



**Impact Assessment and Evaluation Study  
"Proposal for a Legal Instrument on the  
harmonisation of boatmasters' certificates  
in Inland Waterway Transport"**

**Final Report**

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## DISCLAIMER

The evaluation has been carried out by an independent evaluation team. It should be noted that this report represents the views of the consultant, which do not necessarily coincide with those of the European Commission.



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## EXECUTIVE SUMMARY

- 1 The primary objective of this report, as defined in the terms of reference, is to provide DG TREN with the final results of the impact assessment on the possible harmonisation of boatmasters' certificates throughout the Inland Waterway Transport (IWT) network in the EU.
- 2 The first part of our report presents an inventory of the current situation and an analysis of existing gaps in the legal regimes.
- 3 Our findings show that the IWT sector in the EU suffers from a rather fragmented legislative and institutional framework. The main regulatory actors in the sector are the CCNR, the EU, the DC and the UNECE, who each have a different (but to an extent overlapping) geographical scope, and whose legislation/resolutions set different requirements for boatmasters' qualifications.
- 4 Of the main actors, the CCNR has the smallest geographical scope but the highest harmonised requirements, whereas the UNECE has the biggest geographical scope but the lowest level of harmonisation.
- 5 Besides the different geographical scope, the different regulators also have different mechanisms to implement their decisions. For example, the CCNR Regulations and EU Directives are binding, whereas Danube Commission Recommendations and UNECE Resolutions are not.
- 6 The professional experience required in order to obtain a boatmasters certificate also varies between the four main regulatory entities; this may create some competitive advantages or disadvantages to boatmasters and IWT firms depending on their country of residence.
- 7 The current picture is evolving. In particular, the CCNR has started a process in which countries outside the CCNR can have their certificates issued pursuant to EC Directive 96/50 recognised as equivalent to those used on the Rhine; Romania was the first country to receive this recognition, and others are due to follow in 2009.
- 8 In terms of market access, the most important restriction is the access to the German Rhine, where a Rhine Patent is required in nearly all cases to be able to navigate; this section of the Rhine is Europe's most important inland waterway in terms of economic significance. Besides the German Rhine, other stretches of inland waterways exist in some European countries where access is restricted to those boatmasters who have a defined minimum of local experience; this represents another obstacle when trying to enter a new (foreign) market.



- 9 The influx of people into the profession of boatmaster is declining in several countries; currently the number of people holding a boatmaster certificate in the EU is estimated to be about 80,000. The number of people holding a Rhine Patent is estimated to be around 11,500. However, a more detailed and structured registration of boatmasters' certificates would be desirable.
- 10 Access to the Rhine is found to be the most critical issue with regards to boatmasters' activity in the IWT sector. The current regime results in significant entry barriers in the most important river for IWT, the Rhine.
- 11 We were instructed to analyse four policy options aimed at improving the current situation, and to add alternative options we considered worth analysing.
- 12 The option we added was defined as "C1", and the resulting list of options object of our impact assessment exercise is the following:
- (a) **Option A:** maintenance of the current situation – non EU action/intervention;
- 13 Under this option, the status quo regarding existing legal regimes would not be affected by EU action.
- (b) **Option B:** the promotion of voluntary action;
- 14 The promotion of voluntary action aims at strengthening co-operation between Member States in the process of tackling existing differences and their effects, particularly in the framework of the International River Commissions.
- 15 Under this option, the Member States of the CCNR would continue the ongoing process of individual recognition of national navigability licenses, which are issued on the basis of Directive 96/50/EC, for navigation on the Rhine.
- 16 Interested parties would seek to identify differences between EU waterways, and to reduce them in order to ameliorate constraints to the free movement of boatmasters and to promote competition in the IWT sector.
- (c) **Option C:** mandatory action through new or revised EU legislation – Directive – distinguished between C(a) "harmonisation at the highest standards" and C(b) "modular approach".
- 17 This option would entail a revision of Council Directive 96/50/EC, or the adoption of a new Directive, with the aim of harmonising and simplifying the legal framework regarding the issuance and recognition of boatmasters' certificates across the EU that would, in effect, lead to the issuance of a European boatmasters' certificate valid for the entire EU IWT Network.
- 18 Within this option, two sub-options, between which the EU Member States would be able to choose, should be distinguished. These two sub-options would be the following:



- requiring harmonisation according to the highest possible qualification standards (with a certificate permitting navigation with all kinds of vessels on all EU waterways); or
  - Allowing a “modular approach” which would allow the gradual acquisition (and certification) of qualifications.
- (d) **Option C1:** directive to enforce the mutual recognition of boatmasters’ certificates.
- 19 A revision of Council Directive 96/50 that relates to the promotion of the mutual recognition of certificates should be considered. A boatmaster that has a certificate issued by a licensing authority in any of the EU Member States should have full access to all inland waters across the EU.
- 20 This would permit boatmasters to move freely from one Member State to another, and would allow companies to respond more quickly to changes affecting incentives such as evolving market conditions, peaks (or troughs) in demand, or availability of labour, etc.
- (e) **Option D:** mandatory action through new EU legislation – Regulation
- 21 This option proposes that the EU should consider the amount of legal work which is to be carried out within the UNECE with regard to the mutual recognition of boatmasters’ certificates in the UN ECE region, namely, UN ECE Resolution no. 31 which provides recommendations on minimum requirements for the issuance of boatmasters’ certificates.
- 22 As promotion of voluntary action is currently under way, option B was defined as the “counterfactual” scenario against which the impacts of the other options were assessed.
- 23 The main impacts considered were:
- (a) **Economic impacts:** competitiveness of SMEs, competition in the internal market,
  - (b) **Social impacts:** labour market impacts, especially in terms of job opportunities, and safety impacts
  - (c) **Environmental impacts:** changes in emissions and effects on local environment
- 24 Changes in access conditions to the Rhine were identified as the main driver of those impacts. Our assessment on this dimension was summarised in the Table 1 below:

**Table 1: The impacts on access to the Rhine**

|                    |                  |
|--------------------|------------------|
| <b>Option A</b>    | Negative         |
| <b>Option B</b>    | -                |
| <b>Option C(a)</b> | Positive         |
| <b>Option C(b)</b> | Positive – small |
| <b>Option C1</b>   | Positive – large |
| <b>Option D</b>    | Positive         |

Source: Europe Economics

- 25 The following table summarise the impacts of the options. Impacts are indicated as very positive (++), positive (+), neutral (=), negative (-), and very negative (--).

**Table 2: Summary of the Impacts**

| <b>Options</b> | <b>SME's competitiveness</b> | <b>Annual Cost</b> | <b>Competition</b> | <b>Safety</b> | <b>Job Opportunities</b> | <b>Environment</b> |
|----------------|------------------------------|--------------------|--------------------|---------------|--------------------------|--------------------|
| <b>A</b>       | (-)                          | (=)                | (-)                | (=)           | (-)                      | (-)                |
| <b>B</b>       |                              |                    |                    |               |                          |                    |
| <b>C(a)</b>    | (+)                          | (-)                | (+)                | (+)           | (+)                      | (+)                |
| <b>C(b)</b>    | (+)                          | (=)                | (+)                | (=)           | (+)                      | (+)                |
| <b>C1</b>      | (++)                         | (-)                | (++)               | (=)           | (++)                     | (++)               |
| <b>D</b>       | (+)                          | (--)               | (+)                | (+)           | (+)                      | (+)                |

Source: Europe Economics

- 26 We have argued that the incremental benefits of option C1 outweigh the incremental costs and possible safety concerns.
- 27 Hence we recommend that the Commission implements Option C1, i.e. to amend Council Directive 96/50 to enforce the mutual recognition of boatmasters' certificates across the entire EU inland waterway network.





# 1 INTRODUCTION

## Overview of the Final Report

- 1.1 The primary objective of this report, as defined in the terms of reference, is to provide DG TREN with the final results of the impact assessment. Having completed the stakeholder consultation, this report includes an inventory of the current situation, a gap analysis, the final results of the impact assessment (quantitative and qualitative), and our findings on the comparison of the policy options.
- 1.2 This report is structured as follows:
  - (a) Section 2 provides an inventory of the current situation;
  - (b) Section 3 provides a gap analysis;
  - (c) Section 4 provides some initial conclusions drawn from the inventory of the current situation and the gap analysis;
  - (d) Section 5 defines the rationale for interventions;
  - (e) Section 6 presents the policy options;
  - (f) Section 7 defines the impacts of policy options;
  - (g) Section 8 provides an analysis of the impacts;
  - (h) Section 9 presents the comparisons of the options;
  - (i) Section 10 defines monitoring and evaluation procedures;
  - (j) Section 11 presents conclusions and recommendations and our proposal for a draft legal instrument;
  - (k) Appendix 1 contains a bibliography;
  - (l) Appendix 2 provides a list of the stakeholders that were interviewed;
  - (m) Appendix 3 provides a summary table comparing different regimes;
  - (n) Appendix 4 provide information in the administrative arrangement between the CCNR and Romania; and
  - (o) Appendix 5 contains a summary of the stakeholder feedback.



## **List of Abbreviations**

|       |  |
|-------|--|
| CCNR  | Central Commission for Navigation on the Rhine |
| UNECE | United Nations Economic Commission for Europe  |
| EC    | European Commission                            |
| DC    | Danube Commission                              |



## **2 INVENTORY OF THE CURRENT SITUATION**

### **Introduction**

- 2.1 This section begins by addressing the various relevant legal and institutional frameworks that regulate the inland waterways sector. In doing so, a distinction is made between binding regulations and non-binding regulations. In terms of geographical scope, the regulations are broken down between international, European and national (including the need for “local knowledge”).
- 2.2 The latter part of the section provides an analysis of the various relevant aspects of the sector, such as the number of boatmasters’ certificates and Rhine Patents currently in circulation; this will serve as input for the Impact Analysis.

### **The Current Legal Framework Regarding the Boatmasters’ Certificates Binding International Regulations**

#### **CCNR (Rhine Commission)**

- 2.3 In 1815, the Final Act of the Congress of Vienna established the principle of freedom of navigation on international waterways. Among the provisions which followed, the ones concerning the river Rhine held the creation of a Central Commission “in order to ensure a precise control of the enforcement of common rules as well as to provide an authority used as a means of communication between riparian States with regard to all aspects of navigation” (annex to the Final Act of the Congress of Vienna).<sup>1</sup> The CCNR was established in 1868 under the Mannheim Convention.
- 2.4 On the Rhine, boatmasters must have a certificate based on the Rhine Patent Regulation of the CCNR, which is issued by the competent authorities in any of the CCNR Member States (Belgium, France, Germany, the Netherlands and Switzerland); and it is recognised by the EU as valid for navigation on all EU waterways (although local knowledge<sup>2</sup> certificates are nevertheless required in several countries, as well as on sections of the Rhine itself).
- 2.5 Four types of Rhine Patents exist:<sup>3</sup>
  - (a) the big patent valid for all vessels;

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<sup>1</sup> Source: CCNR website

<sup>2</sup> See the subsequent section “Local knowledge requirements” for an explanation of local knowledge

<sup>3</sup> An additional patent exists for radar operation (the Radar Patent).



- (b) the small patent valid for sailing a vessel less than 35 metres long, provided it is not a tug or pusher, or a vessel propelling a side-by-side formation, or valid for sailing a passenger vessel that cannot carry more than 12 passengers;
  - (c) the sport patent for sailing a recreational vessel with a length of less than 25 metres; and
  - (d) the government patent for sailing government vessels and fire-fighting vessels.
- 2.6 The sport and government patents will not be considered further in this study.
- 2.7 The longest stretch of the German Rhine (between Spijsksche Veer on the Dutch/German border and the locks at Iffezheim on the French/German border just north of Strasbourg) requires local knowledge, and to obtain this a candidate must have made at least sixteen trips on the stretch (or the relevant part of it, which is referred to below) on a vessel operating under qualified certificates in the last ten years, and of those sixteen trips, at least three upstream trips and three downstream trips must have been made in the last three years.
- 2.8 Any Rhine Patent will indicate for which section of the river it is valid (the relevant sections are clearly set out in the document) and local knowledge may be required for which examinations can be held.
- 2.9 For example, although no local knowledge is required by the Netherlands, the country provides facilities for taking examinations and obtaining certificates for seven sections of the Rhine; and these may all be taken on the same day:
- (a) Spijsksche Veer (km 857,40) – Rheinberg (km 806);
  - (b) Rheinberg (km 806) – Neuss (km 740);
  - (c) Neuss (km 740) – Lülldorf (km 666);
  - (d) Lülldorf (km 666) – Ober Lahnstein (km 585);
  - (e) Ober Lahnstein (km 585) – Mainz (km 493);
  - (f) Mainz (km 493) – Rheinau (km 412);
  - (g) Rheinau (km 412) – Iffezheim (km 334).
- 2.10 Rhine patents are issued by various authorities in different countries:
- (a) in the Netherlands they are issued by the CCV, part of the CBR that is the national driving license issuing authority;
  - (b) in Germany they are issued by the Länder (the regional governments);



- (c) in France they are also issued by the national representation in Strasbourg;
  - (d) in Switzerland they are issued by the cantons; and
  - (e) in Belgium they are issued by the federal government. The Schelde river also falls under the Rhine regime, and the other Belgian waterways are accessible for any boatmaster holding a Rhine Patent.
- 2.11 The CCNR has set a limit to the penalties that can be imposed by the enforcement authorities in its member states in case of an infringement. This limit is €25.000. The Mannheim Convention further prohibits confinement of people as a sanction. In addition to this binding ceiling of penalties, the CCNR has adopted a recommendation providing for a scale of fines depending on the type of the infringement. Finally, in case any imposed fine is contested, an appeals Chamber rules on appeals. A common reunion of CCNR member states' river police is organized by the CCNR every 2-3 years. In this way, the CCNR gets feedback on the main issues of control, flaws and gaps in the regulations. So far, no special issues were reported on licenses per se.
- 2.12 In 2002 the CCNR adopted Additional Protocol nr.7 to the Rhine Navigation Act, which states that in order to promote harmonisation, and as long as safety standards can be maintained and improved, other boatmasters' certificates and patents - especially in the case of documents issued within the European Union - should receive equivalent status to the Rhine documents. The underlying principle is that other certificates can be recognised as equivalent to the Rhine certificates if these are issued under regulations that are equivalent to the Rhine regulation and according to procedures that guarantee their proper implementation. The CCNR has the right to revoke equivalency if it finds that the required conditions are no longer met.
- 2.13 The details of this procedure were specified at the beginning of 2007.<sup>4</sup> Whenever a country wishes to have its boatmaster certificate recognised as equivalent to a Rhine Patent, it must submit the following to the CCNR (in one of the CCNR's working languages - German/French/Dutch):
- (a) all laws/regulations dealing with the material conditions for obtaining, keeping and revoking of navigation certificates or radar patents;
  - (b) all laws/regulations dealing with the procedures for obtaining, keeping and revoking of boatmaster certificates and radar patents;
  - (c) a list of all competent authorities;

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<sup>4</sup> The rules are specified in Protocol 11 of the Assembly of May 31<sup>st</sup>, 2007.



- (d) a list of relevant boatmaster certificates and radar patents (including graphical representations as in Annex C1 to the Rhine Patent Regulation);
  - (e) besides laws and regulations, all important guidelines and other official instructions, decisions etc.;
  - (f) minimum/maximum age requirements and health statements need to be in line with the Rhine Regulations; and
  - (g) The professional experience and knowledge of boatmasters must match at least Article 2.01 of Directive 96/50/EC or Appendix D1 to the Rhine Patent Regulation.
- 2.14 Equivalent regulations are those regulations that are either identical to those of the Rhine, or those that offer the same guarantees for safety, traffic speed and free competition as the Rhine Patent Regulation. Only those differences that have little or no effect on safety, traffic speed or free competition are accepted, or if they are offset by additional benefits.
- 2.15 Any request for equivalency can only be granted if full reciprocity is given, i.e. any country wishing to have its boatmasters' certificates recognised as equivalent must also allow any Rhine Patent-holder full access to its waterways. This is a rather academic question within the EU, where Rhine Patents already give full access to all waterways, but would be a relevant condition if a non-EU member submitted a request.
- 2.16 When a national boatmasters' certificate is considered as equivalent by the CCNR, this recognition automatically applies to every individual certificate, and individual boatmasters do not need to apply for recognition of their personal certificates.
- 2.17 Requests will be processed by the CCNR's Committee of Social Affairs, Labour Conditions and Professional Vocation (STF). The process can include inspections and meetings with relevant authorities and individuals. The STF then forms an opinion on the request, with the final decision being taken by the CCNR's plenary assembly.
- 2.18 So far Romania is the only non-CCNR member state which has obtained this equivalency, on 1 October 2008. The administrative agreement between the CCNR and the Romanian Ministry of Transport can be found in Appendix 4: The CCNR has received formal applications from three other states (Hungary, Austria and the Czech Republic) which should be completed by May 2009, according to the CCNR. Three other states (Poland, the United Kingdom and Slovakia) have made enquiries and expressed an interest to the CCNR. Serbia also contacted the CCNR in May 2007.
- 2.19 The process of recognising Romania's equivalency took about 1.5 years, and the CCNR expects to be able to process any future equivalency request within about one year. The costs incurred by the national authorities when applying for equivalency (and changing their legislation and practices to CCNR standards) could not be estimated. Further, according to the CCNR, they do not charge national authorities when applying for the recognition of national licenses.



- 2.20 For the stretch of river from Spijsche Veer to Iffezheim, the boatmaster certificate types A and B of the Netherlands, Germany, Belgium and Romania are recognised as equivalent to a Rhine Patent, but only if: a local knowledge certificate for (the relevant part of) this stretch is also owned,<sup>5</sup> the boatmaster is over 21 and (if over 50) in possession of a health certificate complying with the Rhine regulations. The equivalent Rhine Patents, as well as equivalent radar patents, are specified and shown in Annex C1 of the Rhine Patent Regulation. The local knowledge certificates also require knowledge about police regulations on the relevant stretch of Rhine.
- 2.21 On the upper Rhine between Iffezheim and Switzerland, as well as on the Dutch Rhine, it is sufficient to carry a boatmaster's certificate recognised by EC Directives 91/672/EEC and/or issued under Directive 96/50/EC. Rhine Patents or equivalent boatmaster certificates are therefore not required on these two stretches.
- 2.22 An overview of the validity of certificate combinations is given in Table 2.1.

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<sup>5</sup> As specified in Annex A3 of the Rhine Patent Regulation

**Table 2.1: Validity of various certificates on Rhine stretches**

|  | Europoort<br>(Rotterdam) -<br>Spijksche Veer (NL) | Spijksche Veer -<br>Iffezheim (DE) | Iffezheim - Basel<br>(DE/FR/CH) |
|--|---|------------------------------------|---------------------------------|
| Rhine Patent (big/small/<br>sport/government) incl. local<br>knowl. Sp. Veer - Iffezheim                               | Yes   | Yes                                | Yes                             |
| Equivalent national certificate<br>NL/DE/BE/RO + local knowl.<br>Sp. Veer - Iffezheim + additional<br>age/health reqs. | Yes   | Yes                                | Yes                             |
| Any other certificate under<br>96/50/EC or 91/672/EEC  | Yes   | No                                 | Yes                             |

(Source: Rhine Patent Regulations, CCNR)

2.23 CCNR Regulations are binding. European Community Law has always respected CCNR Regulations so far. A hypothetical situation in which the CCNR would adopt regulations that could be in conflict with European Union legislation or *vice versa* has not been investigated in much detail, as it seems very unlikely that either of the two institutions would have an interest in such a situation occurring.

### Sava Commission

2.24 The International Sava River Basin Commission was established by the Framework Agreement on the Sava River Basin, signed on 3 December 2002 by Slovenia, Croatia, Bosnia and Yugoslavia – the latter succeeded by Serbia, after successful completion of negotiations carried out under the “umbrella” of the Stability Pact for south-eastern Europe.

2.25 The Sava Commission adopted rules on minimum requirements for the issuance of boatmasters’ certificates (Decision 32/07) which is compulsory for its member states.

2.26 Decisions in force are in line with the Danube Commission (as the Sava is a tributary to the Danube) and are binding.

### Moselle Commission

2.27 The Moselle Commission was established in 1956 and has three member states: Germany, Luxembourg and France.

2.28 The main relevant document is the *Moselschiffahrtspolizeiverordnung* (Moselle Navigation Police Regulation) of 1995, but the Moselle Commission does not issue its own boatmaster certificates. As the Moselle is a tributary to the Rhine, most boatmasters are likely to be in possession of Rhine Patents.





- 2.29 Nearly all Moselle traffic originates in either France or Germany and therefore needs certificates valid for either country. Luxembourg does not issue its own boatmaster certificates but recognises all certificates valid under Directive 91/672/EEC and 96/50/EC. As anywhere else in the EU, Rhine Patents are also valid.

## **Binding European Community Law/Legislation**

- 2.30 The European Union has issued several Directives affecting harmonisation in the inland waterways sector, the most important of which are Directive 91/672/EEC and Directive 96/50/EEC.
- 2.31 Directive 91/672/EEC provided for the mutual recognition by the Member States of each other's boatmasters' certificates, and established a committee to facilitate the process and list the recognised certificates (composed of delegates of the Member States and chaired by the Commission).
- 2.32 Directive 96/50/EC laid down harmonised minimum conditions for the issuing of national certificates (essentially an examination programme).
- 2.33 The Directive distinguishes between an "A" type certificate which is valid for all inland waterways not falling under Rhine regulations, and the "B" type which is similar but not valid on inland waterways waters with a maritime character, such as estuaries.
- 2.34 Normally, boatmasters' certificates based on Directive 96/50/EC are not valid for navigation on the Rhine between Spijksche Veer and Iffezheim, except that, under certain conditions, the equivalent national boatmasters certificate is recognised by the CCNR (see table 2.1 above).

## **Non-binding International Legislation and Institutions**

### **Danube Commission**

- 2.35 The Danube Commission (DC) was established under the Belgrade Convention in 1948. Its member states are all countries that border the Danube plus Russia, and the European Commission was also added recently.
- 2.36 The DC has adopted Recommendations on the Issuing of Boatmasters' Certificates on the Danube.<sup>6</sup> These are very similar to UNECE Resolution 31, and therefore the level of implementation of the UNECE Resolution is taken as an indicator for the implementation of the DC recommendations. Danube states recognise each other's national certificates, including those of non-EU Danube countries (Croatia, Serbia, Moldova, Ukraine) and Russia.

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<sup>6</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, 2007.



- 2.37 Danube Commission decisions are currently recommendations only, but an upcoming conference in Belgrade is expected to adopt a new convention making the DC's decisions binding.
- 2.38 The DC has established a working group on technical questions that is dealing with the harmonisation of boatmaster certificates.

### **The UNECE**

- 2.39 In 1992, the UNECE adopted Resolution 31 on Recommendations on Minimum Requirements for the Issuance of Boatmasters' certificates in Inland Navigation<sup>7</sup> with a view to their reciprocal recognition for international traffic.
- 2.40 UNECE Resolutions are not binding and therefore the UNECE does not have any mechanisms to force its member states to implement its resolutions other than political pressure. Nevertheless, the vast majority of its member states have implemented Resolution 31 into their own inland waterways sector.
- 2.41 Switzerland, which only joined the UN in 2002, is the only European country within the UNECE not to have implemented Resolution 31.
- 2.42 The UNECE established a Group of Volunteers on Boatmasters' Licences (GVBL) which is dealing with possible amendments to Resolution 31 in order to strengthen harmonisation between the various UNECE Member States.

### **National Legislation**

- 2.43 This section lists national legislation related to boatmasters' certificates. In most cases this reflects the transposition of Directive 96/50/EC, with particular differences in some countries as will be specified below. Comments are confined to those countries where there is a significant inland waterway sector but, for the sake of completion, the remaining countries are also listed.

#### **Austria**

- 2.44 In Austria the relevant law is the *Schiffahrtsgesetz - SchFG*<sup>8</sup> and the *Schiffsführerverordnung*.<sup>9</sup> Certificates are issued in line with Directive 96/50/EC, but only "B" type certificates are available as Austria is landlocked.
- 2.45 Local knowledge is required on three free-flowing sections of the Danube.

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<sup>7</sup> Recommendations on Minimum Requirements for the Issuance of Boatmasters' Licenses in Inland Navigation with a view to their Reciprocal Recognition for International Traffic (Resolution No.31, 1992)

<sup>8</sup> [www.doris.bmvit.gv.at/fileadmin/group\\_upload/8/Downloads/Gesetze/Schiffahrtsgesetz\\_2008\\_web.doc](http://www.doris.bmvit.gv.at/fileadmin/group_upload/8/Downloads/Gesetze/Schiffahrtsgesetz_2008_web.doc)

<sup>9</sup> [www.doris.bmvit.gv.at/fileadmin/group\\_upload/8/Downloads/Verordnungen/fuehrvo.doc](http://www.doris.bmvit.gv.at/fileadmin/group_upload/8/Downloads/Verordnungen/fuehrvo.doc)



## Belgium

- 2.46 The relevant Belgian laws<sup>10</sup> are in line with Directive 96/50/EC; boatmaster certificates A and B are considered equivalent to Rhine Patents.
- 2.47 No local knowledge is required anywhere in Belgium.

## Bulgaria

- 2.48 No information on legislation or local knowledge could be obtained from Bulgaria.
- 2.49 As Bulgaria has no other inland waterways than the Danube, which at all times is the border with Romania that imposes no local knowledge requirements, it is virtually impossible for Bulgaria to have any differing regulations, and therefore it is assumed that Bulgaria does not impose local knowledge requirements either.

## Czech Republic

- 2.50 The relevant Czech laws<sup>11</sup> are in line with EU Directive 96/50/EC.
- 2.51 No local knowledge is required anywhere in the Czech Republic.

