188</sup> The bodies involved include the Ministry of Transport, Posts and Telecommunications and, particularly, the State Navigation Administration.<sup>189</sup> The latter is responsible for monitoring the compliance of vessels with the Act and other binding legislations, including the international ones that the Slovak Republic is bound to. Its powers include, and are not limited to, terminating the operation of a vessel in violation of its obligations, and imposing fines.<sup>190</sup> There is also a nautical inspector authorized to board vessels for the purpose of monitoring their compliance with the Act.<sup>191</sup>

In the Netherlands, the transposition of certain directives can be problematic, for instance the implementation of the EU Directive 2000/34/EC, concerning certain aspects of the organization of working time to cover sectors excluded from Directive 93/104/EC (amended Directive 2003/88/EC). It was forecast that the implementation of the recommended 48-hour working week may cost the government an estimated €6 million in the worst case scenario. This cost factor may also be exacerbated by how resting and working times are defined in various national legislation, rendering enforcement a tedious process. In addition, a study in the Netherlands on IWT also revealed that the gains of a reduced accident risk would not outweigh the increased costs of operation.

### **7.1.6. Conclusion**

Despite international and regional legislation on various aspects of inland navigation, enforcement remains lax. To a large extent, this is due to the non-binding nature of most legislation and the scope for discretion afforded to national authorities to implement and enforce the law. In other words, the responsibility still lies with the respective competent authorities within each domestic jurisdiction. At this juncture, it is highly dependent on the quality of enforcement within each State.

<sup>187</sup> CCNR, «IV-Comité Politierèglement » <[http://www.ccr-zkr.org/files/programtravail/Resolution2011-II-6\\_RP\\_nl.pdf](http://www.ccr-zkr.org/files/programtravail/Resolution2011-II-6_RP_nl.pdf)> accessed 9 October 2013.

<sup>188</sup> Act 338/2000 Annex 1.

<sup>189</sup> Act 338/2000 s 37.

<sup>190</sup> Ibid s 39d.

<sup>191</sup> Ibid s 39e.

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## 8. Conclusion

The IWT sector in Europe undoubtedly contains a mature set of systems, some of which are very elaborate and others still evolving. Regulatory bodies such as the UNECE, EU, CCNR, DC and ISRBC have unanimously recognized, in one way or another, the need to harmonize the disparity between them. Successful outcomes include the usage of UNECE's Resolution No. 61 as a benchmark for all things technically-related to the inland navigation vessel. Also, the mutual recognition of boatmasters' certificates, by virtue of EU Directive 96/50/EC, has contributed to a level playing field across Europe. These successes were not without criticism. The Sectorial Social Dialogue Committee has been actively monitoring the efficacy of these harmonization rules. It has diligently followed up on any areas that need improvement or can be introduced as an area needing to be addressed, such as minimum wages.

Unquestionably, workers in the IWT sector are sufficiently provided for at the beginning of their careers, that is they will have less difficulty in having their qualifications, training and working times recognized. However, when they have been in the sector for a longer period, this is less so. Nevertheless, the worker may become a secondary factor, depending on the manning agency, the country and the legislation they are subject to. If it was not for the strength of social dialogue, IWT workers would remain ignorant of their working conditions. Obviously, wages are higher in the West than in the East, therefore, many move to the West for the better opportunities, but this can be complicated as more rules and regulations come into play. It is, therefore, critical that workers join trade unions to enable them to understand the sector's developments and its range of opportunities.

This report set out to identify the regulatory gaps across international, regional and national borders. It suffices to say, the gaps are narrowing. As long as international and regional plans of actions keep up their momentum, national plans of actions will soon be forced to follow suit.