## Finland

- 2.52 The relevant law in Finland<sup>12</sup> is in fact a maritime law, in accordance with STCW<sup>13</sup>, so not specifically geared towards IWT.
- 2.53 Boatmasters' certificates from other EU member states are not recognised by Finland. Finland does however, recognise certificates issued in the EEA that meet STCW standards; mutual recognition of boatmasters' certificates is therefore limited to the maritime sector only. The Finnish law does not mention Directive 96/50/EC or 91/672/EC.
- 2.54 The Finnish inland and costal waters are divided into three categories; for each of these categories a different level of boatmasters' experience is required; this is therefore a system that is different from the A/B certificate categories that are specified by Directive 96/50/EC.
- 2.55 No local knowledge is required anywhere in Finland.

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<sup>10</sup> Wet van 21 mei 1991 betreffende het invoeren van een stuurbrevet voor het bevelen van de scheepvaartwegen van het Rijk, Koninklijk besluit van 23 december 1998 betreffende het verkrijgen van vaarbewijzen voor het besturen van binnenvaartuigen bestemd voor het goederen- en personenvervoer, Koninklijk besluit van 27 maart 2007 tot wijziging van het koninklijk besluit van 23 december 1998 betreffende het verkrijgen van vaarbewijzen voor het besturen van binnenvaartuigen bestemd voor het goederen- en personenvervoer.

<sup>11</sup> Zákon č. 114/1995 Sb., o vnitrozemské plavbě, ve znění zákona č. 358/1999 Sb., kterým se mění zákon č. 114/1995 Sb., o vnitrozemské plavbě, a zákon č. 455/1991 Sb., o živnostenském podnikání (živnostenský zákon), ve znění pozdějších předpisů

<sup>12</sup> Decree on the Manning of Ships, Certification of Seafarers and Watchkeeping (1256/1997; amendments up to 910/2007 included)

<sup>13</sup> International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (Finnish Treaty Series 22/1984); adopted by the International Maritime Organization in 1978 as amended.



## France

- 2.56 In France, the relevant legislation<sup>14</sup> conforms to Directive 96/50/EC; but the boatmaster certificates are not considered equivalent to the Rhine Patent.
- 2.57 No local knowledge is required in France except for the small stretch of the Rhine at the border with Germany between Iffezheim and Lauterbourg. However, this is a small stretch of about 18 km with no significant ports, so it is assumed that local traffic between those two ports is insignificant, that all traffic will go in and out of the German section of the Rhine, and will thus fall under German regulations. Therefore, for the sake of simplicity, France is considered not to have local knowledge requirements.

## Germany

- 2.58 The relevant law in Germany is the *Binnenschifferpatentverordnung* (BinSchPatentV).<sup>15</sup> German certificates comply with the relevant EU Directives and are considered by the CCNR to be equivalent to the Rhine Patent.
- 2.59 Local knowledge is required on:
- (a) the Rhine from km 335,92 (Iffezheim) to km 857,4 (Spijksche Veer);
  - (b) the Elbe from km 0,0 (Schöna) to km 607,50 (limit of the Hamburg Port);
  - (c) the Weser from km 0,0 (Hann.-Münden) to km 204,45 (Minden) – Oberweser;
  - (d) the Donau from km 2.249,00 (Vilshofen) to km 2.322,02 (Straubing);
  - (e) the Untere Havel-Wasserstraße from km 68,0 (Plaue) to km 145,8 (Havelberg), but only when water levels at Unterpegel Rathenow are above 130 cm;
  - (f) the Oder from km 542,4 (Ratzdorf) to km 704,1 (Widochowa); and
  - (g) the Saale from km 0,0 (Mündung in die Elbe) to km 19,50 (Unterer Vorhafen Schleuse Calbe).

## Hungary

- 2.60 The relevant law<sup>16</sup> fully complies with Directive 96/50/EC. The Hungarian authorities also require that a basic command of Russian or German navigation terminology must be demonstrated.

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<sup>14</sup> Décret n°91-731 du 23 juillet 1991, Arrêté du 19 décembre 2003

<sup>15</sup> [www.elwis.de/Schiffahrtsrecht/downloads/pdfs/BinSchPatentV.pdf](http://www.elwis.de/Schiffahrtsrecht/downloads/pdfs/BinSchPatentV.pdf)

<sup>16</sup> Ministerial Decree 15/2001. (IV. 27.) KöViM rendelet a hajózási képzésekről.



- 2.61 The competent Hungarian authorities are prepared to recognise the equivalence of Rhine radar navigation certificates without further examination, on a reciprocal basis.
- 2.62 Local knowledge is required for all Hungarian inland waterways. A local knowledge certificate will state for which stretch of waterway it is valid. Obtaining (or expanding) a local knowledge certificate involves making at least 8 upstream and 8 downstream trips on the stretch for which the certificate is requested, and taking an exam on local conditions and regulations.

### Italy

- 2.63 The main inland waterways law in Italy is the *Codice della Navigazione*; the Directive 96/50 was implemented in 1999<sup>17</sup> and Italy issues certificates of both “A” and “B” type.
- 2.64 Italian law still requires Italian citizenship as a condition to work as crew in the inland waterways sector (Article 133 of the *Codice*). However, since 1994, EU citizens are given equal rights as Italian citizens in the inland waterways sector.<sup>18</sup>
- 2.65 There is no information on local knowledge requirements.

### Lithuania

- 2.66 Lithuanian law<sup>19</sup> recognises all boatmasters’ certificates for the carriage of goods and passengers issued under Directive 96/50/EC, and issues “B” type certificates in line with that Directive. It also recognises Belarus boatmaster certificates.
- 2.67 No local knowledge is required anywhere in Lithuania.

### Luxembourg

- 2.68 In view of the small number of people working in inland navigation, Luxembourg does not issue a specifically national document but recognises documents issued by other countries, including all UNECE Member States. Recognition is provided for under articles 1, 2 and 15 of the Grand Ducal regulation of 29 April 2002.
- 2.69 No local knowledge is required anywhere in Luxembourg.

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<sup>17</sup> Through the decreto presidente repubblica 18 dicembre 1999, n. 545

<sup>18</sup> As stated in Article 23 of Decreto Legislativo 2 maggio 1994, n. 319

<sup>19</sup> Įsakymas dėl Lietuvos respublikos vidaus vandenų transporto specialistų laipsnių diplomų ir kvalifikacijos liudijimų išdavimo tvarkos aprašo patvirtinimo, įsakymas dėl inspekcijos viršininko 2005-05-11 įsakymo „dėl vidaus vandenų transporto specialistų ir motorinių pramoginių laivų laivavedžių kvalifikacijos suteikimo nuostatų pakeitimo“ pakeitimo



## The Netherlands

- 2.70 The Dutch boatmaster certificate legislation<sup>20</sup> has been designed to be as far as possible in line with the Rhine Patent system. Dutch certificates are recognised by the CCNR as equivalent to the Rhine Patent.
- 2.71 In addition, the Netherlands are in compliance with Directive 96/50/EC.
- 2.72 On top of the boatmaster certificates, the Netherlands oblige anybody running an enterprise in the inland waterways sector (which means about 90 per cent of the boatmasters) to take a course in entrepreneurship. This course, excluding the exams, costs €735 and reflects the implementation into Dutch law of Directive 87/540/EEC.<sup>21</sup>
- 2.73 No local knowledge is required anywhere in the Netherlands.

## Poland

- 2.74 No information on legislation or local knowledge could be obtained from Poland.

## Portugal

- 2.75 Portugal is exempted from implementing Directive 96/50/EC as it shares no navigable waters with other Member States (the main rivers flowing from Spain into Portugal are dammed and impassable).
- 2.76 No local knowledge is required anywhere in Portugal.

## Romania

- 2.77 The relevant law in Romania is law 318/2006<sup>22</sup> which issues certificates in line with Directive 96/50/EC.
- 2.78 As of 1 October 2008, Romanian boatmaster certificates are considered equivalent to the Rhine Patent by the CCNR.
- 2.79 No local knowledge is required anywhere in Romania.

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<sup>20</sup> Wet van 30 september 1981, houdende bepalingen ter bevordering van de veiligheid van de vaart van schepen op binnenwateren en van goede arbeidsomstandigheden aan boord van die schepen, Wet van 12 december 1991, houdende regeling van het vervoer van goederen en personen met binnenschepen

<sup>21</sup> Council Directive 87/540/EEC of 9 November 1987 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

<sup>22</sup> ORDIN nr. 318 din 3 martie 2006 privind aprobarea standardelor de instruire, confirmarea competenței și eliberarea documentelor de atestare a personalului navigant pentru navele de navigație interioară care arborează pavilion roman1



## **Slovakia**

- 2.80 The relevant law in Slovakia<sup>23</sup> issued “B” type certificates; the transposition of the Directive was initially delayed.
- 2.81 Slovakia complies with the DC and with Directive 96/50/EC.
- 2.82 There is no information on local knowledge requirements.

## **United Kingdom**

- 2.83 As of 1 January 2007, the United Kingdom accepts boatmasters from other European Community member countries provided they hold a certificate issued in accordance with Directive 96/50/EC. It also allows boatmasters from the United Kingdom to command vessels in other EU countries.
- 2.84 United Kingdom legislation in this area consists of the Merchant Shipping Regulations 2006 (Inland Waterway and Limited Coastal Operations, Boatmasters’ Qualifications and Hours of Work). A new national Boatmasters’ Licence (BML) was introduced in 2006 which replaced various local BMLs. The new certificate regime is set out in Merchant Shipping Notice 1808.
- 2.85 The licence is modular, consisting of a ‘generic’ licence which is divided into two tiers, a number of endorsements which entitle the holder to carry out various specialist operations and, for a few parts of the classified water network, a local knowledge endorsement which is supposed to ensure that the licence-holder is aware of the special hazards present in the waterway in question.
- 2.86 The new licence is required by the masters of:
  - (a) passenger ships carrying more than 12 passengers; and
  - (b) non-passenger vessels measuring 24m and over, including cargo vessels, tankers, tugs, workboats and dredgers,

when they are operating in inland waterways or in “limited coastal areas” (an area no more than three miles from land and no more than 15 miles from the point of departure). The licence is also suitable for passenger vessels carrying 12 or fewer passengers; or for smaller commercial vessels, although alternative qualifications are available in respect of these vessels. Certain equivalent or higher seagoing qualifications may also be used in place of a BML on suitable vessels in inland waters.

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<sup>23</sup> Zákon 338 z 22. septembra 2000 o vnútrozemskej plavbe a o zmene a doplnení niektorých zákonov.



- 2.87 There are 12 areas of the inland waterway network for which a boatmaster needs an additional endorsement on his or her licence in order to operate, known as local knowledge areas. In three cases—Portsmouth Harbour, the Isles of Scilly and the Thames—this endorsement requires an additional 60 days’ service in the area over a period of not less than six months.
- 2.88 The most important stretch, in terms of traffic density, where local knowledge is required is on the Thames from Putney Bridge to the eastern limit of the Thames Barrier Control Zone at Margaretness (near Woolwich), excluding both the upper and lower reaches.
- 2.89 Local knowledge is also required in the ports of Bristol, Caernarfon and Menai Strait, Dee Conservancy, Dover Harbour, Fowey Harbour, Gloucester Harbour, the Port of Liverpool, Padstow Harbour, Portsmouth Harbour, the Isles of Scilly, and Teignmouth. Local knowledge requirements differ per port but normally include at least the following:
- (a) a thorough knowledge of local regulations and bylaws (this is essential for all areas);
  - (b) knowledge of navigation authority publications;
  - (c) local signals and traffic regulations;
  - (d) local marks, including buoyage, lights, leading lights and marks;
  - (e) local dangers to navigation – depths over banks, obstructions, currents and abnormal tidal streams etc.;
  - (f) local safe havens and landing places in differing weather conditions;
  - (g) a knowledge of the times and heights of tides;
  - (h) safe courses in and out of local harbours;
  - (i) locations of, and means of communication with, the nearest Coastguard centre and other emergency services;
  - (j) local language terminology (including radio communications where appropriate);
  - (k) knowledge of local VTS and traffic control;
  - (l) knowledge of local traffic density and patterns;
  - (m) types of traffic to be encountered;
  - (n) any other item of local knowledge which an examiner may deem to be necessary (e.g. current notices to mariners on temporary works); and
  - (o) fixed items and air draft hazards (e.g. bridges).





### **Other EU Countries**

2.90 The inland waterways sector of the following countries was deemed too small or non-existent to be relevant: Cyprus, Denmark, Estonia, Greece, Ireland, Latvia, Malta, Slovenia, Spain and Sweden.

### **Local Knowledge Requirements**

2.91 Several European countries have so-called “Local Knowledge” requirements (“Streckenkenntnis” is the German term that is often used in other countries too). In all cases, local knowledge must be demonstrated by showing that the relevant stretch of river has been navigated a certain number of times on a motorised vessel for which a Rhine Patent is mandatory; this experience can be obtained while working as a rating, engine-minder, leading crewman or helmsman.

2.92 In addition to the above, local knowledge certificates may also require an examination which addresses specific local conditions such as police regulations and river conditions. This is the case on the German Rhine between Spijsksche Veer and Iffezheim.

2.93 Table 2.2 below shows the stretches for which local knowledge certificates are required and what procedures exist to obtain them.

**Table 2.2: Local knowledge requirements and procedures**

| Country               | Stretch   | Required knowledge / experience  | Procedure   |
|-----------------------|---|--|---|
| <b>Austria</b>        | Danube (three stretches)  | 16 trips on the respective stretch (8 upstream, 8 downstream)  | Experience is shown through service booklet               |
| <b>Belgium</b>        | None  |  |   |
| <b>Bulgaria</b>       | None (see text above)   |  |   |
| <b>Czech Republic</b> | None  |  |   |
| <b>Finland</b>        | None  |  |   |
| <b>France</b>         | None (see text above)   |  |   |
| <b>Germany</b>        | 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);<br>Weser (Hannover-Münden - Oberweser);<br>Danube (Vilshofen - Straubing);<br>Untere Havel-Wasserstraße (Plaue -Havelberg), if water at Unterpegel Rathenow is above 130 cm;<br>Oder (Ratzdorf - Widochowa);<br>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               |
| <b>Hungary</b>        | 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 |
| <b>Italy</b>          | Unknown   |  |   |
| <b>Lithuania</b>      | None  |  |   |
| <b>Luxembourg</b>     | None  |  |   |
| <b>Netherlands</b>    | None  |  |   |
| <b>Poland</b>         | Unknown   |  |   |
| <b>Portugal</b>       | None  |  |   |
| <b>Romania</b>        | None  |  |   |
| <b>Slovakia</b>       | Unknown   |  |   |
| <b>United Kingdom</b> | Tidal River Thames (Putney Bridge - eastern limit of the Thames Barrier)  | 6 months / 60 days of service, including work in different directions, in  | Show experience through service booklet and take exam     |



|  |   |  |   |
|--|---|--|---|
|  | Control Zone)   | varying conditions and darkness<br>Local conditions and regulations  |   |
|  | Portsmouth Harbour<br>Isles of Scilly   | 6 months / 60 days of service<br>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<br>Local conditions and regulations | Show experience through service booklet and take exam |
|  | Bristol Port<br>Caernarfon and Menai Strait<br>Dee Conservancy<br>Dover Harbour<br>Fowey Harbour<br>Gloucester Harbour<br>Port of Liverpool<br>Teignmouth | Local conditions and regulations   | Take exam   |

Source: national authorities. For cells showing "unknown", please refer to the country descriptions above.

## Sector Overview

### Market structure

2.94 The inland waterways market is a market of small enterprises – the IWT is in fact dominated by micro-enterprises with less than 10 people employed. In the Netherlands, a large proportion of companies are independent undertakings with only two crew members on a vessel – this limits them to daytime-only operations or semi-continuous operations, and is most prevalent in tankers, container traffic and pushed barges. About 90 per cent of companies have only one vessel, and just five per cent have more than two vessels.<sup>24</sup> Ship-owning companies are more common in the more specialised forms of transport (tankers, tugs, passenger traffic).

<sup>24</sup> Effecten van de invoering van ATB-V/BVBB en richtlijn 2000/34 op de binnenvaart, NEA 2001.



2.95 Details are not available for several countries, but the picture does appear rather similar when, for example in France, 99.9 per cent of companies working in the IWT sector fall in the SME category<sup>25</sup>.

### Market concentration

2.96 Inland waterway transport (IWT) is an important method of transport in Europe. The total network of inland waterways in the European Union (EU) is 37,000 kilometres in length. A total of 138 billion ton-kilometres were transported by inland waterways in the EU in 2006, a 14.5 per cent increase on 1995. River transport accounts for 6 per cent of the total inland freight transport in the EU although this varies considerably between countries; for example, it is around 43 per cent in the Netherlands.<sup>26</sup>

2.97 IWT is only present in parts of the EU, and the major share of EU inland navigation is concentrated in two areas:

(a) the countries along the Rhine axis, with more than 80 per cent (in tons-km) of EU river transport; and

(b) The Danube and the Main Danube Canal, representing approximately 9 per cent of EU traffic. Danube traffic was very badly affected by the destruction in 1999 of several bridges in Serbia, most notably three bridges in Novi Sad, cutting the Danube in half as a transport corridor with traffic only being possible on the higher or lower sections. As a consequence, international traffic on the Danube almost came to a halt. Clearing the river from debris and making it fully navigable took many years, and only now is traffic gathering strength, but it is still less than half what it was before 1999.

2.98 Figure 2.1 below sets out the share of freight carried by IWT per country within the EU.<sup>27</sup>

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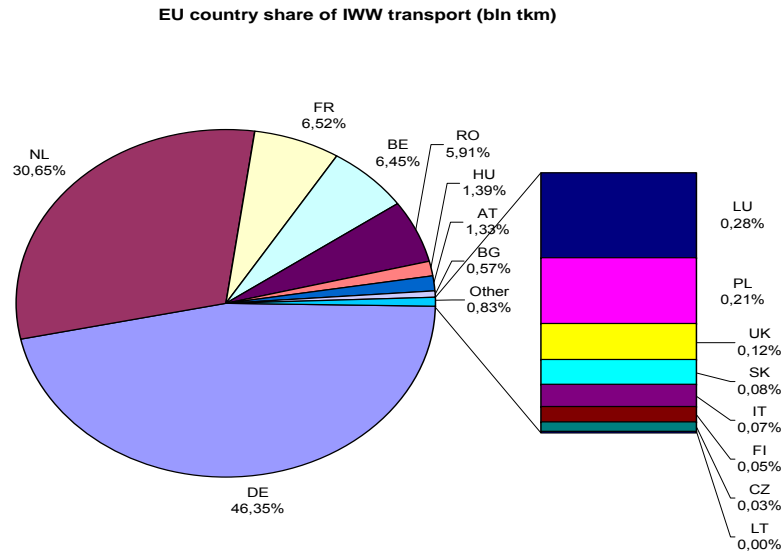
<sup>25</sup> Source: CEN

<sup>26</sup> Energy and transport in figures, DG TREN 2007.

<sup>27</sup> Sources: DG TREN, State Statistics Committee of Ukraine, Russian Federal State Statistics Service, Moldovan National Bureau of Statistics, Ministry of Statistics and Analysis of the Republic of Belarus, Statistical Office of Serbia.



**Figure 2.1: EU country share of IWT transport**



Source: DG TREN/Eurostat

2.99 Table 2.3 shows the absolute level of freight carried by IWT in each country in and outside the EU: 56.9 per cent of the total tonne-km was produced in the EU, and 43.1 per cent outside the EU (in Russia, the Ukraine, and to a much lesser extent Serbia and Croatia).

**Table 2.3: EU country share of IWT in bn. ton-km, 2006**

| Rank | Country     | bn tkm (2006) | Rank | Country        | bn tkm (2006) |
|------|-------------|---------------|------|----------------|---------------|
| 1    | Russia      | 87,000        | 13   | Poland         | 0,289         |
| 2    | Germany     | 63,975        | 14   | United Kingdom | 0,160         |
| 3    | Netherlands | 42,310        | 15   | Croatia        | 0,116         |
| 4    | Ukraine     | 18,600        | 16   | Belarus        | 0,109         |
| 5    | France      | 9,005         | 17   | Slovakia       | 0,106         |
| 6    | Belgium     | 8,908         | 18   | Italy          | 0,100         |
| 7    | Romania     | 8,157         | 19   | Finland        | 0,066         |
| 8    | Hungary     | 1,913         | 20   | Czech Republic | 0,044         |
| 9    | Austria     | 1,837         | 21   | Switzerland    | 0,042         |
| 10   | Serbia      | 1,640         | 22   | Lithuania      | 0,002         |
| 11   | Bulgaria    | 0,785         | 23   | Moldova        | 0,000         |
| 12   | Luxembourg  | 0,381         |      |                |               |

Source: DG TREN, State Statistics Committee of Ukraine, Russian Federal State Statistics Service, Moldovan National Bureau of Statistics, Ministry of Statistics and Analysis of the Republic of Belarus, Statistical Office of Serbia.



## Employment

2.100 An attempt was made by the PINE study to assess the total number of people working in the IWT sector, but this was very difficult as there is no standardised method of assessing labour statistics in this sector, and one of the problems identified was the way in which national data could be distorted if a domestic company was taken over by a foreign company (even though the overall numbers working on the IWT sector remained unaffected).<sup>28</sup> Recent Eurostat figures however, indicate that approximately 42,000 people are employed in the inland waterways sector.

## Access to the profession

2.101 All international entities define a minimum age for a boatmasters, as shown in Table 2.4.

**Table 2.4: 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

2.102 Under the regulations of the CCNR and the DC, someone must be at least 21 years old in order to become a boatmaster. The EC and UNECE also use this rule, but allow their member states to issue Group A or B boatmasters certificates already from 18 years on – however, if somebody with such a certificate between the age of 18 and 21 that would wish to navigate in another member state, should meet the minimum age requirements of that member state (plus any other restrictions that apply outside the minimum age scope).

2.103 All international entities and national authorities require a doctor appointed by a competent body to confirm the boatmasters' physical fitness (eyesight, hearing and the ability to distinguish colours) and the boatmaster must be in possession of the health certificate whenever in function. The CCNR, EC and DC also require a check of mental fitness. The CCNR is very specific in its requirements, much more than any of the other entities.

2.104 An overview of the various requirements is given in Table 2.5.

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<sup>28</sup> PINE: Prospects of Inland Navigation within the Enlarged Europe, Buck Consultants International et al, 2004

**Table 2.5: Physical fitness requirements for boatmasters**

| CCNR   | EC  | DC  | UNECE  |
|--|---|---|--|
| <p>I Eyesight</p> <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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").</li> <li>6. Motility: unrestricted agility of both eyes, no cross-eyedness.</li> </ol> <p>II Hearing</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>III. 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



2.105 Renewal of medical certification is required after a certain age in most countries; Table 2.6 shows the various requirements by the international entities and the countries.

**Table 2.6: Renewal of health certificates for boatmasters**

| Entity/country | 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.

2.106 In several countries<sup>29</sup>, having been convicted of a criminal offence related to inland waterways automatically excludes any applicant from entering (or keeping) the profession. This is also the case for Rhine Patents. The Danube Commission states that the candidate must be able to captain the crew. Candidates that have been convicted of any infringement on human life, someone else's property or custom requirements, while carrying out their duties, are considered unable to captain a crew.

2.107 The EC and UNECE do not have any legal provisions on this issue. Some other entities (the Sava Commission and the United Kingdom) stated that this would be impossible to implement as it would violate the principle that a person may not be punished for the same crime twice.

<sup>29</sup> This is the case in Hungary, the Netherlands





### Boatmasters' certificates issued

2.108 The number of boatmasters certificates issued is stable throughout Europe, yet there are considerable national differences. In the Netherlands the number of certificates seems to be fairly constant and in Germany it is actually rising, based on information supplied by the issuing authorities. However, in Belgium there has been a large decline as shown in Table 2.7 below.

**Table 2.7: First-time boatmaster certificates issued**

|              | 2003        | 2004        | 2005        | 2006        | 2007        |
|--------------|-------------|-------------|-------------|-------------|-------------|
| AT*          | 27          | 27          | 27          | 27          | 27          |
| BE           | 153         | 132         | 62          | 102         | 4           |
| BG           | NA          | NA          | NA          | NA          | NA          |
| CZ           | NA          | 201         | 201         | 179         | 246         |
| DE           | 237         | 257         | 251         | 279         | 286         |
| FI           | 96          | 67          | 66          | 50          | 63          |
| FR*          | 77          | 77          | 77          | 77          | 77          |
| HU           | NA          | 21          | 49          | 69          | 60          |
| IT           | NA          | NA          | NA          | NA          | NA          |
| LT           | NA          | NA          | NA          | NA          | NA          |
| NL           | 390         | 390         | 390         | 390         | 383         |
| PL           | NA          | NA          | NA          | NA          | NA          |
| PT           | NA          | NA          | NA          | NA          | NA          |
| RO**         | 28          | 59          | 42          | 62          | 47          |
| SK           | NA          | NA          | NA          | NA          | NA          |
| UK           | NA          | NA          | NA          | NA          | NA          |
| <b>Total</b> | <b>1008</b> | <b>1231</b> | <b>1165</b> | <b>1235</b> | <b>1193</b> |

\*average per year (through national authorities) \*\* Number of applications multiplied by average success rate. NL: average for 2003-2006. NA=information not available.

Source: National Authorities

2.109 A similar picture is shown for first-time Rhine Patents issued as indicated in Table 2.8 below.

**Table 2.8: First-time Rhine Patents issued**

|              | 2003       | 2004       | 2005       | 2006       | 2007       |
|--------------|------------|------------|------------|------------|------------|
| BE           | 88         | 78         | 86         | 104        | 29         |
| CH*          | 10         | 10         | 10         | 10         | 10         |
| DE           | 373        | 351        | 370        | 352        | 350        |
| FR*          | 14         | 14         | 14         | 14         | 14         |
| NL           | 150        | 150        | 150        | 150        | 143        |
| <b>Total</b> | <b>635</b> | <b>603</b> | <b>630</b> | <b>630</b> | <b>546</b> |

\* average per year (through national authorities), NL averages for 2003-2006

Source: National Authorities

- 2.110 These tables show that the number of first-time Rhine Patent holders is often larger than the number of first-time boatmasters certificate holders. This may seem strange, as it is not possible to obtain a Rhine Patent without having a boatmasters certificate first, but it may in fact be showing the decreasing popularity of the profession: it takes several years of experience for those with a boatmasters certificate to acquire a Rhine Patent; so first-time Rhine Patent holders are generally older than those with a first-time boatmasters certificate.
- 2.111 It has been difficult to establish the total number of boatmasters certificates in circulation because national authorities keep track of issued certificates and extensions, but not of certificates going out of circulation as a result of crew retiring, dying, or leaving the profession. Only in the Netherlands and Germany were numbers retrieved through the CCNR (28808 and 20347 certificates, respectively).
- 2.112 An alternative method therefore, of estimating the total number of boatmasters' certificates in circulation was employed in this study. Considering the huge scarcity of qualified boatmasters, it is fair to assume that there is no structural unemployment in the profession – any qualified boatmasters wanting to work will find a job, and therefore the only unemployment is frictional. Since every vessel needs at least one boatmaster (and often more than one, depending on vessel type and operating mode), a good proxy indicator might be the number of active vessels, as the registration of these vessels is generally accurate and reasonably up-to-date.
- 2.113 Using the number of registered vessels in the Netherlands and Germany, as well as the active motorised vessels in those countries, we sought to establish an average number of boatmasters certificates per vessel. Extrapolating this figure,<sup>30</sup> and taking into account the differences in the typical distances travelled in each country (and its effect on operating modes), as well as recent certificate-issuing data, we concluded that the total

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<sup>30</sup> For those countries with known numbers for total certificates in circulation, the average number of certificates per active vessel was calculated. For the other countries this was then multiplied by the number of active vessels, and in those countries with short navigable stretches the number was rounded down



number of boatmasters certificates for commercial inland waterway transport is around 80,000, with a 15 per cent margin of error.

2.114 The following table shows vessel numbers for most EU countries. Estimates were made for the others.

**Table 2.9: Number of active fleets**

| Country        | Motorised freight vessels | Motorised tankers | Tow boats  | Tugs        | Passenger vessels | Towing vessels | Total per country |
|----------------|---------------------------|-------------------|------------|-------------|-------------------|----------------|-------------------|
| Belgium        | 1099                      | 200               | 0          | 0           | 153               | 7              | 1459              |
| Germany        | 937                       | 369               | 0          | 146         | 1000              | 88             | 2540              |
| France         | 1126                      | 70                | 196        | 3           | 0                 | 0              | 1395              |
| Luxembourg     | 26                        | 27                | 11         | 9           | 6                 | 0              | 79                |
| Netherlands    | 3156                      | 733               | 156        | 497         | 929               | 132            | 5603              |
| Austria        | 28                        | 4                 | 13         | 6           | 0                 | 43             | 94                |
| Bulgaria       | 31                        | 1                 | 28         | 21          | 13                | 78             | 172               |
| Hungary        | 86                        | 6                 | 23         | 56          | 81                | 68             | 320               |
| Poland         | 105                       | 0                 | 236        | 9           | 76                | 492            | 918               |
| Romania        | 1                         | 4                 | 125        | 115         | 8                 | 421            | 674               |
| Slovakia       | 25                        | 2                 | 38         | 1           | 15                | 204            | 285               |
| Czech Republic | 67                        | 0                 | 20         | 85          | 67                | 176            | 415               |
| United Kingdom | 118                       | 55                | 0          | 69          | 0                 | 247            | 489               |
| Finland        | 13                        | 0                 | 0          | 28          | 107               | 56             | 204               |
| <b>Total</b>   | <b>6818</b>               | <b>1471</b>       | <b>846</b> | <b>1045</b> | <b>2455</b>       | <b>2012</b>    | <b>14647</b>      |

Source: EBU 2008, Danube Commission Annual Report 2006, PINE 2004

2.115 A similar approach was used for the Rhine Patents, possibly with greater accuracy since the number of countries involved is smaller and all have provided data on vessels. In this case, the number of Rhine Patents in the Netherlands was reported to be 4,540 (CCNR data), and 1,044 in Switzerland. We have estimated that currently 11,500 Rhine Patents are in circulation in the sector, with a 10 per cent margin of error.

**Table 2.10: Current number of boatmasters' certificates**

|                |               |
|----------------|---------------|
| Austria        | 647           |
| Belgium        | 6052          |
| Bulgaria       | 994           |
| Czech Republic | 1413          |
| Finland        | 708           |
| France         | 2500          |
| Germany        | 20347         |
| Italy          | 4500          |
| Lithuania      | 350           |
| Luxembourg     | 283           |
| Netherlands    | 28808         |
| Poland         | 4434          |
| Portugal       | 500           |
| Romania        | 4754          |
| Slovakia       | 994           |
| Sweden         | 200           |
| United Kingdom | 1665          |
| <b>Total</b>   | <b>79,572</b> |

Source: Europe Economics and TIS estimates

**Table 2.11: Rhine Patents issued and total existing patents**

|              | 2003       | 2004       | 2005       | 2006       | 2007       | Total existing Rhine Patents |
|--------------|------------|------------|------------|------------|------------|------------------------------|
| Belgium      | 88         | 78         | 86         | 104        | 29         | 2352                         |
| Switzerland  | 10         | 10         | 10         | 10         | 10         | 1044                         |
| Germany      | 373        | 351        | 370        | 352        | 350        | 3207                         |
| France       | 14         | 14         | 14         | 14         | 14         | 455                          |
| Netherlands  | 150        | 150        | 150        | 150        | 143        | 4540                         |
| Romania      | -          | -          | -          | -          | -          | 0                            |
| <b>Total</b> | <b>635</b> | <b>603</b> | <b>630</b> | <b>630</b> | <b>546</b> | <b>11,598</b>                |

Source: Europe Economics and TIS estimates



### 3 GAP ANALYSIS

#### Introduction

- 3.1 This chapter identifies the gaps that currently exist in the various legal regimes in terms of scope of application, zones of navigation, administrative procedures of competent authorities, technical requirements for vessels and various responsibilities for the competent authorities.

#### Legal Regimes

- 3.2 The legislation governing the inland waterways in Europe is fragmented, because various countries and rivers fall under different institutions, treaties and laws. The (binding) CCNR Resolutions govern the Rhine, non-binding resolutions govern the Danube, and EU legislation governs all EU states. This means that, for example in Germany, the CCNR, EU and DC all have various degrees of legislative power; and this patchwork of legislation may have distorting effects on free trade and competition.
- 3.3 Currently, the CCNR Regulations are the only international regulations which have an extensive list of definitions. The regulations of the UNECE, EC and DC only define the terms “boatmaster”, “boatmasters’ certificate” and “administration” or “competent authority”, while the CCNR definitions include the sailor, engine minder, leading crewman and helmsman. These differences potentially affect the ability to harmonise inland waterways legislation.
- 3.4 Comparing the four main documents<sup>31</sup> affecting boatmasters’ certificates, the main gaps refer to the following:
- (a) professional experience - this varies between four years under CCNR, DC or EC regulation, and two years elsewhere;
  - (b) the definition of a “year” varies, e.g. in the Rhine Patent system, the days registered in the service booklets are counted differently on the Rhine from elsewhere (on the Rhine, 180 effective working days count as one year, whereas in the maritime sector 250 days count as one year). Other institutions do not specify how “one year” is calculated, but some countries (Austria, Romania) count in the same way as the CCNR. See Table 3.1 for the description of professional knowledge;
  - (c) both the CCNR and the DC include provisions related to acquiring local knowledge (normally requiring sixteen trips on the stretch in question);

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<sup>31</sup> UNECE resolution nr 31, Rhine Patent Regulation, Recommendations on the establishment of boatmaster licenses on Danube and Directive 96/50/EC



- (d) absence of past infractions – both the CCNR and DC include such a requirement while the EU and UNECE do not.

3.5 Some differences exist between the levels of professional experience required by the relevant regulatory bodies. The following table gives an overview of the different professional experience requirements of the four main international regulatory authorities.

**Table 3.1: Professional experience required by the different international authorities**

|              |   |
|--------------|---|
| <b>CCNR</b>  | <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:</p> <ul style="list-style-type: none"> <li>– By a maximum of 3 years for the time spent in a training programme</li> <li>– By a maximum of 2 years for the maritime experience (minimum 250 days of navigation needed per calendar year)</li> <li>– 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.</li> </ul>  |
| <b>DC</b>    | <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 the candidate has a certificate confirming his nautical knowledge and skills, delivered by the DC member states or other Danube countries</p>  |
| <b>EC</b>    | <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:</p> <ul style="list-style-type: none"> <li>– Where the applicant has a diploma recognised by the competent authority which confirms specialised training in inland navigation comprising practical navigation work;</li> <li>– 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)</li> <li>– 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.</li> </ul> |
| <b>UNECE</b> | <p>(l) 2 years' professional experience, acquired in the deck department on board an inland navigation vessel, at least as a rating.</p>  |



|  |     |   |
|--|-----|---|
|  | (m) | Must be validated and/or approved by the Administration.  |
|  | (n) | The minimum duration may be reduced if: <ul style="list-style-type: none"> <li>– The Administration requires special training considered as equivalent</li> <li>– The candidate possesses a diploma of specialised 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

- 3.6 This table shows that the requirements are much lower for UNECE-based certificates (two years instead of four years of professional experience). In practical terms however, nearly all countries, with the exception of Belarus, relevant to the EU inland waterways sector fall under the CCNR, EU or DC regulations (or a combination of these).
- 3.7 It also shows that previous experience of working in the maritime sector can only count as up to two years of IWT experience. This means anybody wishing to move from the maritime to the IWT sector will have to work two years at a (possibly) lower position in order to become eligible for a boatmasters certificate.

### Local Knowledge Requirements

- 3.8 In geographical terms, the biggest regulatory obstacle is the local knowledge requirement that is imposed by some Member States. While local knowledge certificates are required from everyone, irrespective of nationality, they do effectively constitute a barrier to foreign companies/personnel, as these will either have to hire a pilot to guide them until they have the required experience, or (in case of individuals) foreign nationals will have to work for companies operating the affected stretches.
- 3.9 The stretch of the Rhine between Spijsche Veer and Iffezheim is the largest where local knowledge is required, both in terms of geographical length and transport volume. If local knowledge requirements could be reduced or abolished while maintaining the same level of safety, an immense trade barrier would be removed.
- 3.10 The need for local knowledge requirements could be reduced by improving markings and/or the more widespread use of River Information Systems.

### Administrative Procedures

- 3.11 Rhine Patent Regulation article 2.09 states that in order to prove the required amount of navigation experience, any applicant must show a service booklet as specified in Annex F of the RVIR, or another service booklet recognised by the CCNR as equivalent.
- 3.12 If the applicant is from a country where service booklets are not required, then an official government document containing the same data must be supplied. Similarly, time spent at a sailing school must be shown by a statement made by that school.



- 3.13 The problem with the documents required (identified in the latter paragraph) is that they need to be written in one of the CCNR's official languages (Dutch, German, or French). National government documents will however, often only be valid in their own language, or perhaps in English, but the CCNR does not allow documents in English to be used.
- 3.14 Another aspect creating inequality between the various countries is the cost associated with obtaining a boatmasters' certificate. Boatmasters certificates often require various examinations and the costs vary a lot between countries: in Lithuania, a boatmasters certificate can be had for approximately €20, whereas the equivalent certificate in Austria will cost €250. The difference between the costs for the Rhine Patents are smaller, ranging from €98 in France to €150 in Germany – the final cost may increase when local knowledge exams are added in order to geographically expand the Patent's validity to other German Rhine sectors.
- 3.15 All boatmasters' certificates, as well as the Rhine Patent, require a health statement issued by an authorised doctor. Since doctors in many countries are free to set their own prices, this will also lead to imbalances. In the Netherlands, prices vary between €40 and €80 for a medical check whereas in new Member States prices are much cheaper.
- 3.16 The Rhine regulations, as well as those of most other countries, require boatmasters to renew their health certificate every five years starting from the age of 50 (and, where allowed, every year after the age of 65), so the price difference between the various health certificates has most effect on the 50+ age group.

### **Various Responsibilities of the Competent Authorities**

- 3.17 As discovered in this study, the information registered by national authorities is very detailed in terms of vessel registration and trade statistics. However, the information about boatmasters certificates and local knowledge certificates is more limited. While certificate-issuing authorities do keep track of the number of certificates and Rhine Patents that were issued (both first-time and renewals), the total number of certificates and Rhine Patents in circulation is unknown in all countries except the Netherlands, Germany and Switzerland. For policy purposes it would be very desirable to have a better idea about the sector. This study has made estimates about the total number of certificates in circulation, but solid statistical data would be preferable.





## 4 SUMMARY AND CONCLUSIONS

- 4.1 The inland waterways sector in the EU suffers from a rather fragmented legislative and institutional framework. The main regulatory actors in the sector are the CCNR, the EU, the DC and the UNECE, each of whom have a different (but to an extent overlapping) geographical scope, and whose legislation/resolutions set different requirements for boatmasters' qualifications.
- 4.2 Of the main actors, the CCNR has the smallest geographical scope but the highest harmonised requirements, whereas the UNECE has the biggest geographical scope but the lowest level of harmonisation.
- 4.3 Besides the different geographical scope, the different regulators also have different mechanisms to implement their decisions. For example, the CCNR Regulations and EU Directives are binding, whereas Danube Commission Recommendations and UNECE Resolutions are not.
- 4.4 Recently, the CCNR has started a process in which countries outside the CCNR can have their certificates issued pursuant to EC Directive 96/50/EC recognised as equivalent to those used on the Rhine; Romania was the first country to receive this recognition, and others are due to follow in 2009.
- 4.5 The professional experience required in order to obtain a boatmasters certificate also varies between the four main regulatory entities; this may create some competitive advantages or disadvantages to some countries.
- 4.6 There is no full recognition of maritime experience, making it less easy for people with maritime experience to enter the sector.
- 4.7 In terms of market access, the most important restriction is the access to the German Rhine, where a Rhine Patent is required in nearly all cases to be able to navigate; this section of the Rhine is Europe's most important inland waterway in terms of economic significance. Besides the German Rhine, other stretches of inland waterways exist in some European countries where access is restricted to those boatmasters who have a defined minimum of local experience; this represents another obstacle when trying to enter a new (foreign) market.
- 4.8 The influx of people into the profession of boatmasters is declining in several countries; currently the number of people holding a boatmasters certificate in the EU is estimated to be about 80,000. The number of people holding a Rhine Patent is estimated to be around 11,500. However, a more detailed and structured registration of boatmasters' certificates would be desirable.
- 4.9 The cost of obtaining a boatmasters certificate varies considerably across Europe (and to a lesser extent this also applies to Rhine Patents); the cost of health certificates also varies, giving some advantages to some countries. However, health sector prices are difficult to regulate through the transport sector.



- 4.10 Further, the fact that the CCNR does not recognise English as an official language can impose some barriers on those individuals from countries without standardised/recognised service booklets.



## 5 RATIONALE FOR INTERVENTION

- 5.1 This study follows the methodology developed by Europe Economics as well as the European Commission's Impact Assessment Guidelines to outline the underlying rationale that justifies policy intervention in order to harmonise boatmasters' certificates in the EU.
- 5.2 In this section we present: the definition of the problem that leads to the rationale for intervention which, in turn, is converted into the objectives of intervention.

### Problem Definition

- 5.3 In technical terms, *regulatory failure* is the most likely starting point for explaining the lack of harmonised boatmasters' certificates in the EU. This can occur when current regulations are in some sense in conflict with social welfare, defined in its broadest terms.
- 5.4 The current divergence in the rules regarding boatmasters' certificates lead to the following problems:
- (a) access to the Rhine market;
  - (b) duplication of resources and administrative costs;
  - (c) distortion of competition;
  - (d) labour mobility; and
  - (e) The development of IWT as a means of transport.
- 5.5 We now discuss these in turn.

### Access to the Rhine Market

- 5.6 Access to the Rhine - which represents 63 per cent of the volume of freight transported by IWT in Europe - is complicated by the need to obtain a "Rhine Patent": as we will see in Section 6, this renders access more costly to boatmasters.
- 5.7 Access to the Rhine is a problem as the access to which a holder of a Rhine Patent is entitled is not met with "reciprocal" recognition of the certificates issued within the framework of the Directive 96/50/EC, although some progress has been made in this respect. Under the framework established in the 7th Additional Protocol to the Act of Mannheim, the CCNR has recognised Romanian certificates and is in the process of recognising Hungarian and Czech certificates.
- 5.8 Outside the Rhine River the requirements are mainly dictated by the Council Directive 50/96/EC and in general, the principle of mutual recognition provided for by the Council Directive EEC 91/672 allows holders of national patents to have access to the whole IWT network except for limitations involving the Rhine.



- 5.9 Boatmasters that have a certificate that allows them to navigate on the Rhine, conceded by the CCNR, effectively have access to the whole IWT network. In this sense, we can conclude that the Rhine Patent has similarities to an EU-wide patent.

#### **Duplication of resources and administrative costs**

- 5.10 The current system - characterised by the co-existence of national licences issued according to Directive 96/50/EC, plus at the same time special requirements regarding the Rhine and, to a lower extent, the Danube - entails duplication of resources and higher administrative costs to firms and boatmasters. This is due to the need for boatmasters to apply for additional certificates in order to access particular waterways, as well as the need for national authorities to make applications in order to have a Member State's certificates recognised.
- 5.11 We understand that the co-existence of different regimes derives its origins from past situations where regulations were mostly, if not exclusively, oriented to national priorities, and has partially been reduced by efforts at EU level which culminated in the 1991 and Directive 96/50/ECs.
- 5.12 A system where requirements are harmonised or alternatively, recognition of licences is eased, would entail a reduction of the resources needed to move across the entire IWT network, most notably in the most important channel, the Rhine.
- 5.13 In general, these are costs that cannot be recouped by other players in the sector nor in society at large. In the language of economics, these non-recoverable costs are a *deadweight loss*. The detriment may be proportionately higher to SMEs, as some of those costs do not vary with the volume of operation.

#### **Distortion to competition**

- 5.14 The different regimes in place cause distortions to competition and in principle may prevent the formation of a truly unified internal market. However, creating a so-called "level playing field" by harmonisation at a too high a level could unify a market to the detriment of output and jobs in the sector.
- 5.15 Distortion to competition creates its own winners and losers. At the business level, winners might include firms that operate in market niches where they are protected from competition with opportunities to enjoy profits beyond those achievable in a more competitive environment; either because potential entrants are restricted, encouraging mono/oligopolistic tendencies, or because fewer companies increase the opportunity for price collusion.
- 5.16 Hampering access to the Rhine stands out as a major driver creating those niches, exclusion from which creates losers — often SMEs — among firms which see their expansion opportunities undermined, as well as clients of IWT services who pay higher prices than would be the case in competitive markets; consumers also find higher costs passed on in higher prices. Winners and losers can also be identified at Member State



level. In principle, it is possible that some Member States may actually be using different requirements to introduce entry barriers in their own markets to keep out competitors from other Member States and non-EU countries. Such barriers would have to be eliminated in order to create a truly EU-wide market.

- 5.17 A situation where the market does not deliver broadly defined social welfare is an illustration of *market failure*. Restricted competition reduces efficiency, innovation, properly functioning labour markets (and thus levels of employment), the availability of goods and services, and worsens the trade-off between price and quality for those using the services and the final consumer.

### **Labour mobility**

- 5.18 The current system undermines labour mobility, since unless they are in possession of a Rhine licence, boatmasters cannot move freely across the IWT network.
- 5.19 While it is important to highlight that the lack of harmonisation undermines labour shortage problems, as boatmasters constitute a small and ageing population, this issue can in principle be addressed by a set of other policies, such as those aimed at improving the attractiveness of the IWT sector to prospective workers. In principle however, easier access to the Rhine would also enhance the interest in acquiring certificates.
- 5.20 On the other hand, the existing shortage renders the problem of access more critical for SMEs, particularly those who are interested in expanding their activities on the Rhine. The complications for their boatmasters (who are themselves the owners of the firm in a number of cases) in accessing the river are coupled with the difficulties in securing the services of new boatmasters with Rhine licences.

### **Development of IWT as a means of transport**

- 5.21 Developing the full potential of the IWT as a means of transport may be being held back by the various regimes in place at the moment, although labour market concerns are unlikely to be the main factor.
- 5.22 The gap between actual and potential development has long been recognised. For instance, the European Commission's 2001 White Paper "European transport policy for 2010: time to decide" points out that, "In the new context of sustainable development, Community co-financing should be redirected to give priority to rail, sea and inland waterway transport" (p.13) and, most notably, that, "Short-sea shipping and inland waterway transport are the two modes which could provide a means of coping with the congestion of certain road infrastructure and the lack of railway infrastructure. Both these modes remain underused" (p.16).
- 5.23 As the requirements related to the Rhine Patent stand out as a major entry barrier, as pointed out for instance in the NEA (2008) study, enhanced harmonisation of boatmasters' certificates or easier mutual recognition would lead to increased possibilities for expanding activity in the Rhine for firms (especially SMEs) in the IWT sector.



- 5.24 Policy options in that direction would then play a role in improving access to the Rhine and reducing labour market shortages, although many other factors are likely to be involved in improving the overall attractiveness of the IWT sectors to prospective workers and to that extent make a positive contribution to the prospective growth of IWT.
- 5.25 The social desirability at EU level of fostering IWT also stands at the basis of EU programmes such as NAIADES; in a related study (European Commission, 2006) it is pointed out that IWT is less energy-intensive and cleaner than alternative modes of freight transport: namely, road transport results in high external costs in terms of congestion and pollution, up to 1 per cent of Europe annual GDP by 2010.

### **Rationale for Intervention**

- 5.26 The intervention under consideration follows a context in which the EU has already attempted to tackle these problems, firstly by introducing the principle of mutual recognition of national certificates by Member States in the 1991 Council Directive 91/672/EEC, and secondly by harmonising the conditions for obtaining national certificates and creating a Community model certificate through the Council Directive 96/50/EC in 1996.
- 5.27 However, the regime based on the Directive 96/50/EC co-exists with the Rhine Patent Regulation of the CCNR and with the regime applicable to non-EU sections of the Danube, based on the Belgrade convention. While the “Rhine Patent” is recognised as valid for navigation on all Community waterways except for some cases where some additional requirements (e.g. on “local knowledge”) are in place, boatmasters’ certificates issued as per Community law are not valid for navigation on the Rhine.
- 5.28 Given the importance of the Rhine in the fragmented context of the EU IWT sector, and of the Danube (especially in the context of EU enlargement), this discrepancy greatly reduces the level of harmony in the current legislative framework, thereby leading to some of the aforementioned problems, such as legal uncertainties, administrative burdens and the related usage of scarce resources (e.g. time and money).
- 5.29 More specifically this would entail the elimination of any barriers due to the differences in boatmasters’ certificates that may be preventing boatmasters from operating on the Rhine.

### **Objectives**

- 5.30 The objectives of policy intervention consists in improving access to the market, fostering greater competition, maintaining high level of safety standards (most notably with regard to navigation on the Rhine), reducing (and possibly eliminating) deadweight losses, and ultimately enhancing social welfare.



- 5.31 The main objectives of the intervention are summarised as follows:
- (a) fostering access to the whole IWT network by suitably qualified EU boatmasters;
  - (b) reducing administrative costs and the duplication of resources linked to the lack of harmonised requirements;
  - (c) reinforcing the unity of the internal market with regard to IWT activity, with the aim of fostering properly functioning markets and effective competition;
  - (d) fostering labour mobility; and
  - (e) Strengthening IWT as a viable mode of transport in the EU.
- 5.32 The specific objective is to develop a system in which qualified European boatmasters would be able to navigate on the entire European Union Inland Waterways Network, thereby completing the process mentioned above in paragraph 5.26.



## 6 POLICY OPTIONS

6.1 In this section we discuss the policy options aimed at fulfilling the objectives mentioned in Section 5. This discussion will be followed by an expanded analysis of the impacts in Sections 7 and 8.

### Policy Options

6.2 In the process of awarding the contract object of this study the Commission listed a number of possible options for intervention that needed to be assessed. These are:

**Option A:** maintenance of the current situation

**Option B:** the promotion of voluntary action

**Option C:** mandatory action through new or revised EU legislation – Directive

**Option D:** mandatory action through new EU legislation – Regulation

6.3 In this study, it was also within our remit to consider alternative options in addition to those put forward by the Commission. Thus, on the basis of the results of our stakeholder consultation and the additional research we have conducted, a fifth option is suggested: the promotion of the mutual recognition of requirements, most likely through the introduction of a specific directive.

6.4 We therefore include in our Impact Assessment the following option:

**Option C1:** enforce the mutual recognition of boatmasters' certificates through revised EU legislation – Directive

### Option A: maintenance of the current situation

6.5 Under this option, the status quo regarding existing legal regimes would not be affected by EU action.

6.6 Option A is a slightly artificial option since the present system is actually evolving and this option implies that most of the actions that are currently in place to harmonise boatmasters' certificates on various inland waterways would be allowed to expire. This scenario assumes that none of the other options envisaged here regarding boatmasters' certificates will be implemented and the situation in terms of such certificates would not evolve from its present status.

6.7 This option is, in practice, extremely unlikely to materialise as it would imply that many of the efforts of the EC and other actors would be discontinued. There is no real reason to believe that this would be the case.





- 6.8 However, this situation can represent a useful benchmark to have a clear starting point on the basis of which the situation would evolve.
- 6.9 We analyse the impacts of this option, which would result if current efforts towards harmonisation were halted.
- 6.10 In particular, the difficulties in accessing the Rhine would not be ameliorated by current initiatives undertaken by the CCNR and the DC to facilitate access to the Rhine for boatmasters currently working in the Danube riparian countries; furthermore, initiatives under way by the European Commission fostering dialogue between International River Commissions and Member States to promote IWT would be discontinued.
- 6.11 The impacts to be analysed, in comparison to the counterfactual scenario (discussed below and further in Sections 7 and 8), mainly consist of the following:
- (a) access to the Rhine, and hence job opportunities for EU boatmasters, would be undermined;
  - (b) distortion in the competition between firms operating in the IWT sector would be exacerbated; and
  - (c) Competitiveness of SME firms would decrease, due to higher administrative costs and the cost of searching for suitable boatmasters; labour costs will increase for some firms and decrease for others (see the analysis in Section 7).