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## Annex I. Estimated self-employment and mobile workers for 2011

Table. Estimated self-employed and mobile workers for 2011<sup>192</sup>

Countries (EU-27 plus Croatia)	Freight			Passenger			Total IWT employment	% Mobile workers <sup>193</sup>
	Self-employed	Mobile workers	Total freight	Self-employed	Mobile workers	Total passenger		
Netherlands*	4,908	5,912	10,820	731	2,357	3,088	13,908	28%
Germany*****	577	2,197	2,774	288	2,527	2,815	5,589	16%
France*	577	1,096	1,673	60	1,967	2,027	3,700	10%
Luxembourg**	180	2,375	2,555	18	238	256	2,811	9%
Italy*	231	403	634	993	926	1,919	2,553	5%
Belgium*	1,294	557	1,851	326	222	548	2,399	3%
Romania*	14	2,067	2,081	18	230	248	2,329	8%
Bulgaria***/****	1,817	60	1,877	385	13	398	2,275	0%
Sweden*	14	104	118	191	792	983	1,101	3%
United Kingdom*	60	239	299	162	590	752	1,051	3%
Hungary*	9	258	267	25	575	600	867	3%
Portugal**	0	0	0	13	840	853	853	3%
Czech Republic*	42	474	517	58	225	283	800	2%
Poland*	98	215	313	103	200	303	616	1%
Slovakia*	1	412	413	0	31	31	444	2%
Spain*	6	38	44	20	324	344	388	1%
Finland*	1	38	39	28	200	228	267	1%
Austria*	1	50	51	57	100	157	208	1%
Lithuania*	0	0	0	4	141	145	145	0%
Denmark*/**	6	42	48	12	83	95	143	0%
Latvia*	0	89	89	0	17	17	106	0%
Estonia**	0	0	0	1	60	61	61	0%
Slovenia*	24	16	40	13	8	21	61	0%
Ireland	0	0	0	0	0	0	0	0%
Greece	0	0	0	0	0	0	0	0%
Cyprus	0	0	0	0	0	0	0	0%
Malta	0	0	0	0	0	0	0	0%
Latvia*	0	89	89	0	17	17	106	0%
Croatia*/**	7	114	121	6	5	12	133	
<b>Total</b>	<b>9,866</b>	<b>16,758</b>	<b>26,624</b>	<b>3,513</b>	<b>12,671</b>	<b>16,184</b>	<b>42,808</b>	<b>100%</b>
Of which mobile workers							29,429	69%

<sup>192</sup> The total number of persons employed in the IWT sector is given for 2011 for all the countries (provisional data). Nevertheless, information on the distinction between mobile workers versus self-employed is not yet available. The division has been estimated based on the shares in EUROSTAT from 2010 or national statistics/literature review.

<sup>193</sup> Compared to total number of mobile workers in EU-27+Croatia (excluding countries unknown).

Of which self-employed	13,379	31%
<p>* Based on division between mobile workers and self-employed given by EUROSTAT for 2010 or most recent year.</p> <p>** Based on number of enterprises in 2010 (or most recent information) and the average number of self-employed and average number of workers per enterprise.</p> <p>*** Based on survey carried out in 2013 under Ministries, Trade unions and Employers' organizations.</p> <p>**** Based on share freight and passenger vessel within the IVR vessel registration for the year 2011.</p> <p>***** Based on available statistics for 2011.</p>		

Source: EUROSTAT; Belgium (source: RSVZ, ITB, RSZ); Germany (source: DESTATIS); Poland Central Statistical Office. Poland); Survey carried out in 2013 under Ministries, Trade unions and Employer organizations (Austria; Luxembourg and Bulgaria).

EUROSTAT does not provide distinct data before 2008, enabling the estimation of self-employed and mobile workers. Therefore, the shares presented from 2008 until 2011 have been estimated based on the numbers of the countries where this information is known.