**Option B: the promotion of voluntary action**

- 6.12 The promotion of voluntary action aims at strengthening co-operation between Member States in the process of tackling existing differences and their effects, particularly in the framework of the International River Commissions.
- 6.13 Under this option, the Member States of the CCNR would continue the ongoing process of individual recognition of national navigability licenses, which are issued on the basis of Directive 96/50/EC, for navigation on the Rhine.
- 6.14 Interested parties would seek to identify differences between EU waterways, and to reduce them in order to ameliorate constraints to the free movement of boatmasters and to promote competition in the IWT sector.
- 6.15 This can be regarded as the counterfactual scenario, i.e. the scenario that would materialise if no additional measures or options were put into place.
- 6.16 The evolution of relevant variables in this scenario means that it would be grossly misleading to confuse the concept of status quo in the legislative framework with the status quo in the overall environment. This would lead to mistakes in the estimation of costs and benefits: for instance, if the harmonisation of boatmasters' certificates



happened anyway without any intervention on the part of the Commission, we would run the risk of overestimating the benefits of all the other options.

- 6.17 As specified in the methodology produced by Europe Economics and in the methodology specified in the Commission's Impact Assessment Guidelines, it is of primary importance to construct the counterfactual correctly. To this end the developments under option B would be carefully analysed, without necessarily engaging in developing detailed forecasts under the current policy framework for all the relevant variables. The most important changes must, in any case, be considered.
- 6.18 A non-exhaustive list would include:
- (a) the evolution of IWT usage; the CCNR for example, points out that there has been an increase in usage of the Rhine and of the North-South route;
  - (b) improvements in safety of navigation;
  - (c) the increasing shortage of boatmasters, due to a high percentage of workers being close to retirement;
  - (d) the implementation of regulatory changes already determined before policy intervention;
  - (e) new changes in national regulations regarding aspects that affect IWT stakeholders (e.g. quantity/quality aspects related to crews and vessels);
  - (f) changes in the macroeconomic environment affecting demand for and supply of IWT services;
  - (g) changes in the labour markets affecting supply of labour for IWT; and
  - (h) spontaneous adjustment in the specific IWT labour market: a shortage of boatmasters caused by tough job conditions would, if markets are adjusting, lead to the higher salary rate where the labour market clears (i.e. supply equals demand).<sup>32</sup>

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<sup>32</sup> To an economist, the concept of shortage of labour and need for intervention by public authorities seems to require strong justification that should go well beyond the "low attractiveness" of a job due to its "tough conditions". In general, markets should work in such a way that salaries adjust, in a similar fashion as prices of goods adjust in response to the interplay of demand and supply. If a given job is inherently "unpleasant", then the unpleasantness should be considered as one more cost entailed by the economic activity (e.g. waterway transport). As this cost is borne by the worker, then the level of the salaries should reflect this. The same holds with regards to the specific competencies required to be a licensed boatmaster, as they are hard to achieve. If such a level of salaries is too high to make the activity profitable to the employer, then there is simply no scope for the activity to take place, as it cannot be conducted on efficient terms. If public authorities intervene, it must be due to elements outside the activity that compensate for this inefficiency – for instance positive externalities stemming out of this activity.



- 6.19 In principle, this approach has the potential to result in the eventual harmonisation of boatmasters' certificates in the long term as co-operation proceeds between national authorities, river commissions and other stakeholders.
- 6.20 We understand this "promotion" activity as the provision, by the international river commissions and the Member States, of adequate infrastructure facilitating co-operation. At first, an obvious requirement for co-operation towards harmonising rules consists in achieving a common understanding of the existing situation: what the different rules are, and why they exist.
- 6.21 By definition, voluntary action would imply that all agents realise "gains from trade": everyone ends up better off with the agreement than without it. This is an important constraint to keep in mind, for instance when comparing this option with mandatory action by a supra-national authority.
- 6.22 In some cases, voluntary actions may lead to immediate benefits for all parties involved. This could be the case, for instance, when differences in certificates are due to reasons that have become obsolete and lack objective justification: once decision-makers are well informed about technical reasons for imposing a given level of requirements on the different aspects related to certificates (number, age, qualifications etc.), then a given rule is "the best" across different Member States. In this case, promoting voluntary action works as a catalyst favouring co-operation towards mutually advantageous outcomes where gains from trade are immediate and require no difficult negotiations.
- 6.23 Other cases could instead be characterised by the existence of potential synergies which, in order to be realised, require that some or all parties involved make some sort of "sacrifice" if the potential gains are to be realised. For instance, a given rule by some Member States may impose additional difficulty on the circulation of labour or capital across the EU. Free access for all in the IWT sector may be beneficial to all, yet at the individual level there is no incentive to modify one's own rules which may protect national firms and workers from competition from abroad. In the terms of "game theory", a branch of mathematics often used in economics and social sciences, a condition known as "prisoner dilemma" is created: one in which individual incentives favour a lack of co-operation, but co-operation by all would actually make all parties better off. Activities within this option may foster co-operative outcomes, although these may be subject to difficulty and uncertainty in terms of the likelihood of success.
- 6.24 As mentioned above, this option is the reference against which the impacts of other options will be assessed in Sections 7 and 8.

### **Option C: mandatory action through new or revised EU legislation – Directive**

- 6.25 This option would entail a revision of Council Directive 96/50/EC, or the adoption of a new Directive, with the aim of harmonising and simplifying the legal framework regarding the issuance and recognition of boatmasters' certificates across the EU that would, in effect, lead to the issuance of a European boatmasters' certificate valid for the entire EU IWT Network.



- 6.26 Within this option, two sub-options, between which the EU Member States would be able to choose, should be distinguished. These two sub-options would be the following:
- (a) requiring harmonisation according to the highest possible qualification standards (with a certificate permitting navigation with all kinds of vessels on all EU waterways); or
  - (b) allowing a “modular approach” which would allow the gradual acquisition (and certification) of qualifications.
- 6.27 The first would have the merit of increasing simplicity and uniformity in the system certificates, and may enhance safety by requiring high competencies for all boatmasters. The second would allow more flexibility, whereby lower levels of competencies could be of use in contexts where their application is most appropriate.
- 6.28 We understand that, in any case, the rights related to existing licences already conceded to boatmasters will not be undermined, so that no boatmaster will have his area of navigation reduced following the implementation of this option. New applicants, instead, will be subject to the new rules. This implies that on one hand future certified boatmasters would have access to the whole IWT network but, on the other, certificates entailing lower requirements together with more limited rights would disappear.
- 6.29 For both sub-options, practical local knowledge of specific river conditions could be required as a supplement to the above common trunk certificate whenever conditions of navigation so warrant. The challenge in this case would be to define common criteria for requiring local knowledge.
- 6.30 Benefits may be defined, at a high level, with reference to harmonisation and enhanced strength, fairness and efficiency-oriented competition in the internal market. Costs may be manifested through the loss of adaptability of the legal systems to the need for specific boatmasters’ competencies in national or river-level contexts on the other: this is particularly relevant with regards to possible safety impacts. The actual Directive may be able to define mechanisms of flexibility.
- 6.31 At a more specific level, we would need to analyse to what extent the adoption of a Directive would involve additional costs from adapting legal regimes and/or the benefits resulting from avoiding the duplication of resources entailed by the multiplicity of non-harmonised legislative processes.
- 6.32 The impact assessment, to be presented in Sections 7 and 8, will focus on these main dimensions:
- (a) easier access to the IWT network, in particular to the Rhine, and hence better job opportunities for boatmasters;
  - (b) fairer and stronger competition in the internal market, as entry and expansion of the activities of SMEs are rendered more viable; and



- (c) higher competitiveness of EU firms operating in the IWT sector, as administrative and search costs are reduced; labour costs are likely to vary in different directions for different group of firms (see Sections 7 and 8);
- (d) Safety impacts shall be considered, as requirements would vary under this option.

**Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive**

- 6.33 We believe that a revision of Directive 96/50 that relates to the promotion of the mutual recognition of certificates across the entire EU inland waterway network should be considered. By this we mean that as long as a boatmaster has a certificate issued by a licensing authority in any of the EU Member States then he or she should have full access to all inland waters across the EU.
- 6.34 This would permit boatmasters to move freely from one Member State to another, and would allow companies to respond more quickly to changes affecting incentives such as evolving market conditions, peaks (or troughs) in demand, or availability of labour, etc.
- 6.35 Mutual recognition allows competition to work effectively and over time, this might be expected to lead to a gradual harmonising of standards, with none of the potentially harmful effects of imposing so-called “level playing fields”.
- 6.36 With the option of mutual recognition we do not however, imply that unconditional access be granted to any boatmasters having a licence that fulfils the requirements of Directive 50/96/EC. Member States would still be able to require boatmasters to acquire local knowledge certificates for rivers that are deemed to be particularly difficult to navigate. However, it would be the onus of each Member State to prove that the conditions on a particular part of a river require such local knowledge. Clearly it would be necessary to define what particular characteristics should be taken into account when deciding whether or not a particular part of a river requires local knowledge. Possible factors could be, e.g. the strength of the current, the amount of traffic in the past 5 or 10 years, the depth of the river etc.
- 6.37 Our recommendation would be for an Expert Group (e.g. to be composed of experts on inland waterway networks) be established by the Commission prior to the undertaking of any revision to Directive 96/50 in order to define key and practical criteria by which Member States can assess (and thereby prove) whether imposing an additional requirements for local knowledge for navigation on stretches of their waterway are justified.
- 6.38 Member States would then able ex-ante to submit a request to require that additional local knowledge be required on the basis of the criteria defined by the Expert Group, with the added option of doing this ex-post (although this would imply that Member States recognise that until this option in exercised, all boatmasters certificates will be recognised on their section of waterway).



- 6.39 Thus, under this option, boatmasters' certificates would continue to be issued by national licensing authorities on the basis of the requirements set out under the existing Directive 96/50 and these would be recognised throughout the EU inland waterway network, although Member States would still retain the flexibility of adapting requirements to reflect local circumstances where these are proven to be necessary against a defined set of criteria. In addition, it would be necessary to ensure that the process of obtaining such a certificate would not be too complex and burdensome (i.e. in terms of time and costs etc) in order to avoid the introduction of disproportionate barriers to market entry.
- 6.40 The main impacts to be considered are, at the definition level, the same as those presented in paragraph 6.32 (referred to in Option C).
- 6.41 The intensity of the impact varies, as highlighted in Section 7 under this option access to the Rhine would be imposed more quickly than under procedures envisaged in Option C, and hence the positive consequences in terms of competition and competitiveness of SMEs would be stronger.
- 6.42 On the other hand, we shall also consider in Section 7 whether safety concerns would be exacerbated, though there is no *prima facie* reason to think safety standards would be eroded.

#### **Option D: Mandatory action through new EU legislation – Regulation**

- 6.43 This option proposes that the EU should consider the amount of legal work which is to be carried out within the UNECE with regard to the mutual recognition of boatmasters' certificates in the UN ECE region, namely, UN ECE Resolution no. 31 which provides recommendations on minimum requirements for the issuance of boatmasters' certificates.
- 6.44 Once further developed, the recommendations put forth under Resolution 31 could then serve as a pan-European common standard. Based on this, the Commission could propose a regulation which would implement the provisions of the recommendations into EU Community law.
- 6.45 It is important to note that this option would entail the most direct form of EU action as the resulting Regulation would have immediate effect within the legal systems of the Member States, becoming part of national laws, while a Directive requires implementation into national legislation to become effective, so that previous benefits of mandatory action associated with Option C might be enhanced.
- 6.46 In the same way as set out in Option C, practical local knowledge of specific river conditions could be required as a supplement to the above common trunk certificate whenever conditions of navigation so warrant. The challenge in this case would be to define common criteria for requiring local knowledge.
- 6.47 Similarly as with Option C, impacts to be considered mainly regard access to the whole IWT network, and related labour market impacts, competition in the internal market and competitiveness of SMEs.



## Summary of Possible Impacts

- 6.48 The degree of boatmasters' access to the IWT network is the first focus of the various policy options, but other effects would accrue.
- 6.49 These effects span the economic impacts, environmental impacts, and social impacts as described in the European Commission IA guidelines.

### Economic effects

- 6.50 Effects arising directly from policy options consist of the following elements:
- (a) **Operating and administrative costs and conduct of business** relate to the costs of complying with rules and of liaising with authorities, and are also linked to the costs of certificates, if a part of those costs can be “passed through” from the boatmasters onto firms. The cost of securing the services of boatmasters would also be affected: see the discussion on labour market effects below.
  - (b) **Competition in the internal market:** the current divergence in certificates entails distortion in internal market competition, while the definition of a common European standard (provided it were not set too high) or the enforcement of mutual recognition could ease the entry in the IWT market, especially with regard to offering services on the Rhine. Competition would enhance the availability of IWT services for those who demand transport services.
  - (c) **Costs for public authorities** of implementing and enforcing new rules.
- 6.51 These, in turn, may lead to the following impacts:
- (a) **Consumers and households:** prices of and the variety of goods for which IWT services are used may differ according to variations in the efficiency of transport services. The estimate of this type of impact, which would involve the estimation of elasticities across the value chain of which transport is only one part, is beyond the scope of this report. Nevertheless, qualitative conclusions can be made regarding a positive, albeit limited, impact on consumers from an Option strengthening the viability of IWT.
  - (b) **Specific regions or sectors** may be affected by the creation of new standards for boatmasters' certificates. The regions where the Rhine and the Danube flow, the ITW sector, other transport sectors and those sectors where there are transport costs (which could be affected by IWT options) are relevant objects of analysis. Qualitative discussions are likely to be the main outputs.
  - (c) Impacts on the **macroeconomic environment** (on employment, GDP growth levels, etc.) will be defined in proportion to the relevance of the IWT sector in the overall economy: in this case, variations stemming out of options regarding





boatmasters are small, when considering the whole economic environment and qualitative assessment defines the sign of variation.

### **Social effects**

- 6.52 **Employment and labour markets:** under Options C and D, a new European standard for boatmasters certificates would arise, while option C1 would enforce a mutual recognition system and option A would halt current initiatives fostering greater harmony in boatmasters' access to the IWT network.
- 6.53 The actual implementation of these options would have crucial consequences in the demand and supply of boatmasters' services.
- 6.54 In the first place, the supply would be affected via changes in the cost of gaining the certificates. If one single standard were put in place, this could be set at the highest level of requirement, which, in our understanding, would be akin to those set for navigation on the Rhine. This would mean that the cost of obtaining this new certificate would be approximately equal to that entailed by the Rhine certificate (valid on the whole network) and higher than the cost of the certificates needed to navigate on the rest of the inland waterway network – possibly with the exception of some parts of the Danube - that is, a first effect would consist in higher costs for those prospective boatmasters.
- 6.55 Variations in those costs are different under Option C1, whereby existing certificates would be recognised in the entire network; in fact, in this case there would be a fall in the costs of accessing the Rhine, as no additional licence would be required.
- 6.56 Our analysis, however, would need to be completed while making a distinction among different groups of boatmasters. We understand that nowadays there are boatmasters who possess a certificate which permits them to navigate on the whole network except for the Rhine and part of the Danube. The supply of this type of boatmasters would probably decrease (and prices increase). However, the supply of boatmasters with certificates to navigate on the whole network may be augmented by a substitution effect: some of those who do not have a complete certificate would eventually be able to navigate on the whole network, the Rhine included.
- 6.57 Overall, the supply of boatmasters able to navigate on the whole network would increase, according to our economic analysis, under Options C, C1 and D.
- 6.58 The demand for labour would also be affected, and could be enhanced (under Options C and D) by the presence of a unique standard, thereby reducing uncertainties and entailing higher value being placed on EU boatmasters' services; it would also increase the demand for boatmasters in possession of a national certificate valid on the whole network (Option C1).
- 6.59 The market salary of boatmasters would be positively affected by an increase in the level of demand for boatmasters in the IWT sector. The overall effect, however, would also depend on the changes which occur in the supply of boatmasters in the sector. If, on the





one hand, certificates become harder to acquire (as may be the case with Option C), the supply of boatmasters may decrease which would imply a further positive effect on salaries. If, on the other hand, harmonised certificates serve to enhance the attractiveness of the job (e.g. by increasing market opportunities through improved access to the Rhine), the supply of boatmasters in the sector may increase, thereby counterbalancing (partially or totally) the upward pressure on salaries resulting from an increase in demand.

- 6.60 **Standards and rights related to job quality:** job quality may be enhanced by options defining a clearer role for boatmasters in the EU. Furthermore, new standards could also affect the safety of boatmasters and other crew members – in that respect, also on the basis of consultation, we may derive estimates of variations in the risks entailed by navigation in the IWT sector.
- 6.61 **Public health and safety:** similarly, consultations with stakeholders and experts allow a closer look at the effects on public health and safety where linked to boatmasters' expertise (as required to obtain certificates under different policy options) – do note that these effects may be hard to quantify explicitly.

### Environmental effects

- 6.62 We have identified two types of indirect effects, stemming from variations in the usage of IWT:
- (a) **Changes in emissions.** The alteration in the amount of traffic due to the harmonisation of requirements would change the overall level of emissions given that the IWT sector is much more energy-efficient than the other transport modes it would partially replace.
  - (b) **Effects on the local environment.** Changes in the amount of traffic may have effects on the river basins by influencing the aquatic environment, the landscape, etc.

### Displacement effects

- 6.63 **Crowding-out of other sectors:** a wider use of IWT would in part replace existing transport modes. Reducing the reliance on road transport is, in fact, among the objectives of the intervention. When we assess whether a given option renders IWT services more or less attractive with respect to other modes of transport, we shall include the crowding-out effect under which the activity in other competing sectors is replaced – in turn, this will constitute the basis for the estimation of other effects, e.g. the environmental impacts mentioned above.

### Other significant dynamics

- 6.64 In addition to the effects described above we believe that there are other important issues that need to be taken into account.



6.65 In our evaluation we would take into account the following issues:

- (a) the interaction with other labour and social policy issues;
- (b) the risks and uncertainties associated with the effects, for instance, in terms of different (likely) degrees of compliance, the time necessary to implement the policy change, and the sensitivity to external shocks (e.g. changes in other national and community legislation);
- (c) monitoring and evaluation issues, i.e. how easy it would be to monitor the application of the envisaged changes and what would be the most appropriate tools to use.

6.66 For ease of reference, Table 6.1 summarises the effects that we have discussed above.

6.67 We also note that channels of impacts would be considered, in relation to the cost/benefit trade-offs, with a basic distinction between navigation on the same river spanning across borders (where differences in regulations may cause specific problems) and navigation on rivers within one State (where the need of harmonisation appears to be related to the desire to foster free entry and enhanced competition).



**Table 6.1: Summary of impacts of boatmasters' certificates policy options and significant other dynamics**

|   | <b>Direct effects</b>   | <b>Indirect effects</b>   | <b>Induced effects</b>   |
|---|---|---|--|
| <b>Economic effects</b>                 | Operating costs (adjustment, compliance)<br>Administrative costs      | Operating costs (labour)<br>Competitiveness, trade and investment flows | Specific regions (e.g. where the Rhine flows)<br>Specific sectors (affected by IWT)<br>Consumers and households<br>Macroeconomic environment |
| <b>Environmental effects</b>            |   | Changes in emissions<br>Effects of the local environment                |  |
| <b>Social effects</b>                   | Employment and labour markets<br>Job quality and job safety standards | Public health and safety  |  |
| <b>Displacement effects</b>             | Crowding-out of other transport sectors                               |   |  |
| <b>Interactions with other policies</b> | Other labour and social policies<br>Sensitivity to shocks             |   |  |
| <b>Risks and uncertainties</b>          | Compliance<br>Time allowed for implementation                         |   |  |
| <b>Monitoring and evaluation</b>        | Ease of use<br>Alternative methods of enforcement                     |   |  |



## Our Focus

- 6.68 The impacts described above could all possibly materialise following an intervention favouring the harmonisation of boatmasters' certificates. However, following our interaction with the Commission services as well as the discussions we have conducted with various stakeholders we have concluded that an analysis of a more limited number of impacts would be appropriate in this case.
- 6.69 In particular, the rationale for intervention and the problem definition both stress that there may be difficulties for boatmasters with certificates issued by authorities in non-Rhine riparian countries in accessing the market on the Rhine.
- 6.70 The Commission believes that through the harmonisation of boatmasters' certificates the problem can be, at least partially, solved. If such access is limited because boatmasters are prevented from moving on the Rhine, then harmonising certificates may improve the functioning of the IWT sector.
- 6.71 We will therefore focus our analysis on a number of effects which we think are most directly related to the problem identified. These are:
- (a) an assessment of the number of boatmasters that are currently restricted from entering the Rhine market because they are having difficulties in obtaining the certificate, and of how options improve access;
  - (b) the impact on costs for firms of the implementation of the different options. Such costs can be divided into administrative costs to comply with the different regulations and other costs incurred by firms (e.g. changes in salary costs in order to hire new boatmasters);
  - (c) given the importance of small firms in the IWT sector and the requirements of the Commission an assessment of the likely impacts on SMEs;
  - (d) the likely effects on competition in the IWT market;
  - (e) the likely effects on labour market dynamics, with particular regards to job opportunities;
  - (f) the likely effects on safety of navigation; and
  - (g) The likely environmental effects.
- 6.72 Assessing how large the problem is at the moment is of great importance in knowing whether an intervention would be justified. If only a limited share of boatmasters operating in the sector are experiencing problems related to the different certificate necessary on the Rhine (because they are not interested in moving, or because obtaining the certificate is not particularly difficult etc.), it is possible that the efforts necessary to develop and implement new legislation that harmonises certificates would not be justified.



On the contrary, if there is evidence that a considerable share of boatmasters are finding it difficult to access the Rhine market because of the different certificates, then harmonisation may well have significant effects on the IWT sector.



## 7 IMPACTS OF THE VARIOUS OPTIONS

- 7.1 The European Commission's Impact Assessment Guidelines defines three main categories of impact: **social**, **economic** and **environmental** impacts.
- 7.2 At the end of the previous section, we pointed out the elements constituting the most important impacts of the various options. They relate to the three dimensions in the following ways.
- (a) Within **social impacts** – mainly through their effects on labour markets, namely on the job opportunities of actual and perspective boatmasters, on salary levels and on **occupational safety**. Access to the whole IWT network, and most notably to the Rhine, is therefore a main driver of most social impacts, as variations along this dimension entail changes in job opportunities and in overall labour market dynamics. Occupational safety issues are also considered among social impacts as workers are the most directly affected by possible accidents.
  - (b) Within **economic impacts** – each option implies effects on competitiveness of EU firms, and most notably of SMEs (constituting the bulk of activity in the IWT sector). Different options ameliorate or exacerbate existing distortions to competition in the internal market, as Rhine Patent holders currently enjoy significantly wider access to the IWT networks than those without those patents, and as costs to obtain Rhine Patents differ across boatmasters in the EU. Finally, policy options also affect the level of administrative costs related to obtaining and managing certificate; these costs are especially relevant for the economic viability of SMEs.
  - (c) Within **environmental impacts** – these are second-order effects driven by the possible enhancement of the IWT sector by the overall harmonisation effort, comprising boatmasters' certificates, which is aimed at fostering the development of IWT as a means of transport which may partially replace alternative means causing more damages to the environment in particular in terms of emissions such as railways and especially road transport - as mentioned in the 2001 EC White Paper. Other types of impact relate to the safety of navigation and the possibility of environmentally damaging accidents, with effects beyond those affecting IWT employees mentioned above among social impacts.

### Main Impacts of the Different Options

#### *Option A – Maintenance of the current situation/No EU action/intervention*

- 7.3 As mentioned above, this option is "artificial" as it would imply discontinuity of the ongoing efforts towards better harmony in the recognition of different boatmasters' certificates.
- 7.4 The precise extent of the impacts of this option is hard to define, as these efforts are currently under way in particular with regards to access to the Rhine, a crucial issue given the importance of the river in the IWT sector.



- 7.5 A qualitative estimation of the effects of this option is, however, entirely feasible.
- 7.6 In particular, we maintain that discontinuing those efforts would exacerbate the existing problems of limited boatmasters' access to the Danube and especially to the Rhine, which in turn have negative economic effects in terms of competition and competitiveness.
- 7.7 Therefore, keeping in mind that Option B is used as a counterfactual scenario, the sign (i.e. positive or negative) of the changes regarding this option are as follows:
- (a) negative impact regarding access to the IWT network by EU boatmasters;
  - (b) negative impact on competition, most notably among firms operating on the Rhine, as the lack of qualified boatmasters operates as a barrier to entry and expansion of activity;
  - (c) negative impact on the competitiveness of firms operating in the IWT sector, as the shortage of boatmasters with a Rhine Patent is exacerbated;
  - (d) neutral impact on the safety of navigation;
  - (e) negative impact on the environment, as replacement of road and railway transport by IWT is reduced.

*Option B: the promotion of voluntary action*

- 7.8 This option would imply the decision not to proceed with further intervention, and the ongoing process towards mutual recognition would follow the current agenda.
- 7.9 This would mean that access to the Rhine would still be limited to Rhine Patent holders; however, as we have seen, achieving the Patent is likely to become easier for nationals of Danube riparian countries.
- 7.10 Relying on the current efforts towards mutual recognition is likely to result in maintaining a situation where access to the Rhine is then prevented for some EU boatmasters.
- 7.11 In our understanding, nationals of France, the Netherlands, Germany and Belgium can obtain Rhine certificates from their own authorities, and hence we assume that those genuinely interested in accessing the Rhine can do so. However, the costs entailed requirements related to knowledge of local conditions (a requisite for the Rhine certificate) varies with the proximity to the river, especially in France and Germany, For instance, the NEA study<sup>33</sup> finds that German boatmasters working on the Elbe river are often prevented access to the Rhine by the current Rhine patent regime.

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<sup>33</sup> See the "Study on Administrative and Regulatory Barriers in the field of Inland Waterway Transport", produced by NEA for DG TREN.



- 7.12 Boatmasters in Danube countries are going to benefit from the ongoing recognition process: those who would like to migrate towards Rhine riparian countries, or who would like to spend a part of their career there, may find it easier to do so. We conclude that the issue of their access is limited at least in time.
- 7.13 Boatmasters in the remainder of the EU have their possibilities limited in the current situation and are likely to remain without inexpensive access options under option B. It is important, however, to be aware that those who believe that access to the Rhine is highly profitable are also those who are more likely to sustain the costs of access to it.
- 7.14 It is worth considering not only that the majority of existing boatmasters would be unprepared to bear the costs of Rhine access, but also that more people would be likely to consider a boatmasters career if access to the Rhine was easier. The latter effect, however, is likely to be minor.
- 7.15 The competitiveness of EU firms involved in the IWT sector may suffer from scarcity of available boatmasters.
- 7.16 It is important to be aware of the need to distinguish between the costs in terms of paying boatmasters and the costs of finding licensed boatmasters.
- 7.17 The former relate to tough job conditions and to high levels of professional competence. There is evidence (see above) that salaries are adjusting upwards to reflect those “standard” labour market factors. Public intervention is currently under way to render jobs more attractive and to foster the achievement of professional competences; those initiatives complement and may, to some extent, foster greater interaction between demand and supply towards market clearing.
- 7.18 The second element relates to possible job shortages. Imposing high search costs on firms, which would be a “deadweight loss” (whereas salaries increases are transferred to boatmasters), induces a loss of competitiveness with respect to potential levels. Also in this respect the public interventions mentioned above may ameliorate these problems. SMEs are likely to be disproportionately hurt by high search costs.
- 7.19 Granting unlimited access for Rhine Patent-holders to the EU IWT network while access to the Rhine is limited distorts competition. The effects on boatmasters themselves are captured in the labour market interactions discussed above. However, firms are also affected as reduced availability of boatmasters constitutes a barrier to entry and expansion of activity on the Rhine.
- 7.20 Those firms which recruit boatmasters in non-Rhine countries are likely to be relatively less able to compete, as their access to the Rhine implies either sustaining a part of the cost of upgrading the certificates of their staff or of recruiting new boatmasters. Again, those costs are likely to proportionately hurt SMEs rather than large firms.
- 7.21 As previously mentioned, this option is used as a counterfactual scenario.





- 7.22 Therefore, as a starting point towards an assessment of the impact of the different policy options, we now proceed to derive estimation of boatmasters affected by difficulty of access to the Rhine, and who are likely to remain affected by such difficulties under the counterfactual, i.e. option B.
- 7.23 We report below, for convenience, the Tables 7.1 and 7.2 (already presented in Section 2) with figures regarding boatmasters' certificates in the EU and Rhine Patents.
- 7.24 We estimate that there are currently about 11,500 boatmasters in possession of a Rhine Patent, about 10,500 being from the EU (the remainder from Switzerland). Considering 18 out of 27 countries where data are available (as IWT is not significant in the excluded nations – Cyprus, Denmark, Estonia, Greece, Ireland, Latvia, Malta, Slovenia, and Spain), there are about 79,500 certified boatmasters. Among them, about 57,700 reside in the four nations where Rhine Patents have so far been issued – Belgium, France, Germany, and the Netherlands. Boatmasters in Romania, whose patents are now recognised by the CCNR, number about 4,800; in the Czech Republic and Hungary, soon to follow Romania according to the CCNR, there are 3,500 boatmasters. Summing up the three figures, we find that 66,000 boatmasters either reside in nations with the rights to issue Rhine Patents or where the recognition process by the CCNR is under way, and 13,500 boatmasters reside in the other EU nations. However, we will also consider the benefits for boatmasters residing in CCNR countries, as access problems also exist there, most notably in Germany.

**Table 7.1: Current number of boatmasters' certificates**

|                |               |
|----------------|---------------|
| Austria        | 647           |
| Belgium        | 6,052         |
| Bulgaria       | 994           |
| Czech Republic | 1,413         |
| Finland        | 708           |
| France         | 2500          |
| Germany        | 20,347        |
| Italy          | 4500          |
| Lithuania      | 350           |
| Luxembourg     | 283           |
| Netherlands    | 28,808        |
| Poland         | 4434          |
| Portugal       | 500           |
| Romania        | 4754          |
| Slovakia       | 994           |
| Sweden         | 200           |
| United Kingdom | 1665          |
| <b>Total</b>   | <b>79,572</b> |

Source: Europe Economics and TIS estimates

**Table 7.2: Rhine Patents issued and total existing patents**

|              | 2003       | 2004       | 2005       | 2006       | 2007       | Total existing Rhine Patents |
|--------------|------------|------------|------------|------------|------------|------------------------------|
| Belgium      | 88         | 78         | 86         | 104        | 29         | 2,352                        |
| Switzerland  | 10         | 10         | 10         | 10         | 10         | 1044                         |
| Germany      | 373        | 351        | 370        | 352        | 350        | 3,207                        |
| France       | 14         | 14         | 14         | 14         | 14         | 455                          |
| Netherlands  | 150        | 150        | 150        | 150        | 143        | 4,540                        |
| Romania      | -          | -          | -          | -          | -          | 0                            |
| <b>Total</b> | <b>635</b> | <b>603</b> | <b>630</b> | <b>630</b> | <b>546</b> | <b>11,598</b>                |

Source: Europe Economics and TIS estimates

- 7.25 Whether access restrictions affect operations is another matter: as the CCNR pointed out during the consultation process, only 11 EU Member States issue documents under the Directive 96/50/EC, of which 4 are CCNR States and the rest are on the Danube, except for Poland and the Czech Republic. In other words, possibilities *already* provided under the current framework are not fully exploited in nations such as Italy and the United Kingdom. This reflects the regional nature of the IWT sector, where the geographical range of most companies is rather limited.
- 7.26 The Czech Republic is in the process of getting recognition of certificates, so that Poland and Austria (the latter a Rhine riparian country, but not a CCNR state) remain as the nations whose boatmasters are among the ones most affected by restriction of access to the Rhine, while actual exploitation of new access opportunities by boatmasters and firms in other nations would be more limited. There are only about 650 Austrian boatmasters, and these may benefit from the current trend of the CCNR towards recognising patents of boatmasters navigating on the Danube – Austria has actually applied for recognition.
- 7.27 We also consider that some nationals in CCNR countries would also benefit from the implementation of policy options fostering easier access. As mentioned above, the NEA study found that German boatmasters are among those who complain the most about lack of access, most notably those operating on the Elbe who would like to expand their activities. Similarly, we assume that benefits to Czech boatmasters would be limited to those navigating the Danube and not to the same extent to those navigating the Elbe. Finally, French boatmasters are also negatively affected by difficulties in achieving the Rhine Patent, especially due to the lack of proximity of committees in charge of administering exams and granting patents.
- 7.28 We envisage that French, Czech, Romanian and German boatmasters would expand their activity on the Rhine, while barriers for Belgian and Dutch boatmasters are likely to be more limited. The sum of boatmasters from those nations is around 29,000, of which 3,700 are in possession of the Rhine certificate. Considering that barriers, although existent, come in the form of additional costs and hence are likely to discourage only those whose activity on the Rhine would be limited (otherwise sustaining those costs would be worthwhile), we assume that their activity on the Rhine would be a percentage



of 25,300 full-time boatmasters which is likely to be lower in the group including Austrian and Polish nationals.

- 7.29 Summing up, the boatmasters which could effectively benefit from greater access opportunities could be divided into these groups, whereas the frequency of boatmasters who would seize new opportunities to access the Rhine if they could is assumed to be uniform:
- (a) Polish and Austrian boatmasters: 5,000 (approx.);
  - (b) German, Czech, Romanian, and French boatmasters: 25,300 (approx.); and
  - (c) Others (Italian, UK etc.): 8,400 (approx.).
- 7.30 From interviews and previous studies, our understanding is that the first group is where we would reasonably expect to find the highest percentages, as the boatmasters of the second groups should in principle enjoy the advantage (currently or in the near future) of residing in CCNR nations (although, as explained above, this does not completely erase access problems). Boatmasters in the third group are likely to be less interested in access possibilities, especially due to the high costs of migration.
- 7.31 In order to proceed with an exercise to show possible effects of policy options, we build upon the assumption that frequency of increment of access in the first group (we call it group 1) is the double of the second (group 2), which is in turn the double of the third (group 3).
- 7.32 This assumption is used for the purpose of illustrating how patterns of migration and of expansion of activity result in different levels of impact, which is measured in absolute terms and as a percentage of the current number of Rhine Patents (10,500).
- 7.33 We present a table with different hypotheses regarding the intensity of new access. These hypotheses will be used below when estimating impacts of alternative policy options aimed at fostering access.
- 7.34 For instance, if we assume that 20 per cent of group 1 (Polish and Austrian boatmasters), 10 per cent of group 2 and 5 per cent of group 3 employ the opportunity of accessing the Rhine, the increment is:  $(0.2)5,000+(0.1)25,300+(0.05)8,400=3,950$ , or 38 per cent of current Rhine Patents.

**Table 7.3: Hypotheses of incremental access to the Rhine**

| Percentage increment<br>(Groups 1, 2, 3) | Increment | Increment<br>(percentage of 10,500 existing<br>Rhine Patents) |
|--|-----------|---|
| 30%, 15%, 7.5%                           | 5,925     | 56%   |
| 20%, 10%, 5%                             | 3,950     | 38%   |
| 10%, 5%, 2.5%                            | 1,975     | 19%   |
| 5%, 2.5%, 1.25%                          | 987       | 9.5%  |

Source: Europe Economics

7.35 As one could expect, variations are wide depending on which hypothesis one uses. We note that, even in the lowest hypothesis, the percentage change regarding the access to the Rhine is significant, close to 10 per cent of existing Rhine Patents.

7.36 Applying the same percentages, we get increases of approximately **300, 200, 100** and **50** boatmasters (respectively, according to the four hypotheses) becoming available every year for navigation on the Rhine, in addition to the numbers recorded in the last few years for Rhine Patents – 630 in 2005 and 2006, and 546 in 2007.

*Option C: mandatory action through new or revised EU legislation – Directive*

7.37 Under this option, harmonisation would be pursued either through a revision of the Directive 96/50/EC or through the adoption of a new Directive.

7.38 In our understanding, a European boatmasters certificate would emerge, and be valid for the entire European IWT network.

7.39 Two main alternatives were presented to us by DG TREN, as mentioned above:

(a) harmonisation according to the highest possible standard, with a certificate allowing the navigation of all kinds of vessels on all EU Waterways; or

(b) a “modular approach” which would allow the gradual acquisition of qualifications.

7.40 In both cases, the main objective consists in improving access to the whole IWT network.

7.41 We proceed now to the assessment of the impact of variant (a) of Option C.

7.42 Setting harmonisation at the highest possible standards implies that some boatmasters already qualify to navigate in all EU waterways, whereas some do not fulfil current qualifications.

7.43 The boatmasters in the latter group would still be allowed to navigate in that part of the network where they are currently allowed to do so, but should extend their qualification to navigate elsewhere, most notably on the Rhine. Requirements for future applicants



would be augmented in order to navigate on the IWT network, but, once fulfilled, these rights would also include the Rhine.

- 7.44 The group of boatmasters who would satisfy requirements would be automatically allowed to navigate on the Rhine, once the Directive is effective, given that the Rhine river is a Community waterway.
- 7.45 Therefore, in terms of access to the Rhine and to the IWT network in general, this option implies the following types of change:
- (a) access to the Rhine for boatmasters that already satisfy the new standards;
  - (b) the possibility for those boatmasters not satisfying the new standards to upgrade their qualifications, so as to reach the new requirements and have free access to the Rhine;
  - (c) the possibility for future applicants to access the Rhine under the new standards, which may differ from those currently imposed by the CCNR; and
  - (d) More difficult access for future applicants to the rest of the IWT network, for those national contexts where current standards for boatmasters' certificates are lower.
- 7.46 Enhancing the availability of boatmasters licensed to navigate on the Rhine would reduce current upwards pressure on salaries. In fact, in economic terms, an expansion of the supply would, *ceteris paribus*, reduce salary rates. This of course, represents lower costs for firms navigating on the Rhine and lower incomes for those boatmasters who already possess a Rhine Patent; it also implies higher incomes for new Rhine Patent-holders, with income differentials that are likely to exceed the possible costs of migrating to the Rhine.
- 7.47 The quantitative determination of those changes in salary rates would depend on several variables, including the elasticity of labour demand and supply. We do not possess the data that would be needed for such estimations. We note, however, that rather than a downright reduction of salaries we would be likely to observe a moderation of the current trend towards higher salaries for boatmasters operating on the Rhine.
- 7.48 Conversely, in the rest of the IWT network the opposite would happen: boatmasters could become scarcer as a result of migration to the Rhine region and of higher standards, rendering more difficult the attainment of the new pan-European patent with respect to the previous national certificates. Hence we would get higher salary rates in the rest of the network. It is important however, to note that the Rhine already represents 63 per cent of the volume, so that the rest of the network involves a relatively less important impact.
- 7.49 Administrative costs may increase in the short term, when adapting to the new system, and decrease in the long term following harmonisation. In any case, the impact is likely to be minor.



- 7.50 Search costs are likely to be lower for companies navigating on the Rhine.
- 7.51 This, in combination with the reduction of administrative costs, would result in the enhancement of the competitiveness of EU firms in the IWT sector. While this effect is important, it should not be overestimated, as the IWT sector is relatively capital intensive.
- 7.52 Effects on competition would also be positive: the need to secure the services of a licensed boatmaster is in fact among those factors hampering the entry of new firms in IWT on the Rhine. These new entry possibilities are likely to especially affect SMEs, as big firms may find those cost reductions negligible.
- 7.53 Existing competition distortions would then be reduced and stronger competitive pressure may reduce the margins currently enjoyed by firms operating on the Rhine: to them, this effect is likely to be stronger than the cost reductions related to boatmasters' salaries. On the other hand, the profitability of firms entering the Rhine is likely to increase, and the firms using IWT services through the Rhine are likely to reap the benefits of competition via reductions in the prices they pay. Those reductions may be partially passed on to other firms and to the final consumers of the goods transported on the Rhine.<sup>34</sup>
- 7.54 With regard to navigation on the whole network excepting the Rhine, safety is likely to be enhanced by higher standards.
- 7.55 With regard to navigation on the Rhine the CCNR scheme is aimed at fostering safety, stressing the requirement of the knowledge of local conditions. This requirement is likely to be less stringent if a European IWT driving licence emerges, although some knowledge of the Rhine as the most important river for IWT may well be required even under the new scheme.
- 7.56 Our impact assessment, then, results in neutral safety impact on the Rhine, and lower risks in the rest of the IWT network – while actual estimation of a likely number of accidents is not possible in this report. We note, however, that existing sources such as the NAIADES 2006 report<sup>35</sup> point out that IWT is safer than alternative modes of transport and that “the number of yearly fatalities caused by accidents in the Netherlands, which has the highest density of inland waterway traffic in Europe, is next to zero”.
- 7.57 Furthermore, the 2003 UNITE project led by the Institute for Transport Policy of the University of Leeds<sup>36</sup> confirms that, in the Rhine and in the overall inland waterway, safety issues are quite limited. For instance, in 1998, in the segment from the seaport of Rotterdam to the inland port of Mannheim with a total distance of 590 km, only 2 out of 1,000 ships met with an accident, and those tended to be “light”, with minor material

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<sup>34</sup> For the materials being transported in IWT, see “Market observation for inland navigation in Europe”, 2007, available at [http://ec.europa.eu/transport/iw/observatory/doc/2007\\_01\\_marketobs\\_en.pdf](http://ec.europa.eu/transport/iw/observatory/doc/2007_01_marketobs_en.pdf).

<sup>35</sup> Communication from the Commission on the Promotion of Inland Waterway Transport “NAIADES”, 2006.



damages and no fatalities; and that there is still a lot of spare capacity on the Rhine and there is therefore no reason to assume that congestion will cause marginal costs to rise.

- 7.58 Environmental effects would also reflect changes in the rates of accidents. Besides that, benefits would arise if the use of IWT (especially on the Rhine) becomes more intense and replaces other modes of transportation.
- 7.59 Summing up, the following impacts arise from Option C (a), when requirements are augmented to the highest standards:
- (a) positive impact regarding access to the IWT network by EU boatmasters. Estimates of how many boatmasters would use this option may vary greatly depending on assumptions on market evolution and how high the new requirements will be set. A conservative estimate would set a 10 to 20 per cent increase regarding existing boatmasters. Annual increases would be around 100 units. Possible negative impact regarding access to the rest of the network if new standards are set disproportionately high with respect to navigation in other rivers;
  - (b) positive impact on competition, most notably among firms operating on the Rhine, as the lack of qualified boatmasters operates as a barrier to entry and expansion of activity; this positive impact is reduced, in the rest of the IWT network, to the extent that new standards are set too high;
  - (c) positive impact on the competitiveness of firms operating in the IWT sector; also in this case, high standards may reduce the intensity of this positive impact.
  - (d) neutral impact on the safety of navigation on the Rhine, and positive (but small) impact on the rest of the IWT network; and
  - (e) Lower emissions following expansion of activity on the Rhine.
- 7.60 The “modular approach” is advocated by the CCNR, and consists in devising basic skill requirements and adding, where necessary, modules with enhanced requirements to extend the navigation rights of boatmasters.
- 7.61 The system would be more similar to the current one than that which would result from a Directive establishing high standards giving rights of navigation in the whole IWT network.
- 7.62 In particular, while we do not possess specific indications of how modules would be defined, it looks like requirements to navigate on the Rhine would end up reflecting current requirements. Some benefits of enhanced clarity of rules could emerge, and safety could be reinforced, but administrative complexity would probably not be reduced

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<sup>36</sup> See Deliverable 9 and the overall study at <http://www.its.leeds.ac.uk/projects/UNITE>



nor would the issue of access to the Rhine be resolved, unless modules are defined in such a way that access to the Rhine is not hampered by special and more stringent requirements as those which exist today. In this case, the modular approach would instead have the potential of combining the solution to the access problem with the possibility of allowing boatmasters with lower competences to keep working in some parts of the IWT network requiring lower competences.

- 7.63 Bearing in mind the difficulty of estimating the actual impact of the modular approach, the following impacts would emerge:
- (a) positive impact regarding access to the IWT network by EU boatmasters, but of a limited extent, between 0 and 10 per cent, due to the fact that requirements to access the Rhine would not significantly differ from existing ones. Annual increases would be between 0 and 50 boatmasters;
  - (b) positive albeit limited impact on competition, most notably among firms operating on the Rhine;
  - (c) positive but limited impact on the competitiveness of firms operating in the IWT sector.
  - (d) neutral impact on the safety of navigation on the Rhine and on the rest of the IWT network; and
  - (e) Lower emissions following expansion of activity on the Rhine.

*Option C1: enforce mutual recognition of certificates through revised EU legislation -Directive*

- 7.64 A directive enforcing mutual recognition would entail that boatmasters certificates issued in any given EU Member State are recognised as valid throughout the IWT network.
- 7.65 As noted in Section 6, this option does not necessarily imply that unconditional access be granted to any boatmasters having a licence that fulfils the requirements of Directive 50/96/EC as Member States would still be able to require boatmasters to acquire local knowledge certificates for rivers that are deemed to be particularly difficult to navigate. The case for including a local knowledge requirement, would under this option however, require verification that this is in the interests of safety.
- 7.66 The effect of allowing access to the Rhine would be even more direct than under option C, as no higher standards would be required. This would imply an increment in boatmasters available to work on the Rhine that is significantly higher, *ceteris paribus*, than in option C. Furthermore, unlike in Option C, under this option there is no reduction of available boatmasters in the overall IWT sector. On the other hand, we believe that issues relating to the safety of navigation would not be exacerbated. While current requirements established by the CCNR are aimed at preserving safe navigation on the Rhine, there is no evidence that the requirements established under the Directive 96/50/EC are insufficient to preserve safety on the whole network, the Rhine included.





Where knowledge of local conditions is deemed to be crucial for safe navigation, a Member State could still, under this option, require additional local knowledge as described in paragraph 6.36.

- 7.67 Effects on competitiveness and on competition patterns would follow the previous description and be even more intense than in Option C.
- 7.68 Summing up, the main impacts would be:
- (a) strong and positive impact regarding access to the IWT network by EU boatmasters. We estimate an approximate 20 to 40 per cent increase on existing boatmasters, and a yearly increase of approximately 200 new boatmasters;
  - (b) strong and positive impact on competition, most notably among firms operating on the Rhine, as lack of qualified boatmasters operates as a barrier to entry and expansion of activity;
  - (c) strong and positive impact on the competitiveness of firms operating in the IWT sector, as the shortage of boatmasters with a Rhine Patent is exacerbated;
  - (d) neutral impact on the safety of navigation on the Rhine, positive (but small) impact on the rest of the IWT network.
  - (e) lower emissions following expansion of activity on the Rhine.

*Option D: mandatory action through new EU legislation – Regulation*

- 7.69 As previously mentioned, this option would be based on UNECE Resolution no. 31 which provides recommendations on minimum requirements for the issuance of boatmasters' certificates. Once further developed, the recommendations put forth under Resolution 31 could then serve as a pan-European common standard. Based on this, the Commission could propose a regulation which would implement the provisions of the recommendations into EU Community law.
- 7.70 This option would entail that an approach similar to the one envisaged in the Directive 96/50/EC, with regard to the definition of minimum requirement, which would be transposed into a law which, in its turn, implies direct application throughout the EU and hence also affects access to the Rhine.
- 7.71 How in practice this law would be designed would determine the precise effects in terms of access to the Rhine: for instance, the new Community Law may require, or not, examination by the CCNR or specify requirements in terms of local knowledge.
- 7.72 Overall, we assume that, at least in qualitative terms, the effects would be of the same sign as those in options C and C1, but a quantitative estimation is at this stage not possible.



- 7.73 Environmental effects would also reflect changes in the rates of accidents. Besides that, benefits would arise if the use of IWT (especially on the Rhine) becomes more intense and replaces other modes of transportation.



## 8 ANALYSIS OF IMPACTS

8.1 In this section we analyse the impacts of the different options along the main dimensions involved. First, we focus in particular on the impacts on SMEs and on their competitiveness, which constitute the bulk of the firms operating in the IWT sector. Then we proceed with specific estimations of the costs involved, including those to be sustained by public authorities. After that, we present our reasoning regarding how other economic - those regarding competition – social – impacts on labour markets – and environmental dimensions are affected.

### Access to the Rhine

8.2 In the previous section, we derived estimates, quantitative for Options C and C1, qualitative for the rest, of the variation in the access to the Rhine, the most important river for IWT and the one where the effects of different options would be most important.

*Option A: maintenance of the current situation/No EU action/intervention*

8.3 Maintenance of the current situation would reduce access to the Rhine with respect to a counterfactual where efforts are being undertaken in order to promote it.

*Option B: promotion of voluntary action*

8.4 This option is regarded as the counterfactual situation.

8.5 Recall that we have divided in three groups the boatmasters assumed to be affected by restriction of access to the Rhine under this option:

(a) Polish and Austrian boatmasters: 5,000 (approx.);

(b) German, Czech, Romanian, and French boatmasters: 25,300 (approx.); and

(c) others (Italian, UK etc.): 8,400 (approx.).

*Option C: mandatory action through new EU legislation – Directive*

8.6 Under the first variant, i.e. harmonisation at the highest standards - we call it C(a) in the tables below – we have estimated a 10 to 20 per cent increase of access to the Rhine regarding existing boatmasters, and about 100 units more of entrants among newly qualified boatmasters. Lower estimations (0-10 per cent and 50 units, respectively) were determined for the “modular approach” – to which we refer to as C(b) in the tables.

*Option C1: enforce mutual recognition of certificates through revised EU legislation –Directive*

8.7 We estimated that the increase in access to the Rhine would be greater under this option, between 20 to 40 per cent with regards to existing boatmasters and approximately 200 yearly boatmasters available to navigate on the river.



*Option D: mandatory action through new EU legislation – Regulation*

- 8.8 We have explained that we cannot define quantitative estimation, as it would depend on how the minimum requirements would be set up in practice. At a qualitative level, we argue that effects on access would be positive with respect to the counterfactual, unlikely to reach the same intensity as with option C1.
- 8.9 The effects on access to the Rhine of the envisaged options are summarised in the following table.

**Table 8.1: The impacts on access to the Rhine**

|                    |                  |
|--------------------|------------------|
| <b>Option A</b>    | Negative         |
| <b>Option B</b>    | -                |
| <b>Option C(a)</b> | Positive         |
| <b>Option C(b)</b> | Positive – small |
| <b>Option C1</b>   | Positive – large |
| <b>Option D</b>    | Positive         |

Source: Europe Economics

## Estimating the Impacts on Costs

### Costs to boatmasters

- 8.10 Assuming harmonisation leads to an increase in the number of certificates issued there will be an aggregate<sup>37</sup> increase in costs to boatmasters in terms of application, examination and card issuance costs, as well as in time spent studying. We set out below the costs to boatmasters under each of the options.

*Option A: maintenance of the current situation No EU action/intervention*

- 8.11 Maintenance of the current situation with a discontinuation of current efforts towards harmonisation will not impose any additional costs to either boatmasters or national authorities in addition to those which are currently imposed.
- 8.12 However, there are currently substantial costs for non-Rhine national authorities relating to applying to CCNR for the recognition /equivalence of their national certificates issued pursuant to EC Directive 96/50.

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<sup>37</sup> In terms of total costs over all boatmasters obtaining certificates, the costs to individual boatmasters are unlikely to increase.



*Option B: promotion of voluntary action*

- 8.13 This option is regarded as the counterfactual situation therefore although costs would occur as a result of the voluntary action there would be no additional costs to those that would otherwise have occurred in the absence of intervention.

*Option C: mandatory action through new EU legislation - Directive*

- 8.14 Under this option there would be a revision of Council Directive 96/50/EC or the adoption of a new directive, with the aim of harmonising and simplifying the legal framework regarding the issuing and recognition of boatmasters certificates and would effectively lead to the issuing of a single boatmasters certificate valid for the entire EU IWT network.