## Annex II. Manning requirements

**Table 1. Minimum crew for self-propelled vessels and pushers**

Group		Crew members	Number of crew members for operating mode A1, A2 or B and for equipment standard S1, S2					
			A1		A2		B	
			S1	S2	S1	S2	S1	S2
1	L≤70 m	Boatmaster	1		2		2	2
		Helmsman	-		-		-	-
		Able crewman	-		-		-	-
		Crewman	1		-		1	-
		Apprentice	-		-		1	2 <sup>13</sup>
2	70m<L≤86m	Boatmaster	1 of 1	1	2		2	2
		Helmsman	- -	-	-		-	-
		Able crewman	1 -	-	-		-	-
		Crewman	- 1	1	-		2	1
		Apprentice	- 1	1	1		-	1
3	L>86m	Boatmaster	1 of 1	1	2	2	2 of 2	2
		Helmsman	1 1	1	-	-	1 1	1
		Able crewman	- -	-	-	-	- -	-
		Crewman	1 -	-	1	-	2 1	1
		Apprentice	- 2	1	1	2	- 1	1

<sup>1)</sup> The apprentice or one of the apprentices may be replaced by a deckhand  
<sup>2)</sup> The helmsman shall hold the licence prescribed in the Rhine Licensing Regulations  
<sup>3)</sup> One of the apprentices shall be more than 18 years of age

Source: CCNR, 2010, Rhine Vessels Inspection Regulations on Manning Requirements, article 3



**Table 2. Minimum crew for rigid convoys and other rigid assemblies**

Group	Crew members	Number of crew members for operating mode A1, A2 or B and for equipment standard S1, S2					
		A1		A2		B	
		S1	S2	S1	S2	S1	S2
1 Abreast formation with the dimensions L≤37 m B≤15 m	Boatmaster	1		2		2	2
	Helmsman	-		-		-	-
	Able crewman	-		-		-	-
	Crewman	1		-		1	-
	Apprentice	-		-		1	2 <sup>13</sup>
	Engineer or engine-minder	-		-		-	-
2 Abreast formation with the dimensions 37m<L≤86 m B≤15 m	Boatmaster	1 of 1	1	2		2	2
	Helmsman	- -	-	-		-	-
	Able crewman	1 -	-	-		-	-
	Crewman	- 1	1	-		2	1
	Apprentice	- 1	1	1		-	1
	Engineer or engine-minder	- -	-	-		-	-
3 Pusher + 1 barge of L>86m or abreast formation with the dimensions 86m<L≤116,5 m B ≤ 15 m	Boatmaster	1 of 1	1	2	2	2 of 2	2
	Helmsman	1 1	1	-	-	1 1	1
	Able crewman	- -	-	-	-	- -	-
	Crewman	1 -	-	1	-	2 1	1
	Apprentice	- 2	1	1P <sup>1</sup>	2P <sup>1</sup>	- -	1
	Engineer or engine-minder	- -	-	-	-	- -	-
4 pusher + 2 barges, self-propelled vessel + 1 barge	Boatmaster	1	1	2	2	2 of 2	2 of 2
	Helmsman	1	1	-	-	1 1 <sup>2</sup>	1 1 <sup>2</sup>
	Able crewman	-	-	-	1	- -	1 1
	Crewman	1	-	2	-	2 2	- -
	Apprentice	1P <sup>1</sup>	2P <sup>1</sup>	1P <sup>1</sup>	2P <sup>1</sup>	- -	1 1
	Engineer or engine-minder	-	-	-	-	1 -	1 -
5 pusher + 3 or 4 barges, self-propelled vessel + 2 or 3 barges	Boatmaster	1 of 1	1	2	2	2 of 2	2 of 2
	Helmsman	1 1	1	-	-	1 1	1 1
	Able crewman	- -	-	-	1	- -	1 1
	Crewman	2 1	1	2	-	2 2	- -
	Apprentice	- 2	1	1 <sup>1</sup>	2 <sup>1</sup>	1 <sup>1</sup> -	2 1
	Engineer or engine-minder	1 1	1	1	1	1 1	1 1
6 pusher + more than 4 barges	Boatmaster	1 1	1	2	2	2 of 2	2 of 2
	Helmsman	1 1	1	-	-	1 1	1 1
	Able crewman	- -	1	-	1	- -	1 1
	Crewman	3 2	1	3	1	3 3	1 1
	Apprentice	- 2	1	1 <sup>1</sup>	2 <sup>1</sup>	1 <sup>1</sup> -	2 <sup>1</sup> 1
	Engineer or engine-minder	1 1	1	1	1	1 1	1 1

<sup>1)</sup> The apprentice or one of the apprentices may be replaced by a deckhand

<sup>2)</sup> The helmsman shall hold the licence prescribed in the Rhine Licensing Regulations

<sup>3)</sup> One of the apprentices shall be more than 18 years of age

Source: CCNR, 2010, Rhine Vessels Inspection Regulations on Manning Requirements, article 3

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## Central Commission for the Navigation of the Rhine

With Resolution 2010-I-8-Annex 1, the Central Commission has adopted the Regulations for Rhine navigation personnel (RPN), which came into force on 1 July 2011.