- 8.15 There would be two sub-options within this option between which Member States could choose:

- (a) harmonisation according to the highest possible qualification standards; and
- (b) A modular approach which would allow for the gradual acquisition and certification of qualifications.

- 8.16 We discuss these sub-options below:

*(a) Harmonisation according to the highest possible qualification standards*

- 8.17 Harmonisation according to the highest possible qualification standards is the more expensive option as it would entail boatmasters effectively paying for the acquisition of knowledge that they would not all necessarily need (as not all IWT require the same levels of knowledge/expertise to navigate on different sections of the waterways).

*(a) A modular approach which would allow for the gradual acquisition and certification of qualifications.*

- 8.18 This approach would be the less expensive option as it would allow boatmasters to obtain a core general competency certificate with additional modules for specific skills/knowledge requirements.

*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

- 8.19 The directive proposed here would mean that, as long as a boatmaster had a certificate issued by a licensing authority in any of the Member States, then he or she would have full access (at least for a limited period) to all inland waterways across the EU. This would permit boatmasters to move freely between Member States.

- 8.20 This option may also require boatmasters to obtain a specific local knowledge certificate in addition to the main certificate.



- 8.21 If we assume the cost of a local knowledge exam to be €91 (based on the cost of the local knowledge exam in the Netherlands) the extra costs would then depend on the number of Member States which chose to introduce local knowledge certificates.
- 8.22 If we assume that 300 additional boatmasters access the Rhine and therefore need this exam, than this would potentially lead to an aggregate increase in costs for boatmasters of €27,300.
- 8.23 However, this would be offset by any amount saved by boatmasters in currently obtaining more than one certificate and the costs currently spent on applying for Rhine Patents.
- 8.24 If this option led to an increase in the numbers of boatmasters' certificates applied for, there would be an increase in processing costs for national authorities.

*Option D: mandatory action through new EU legislation - Regulation*

- 8.25 This option proposes that the EC should consider the work of the UNECE regarding the harmonisation of boatmasters' certificates, namely UNECE Resolution no. 31 which provides recommendations on minimum requirements for the issuance of boatmasters' certificates.
- 8.26 Once further developed, the recommendations put forth under Resolution 31 could serve as a pan-European common standard.
- 8.27 This option may also necessitate boatmasters having, in addition to the main certificate, a specific local knowledge certificate where local conditions are such as to require this.

**Costs to national authorities**

**Administrative burdens**

- 8.28 One important component of the cost calculation is that of the changed administrative burdens. The EC IA guidance defines administrative costs as "the costs incurred by enterprises, the voluntary sector, public authorities and citizens in meeting legal obligations to provide the information on their action or production, either to public authorities or to private parties".
- 8.29 In the case of the proposed options for the harmonisation of boatmasters certificates, the administrative burdens would relate to the costs of having to adapt exams and training courses to the new standards as well as processing certificates.
- 8.30 The standard cost model proposed by the EC assesses administrative costs on the basis of the average cost of the required action, multiplied by the total number of actions performed during a given year. The formula is as follows:

$$\text{Administrative burden} = \sum \text{Price} \times \text{Quantity}$$



where the price is calculated as the average labour cost per hour (in the EU) multiplied by the time associated with each approach. Quantity in this case refers to the number of individuals involved in administrative activities.

- 8.31 A number of Member States did not anticipate any additional ongoing costs arising from the changes in policy (towards a harmonised certificate). We were unable to gather any information from Member States on the one-off change over costs of the new requirements. However, it has been possible to make qualitative estimates as to the order of the likely costs as follows.
- 8.32 Some of the proposed options may lead to additional costs to national authorities both in terms of one-off costs from implementing and ongoing costs resulting from the need to regulate the new regime.

*Option A: maintenance of the current situation*

- 8.33 Maintenance of the current situation with a discontinuation of current efforts towards harmonisation will not impose any additional costs to national authorities in addition to those which are currently imposed.
- 8.34 However, there are currently substantial costs for non-Rhine national authorities relating to applying to CCNR for the recognition /equivalence of their national certificates issued pursuant to EC Directive 96/50.

*Option B: promotion of voluntary action*

- 8.35 This option is regarded as the counterfactual situation therefore although costs would be occurred as a result of the voluntary action there would be no additional administrative costs to those that would otherwise have occurred in the absence of intervention.

*Option C: mandatory action through new EU legislation – Directive*

- 8.36 Under this option there would be a revision of Council Directive 96/50/EC or the adoption of a new directive, with the aim of harmonising and simplifying the legal framework regarding the issuing and recognition of boatmasters certificates and would effectively lead to the issuing of a single boatmasters certificate valid for the entire EU IWT network.
- 8.37 There would be two sub-options within this option between which Member States could choose:
- (a) harmonisation according to the highest possible qualification standards; and
  - (b) A modular approach which would allow for the gradual acquisition and certification of qualifications.
- 8.38 The respective costs of these options would depend on the proportion of costs that could be passed on to boatmasters and that which would be borne by national authorities. As a



result of the revised certificates, certificates are likely to be more complex to study for and examine, however, we assume that the additional cost of this will be borne by boatmasters. The costs to national authorities will therefore be set-up costs in order to change over to the new system and the day-to-day costs of administering the new system.

8.39 We discuss these sub-options below:

*(a) Harmonisation according to the highest possible qualification standards*

8.40 This option would entail initial set up costs of the new exam system.

8.41 Our responses from national authorities suggested that there is unlikely to be additional costs of day-to-day administration of the new system.

*(a) A modular approach which would allow for the gradual acquisition and certification of qualifications.*

8.42 This option would entail initial set up costs of the new exam system. However, due to the modular approach, these costs are likely to be lower than under the previous option as it would not entail a large component of Member States existing exams to be retained.

8.43 Our responses from national authorities suggested that there is unlikely to be additional costs of day-to-day administration of the new system.

*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

8.44 Under this option there would be one-off costs to national authorities in converting the directive into national law.

8.45 Once the directive has been implemented, the costs of regulating are unlikely to differ substantially from those of regulating the current requirements. As the directive would be likely to lead to an increase in use of waterways there would also be increased costs associated with issuing a larger number of certificates and regulating a larger number of companies.

*Option D: mandatory action through new EU legislation – Regulation*

8.46 This option proposes that the EC should consider the work of the UNECE, namely UNECE Resolution no. 31 which provides recommendations on minimum requirements for the issuance of boatmasters' certificates. Once further developed the recommendations put forth under Resolution 31 could serve as a pan-European common standard. This option may also necessitate boatmasters having, in addition to the main certificate, a specific local knowledge certificate where local conditions are such as to require this.





8.47 The costs under this option are likely to be higher than for the other Options, namely A, B C, and C1 due to the substantial costs associated with adapting examination and training requirements to the harmonised standards.

**Summary of the impacts on costs**

8.48 The effects on costs are summarised in the following table. To be consistent with the remainder of the table, with “negative” impact we mean an *increase* in costs.

**Table 8.2: Cost Impacts**

|                    | <b>Annual Cost</b> |
|--------------------|--------------------|
| <b>Option A</b>    | Neutral            |
| <b>Option B</b>    | -                  |
| <b>Option C(a)</b> | Negative small     |
| <b>Option C(b)</b> | Neutral            |
| <b>Option C1</b>   | Negative           |
| <b>Option D</b>    | Negative - Large   |

*Source: Europe Economics calculations*

**Estimating the Impacts on Competition**

8.49 The need to have a boatmaster in possession of a Rhine patent in order to access the Rhine leads to an access barrier for all other firms operating in the IWT sector without a Rhine Patent.

8.50 Options leading to improved access entail, therefore, an amelioration of entry barriers for firms operating in the IWT sector.

8.51 In order to quantify changes in the dimensions related to competition - number of new entrants, expansion of volume of activity, reduction in prices for IWT services and, in turn, for goods transported – we would need additional data that we do not possess.

8.52 With regards to entry, we point out two opposing factors. On one hand, the fact that the sector is relatively capital intensive limits the extent to which boatmasters’ requirements affect entry; on the other, easier access for boatmasters and hence a greater availability of boatmasters on the Rhine (the most important river in EU IWT sector) certainly does ameliorate the trade-off faced by firms considering entry and expansion of activity on the Rhine.



8.53 Overall, notwithstanding the first factor, we state that the impacts on competition of the various options are significantly linked to how they improve access, and hence we derive impacts in line with our conclusions reached in Section 7 with regards to increments in the availability of boatmasters on the Rhine.

*Option A: maintenance of the current situation*

8.54 Maintenance of the current situation would reduce access and hence exacerbate distortions in the internal market.

*Option B: promotion of voluntary action*

8.55 This option is regarded as the counterfactual situation, against which the others are compared. We maintain that existing distortion would be progressively reduced by this option but not eliminated.

*Option C: mandatory action through new EU legislation – Directive*

8.56 As we have seen above, Option C would entail wider availability of boatmasters on the Rhine. This effect would be more intense under the first variant, C(a) (harmonisation at the highest standards) than under C(b), the “modular approach”.

8.57 This wider availability would imply easier access for IWT firms onto the Rhine, expansion of activity and hence more competition, to the benefit of new entrants and to the detriment of firms currently enjoying market power on the Rhine.

8.58 As we discussed above, the overall effect of more intense competition is positive when we consider benefits on the demand side. More competition, in fact, implies lower prices for the same services or, in other words, better price/quality ratio for users of IWT services.

8.59 In turn, final consumers of the goods being transported would also reap benefits, at an extent which depends on the interplay of elasticities of demand and supply.

*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

8.60 The positive impact on availability of boatmasters on the Rhine would be stronger under this option.

8.61 As a consequence, the perspectives of entry and expansion of activity on the Rhine would be reinforced and competition would become even more intense under this option than under Option C.

*Option D: mandatory action through new EU legislation – Regulation*

8.62 The effects with regards to access to the Rhine are hard to quantify at this stage, while we do maintain that they would have a positive sign. Effects on competition would follow suit, under the same arguments developed for the other options.



### Summary of the impacts on competition

8.63 The effects on competition of the policy options are summarised in the following table.

**Table 8.3: The impacts on competition**

|                    |                              |
|--------------------|------------------------------|
| <b>Option A</b>    | Negative                     |
| <b>Option B</b>    | -                            |
| <b>Option C(a)</b> | Positive                     |
| <b>Option C(b)</b> | Positive                     |
| <b>Option C1</b>   | Positive - potentially large |
| <b>Option D</b>    | Positive                     |

Source: Europe Economics

### Estimating Labour Market Impacts

8.64 The intensity of labour market impact follows the effects established with regards to the access to the Rhine.

8.65 The most direct impact consists in variations in job opportunities in the sector. Easier access to the Rhine entails better conditions for boatmasters in the EU overall although, as pointed out in the earlier sections, those who already had access may be worse off.

#### *Option A: maintenance of the current situation*

8.66 Under Option A, difficulties in accessing the Rhine would be exacerbated, and this would reduce job opportunities for boatmasters who currently cannot operate on the river.

#### *Option B: promotion of voluntary action*

8.67 Voluntary action would lead to some progress in job opportunities under the counterfactual scenario.

#### *Option C: mandatory action through new EU legislation – Directive*

8.68 Under option C access to the Rhine would be eased, and this would be more intense under sub-option C (a). Consequently, job opportunities would be expanded..

8.69 Notice, however, that boatmasters currently operating on the Rhine would lose some of the rents they might currently enjoy from their existing position of “rare” resources, manifested through an important trend which has been that of increasing salaries, which would be partially mitigated under this option. In other words, higher salaries to boatmasters accessing the Rhine would coincide with lower salaries with respect to the counterfactual for those already in possession of the Rhine patent.



8.70 Migration towards the Rhine, on the other hand, would also benefit those boatmasters remaining on the other rivers of the IWT network, where supply of labour would be reduced and hence salary rates would increase.

8.71 On the demand side however, firms operating on the Rhine would enjoy lower labour costs (again, with respect to the counterfactual) while those on the rest of the network may suffer from higher labour costs.

*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

8.72 The improvement in job opportunities would be stronger under this option, as a result of the greater effect on access to the Rhine this option would imply.

8.73 The same holds for the labour market dynamics described under Option C: they would have the same sign but higher intensity under option C1.

*Option D: mandatory action through new EU legislation – Regulation*

8.74 The effects under the option would have the same sign as with Options C and C1; as with access to the Rhine, the intensity of these effects are however, hard to quantify at this stage.

**Summary of the impacts on job opportunities**

8.75 The main and most direct social impact caused by labour market dynamics arises from the expansion of job opportunities. We highlight that this impact represents variations in social welfare of the same sign, while variations in salary rates mainly constitute transfers among different agents in the societies, firms and workers.

8.76 The impacts on job opportunities, presented in the following table, reflect the impacts previously established with regards to access.

**Table 8.4: The impacts on job opportunities**

|                    |                              |
|--------------------|------------------------------|
| <b>Option A</b>    | Negative                     |
| <b>Option B</b>    | -                            |
| <b>Option C(a)</b> | Positive                     |
| <b>Option C(b)</b> | Positive – small             |
| <b>Option C1</b>   | Positive - potentially large |
| <b>Option D</b>    | Positive                     |

Source: Europe Economics



## Estimating the Impacts on Safety

8.77 The number of accidents that have been recorded in IWT are very few.<sup>38</sup> Compared to other modes of transportation, however, IWT causes the lowest accident costs and it is not least for this reason that inland waterway transport accounts for approximately 80 per cent of all dangerous goods transported in Europe. Studies on the occurrence and impacts of accidents in IWT have been mostly limited to the Rhine stretch of the EU waterway, with the scale of operations on this stretch being the main justification for this being the focus of such studies. One study in particular, carried out by UNITE,<sup>39</sup> which covered the areas along the lower and middle Rhine, noted that approximately two out of every 1,000 ships travelling on the Rhine faces an accident, which implies only 0.2 per cent of all firms are the subject of an accident along this stretch of the waterway.

### *Option A: maintenance of the current situation/no EU intervention*

8.78 In the current situation, estimates indicate that the number of accidents occurring on the busiest section of the European inland waterway is very limited and the costs of those that do occur (on the Rhine stretch) have been estimated at, €29 million per year which represents only a negligible percentage of the total value of total turnover in the IWT sector.<sup>40</sup> Therefore, assuming that the good safety records which exist today continue to be preserved (i.e. no additional improvement to safety of navigation is made), we would expect no change to the frequency of accidents on the busiest section of the IWT sector and thus the currently high level of safety would be maintained.

### *Option B: the promotion of voluntary action*

8.79 In this counterfactual scenario, there would be no EU intervention. Under this option, the Member States of the CCNR would voluntarily continue the ongoing process of individual recognition of national boatmasters certificates, which are issued on the basis of Directive 96/50/EC, for navigation on the Rhine. In this section then, we thus assess what will be the likely evolution of safety of navigation in the EU waterways assuming that voluntary access eventually leads to greater access to the Rhine market, and taking account of other key developments in the market that can be expected to have an impact on safety.

8.80 If we assume that voluntary action increases opportunities for accessing the Rhine by boatmasters from Member States outside of this jurisdiction, this would imply that the number of vessels navigating on this stretch of the waterway will increase over time. While an increase in traffic could potentially increase the risks of accidents occurring on this stretch of waterway, there are three key reasons to suggest that this will have negligible impact on compromising the sound safety record of this sector (the Rhine in particular):

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<sup>38</sup> Statistical information from Eurostat to compare with other modes is not currently available.



- (a) it has been shown that given the level of spare capacity in the sector, the Rhine in particular, there is little reason to assume that congestion will appreciably increase safety risks in the medium-term. Indeed, estimates have shown the expected increase in marginal cost from congestion is almost constant (the elasticity of this being 0.01 per cent). Any increase that might be expected to emerge in the long term can be expected to be mitigated by improvements in other factors (such as those discussed below) which will help to improve, amongst other things, safety of navigation in the sector;
- (b) increased possibilities and opportunities linked to ICT, namely the emergence of River Information Systems, are likely to continue to improve safety in IWT as well as improving environmental protection and increasing the efficiency of logistics in the sector; and
- (c) The increased deployment of Vessel Traffic Services (VTS) at critical points in inland waterways can also be expected to improve the safety of navigation in the sector.

8.81 Thus, even if the degree of boatmaster access under our most optimistic scenario (as outlined in Section 7) was to materialise, there is enough spare capacity on the Rhine (underpinned by an advancing adoption of technological developments related to safety improvements) to expect that the continued promotion of voluntary action will not compromise safety in this scenario.

8.82 Thus, overall, we would not expect current safety standards to decline and may in fact improve under this counterfactual scenario.

*Option C: mandatory action through new or revised EU legislation – Directive*

8.83 This option assumes that boatmasters certificates are harmonised across the EU. From our analysis in Section 7, this implies that, like Option B, applying this option would result in additional boatmasters accessing the Rhine. Under option C(a) these boatmasters would be more qualified than the current boatmasters on average, as they will all comply with the requirements for the current Rhine patent. Overall therefore, safety in IWT can be expected to improve beyond that which is likely to materialise under the counterfactual scenario. However, given the incidents in IWT overall currently appear to be small, as well as the overall improvements in factors related to safety improvements expected to take place in our baseline scenario, we anticipate that the incremental improvements on safety under this option will be relatively small, while we estimate them to be neutral under option C(b).

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<sup>39</sup> The report is available at <http://www.its.leeds.ac.uk/projects/UNITE>.

<sup>40</sup> Total turnover in the sector is approximately €5.3 billion per annum.



*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

- 8.84 Under this option, mandatory harmonisation is not enforced and boatmasters in the EU will be free to access all stretches of the EU waterway with their existing certificate.
- 8.85 In theory this may have detrimental effects on safety if boatmasters do not have the necessary skills to navigate all inland waterways in the EU. However this is unlikely to be the case for exactly the same reasons we list above: the spare capacity present in many rivers, the small marginal cost associated with congestion, the emergence of river information systems and the deployment of VTS make it very unlikely that safety would decline at a level below the current one.
- 8.86 Further, boatmasters certificates that are currently issued by national licensing authorities in the Member States will still need to satisfy the requirements of Directive 96/50/EC which guarantee that a set of minimum standards are met, and in addition to this, Member States will retain the prerogative to request the requirement of additional local knowledge where this is deemed necessary (subject to the conditions outline in Section 6). It is therefore unlikely that boatmasters in possession of such a certificate would represent a significant safety hazard should they be allowed to navigate the Rhine and we thus expect no change to occur to the safety of navigation relative to the counterfactual scenario.

*Option D: mandatory action through new EU legislation – Regulation*

- 8.87 The effects detailed under Option C are expected to hold under this option. One may expect, however, the impact to be more certain under this option, because its application though the use of a Regulation would imply more stringency and consistency in the extent to which MS will apply these new rules than they otherwise might under the use of a Directive.

**Summary of the impacts on safety**

- 8.88 The effects on safety are summarised in the following table.



**Table 8.5: Incremental impacts on safety**

| Option      | Impact on safety |
|-------------|------------------|
| Option A    | Neutral          |
| Option B    | -                |
| Option C(a) | Positive – small |
| Option C(b) | Neutral          |
| Option C1   | Neutral          |
| Option D    | Positive – small |

*Source: Europe Economics assessment*

## Estimating the Environmental Impacts

8.89 As detailed above (see 6.71), the two primary environmental effects we examine are:

- (a) changes in emissions; and
- (b) damage to the local environment.

8.90 We argue that the second effect following variations in the activity in the IWT is negligible, due to ample spare capacity in the IWT network that is currently underemployed according to several sources.<sup>41</sup>

8.91 The same sources point out that an expansion of IWT activity would entail limited additional emissions and much bigger savings of emissions of other means of transport that would be replaced.

### *Option A: maintenance of the current situation*

8.92 Under this option, the expansion under way in the counterfactual scenario would be reduced, and the replacement of other means of transport causing higher levels of emissions would be undermined.

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<sup>41</sup> See, among others, European Commission (2001): White Paper “European transport policy for 2010: time to decide”.





*Option B: promotion of voluntary action*

8.93 This is the counterfactual scenario described in paragraphs 8.130-8132

*Option C: mandatory action through new EU legislation – Directive*

8.94 The reduction of emissions following replacement of road and railway transport would be proportional to the expansion of activity, most notably on the Rhine, arising from harmonisation. Hence, option C (a) would have a stronger impact than C(b), while in both cases the effect is positive.

*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

8.95 This option is the one we deem to have the strongest impact in terms of availability of qualified boatmaster in the main river for IWT, the Rhine, and in turn in terms of expansion of IWT activity.

8.96 Therefore, the environmental benefit from displacement effect of road and railway transport would also be stronger under this option.

*Option D: mandatory action through new EU legislation – Regulation*

8.97 Increase in the availability of boatmasters and expansion of activity would also occur under option D, as we have seen.

8.98 This option, then, would also entail reduction of environmentally damaging emissions.

8.99 The environmental impact is presented in the following table.

**Table 8.6: The impacts on the environment**

|                    |                              |
|--------------------|------------------------------|
| <b>Option A</b>    | Negative                     |
| <b>Option B</b>    | -                            |
| <b>Option C(a)</b> | Positive                     |
| <b>Option C(b)</b> | Positive – small             |
| <b>Option C1</b>   | Positive - potentially large |
| <b>Option D</b>    | Positive                     |

Source: Europe Economics



## Estimating the Impacts on SMEs

- 8.100 We have already pointed out that SMEs would be strongly affected by impacts on competition and competitiveness. We now proceed towards a qualitative assessment.
- 8.101 The impact assessment requires us to consider whether the administrative costs on businesses weigh heavily in relative terms on SMEs (small and medium enterprises). In the following analysis we assume that the costs of obtaining boatmasters' certificates are borne by the boatmasters themselves, although in some cases costs are subsidised by companies.
- 8.102 There are 9,000 companies involved in IWT in the EU-27, the overwhelming majority of which only operate one vessel. They are therefore classified as micro-enterprises (those that employ up to 10 people). Some companies could be in the small category (between 11 and 50 people employed) and very few could be classified as medium-sized enterprises (those that employ between 51 and 250 people). All employment in the sector is therefore concentrated in SMEs, with the majority comprising of micro-enterprises.
- 8.103 As the preliminary assessment leads to the conclusion that SMEs are among the affected parties, under impact assessment guidelines the initial presumption would be that the costs would fall disproportionately on small businesses. However, it cannot therefore be said that the impacts associated with any of the options are disproportionate for SMEs: practically all such impacts will be felt by SMEs anyway.
- 8.104 The various direct and indirect effects of the proposed intervention are the same as those described earlier in Section 6 as affecting all enterprises within the sector. These include direct effects such as operating costs concerned with adjustment and compliance and administration; and social effects affecting employment and labour markets and job quality and safety standards.
- 8.105 There are also displacement effects such as the crowding-out of other transport sectors. It is likely that SMEs will be amongst those affected in other sectors such as rail and road which are also commonly used for transporting freight. Transport by road in particular is a sector dominated by SMEs and so any displacement from transport in this sector will impact on SMEs. However as displacement is an indirect effect, we concentrate our discussion below on impacts on SMEs operating within the IWT sector.
- 8.106 In general SMEs have greater difficulties obtaining access to finance than larger enterprises. This means that the IWT sector (as it comprises of SMEs) is likely to be more affected by any proposals that affect enterprises costs than sectors consisting of larger companies.
- 8.107 We now discuss the effects on SMEs for each of the proposed options (please note that as SMEs comprise all effected enterprises in the sector, discussion in other sub-sections also applies to SMEs):



*Option A: maintenance of the current situation/no EU intervention*

- 8.108 Option A is maintenance of the current situation with a discontinuation of the current efforts towards mutual recognition. Under this option SMEs would continue to have the same difficulties as they have under the current status quo. These would include the current difficulties accessing the Rhine, which would not be ameliorated by current initiatives undertaken by the CCNR and the DC to facilitate access to the Rhine by boatmasters currently working in the Danube riparian countries. Under this situation access to the Rhine and hence job opportunities for EU boatmasters would be less than optimal.
- 8.109 The distortion between firms currently operating in the IWT (with firms currently operating in the Rhine) would continue. SMEs would continue to face high search costs associated with searching for suitably qualified boatmasters.
- 8.110 The overall impact is therefore negative with respect to the counterfactual scenario (Option B).

*Option B: the promotion of voluntary action*

- 8.111 This option is the counterfactual and would imply no further intervention although current actions would continue. Under this option the Member States of the CCNR would continue the process of individual recognition of national navigability licenses. The impacts on SMEs of continuing to promote voluntary action are likely to be small but positive.
- 8.112 With the promotion of voluntary action there is likely to be improved competition in the IWT sector amongst SMEs as the current barriers to the free movement of boatmasters would be lowered. The improved competition could potentially have a detrimental effect on some SMEs as they are likely to be operating with lower profit margins than larger companies and so might be more likely to go out of business as a result of the proposals if they found themselves unable to attract and retain staff at current salary levels. However, unfair competition would be reduced, resulting in overall competitive gains to SMEs in the sector.
- 8.113 SMEs would also benefit from increased access to labour which is likely to reduce the costs associated with searching for and recruiting suitably qualified labour.
- 8.114 There are unlikely to be impacts on energy efficiency or reductions in fraud by competitors. Impacts on the safety of navigation are as set out in the subsection on safety and are expected to be neutral and possibly positive under the counterfactual scenario.



*Option C: mandatory action through new or revised EU legislation – Directive*

8.115 Under this option there would be a revision of Council Directive 96/50/EC or the adoption of a new directive, with the aim of harmonising and simplifying the legal framework regarding the issuing and recognition of boatmasters certificates and would effectively lead to the issuing of a single boatmasters certificate valid for the entire EU IWT network.

8.116 There would be two sub-options within this option between which Member States could choose:

(a) harmonisation according to the highest possible qualification standards; and

(b) A modular approach which would allow for the gradual acquisition and certification of qualifications.

8.117 We discuss these sub-options in turn below:

*(a) Harmonisation according to the highest possible qualification standards*

8.118 It is difficult to assess the specific impacts of a directive to harmonise boatmasters' certificates without knowing the specific content of such a directive.

8.119 However, as described above, if we assume that an European boatmaster certificate would emerge and work as an IWT driving licence with harmonisation according to the highest possible standard, with a certificate allowing to navigate with all kinds of vessels on all EU waterways, this option would clearly raise the cost for all those companies that are currently operating on waterways but are not interested in gaining access to the Rhine, as the cost of the new certificate is likely to be higher than those currently held.

8.120 As well as companies currently present in the market there may be some companies which are deterred from entering due to the increased costs of obtaining certificates which they did not require. If this were the case, competition could be reduced if natural wastage from firms exiting the market were not replaced by new companies due to the lower profits available.

8.121 There would also be benefits to some firms. These include reduced search cost for firms wishing to recruit labour qualified to navigate in particular waterways as well as increased competition among SMEs. However these benefits would only accrue to a small number of firms, namely those currently wishing to access the Rhine but unable to do so.

8.122 As costs of the intervention would fall on all firms currently unable to access the Rhine but would only benefit those currently unable to access the Rhine but wishing to do so, it would cause a detriment to those firms whom had no intention of accessing the Rhine. It would therefore result in an overall negative impact on SMEs.

8.123 Given that all enterprises involved are SMEs, the consideration of using SME-specific measures in order to ensure the respect of the proportionality principle is not appropriate.



*(a) A modular approach which would allow for the gradual acquisition and certification of qualifications.*

- 8.124 The modular approach would allow for the gradual acquisition and certification of qualifications. This approach is likely to result in the same benefits as discussed above but would result in slightly lower costs to SMEs as it would be cheaper for boatmasters to obtain this qualification. It is therefore likely to result in a slightly higher supply of suitable labour than under the previous option.
- 8.125 Impacts on safety are as set out in the subsection on safety and are expected to be small positive under this option.

*Option C1: enforce mutual recognition of certificates through revised EU legislation – Directive*

- 8.126 If there was a directive to enforce the mutual recognition of boatmasters certificates then this would lead to greater freedom of movement for boatmasters.
- 8.127 With the enforcement of mutual recognition there would be improved competition in the IWT sector amongst SMEs as the current barriers to the free movement of boatmasters would be lowered. The improved competition could potentially have a detrimental effect on some SMEs as they are likely to be operating with lower profit margins than larger companies and so might be more likely to go out of business as a result of the proposals if they found themselves unable to attract and retain staff at current salary levels.
- 8.128 SMEs would also benefit from increased access to labour which is likely to reduce the costs associated with searching for and recruiting suitably qualified labour.
- 8.129 There are unlikely to be impacts on energy efficiency or reductions in fraud by competitors.
- 8.130 Impacts on safety are as set out in the subsection on safety and are expected to be small neutral under this option.
- 8.131 Given that all enterprises involved are SMEs, the consideration of using SME-specific measures in order to ensure the respect of the proportionality principle is not appropriate.

*Option D: mandatory action through new EU legislation – Regulation*

- 8.132 All the considerations reported for the introduction of a Directive which harmonises boatmasters' certificates apply to a Regulation that has the same effect.
- 8.133 It is difficult to assess the specific impacts of a directive to harmonise boatmaster certificate requirements without knowing the specific content of such a regulation. However, as described above, if we assume that an European boatmaster certificate would emerge and work as an IWT driving licence with harmonisation according to the highest possible standard, with a certificate allowing to navigate with all kinds of vessels on all EU waterways, this option would clearly raise the cost for all those companies that



are currently operating on waterways which were not currently interested in gaining access to the Rhine, as the cost of the new certificate is likely to be higher than those currently held.

- 8.134 The effects on each company are not likely to be particularly large, as the increased cost in obtaining the certificate is not likely to be much increased. However, as the companies involved are SMEs which may be operating on very small profit margins, even a small increase in costs could lead to their activities becoming unprofitable and hence to some companies going out of business.
- 8.135 As well as companies currently present in the market there may be some companies which are deterred from entering due to the increased costs of certificates. If this were the case, competition could be reduced if natural wastage from firms exiting the market were not replaced by new companies due to the lower profits available.
- 8.136 Given that all enterprises involved are SMEs, the consideration of using SME-specific measures in order to ensure the respect of the proportionality principle is not appropriate.

### Summary of the impacts SMEs

8.137 The effects on SMEs of the envisaged options are summarised in the following table.

**Table 8.7: The impacts on SMEs**

|                    |                |
|--------------------|----------------|
| <b>Option A</b>    | Negative       |
| <b>Option B</b>    | -              |
| <b>Option C(a)</b> | Small positive |
| <b>Option C(b)</b> | Small positive |
| <b>Option C1</b>   | Large positive |
| <b>Option D</b>    | Small positive |

*Source: Europe Economics*

### Summary of Stakeholders Affected

8.138 In the Table 8.8 below we present a summary which illustrates the various ways in which stakeholders are likely to be affected under the five different policy options.



8.139 Impacts are indicated as very positive (++), positive (+), neutral (=), negative (-), and very negative (--), and explanations of the main drivers of those impacts are reported.<sup>42</sup>

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<sup>42</sup> Recall that Option B is the base line scenario.



**Table 8.8 Summary of impacts across different stakeholders**

| Stakeholders   | Option A   | Option C  | Option C1   | Option D  |
|--|--|---|---|---|
| SMEs – impact on access                                | (-)<br>Reduced options to access the Rhine and the Danube                          | (+)<br>Increased options to access the Rhine and the Danube   | (++)<br>Strong increase in the level of access to the Rhine and the Danube  | (+)<br>Increased options to access the Rhine and the Danube   |
| SMEs with a niche position in the Rhine and the Danube | (+)<br>Lower competitive pressure  | (-)<br>Higher competitive pressure  | (- -)<br>Significantly higher competitive pressure  | (-)<br>Higher competitive pressure  |
| Public Authorities                                     | (=)<br>No variation in costs with respect to the counterfactual                    | (-)<br>Higher costs to adapt to new rules   | (-)<br>Higher costs following increased use of waterways  | (- -)<br>Substantially higher costs to adapt procedures and training requirements to new standards  |
| Boatmasters without a Rhine license                    | (-)<br>Reduced options to access the Rhine and the Danube                          | (+)<br>Greater options to access the Rhine provided higher requirements are met; higher salaries from accessing the Rhine as well as for those who do not (who become more scarce in their resources) | (++)<br>Options to access the Rhine are fostered via mutual recognition; higher salaries from accessing the Rhine as well as for those who do not (who become more scarce in their resources) | (+)<br>Options to access the Rhine are fostered via greater harmonisation; higher salaries from accessing the Rhine as well as for those who do not (who become more scarce in their own countries) |
| Boatmasters with a Rhine licence                       | (+)<br>Lower competitive pressures from other boatmasters, possibly lower salaries | (=)<br>Higher competitive pressure from boatmasters updating their skills   | (- -)<br>Higher competitive pressure from other boatmasters   | (-)<br>Higher competitive pressures from other boatmasters  |
| Crew members   | (=)<br>Safety would not vary from restriction to access                            | (=)<br>Safety would not vary as high requirements are preserved   | (=)<br>Safety would not vary as 1996 Directive requirements are sufficient: exceptions may be provided by Member States leading to additional requirements                                    | (=)<br>Safety would not vary as high requirements are preserved   |

Source: Europe Economics





## 9 COMPARISON OF THE OPTIONS

- 9.1 After having presented the main dimensions of the impacts in the previous section, in this section we discuss the ways in which the different options might be compared in order to arrive at a final recommendation.
- 9.2 The following table summarises impacts we have previously derived, in order to compare the economic, social and environmental costs and benefits associated with each of the options.
- 9.3 Notice that we do not include the impact on access to the Rhine, as we see access as a driver of those impacts: in other words, fostering access is a mean towards higher competitiveness, less distortion to competition and so forth, rather than an end in itself.
- 9.4 The effects on SMEs of the envisaged options are summarised in the following table. Impacts are indicated as very positive (++), positive (+), neutral (=), negative (-), and very negative (--). The row corresponding to Option B, the counterfactual, was left empty (rather than filling it with a dash that could create confusion with the minus sign).

**Table 9.1: Summary of the Impacts**

| Options     | SME's | Annual Cost | Competition | Safety | Job Opportunities | Environment |
|-------------|-------|-------------|-------------|--------|-------------------|-------------|
| <b>A</b>    | (-)   | (=)         | (-)         | (=)    | (-)               | (-)         |
| <b>B</b>    |       |             |             |        |                   |             |
| <b>C(a)</b> | (+)   | (-)         | (+)         | (+)    | (+)               | (+)         |
| <b>C(b)</b> | (+)   | (=)         | (+)         | (=)    | (+)               | (+)         |
| <b>C1</b>   | (++)  | (-)         | (++)        | (=)    | (++)              | (++)        |
| <b>D</b>    | (+)   | (--)        | (+)         | (+)    | (+)               | (+)         |

Source: Europe Economics

- 9.5 As we can see from the table, option C (1) ranks as the best one with respect to competitiveness, competition, job opportunities and environmental dimensions. This is consistent with the fact that those dimensions are mainly driven through impact on access to the whole IWT network and in particular on the most important river, the Rhine.
- 9.6 Although a fully-fledged quantitative assessment of all dimensions cannot be performed due to incompleteness of available data, we conclude a number of things and these are discussed below.



- 9.7 First, the overall positive impact on SME's entailed by Option C1, driven by a wider availability of boatmasters on the Rhine, suffices to compensate for the incremental costs of this option vis-à-vis options with neutral cost impacts. Competition impacts reinforce this effect, so that overall profit increases in the sector (as benefits to firms entering the Rhine exceed detriment to those currently enjoying oligopolistic positions) outweigh cost increases.
- 9.8 Second, as safety levels are quite high in the IWT operations, we deem that safety benefits implied by Options C(a) and D do not suffice to counterbalance the incremental benefits entailed by Option C1 along competitiveness, competition, job opportunities and environmental dimensions.
- 9.9 Again, while we do not possess adequate data to perform a fully-fledged quantitative evaluation in this study, at a conceptual level we would measure safety benefits of options C(a) and D by inserting the probability of accident multiplied by an economic assessment of damages. The latter would include damages to boats and other elements involved in accidents, evaluation of environmental harm and changes Quality Adjusted Life Years (QALY) in relation to personal damages. The low frequency of accidents (hence low probability) combined with relatively low levels of harm (especially regarding persons) involved, as reported in Section 8, results in relatively low extent of safety impacts.
- 9.10 Hence, even if we were to assign high weight to safety impact, Option C1 would still remain the most suitable policy options among those under consideration.



## 10 MONITORING AND EVALUATION

- 10.1 Once a policy option is in place, monitoring and ex-post evaluation procedures are going to be extremely important in order to follow up its effective implementation and to observe whether expected net benefits are being realised.
- 10.2 If our recommended option is chosen, this would imply that mutual recognition is enforced, thereby granting improved access conditions to EU boatmasters in the IWT network, and most notably on the Rhine, by far the most important river for IWT activities

### Monitoring

- 10.3 Monitoring activities should focus on effective compliance by Member States that should incorporate the new Directive establishing mutual recognition, and should also focus on how procedures are put in place with regards to requirements related to local knowledge. In particular, those requirements should be proven to be sensibly related to actual safety concerns rather than be used to preserve distortions to competition that, as we have seen, benefit some agents in the systems – those enjoying rents for the under-use of IWT, most notably on the Rhine.
- 10.4 To this end, Member States could be required to provide notification of transposition of the revised Directive and where Member States wish to include additional provision of local knowledge, that they must submit the relevant evidence (relating to the relevant criteria to be established along the lines of those set out in Section 6) and only once this has been verified, can this additional local knowledge requirement be transposed into national legislation.

### Evaluation

#### Impacts on access to the Rhine

- 10.5 Ex-post evaluation procedures will compare realised benefits and costs with those expected when deciding upon the policy option and as we have seen, most of those effects in relation to option C1 are linked to increased access for boatmasters on the Rhine river. Specific indicators which could be used in order to assess the effectiveness of this policy might include:
  - (a) *Direct measures of variations in the number of boatmasters accessing the Rhine*
    - at the moment, access on the Rhine can be measured in terms of the number of Rhine patents. Once they are not required, a new system should be devised in order to measure effective variations in access by boatmasters. If specific local knowledge requirements for certain stretches of the Rhine (or indeed for any other stretch of the EU inland waterway), where a Member State can justify the need for it, are required, the changes in access would be observable by the number of certificates applied for and subsequently granted. Member States could be required to submit the relevant data (i.e. applications numbers for local



knowledge certificates and success rates) to be provided in consistent format to the Commission; and

- (b) *Indirect measures of variations in the number of boatmasters accessing the Rhine* – where local knowledge is not made a requirement, it may be more difficult to obtain direct measures of the changes in the numbers accessing the Rhine. An indirect measure to assess the removal of entry barriers, among which requirements for boatmasters' patents are an important one, might involve measuring changes in the levels on the Rhine. The CCNR could be required to provide to the Commission yearly data on this indicator.

- 10.6 It is recommended that data on the above indicators be provided in a comparable and consistent format over a number of years to reflect the fact that improvements in access are likely to be gradual: once the new system is in place, the expansion of activity on the Rhine will be a process that involves decisions by boatmasters, or firms employing the boatmasters, where latter are themselves not the owner. Migration patterns, in particular, are likely to be a relatively slow. Thus, the evaluation of this policy option in terms of access to the Rhine should involve looking at a number of indicators across a number of years.

#### **Impacts on competition and competitiveness**

- 10.7 With regards to evaluating the impacts on competitiveness in the sector ex-post, variations in the competitiveness may be analysed via suitably designed ex-post studies, for example involving surveys of stakeholders affected which should be focused in particular on the availability of boatmasters (and at what market wage rate), currently found to be a crucial problem for IWT firms.
- 10.8 Competition could also be analysed with surveys, to explore the degree to which better conditions are enjoyed on the demand side; job opportunities would be analysed following, among other things, migration patterns and expansion of overall activity.

#### **Impacts on the safety of navigation**

- 10.9 The evaluation of impacts on safety should be analysed, in relation to the implementation of a given policy option, via records of accidents including the degree of boatmasters' errors involved and whether those boatmasters were among those that benefit from improved access in the IWT network: for instance, it would not be the case for boatmasters already in possession of a Rhine patent before the new option was implemented.

#### **Impacts on the environment**

With regards to evaluating the ex-post environmental impacts of the proposed policy option, it is important to recognise that environmental benefits are intrinsically hard to observe directly. However, again, expansion of activity would be an indication that the problem of under-use of IWT is being ameliorated. Direct observation of corresponding



reduction in other means of transport could, on the other hand, be confounded by other factors.



## 11 CONCLUSIONS AND RECOMMENDATIONS

- 11.1 It is clear that Option A is not included among reasonable options worth considering.
- 11.2 Option B would entail some progress in terms of access, and hence in terms of the competitiveness of firms (mainly SMEs) and competition in the IWT marketplace, with respect to the current situation, as efforts are being undertaken by the CCNR to foster access on the Rhine to boatmasters, most notably to those navigating on the Rhine.
- 11.3 We understand that the main reason not to extend the framework devised by the Directive 96/50/EC consists in making sure that requirements are not set at a level deemed too low to ensure safety of navigation on the Rhine.
- 11.4 On the other hand, the current system includes difficulties in accessing the Rhine, involves high costs for boatmasters upgrading their certificates, provokes distortions to competition and limits job opportunities for boatmasters and the prospect of expansion to IWT firms.
- 11.5 We have seen that Option C, in the version including the setting of high professional standards to achieve an European patent, implies improvements in the possibility of access to the Rhine, of competitiveness of SMEs, and of fostering competition (with possible minor impacts in terms of safety risks).
- 11.6 The actual increment in the presence of boatmasters available to work on the Rhine depends on different hypotheses concerning how many boatmasters would be willing to move to the Rhine in order to seize new opportunities. However, we find that the percentage increment with respect to existing Rhine Patents is likely to be significant.
- 11.7 Within Option C, the option of adopting a modular approach may be interesting but at this stage remains unclear in terms of how in practice it would be adopted. In principle, it could retain difficulties and high costs of access to the Rhine for European boatmasters. Hence we estimate that the extent of the positive effects would be more limited under the modular approach.
- 11.8 Option C1 would have a stronger impact in terms of easing access to the Rhine, as national certificates would be recognised. According to the CCNR, national requirements are, in several cases, too low in terms of professional competence to allow access on the Rhine. However, at this stage, there appears little evidence to support the assertion that the Rhine river conditions are appreciably different so that option C1 could be expected to compromise safety of navigation in the IWT sector. If it is the case that differences are such that safety navigation would be an issue if Option C1 were adopted, then the onus should be for Member States to prove that navigation on their waterways is significantly different from others, and, following this, to require that additional knowledge consistent with navigation on their waterway be obtained.



- 11.9 This would promote access to the Rhine for those that require it without disproportionately affecting business in the IWT for whom accessing the Rhine is not a part of their business strategy (as would be the case if option C were to be adopted).
- 11.10 Option D would define a pan-European standard on the basis of minimum requirements, via the definition of a Community Law. Changes would be of the same sign as for option C, but it is unclear whether safety concerns would be appropriately dealt with.
- 11.11 Overall we regard Option C1 to be the most appropriate course of action, with Member States retaining the prerogative to require additional local knowledge where differences in local conditions exist, to the extent that an absence of knowledge regarding local conditions would compromise safety. This option, then, combines the positive impacts on competitiveness for EU firms, most notably among SMEs, competition in the internal market, and job opportunities for boatmasters while preserving the safety of navigation in the IWT sector.

### **Proposal for Drafting a Legal Instrument for Mutual Recognition of Boatmasters Certificates**

- 11.12 This section begins by discussing the rationale underlying our recommendation for enforcing mutual recognition at the EU level and why we recommend this be achieved through a Directive (in this case a revision of Directive 96/50) as opposed to a Regulation. We then go on to propose how a legal instrument (in this case revising the current Directive) could be drafted in order to implement the mutual recognition of boatmasters' certificates (in the manner outlined in Section 6) throughout the entire EU inland waterway sector.
- 11.13 The European Treaty requires that regulation should be consistent with the principles of proportionality and subsidiarity. That is, action taken at the level of the EU should only be carried out when necessary and any related burdens (administrative or otherwise) should be proportional to the expected benefits from objectives identified.
- 11.14 In this impact assessment, we have established that there is a clear rationale for action to be taken at the EU level in order to address the objectives set out in Section 5. In principle, our recommended option could be applied via a Regulation opposed to an amended Directive. Under Article 189 of the Treaty of Rome, a Regulation will be binding in its entirety and would be directly applicable to all Member States. This would in turn imply no scope for interpretation by Member States as it would impose a 'one size fits all' solution.
- 11.15 However, we have identified that in the interests of safety (under our recommended option of mutual recognition) Member States should retain the flexibility to require that additional local knowledge be obtained by boatmasters to reflect local circumstances where this is can be proven (in the manner discussed in Section 6) to be necessary to ensure the integrity of the currently high safety record of the sector. By requiring Member States to go through a formal process of justifying the need for local knowledge, the scope



for excessive and unwarranted ‘gold-plating’ that could potentially counteract the objectives of mutual recognition, in this case by erecting barriers through market entry restrictions, be minimised.

11.16 A Community Directive on the other hand, would allow for this flexibility and thus would be more consistent with the principle of subsidiarity. Furthermore, as we propose that boatmasters’ certificates issued by national licensing authorities should continue to be issued under the basis of the requirements set out under Directive 96/50, we recommend that the legal basis for introducing mutual recognition should be achieved through a revision to Directive 96/50.

11.17 More specifically, we propose that the following two sections in Article 1 of Council Directive 96/50/EC of 23 July 1996 on the “harmonisation of the conditions for obtaining national boatmasters’ certificates for the carriage of goods and passengers by inland waterway in the Community”:

“The Group A or Group B certificate issued by Member States in conformity with this Directive shall be valid for all Group A or Group B waterways in the Community”

“Subject to Article 8 (2), the Rhine navigation license, issued in accordance with the revised Convention for the Navigation of the Rhine, shall be valid for all waterways in the Community.”

be replaced with the following:

“Certificates issued by Member States in conformity with this Directive shall be valid for navigation on all waterways in the Community. Member States may impose additional local requirements pursuant to having established and verified, according to a set of established defined criteria against which the need for local requirements can be assessed, that this is essential for the preservation of safety standards”

11.18 This set of defined criteria, which we proposed be established by an Expert Group (as discussed in Section 6), should be included as an Annex to the Directive.





## **APPENDIX 1: BIBLIOGRAPHY**

- A1.1 Reglement betreffende de Patenten voor de scheepvaart op de Rijn (CCNR 2008)
- A1.2 Empfehlungen für die Anforderungen für die Erteilung von Schiffsführererzeugnissen für Binnenschiffe auf der Donau
- A1.3 Bepalingen met betrekking tot de veilige vaart op de binnenwateren (Binnenvaartwet)
- A1.4 European Commission (2001): White Paper “European transport policy for 2010: time to decide”
- A1.5 European Commission (2006): Communication from the Commission on the Promotion of Inland Waterway Transport “NAIADES”.
- A1.6 Exchange of Information on measures aimed at promoting transport by inland waterways, UNECE Working Party on Inland Water transport 2005
- A1.7 PINE – Prospects of Inland Navigation within the enlarged Europe
- A1.8 Study on Administrative and Regulatory Barriers in the field of Inland Waterway Transport, NEA 2008



## **APPENDIX 2: LIST OF STAKEHOLDERS INTERVIEWED**

A2.1 The following entities were interviewed or sent questionnaires in the context of this project:

### **International Entities**

- (a) Ms. Azhar Jaimurzina, UNECE
- (b) Mr. Petar Margić, Danube Commission
- (c) Mr. Željko Milković, Sava Commission
- (d) Ms. Cécile Tournaye, CCNR

### **National Authorities**

- (a) Mr. Krzysztof Blaszkiewicz, Ministry of Infrastructure, Poland
- (b) Mr. Thomas Geib, BMVBS, Germany
- (c) Mr. Henk van Hoorn, Ministry of Transport, the Netherlands
- (d) Mr. Domenico Impagliazzo, Ministry of Transport, Italy
- (e) Ms. Carlota Leitão, IPTM, Portugal
- (f) Mr. Arnaud Mathieu, Ministry of Transport, France
- (g) Mr. Mikael Pizzo, Ministry of Transport, France
- (h) Mr. Nucu Stefanescu, Romanian Naval Authority, Romania
- (i) Ms. Lidy van Sunder, CCV, the Netherlands
- (j) Ms. Christiane Vanluchene, Federal Ministry of Mobility and Transport, Belgium
- (k) Mr. Reinhard Vorderwinkler, Federal Ministry of Transport, Austria
- (l) Ms. Egle Vysniauskaite, Ministry of Transport and Communication, Lithuania



## Stakeholders

- (a) Mr. Albert Bour, CroisiEurope, France
- (b) Mr. Nick Bramley, ETF, Belgium
- (c) Ms. Myriam Chaffart, ETF, Belgium
- (d) Mr. Jean-François Dalaise, Armateurs Fluvieux, France
- (e) Mr. Philippe Haas, CroisiEurope, France
- (f) Mr. Gerard Kester, Kantoor Binnenvaart, the Netherlands
- (g) Mr. Michiel Koning, CBRB, the Netherlands
- (h) Mr. Rob Pauptit, ETF, Belgium
- (i) Mr. Rob van Reem, STC, the Netherlands
- (j) Mr. Jörg Rusche, BDB, Germany
- (k) Mr. Vasile Stanu, Touax, Romania
- (l) Mr. Frédéric Swiderski, ITB, Belgium
- (m) Mr. Jan Veldman, Kantoor Binnenvaart, the Netherlands
- (n) Mr. Klaus Wolz, BDS, Germany
- (o) Mr. Henk van Hoorn, Ministry of Transport, Netherlands
- (p) Ms. Carlota Leitão, IPTM, Portugal

## APPENDIX 3: SUMMARY TABLE COMPARING THE DIFFERENT REGIMES



**Table A3. 1: Comparative table on minimum requirements for the issuance of boatmasters' certificates in inland navigation (source: UNECE Group of Volunteers on Boatmasters' Licences)**

|                         | UNECE  | CCNR   | DC   | EC  |
|-------------------------|--|--|--|---|
| <b>A. Legal Basis</b>   |  |  |  |   |
|                         | Recommendations on Minimum Requirements for the Issuance of Boatmasters' Licences in Inland Navigation with a view to their Reciprocal Recognition for International Traffic (Resolution No.31, 1992)                    | The Rhine Patent Regulation  | Recommendations on the Establishment of Boatmasters' Licences on the Danube (1995)   | Council Directive 96/50/EC on the harmonisation of the conditions for obtaining national boatmasters' certificates for the carriage of goods and passengers by Inland Waterway in the Community (1996)  |
| <b>B. Scope</b>         |  |  |  |   |
| Geographic scope        | UNECE member states  | The Rhine or a particular section of the Rhine   | The Danube   | Group A: boatmasters' certificates valid for waterways of a maritime character as indicated in Annex II to Directive 91/672/EEC<br><br>Group B: boatmasters' certificates valid for the other waterways in the Community, with the exception of the Rhine, the Lek and the Waal.  |
| Type of vessels covered | Cargo or passengers vessels on inland waterways, including self-propelled ships, tugs, pushers, towed convoys, pushed convoys and side-by-side formations.<br><u>Excluding:</u><br>seagoing vessels on inland waterways; | Inland navigation vessels, seagoing vessels and floating equipment.<br><u>Excluding:</u><br>vessels whose length is less than 15 metres and which are not passenger vessels, tugs and towers<br>ferry boats and vessels only | Cargo or passengers vessels on inland waterways, including self-propelled ships, tugs, pushers, towed convoys, pushed convoys and side-by-side formations.<br><u>Excluding:</u><br>seagoing vessels; | Inland-waterway vessels: self-propelled barges, tugs, pusher craft, barges, pushed convoys or side-by-side formations, intended for the transport of goods or passengers, <u>except for:</u><br>boatmasters of vessels intended for goods transport which are under 20 metres in length,<br>boatmasters of vessels intended for passenger transport, which carry no |