### Title II: Manning requirements

This section sets out the manning requirements and minimum crew on board, formerly set out in Chapter 23 of the RVBR regulations. It also contains additional requirements applicable to safety personnel required on passenger vessels, previously covered by a separate regulation.

#### **Deckhand:**

must be not less than 16 years of age.

#### **Apprentice (ship's boy):**

must be not less than 15 years of age and have an apprentice's contract, which provides for attendance at a professional boatmasters' school, or for a correspondence course approved by the competent authority to be taken in preparation for an equivalent diploma.

#### **Ordinary crewman:**

- must be not less than 17 years of age and:
- have passed an examination on completion of the training referred to in 2.2; or
- have passed an examination on completion of training in a professional boatmasters' school; or
- have passed any other examination for able crewman recognized by the competent authority; or
- must be not less than 19 years of age and have had not less than three years' experience as a deckhand, including not less than one year in inland navigation and two years either in inland navigation or at sea in coastal navigation or fishing.

#### **Engine-minder:**

- must be either an ordinary crewman and:
- have passed an engine-minder's examination recognized by the competent authority; or
- must have had not less than one year's experience on board a motorized inland navigation vessel and have a basic knowledge of engines.

#### **Able crewman:**

- must have had not less than one year's experience in inland navigation as an ordinary crewman and
- have successfully completed the training; or
- have passed the final examination of a professional boatmasters' school; or

- 
- have passed any other examination for ordinary crewman recognized by the competent authority; or
  - must have successfully completed training of a duration of not less than three years or have passed a final examination following training of not less than three years in a professional boatmasters' school provided the training includes not less than one year's experience in inland navigation; or
  - must have had not less than one year's experience in inland navigation as an ordinary crewman, and have passed a practical examination in accordance with the Rhine Licensing Regulations; or
  - must have had not less than two years' experience in inland navigation as an ordinary crewman.

**Helmsman:**

- must have had not less than one year's experience in inland navigation as an able crewman or not less than three years' experience as an ordinary crewman; or
- must hold a boatmaster's certificate established under Directive 96/50/EC or a boatmaster's certificate in accordance with Appendix I to Directive 91/672/EEC; or
- must have had not less than four years' experience in inland navigation and hold a certificate of proficiency equivalent to the Principal Licence, permitting him to act as helmsman of a vessel on the inland waterways of a member State of the Central Commission for the Navigation of the Rhine; or
- must have had not less than four years' experience in inland navigation and hold a certificate of proficiency recognized by the Central Commission for the Navigation of the Rhine as equivalent to the Principal Licence in accordance with the Rhine Licensing Regulations, permitting him to act as helmsman on vessels on other inland waterways.

**Boatmaster:**

must hold the licence required under the Rhine Licensing Regulations.

**Engineer:**

- must be at least 18 years of age and have passed an examination on completion of a full training course in the engine and mechanics sectors; or
- must be at least 19 years of age and have worked for not less than two years as an engine-minder on a motorized inland navigation vessel.

**Sava River Commission**

Rules on minimum manning requirements for the vessels on the Sava river basin

Article 2.1 - Crew members

- The minimum crew of a vessel, ensuring the safety of its operation, may consist of the following crew members:

- 
- Boatmaster;
  - Chief Mate;
  - Helmsman;
  - Boatswain;
  - Ordinary crewman;
  - Engineer;
  - Engine-minder.

Article 2.2 - Minimum requirements for crew members.

**1. Boatmaster:**

- a) means the person referred to in the Article 1.02 of the Navigation Rules on the Sava River Basin, who has the necessary aptitude and qualifications to navigate a vessel on the Sava River waterway, as well as the general responsibility for the ship and navigation;
- b) shall hold a boatmaster's licence issued in accordance with the Rules on Minimum Requirements for the Issuance of Boatmasters' Licences on the Sava River Basin.

**2. Chief Mate:**

- a) means the person in charge for navigational watch, who has the necessary aptitude and qualifications to navigate a vessel on the Sava River waterway, and who has nautical responsibility on board during the watch;
- b) shall hold a boatmaster's licence issued in accordance with the Rules on Minimum Requirements for the Issuance of Boatmasters' Licences on the Sava River Basin.

**3. Helmsman:**

- a) shall have not less than one year of navigation service on board the motorized vessel in inland navigation as an boatswain or, not less than three years of navigation service on board the motorized vessel as an ordinary crewman, including not less than one year in inland navigation and two years either in inland navigation or at sea; or
- b) shall have successfully completed vocational training and have passed final examination approved by the competent authority, provided that the training includes navigation service in inland navigation as a helmsman-apprentice or as an ordinary crewman for a period determined by the competent authority.

**4. Boatswain:**

- a) shall have not less than one year of navigation service in inland navigation as an ordinary crewman, and have successfully completed the vocational training and passed the final examination at a professional college of inland navigation, or a correspondence course approved by the competent authority to be taken in the preparation of an equivalent diploma, or have passed any other examination for ordinary crewman recognized by the competent authority; or

- 
- b) shall have successfully completed vocational training referred to in item (a) above of a duration of not less than three years, or have passed a final examination following training of not less than three years in a professional college of inland navigation, provided the training includes not less than one year of experience in inland navigation; or
  - c) shall have not less than two years of navigation service in inland navigation as an ordinary crewman within the meaning of paragraph 3. item (a).

**5. Ordinary crewman:**

- a) shall be not less than 17 years of age and have passed an examination on completion of the vocational training referred to in paragraph 4 (a) above, or have passed any other examination for ordinary crewman recognized by the competent authority; or
- b) shall have not less than three years of navigation service as a member of the vessel's deck department, including not less than one year in inland navigation and two years either in inland navigation or at sea.

**6. Engineer:**

- a) shall be at least 18 years of age and have passed an examination on completion of a full vocational training course in the engine or mechanics sectors; or
- b) shall have worked for not less than two years as an engine-minder on a motorized inland navigation vessel.

**7. Engine-minder:**

- a) shall be not less than 17 years of age and either:
- b) be an ordinary crewman and have passed an engine-minder's examination recognized by the competent authority; or
- c) have not less than one year of navigation service on board a motorized inland navigation vessel as an ordinary crewman and have a basic knowledge of engines.

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## **DONAUKOMMISSION (in German)**

8. Sitzung der Kleinen Gruppe zur Vereinheitlichung der Schiffsführerzeugnisse

5. – 6. November 2012

Neue Fassung von Kapitel 23

### **UBESATZUNG UND PERSONAL**

der „Empfehlungen über die technischen Vorschriften für Binnenschiffe“

- a) Schiffsführer;
- b) Steuermann;
- c) Bootsmann;
- d) Matrosen-Motorwart;
- e) Matrose;
- f) Leichtmatrose;
- g) Decksmann;
- h) Elektromechaniker;
- i) Maschinist;
- j) Funker.

#### **Schiffsführer**

der Besitz eines auf der Grundlage der „Empfehlungen der Donaukommission über Schiffsführerzeugnisse“ erteilten Schiffsführerzeugnisses für die Führung von Binnenschiffen oder eines als gleichwertig anerkannten Schiffsführerzeugnisses.

#### **Steuermann**

- a) eine Fahrzeit in der Binnenschiffahrt von mindestens einem Jahr als Bootsmann oder von mindestens drei Jahren als Matrose nach oder
- b) erfolgreicher Abschluss einer Ausbildung, wenn diese Ausbildung eine Fahrpraxis in der Binnenschiffahrt als Steuermann-Lehrling oder Matrose während einer von der zuständigen Behörde festgelegten Zeit einschließt, oder
- c) eine andere mit Erfolg abgelegte, von der zuständigen Behörde anerkannte Steuermannsprüfung

#### **Bootsmann**

- a) eine Fahrzeit in der Binnenschiffahrt von mindestens einem Jahr als Matrose und
  - ein erfolgreicher Abschluss der Ausbildung oder

- 
- eine mit Erfolg abgelegte Abschlussprüfung an einer Binnenschifferberufsschule oder einer gleichwertigen, staatlich anerkannten Ausbildungsstätte oder
  - eine andere mit Erfolg abgelegte, von der zuständigen Behörde anerkannte Matrosenprüfung Bootsmannprüfung oder
- b) ein erfolgreicher Abschluss einer mindestens dreijährigen Ausbildung oder eine mit Erfolg abgelegte Abschlussprüfung nach einer mindestens dreijährigen Ausbildung an einer Binnenschifferberufsschule, wenn diese Ausbildung eine Fahrzeit in der Binnenschiffahrt von mindestens einem Jahr einschließt oder
- c) eine Fahrzeit in der Binnenschiffahrt von mindestens zwei Jahren als Matrose.

### **Matrosen-Motorwart**

ein Mindestalter von 17 Jahren und

- a) die Befähigung als Matrose und eine von der zuständigen Behörde anerkannte, mit Erfolg abgelegte Prüfung als Matrosen-Motorwart, oder
- b) eine Fahrzeit von mindestens einem Jahr als Matrose auf einem Binnenschiff mit eigener Triebkraft und nachgewiesene Grundkenntnisse in der Motorenkunde und Mechanik.

### **Matrose**

- a) ein Mindestalter von 17 Jahren und
- ein erfolgreicher Abschluss der Ausbildung oder
  - eine mit Erfolg abgelegte Abschlussprüfung an einer Binnenschifferberufsschule, wenn diese Ausbildung eine Fahrpraxis in der Binnenschiffahrt einschließt oder
  - eine andere mit Erfolg abgelegte, von der zuständigen Behörde anerkannte Matrosenprüfung, oder
- b) ein Mindestalter von 19 Jahren und eine Fahrzeit als Angehöriger der Decksmannschaft von mindestens drei Jahren; davon müssen mindestens ein Jahr in der Binnenschiffahrt und zwei Jahre in der Binnenschiffahrt oder in der See- oder Küstenschiffahrt abgeleistet sein.

### **Leichtmatrose**

Ein Mindestalter von 15 Jahren und ein vertraglich geregeltes Lehrverhältnis mit Besuch einer Binnenschifferberufsschule oder mit Teilnahme an einem von der zuständigen Behörde anerkannten Fernkurs, der auf ein gleichwertiges Abschlusszeugnis vorbereitet. Er darf nur unter Aufsicht einer ausgebildeten Person an Bord arbeiten.

### **Decksmann**

Ein Mindestalter von 16 Jahren . Er darf nur unter Aufsicht einer ausgebildeten Person an Bord arbeiten.

### **Elektromechaniker Besatzungsmitglied gemäß der nationalen Gesetzgebung**

- 
- a) Ein Mindestalter von 18 Jahren und eine mit Erfolg abgelegte Abschlussprüfung eines Berufsausbildungskurses auf dem Gebiet der Schiffselektromechanik. Oder
  - b) ein Mindestalter von 18 Jahren und eine von der zuständigen Behörde festgelegte Fahrzeit als Mitglied der Besatzung.

#### **Maschinist**

- a) ein Mindestalter von 18 Jahren und eine mit Erfolg abgelegte Abschlussprüfung eines Berufsausbildungskurses in Motorenkunde und Mechanik, oder
- b) ein Mindestalter von 18 19 Jahren und eine von der zuständigen Behörde festgelegte Fahrzeit und eine Fahrzeit von mindestens zwei Jahren als Matrosen-Motorwart auf einem Binnenschiff mit eigener Triebkraft.

#### **FunkerBesatzungsmitglied gemäß der nationalen Gesetzgebung:**

Ein Mindestalter von 18 Jahren und eine mit Erfolg abgelegte Abschlussprüfung eines Berufsausbildungskurses auf dem Gebiet des Schifffahrtsfunks und eine von der zuständigen Behörde festgelegte Fahrzeit als Mitglied der Besatzung. oder Abschluss einer entsprechenden, mindestens zweimonatigen Probezeit an Bord von Binnenschiffen.

#### **UN-ECE Resolution No. 61 (23-2.1)**

The minimum crew of a vessel, ensuring the safety of its operation, may consist of the following crew members:

- a) Boatmaster;
- b) Helmsmen;
- c) Able crewmen;
- d) Ordinary crewmen;
- e) Engineer;
- f) Electrician-engineer;
- g) Engine-minder;
- h) Radio operator. In accordance with the national rules of the Russian Federation and Ukraine only.

On inland waterways, where national or international legislation so allows, the minimum crew of vessels, ensuring the safety of its operation may also include apprentices and deckhands.

#### **Boatmaster:**

shall hold a boatmaster's certificate issued in accordance with the Recommendations on Minimum Requirements for the Issuance of Boatmasters' Certificates in Inland Navigation with a view to their Reciprocal Recognition for International Traffic (Resolution No. 31 of 12 November 1992, revised).



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**Helmsman:**

shall be not less than 17 years of age and

- a) shall have had not less than one year's experience in inland navigation as an able crewman or not less than three years' experience as an ordinary crewman; or
- b) shall have successfully completed training provided the training includes experience in inland navigation as a helmsman-apprentice or as an ordinary crewman for a period determined by the competent authority.

**Able crewman:**

- a) shall have had not less than one year's experience in inland navigation as an ordinary crewman and
  - have successfully completed the training referred to in 23-2.3.5 below; or
  - have passed the final examination of a professional college of inland navigation; or
  - have passed any other examination for ordinary crewman recognized by the competent authority; or
- b) shall have successfully completed training referred to in 23-2.3.5 below of a duration of not less than three years or have passed a final examination following training of not less than three years in a professional college of inland navigation, provided the training includes not less than one year's experience in inland navigation; or
- c) shall have had not less than two years' experience in inland navigation as an ordinary crewman.

**Ordinary crewman:**

- a) shall be not less than 17 years of age and
  - have passed an examination on completion of the training referred to in 23-2.3.5 below; or
  - have passed an examination on completion of training in a professional college of inland navigation; or
  - have passed any other examination for ordinary crewman recognized by the competent authority; or
- b) shall have had not less than three years' experience as a member of the ship's deck department, including not less than one year in inland navigation and two years either in inland navigation or at sea, in coastal navigation or fishing.

**Apprentice:**

shall be not less than 15 years of age and have an apprentice's contract which provides for attendance at a professional college of inland navigation, or for a correspondence course approved by the competent authority to be taken in the preparation of an equivalent diploma.

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**Deckhand:**

shall be not less than 16 years of age. (The age limitation of an apprentice may be higher depending on national legislation.)

**Engineer:**

- a) shall be at least 18 years of age and have passed an examination on completion of a full training course in the engine and mechanics sectors; or
- b) shall have worked for not less than two years as an engine-minder on a motorized inland navigation vessel.

**Electrician-engineer:**

- a) shall be at least 18 years of age and have passed an examination on completion of a full training course in on-board electrical systems; or
- b) shall be at least 18 years of age and have experience of working in a ship's crew for a period determined by the competent authority.

**Engine-minder:**

shall be not less than 17 years of age and either

- a) be an ordinary crewman and have passed an engine-minder's examination recognized by the competent authority; or
- b) have had not less than one year's experience on board a motorized inland navigation vessel as an ordinary crewman and have a basic knowledge of engines.

**Radio operator:**

shall be at least 18 years of age, have passed an examination on completion of a full training course in on-board radio systems and have navigational experience as part of a vessel crew for a period determined by the competent authority, or have completed an appropriate probationary period of at least two months' duration aboard inland navigation vessels.