Appendix 3: Summary Table Comparing the Different Regimes

|                      | UNECE   | CCNR  | DC   | EC   |
|----------------------|---|---|--|--|
|                      | pleasure craft;<br>small craft, floating equipment, assembly of floating material and ferry-boats<br>Special craft, such as hydrofoil craft and air-cushion vehicles. | propelled by the muscular force if they are:<br>of the length inferior to 15 metres<br>only navigate by sail<br>equipped with a propelling device with power inferior to 3,68 kW  | river-sea vessels                                    | more than 12 people in addition to the crew.                 |
| Definitions included | Administration<br>Boatmaster<br>Boatmasters' licence  | Vessel<br>Inland navigation vessel<br>Seagoing vessel<br>Floating equipment<br>Ferryboat<br>Passenger vessel<br>Recreational vessel<br>Tug<br>Pusher<br>Side-by-side formation<br>Administration's vessels<br>Fire service vessel<br>Length<br>Width<br>Desk crew<br>Rating, engine minder, leading crewman, helmsman<br>Navigation time<br>Navigation by radar<br>Restricted radar certificate | Administration<br>Boatmaster<br>Boatmasters' licence | Competent authority<br>Boatmaster<br>Member of the deck crew |

Appendix 3: Summary Table Comparing the Different Regimes

|  | UNECE   | CCNR   | DC   | EC   |
|--|---|--|--|--|
|  |   | Rhine licence<br>Boatmasters' licence<br>Radar licence<br>Certificate on the special sector's knowledge  |  |  |
| <b>C. Minimum general requirements</b> |   |  |  |  |
| 1. Age                                 | 21 years old<br>Not less than 18 in certain cases   | 21 years old   | 21 years old   | 21 years old<br>Exception: Member States may still issue certificates to persons 18 years old or older. Recognition by a Member State of a Group A or B certificate issued by another Member State may be subject to the same minimum age conditions as are required in that Member State for the issue of a certificate for the same Group.   |
| 2. Physical fitness                    | Proof of physical fitness by passing a medical examination which tests among other things eyesight, hearing and the ability to distinguish colours. | Physical and mental fitness, certified by a document delivered by a doctor, appointed by competent authorities.<br>The certificate must attest the satisfaction of the requirements set in Annex B1.<br>The model certificate is prescribed by Annex B2.<br>Additional medical certification every five years after reaching 50 years of age | 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 the competent body. | (a) Proof of physical and mental fitness by passing a medical examination covering 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.<br>(b) Examination is to be carried out by a doctor recognised by the competent authority<br>(c) Renewal of medical requirement every year starting from 65 years of age |
| 3. Professional experience             | Two years' professional experience, acquired in the   | Four years, including at least two years of inland   | Four years as a crew member, including at least  | Four years' professional experience as a member of the deck crew on an inland  |

Appendix 3: Summary Table Comparing the Different Regimes

|  | UNECE  | CCNR  | DC   | EC   |
|--|--|---|--|--|
|  | <p>deck department on board an inland navigation vessel, at least as a rating.</p> <p>Must be validated and/or approved by the Administration.</p> <p>The minimum duration may be reduced if:</p> <p>The Administration requires special training considered as equivalent;</p> <p>The candidate possesses a diploma of specialised inland navigation training, comprising a period of mandatory on-board service;</p> <p>The Administration decides to take into account the maritime experience.</p> | <p>navigation as rating, engineer, or at least one year as leading crewman.</p> <p>The navigation time must be done on a self-propelled vessel for which a Rhine Patent is required.</p> <p>The navigation time is calculated as follows:</p> <p>Minimum 180 days of navigation per calendar year</p> <p>(d) The required four-year period of experience may be reduced as follows:</p> <p>By a maximum of 3 years for the time spent in a training programme</p> <p>By a maximum of 2 years for the maritime experience (minimum 250 days of navigation needed per calendar year)</p> <p>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.</p> | <p>one year as rating or helmsman on a self-propelled vessel.</p> <p>Maritime experience counts for a maximum of two years. Professional training counts as professional experience.</p> <p>Definition of navigation time</p> <p>(d) The requirement is considered as satisfied if the candidate has a certificate confirming his nautical knowledge and skills, delivered by the DC member states or other Danube countries</p> | <p>waterway vessel.</p> <p>Must be validated by the competent authority of the Member State by being entered in a personal service record.</p> <p>May be reduced by a maximum of three years:</p> <p>Where the applicant has a diploma recognised by the competent authority which confirms specialised training in inland navigation comprising practical navigation work;</p> <p>Professional experience acquired on a seagoing vessel as a member of the deck crew (reduction of three years requires four years' experience in maritime navigation);</p> <p>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> |
| 4. Examination of professional knowledge | The applicant must have passed the examination of professional knowledge to the satisfaction of the Administration; this   | The candidates must demonstrate their professional knowledge and skills by passing an examination.  | The candidates must demonstrate their professional knowledge and skills by passing an examination.   | The applicant must have passed an examination of professional knowledge; that examination must include at least the general subjects listed in Chapter A of Annex II.  |

Appendix 3: Summary Table Comparing the Different Regimes

|  | UNECE  | CCNR   | DC   | EC  |
|--|--|--|--|---|
|  | <p>examination shall cover at least the general subjects set out in the annex.</p> <p>The Administration may supplement the examination with additional subjects.</p>  | <p>The examination programme is contained in Annex D.1.</p>  | <p>The examination programme is contained in Annex 1.</p> <p>Note: the DC examination programme is equivalent to that in UNECE Resolution No.31</p>  | <p>Subject to consultation of the Commission, a Member State may require a boatmaster to satisfy additional requirements concerning:</p> <p>Knowledge of the local situation for navigation of certain waterways;</p> <p>Professional knowledge of special provisions relating to passenger safety, particularly in the event of accidents, fire or shipwreck.</p>  |
| 4. Radar navigation  | <p>(a) For the issuance of a boatmaster's licence for a passenger vessel, the administration may require more detailed professional knowledge, including radar navigation;</p> <p>(b) Content of the examination on radar navigation is contained in Annex 1, point C.</p> | <p>(a) The applicant must possess a restricted radar certificate (certificat de radiotéléphonie)</p> <p>(b) Programme of an examination on the candidate's radar knowledge is contained in Annex D.2</p> | <p>(a) For the issuance of a boatmaster's licence for a passenger vessel, the administration may require more detailed professional knowledge, including radar navigation;</p> <p>(b) Content of the examination on radar navigation is contained in Annex 1, point C.</p> | <p>(a) In order to be authorised to navigate with the aid of radar, the boatmaster must hold a special attestation delivered by the competent authority as proof that he has passed the examination covering professional knowledge of the subjects referred to in Chapter B of Annex II.</p> <p>(b) The Member States shall recognise the qualification issued under the regulation of the issuing of qualifications to sail a vessel with the aid of radar on the Rhine.</p> <p>(c) An applicant satisfying the conditions set out in paragraph 1 shall have his or her fitness to navigate by radar attested by the competent authority in the form of an endorsement on the certificate</p> |
| 5. Absence of past infractions to the safety of navigation | N/A  | <p>The candidates must not have committed infractions in navigation and their prior conduct must support the assumption of their ability to lead the crew and navigate safely</p>                        | <p>The candidate must be able to captain the crew. The candidates that have been convicted of the infringement on human life, someone else's property or of the infractions to the</p>   | N/A   |



Appendix 3: Summary Table Comparing the Different Regimes

|   | UNECE  | CCNR   | DC  | EC  |
|---|--|--|---|---|
|   |  |  | custom requirements, while carrying out their duties, are considered unable to captain the crew.  |   |
| <b>D. Knowledge of specific sectors</b> |  |  |   |   |
| 1. General                              | In so far as it deems necessary the Administration may supplement the examination syllabus with particular and/or additional subjects in order to meet the requirements for issuance of the boatmasters' licences. In this case, the Administration shall specify in the boatmaster's licence its field of application and/or issue a special licence. | The knowledge of specific sectors is required for all Rhine Patents.   | In any case, the candidate must have the professional experience as a rating or a helmsman on a self-propelled vessel or convoy on the sector concerned, acquired by accomplishing 8 runs upstream and 8 runs downstream, including at least 3 runs in all directions in the 18 months preceding the request. | Subject to consultation with the Commission, a Member State may require a boatmaster to satisfy additional requirements concerning knowledge of the local situation for navigation of certain waterways, with the exception of the waterways of a maritime character referred to in Annex II to Directive 91/672/EEC. |
| 2. Professional experience              |  | The applicants must have accomplished 16 runs on the sector between the lock of Iffezheim and the ferry of Spijk during the preceding 10 years, including at least 3 runs in each direction during the last 3 years. They must have undertaken these runs as rating, engine minder, leading crewman, or helmsman on board a motorised vessel, conducting which requires the Rhine Patent or an equivalent certificate. | As stated above, the candidate must have accomplished 8 runs upstream and 8 runs downstream, including at least 3 runs in all directions in the 18 months preceding the request.  |   |

Appendix 3: Summary Table Comparing the Different Regimes

|                | UNECE | CCNR   | DC | EC |
|----------------|-------|--|----|----|
| 3. Examination |       | The candidate must also pass an examination on the description of the fairway upstream and downstream, its dimensions and the ability to apply the Rhine Police regulation on this section between the lock of Iffezheim and the ferry of Spijk. |    |    |



**Table A3. 2: Professional knowledge required to obtain the boatmasters' certificate for inland navigation**

| UNECE/ DC   | EC <sup>43</sup> (group B)  | CCNR  |
|---|---|---|
| A. General subjects concerning the carriage of cargo and passengers   |   |   |
| 1. Navigation   |   |   |
| (a) Knowledge of the rules of the road and signs and signals on inland waterways, particularly those included in CEVNI; | (a) Exact knowledge of the traffic regulations of inland waterways, particularly of ECIW (European code for inland waterways), including nautical signing (designation and buoys of waterways);<br><br>Note: For the waterways of a maritime character, listed in annex II to Directive 91/672/EEC (group A): exact knowledge of the traffic regulations of inland waterways, particularly of ECIW (European code for inland waterways), the International Regulations for Preventing Collisions at Sea, including nautical signing (designation and buoys of waterways); | Rhine Police regulations ( including temporary dispositions)<br><br>Requirements to the maritime navigation: marking on vessels, sound systems, waterways' marking, rules of the road.  |
| (b) Knowledge of general characteristics of main waterways from the standpoint of geography and hydrography;            | (b) Knowledge of the general geographical, hydrological, meteorological and morphological characteristics of the main inland waterways;<br><br>Note: for group A: main inland and maritime waterways  | (a) Nautical and sectoral knowledge<br>(i) Rhine and its affluent (essential geographical, hydrological, meteorological and morphological characteristics)<br>(ii) Knowledge of the requested Rhine sectors<br>- description of the navigational channel<br>- the waterway's dimensions<br>(iii) Navigation on the maritime waterways (Determination of the course, position lines and ship's position using sea chart, checking of the compass and bases of tidology). |

<sup>43</sup> Group B: all Community waterways except the waterways of a maritime character, listed in annex II to Directive 91/672/EEC, as well as the Rhine, the Lek and the Waal.

Appendix 3: Summary Table Comparing the Different Regimes



| UNECE/ DC   | EC <sup>43</sup> (group B)   | CCNR  |
|---|--|---|
| (c) Knowledge of the buoyage system;  |  |   |
| (d) Ability to use navigational documents (charts, shipping notices, etc.) and navigational instruments (compass, echosounder, etc.); | (c) Determination of the course, nautical printed matters and publications, buoyage systems.<br><br>Note: for group A: Terrestrial navigation with determination of the course, position lines and ship's position, nautical printed matters and publications, work in the sea chart, nautical marks and buoyage systems, checking of the compass and bases of tidology. | See nautical knowledge  |
| (e) Ability to determine the position of the vessel under any meteorological conditions (poor visibility, ice, etc.);                 |  |   |
| <b>2. Vessel manoeuvring and handling</b>   |  |   |
| (a) Piloting the vessel, having regard to the effects of currents and winds, and the depth under the keel;                            | (a) Handling of the vessel taking account of the effect of wind, current, thrust deduction and draught for the evaluation of sufficient buoyancy and stability;  | (a) Piloting and manoeuvring                                      |
| (b) Function and operation of the rudder and propeller;   | (b) Role and functioning of the rudder and propeller;  | (b) Function and operation of the rudder and propeller            |
| (c) Anchoring and mooring under all conditions;   | (c) Anchoring and berthing in all conditions;  | (c) Anchoring and berthing  |
| (d) Manoeuvring in entering and leaving a lock, in entering and leaving port harbours as well as in meeting and overtaking.           | (d) Manoeuvres in locks and ports; manoeuvres when meeting and passing other vessels.  | (d) Buoyancy and stability rules and their practical application. |
|   | Additional requirements:<br>For group A:<br>(d) Theoretical knowledge of the buoyancy and stability rules and their practical application, especially seaworthiness;<br>(e) Additional requirements and in particular additional   | Additional requirements:<br>Impact of stream, wind and suction    |

Appendix 3: Summary Table Comparing the Different Regimes

| UNECE/ DC  | EC <sup>43</sup> (group B)  | CCNR  |
|--|---|---|
|  | equipment on maritime waterways.  |   |
| <b>3. Vessel design (construction) and stability</b>   |   |   |
| (a) Knowledge of the basic principles of vessel design, particularly as relates to the safety of persons and the vessel; | (a) Knowledge of the basic principles of vessel construction with regard in particular to the safety of persons, the crew and the vessel; |   |
| (b) Knowledge of the main structural elements of the vessel;   | (b) Basic knowledge of Council Directive 82/714/EEC of 4 October 1982 on the technical provisions for inland waterway vessels;            | (a) Rhine vessels inspection regulations<br>(i) Structure and content<br>(ii) Content of the ship's certificate<br>(iii) Crew requirements (Chapter 23) |
| (c) General theoretical knowledge of buoyancy and the rules of stability;  | (c) Basic knowledge of the main component parts of the vessel;  |   |
| (d) Measures to be taken to ensure the stability of the vessel under different circumstances.                            | (d) Theoretical knowledge of the buoyancy and stability rules and their practical application.  |   |
| <b>4. Engines</b>  |   |   |
| (a) Basic knowledge of how engines are constructed and work so as to ensure their proper operation;                      | (a) Basic knowledge of the design and working of the engines in order to ensure their proper functioning;                                 | (a) Design and working of the engines, functioning of electrical equipment;   |
| (b) Checking of the operation of the main and auxiliary engines and any necessary action to be taken.                    | (b) Operation and inspection of the main and auxiliary engines and any necessary action to be taken in case of disorder.                  | (b) Operation and inspection;   |
|  |   | (c) Action to be taken in case of disorder.   |
| <b>5. Loading and unloading</b>  |   |   |
| (a) Use of draught marks;  | (a) Use of draught indicators;  | (a) Use of draught marks;   |
| (b) Determining the weight of the cargo by means of the measurement certificate;   | (b) Determination of the loading weight using the certificate of measurement;   | (b) Determination of the loading weight using the certificate of measurement;   |
| (c) Loading and unloading operations.  | (c) Loading and unloading, stowage of cargo (stowage plan).   | (c) Stowage of cargo.   |
| <b>6. Procedure (action) in special circumstances</b>  |   |   |
|  | (a) Principles of accident prevention;  |   |
| (a) Steps to be taken in the event of damage, collision or   | (b) Measures to be taken in the event of damage,  | (a) Measures in the event of accidents, first   |

Appendix 3: Summary Table Comparing the Different Regimes

| UNECE/ DC   | EC <sup>43</sup> (group B)  | CCNR  |
|---|---|---|
| grounding (before, during and after the event), including plugging of leaks;  | collision and running aground, including the sealing of leaks;  | aid and plugging of leaks                     |
| (b) Use of life-saving material and equipment;  | (c) Use of rescue apparatus and equipment;  | (b) Use of rescue apparatus and equipment     |
| (c) First aid in the event of an accident;  | (d) First aid in the event of accidents;  | (c) First aid in the event of accidents       |
| (d) Prevention of fire and use of fire-fighting equipment;  | (e) Prevention of fires and use of fire-fighting equipment;   | (d) Fire fighting                             |
| (e) Prevention of pollution of waterways.   | (f) Prevention of pollution of waterways;   | (e) Waste management and pollution prevention |
|   | (g) Specific measures relating to the rescue of persons, vessels and cargo on maritime shipping routes, survival in distress (only for group A) | (f) Specific measures for maritime accidents  |
|   |   | (g) Informing competent authorities           |
| 7. Communications   |   |   |
| Knowledge of procedures of usage of radio telephone   |   |   |
| 8. Transport of passengers  |   |   |
| The Administration may in so far as it deems necessary require a more thorough professional knowledge for navigating passenger vessels. |   |   |
| B. Radar navigation   |   |   |
| Chapter C: Additional subjects for radar navigation   | CHAPTER B: Obligatory additional subjects for radar navigation <sup>44</sup>  | Special Annex D.2                             |
| (a) Knowledge of the theory of radar: general information on radio waves and the principles of radar operation;                         | (a) Knowledge of radar theory: general knowledge of radioelectric waves and principles of radar operation;                                      |   |
| (b) Ability to use the radar apparatus, interpretation of the radar image, analysis of the information supplied by the                  | (b) Ability to use radar equipment, interpretation of the radar display, analysis of the information supplied by                                |   |

<sup>44</sup> Does not apply to group A.

Appendix 3: Summary Table Comparing the Different Regimes

| UNECE/ DC  | EC <sup>43</sup> (group B)   | CCNR   |
|--|--|--|
| apparatus and knowledge of the limitations of the radar information;   | the equipment and knowledge of the limits of the information supplied by radar;  |  |
| (c) Use of the rotation-speed indicator;   | (c) Use of the turn indicator;   |  |
| (d) Knowledge of regulations of CEVNI relating to radar navigation.  | (d) Knowledge of the ECIW rules on radar navigation.   |  |
| <b>C. Knowledge for passenger transport</b>  |  |  |
| Chapter B: Special subjects for the transport of passengers required for the issuance of special licenses for navigating passenger vessels   | CHAPTER C: Obligatory additional knowledge for passenger transport <sup>45</sup>   | Special regulation on safety personnel on board passenger boats.<br>The knowledge may be acquired by crew members other than the boatmaster. |
| For the issuance of a boatmasters' licence for a passenger vessel, the Administration may, in so far as it deems necessary from the safety point of view, make provision for more detailed professional knowledge than appears under A as regards paragraphs 2, 3, 5 and 6, and require additional professional knowledge concerning in particular the following points: |  |  |
| (a) Knowledge of safety instructions concerning the vessel;  | 1. Basic knowledge of technical regulations on: the stability of passenger vessels in case of damage, division into watertight compartments, plane of maximum draught. |  |
| (b) Specific provisions for passenger safety in general and in the event of accidents, fire, explosion or shipwreck;   | 2. First aid in case of accidents.   |  |
| (c) Ability to direct passenger movements, embarkation and disembarkation, and deal with the effects of panic;   | 3. Fire prevention and fire-fighting equipment.  |  |
| (d) Rules to be followed in assisting drowned persons (knowledge of first aid);  | 4. Life-saving methods and equipment.  |  |

<sup>45</sup> Does not apply to group A.

Appendix 3: Summary Table Comparing the Different Regimes

| UNECE/ DC  | EC <sup>43</sup> (group B)  | CCNR   |
|--|---|--|
| (e) Special case of vessels equipped to provide meals or accommodation.  | 5. How to protect passengers in general, especially in the case of evacuation, damage, collision, running aground, fire, explosion and other situations which may give rise to panic. |  |
| <p>The Administration may make provision for an additional test of knowledge of local geography in all cases in which it deems it to be justified.</p> <p>Practical tests should be carried out on a passenger vessel in normal operation.</p> <p>Theoretical tests should be of a particularly thorough character concerning passenger vessels.</p>   | 6. Knowledge of safety instructions (emergency exits, gangplank, use of emergency helm).  |  |
| D. Additional subjects for the carriage of dangerous goods   |   |  |
| <p>(a) Familiarity with international regulations and recommendations concerning the carriage of dangerous goods by inland waterway;</p> <p>(b) General requirements concerning the carriage of dangerous goods;</p> <p>(c) Special steps to be taken during the loading and unloading of dangerous goods as well as during the voyage;</p> <p>(d) Signalling of vessels and labelling of packages;</p> <p>(e) Steps to be taken to prevent accidents, during and following an accident.</p> |   | <p>ADNR</p> <p>Structure</p> <p>Documents/instructions</p> <p>Special marking (blue cones and lights)</p> <p>Search for technical requirements</p> |
| E. Patent regulations  |   |  |
|  |   | <p>Rhine Patent regulations</p> <p>Types of boatmasters' licences</p> <p>Criteria for withdrawal and suspension of licences</p>                    |





## **APPENDIX 4: ADMINISTRATIVE ARRANGEMENT BETWEEN THE CCNR AND ROMANIA**

A4.1 This appendix is attached to this report.



## APPENDIX 5: OUTCOME OF STAKEHOLDERS' AND INTERESTED PARTIES' CONSULTATION

### Introduction

A5.1 This appendix provides a summary of the feedback of the various international bodies, national authorities and stakeholders that were approached.<sup>46</sup>

### International bodies

#### CCNR

##### *Current legal situation of boatmasters' certificates*

- There cannot be any conflict between Rhine legislation and national legislation, because if a license is required, it is required in all member states. If a State wants to abolish a license, it has to submit the matter to the CCNR; and then two options are possible: the other States accept the proposal, or a derogation to the general rule is added in the CCNR regulation.
- A revised CCNR regulation was adopted in 2007 that might be a first step towards a more modular approach for the boatmasters' certificates. It clarifies what is general knowledge and what is local knowledge. Administrative instructions will be adapted in autumn 2008 as a follow-up on this regulation. These instructions set common practices and interpretation of the CCNR rules by the various national authorities involved in their implementation<sup>47</sup>.

##### *Issues related to the harmonisation of boatmasters' certificates*

- The tradition so far is that usually the CCNR has taken the initiative for new legislative actions, and other entities would follow the CCNR.
- Currently the trend is that the EU harmonises legislation across Europe in most areas (also outside the IWT sector). The CCNR agrees with this and more specifically thinks that Directive 96/50 is useful for the CCNR as it provides a basis for a uniform boatmasters certificate in Europe. Yet it is too broadly drafted to guarantee by itself the level of requirements considered to be necessary for a safe navigation on the Rhine. As a result, it cannot be directly recognized on the Rhine. Rather, the CCNR checks if the EU member States, while transposing the EU directive, have adopted standards that are equivalent to the CCNR's.

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<sup>46</sup> Disclaimer: this section reflects only the opinion of those interviewed, and may contain factual errors

<sup>47</sup> Issued by member states, in accordance with CCNR regulation



- The Danube states have their own legislation that the CCNR is not familiar with (as the Danube Commission is more about mutual recognition than harmonisation of national laws, so little information can be obtained from the Danube Commission).
- In order for national boatmaster licenses (of non-CCNR states) to be recognised by the CCNR, the third States must submit their relevant legislation to the CCNR in one of the CCNR's working languages. As more countries have their licenses recognised, the CCNR will have a better idea of the local legislation.
- Regarding harmonisation, the Secretariat of the CCNR could imagine a modular system in which the basic skill requirements would be the same throughout Europe, and where modules could be added to a boatmaster's CV if necessary. The CCNR submitted such a proposal to the EC in 2005, but this proposal was not taken up by the Commission. Both the Rhine Patent and its Local Knowledge documents are in a uniform format already.
- Another issue is that the required skills of the crew members below boatmaster level are not harmonised within Europe (and not at all mentioned by 96/50). The Rhine regulations do specify these for the Rhine.
- The CCNR will soon proceed to the recognition of non-Rhine service booklets. While doing so, it will investigate whether requirements of third States regarding service booklets are equivalent to Rhine qualifications. In the context of this recognition process, it also intends to start a database on the number of Service Booklets issued by its member states. It has no fully reliable statistics on this now, although national authorities may be keeping data on this.
- Another EC Directive is having an effect on harmonization of qualifications, namely the Directive 2005/36/EC on "the recognition of professional qualifications", as in some EU member states the IWT professions are considered to fall within the scope of application of this directive.
- The CCNR agrees with the analysis that a harmonisation of boatmasters' certificates may have little to no effect on the labour shortages in the EU15. An assessment of the expected resulting labour migration from the new Member States to the EU15 should be carried out before proceeding with any EC initiative, if harmonization is meant to be a response to this issue. Also, an assessment should be made of the consequences that this migration would have on the economy of the new EU member States.

*Issues related to local knowledge*

- Some other CCNR Member States would like Germany to lift its local knowledge requirement on the Rhine, but Germany does not seem to be keen on doing this.



- In 2005 and 2006, a joint Working Group established by the CCNR and the Danube Commission tried to describe and analyse the various processes of acquiring local knowledge in the CCNR and DC member states. This working group has become dormant since then, because of the resistance of some States. Through the process of recognition of boatmasters' certificates of Danube States (as equivalent to those of the CCNR), the CCNR will acquire a better knowledge of the Danube States' common practice in this field which will hopefully make those countries' processes of acquiring local knowledge certificates more transparent and uniform.

#### *Comments on harmonisation scenarios*

- The CCNR mentioned that since voluntary action between MS already takes place, scenario A effectively doesn't exist - or that A and B are the same. Apparently there is a Russian initiative to amend current Resolution n° 31 (dating from the early 90's and therefore indeed a bit outdated - at least older than Directive 96/50). However, any UNECE-based option would be either slower because it would involve a treaty with all UNECE member states, or less powerful, as it would remain a non-binding resolution. The CCNR noted that no option mentioned in the EC initiative mentioned cooperation with the CCNR, although the purpose is to gain access to the Rhine and the CCNR is the main decision-making body in this area.
- About option C, the CCNR wonders how this would work as the Directive would require regular updating, especially in the years to come, as the IWT sector is currently undergoing important evolutions. Who would be in charge of negotiating and deciding on the future amendments? It is in any event doubtful that the EU directive will reach the required level of detail: the level of harmonization reached by 27 Member States cannot be the same as the level of harmonization with only 5 Member States. This is why the solution of a modular system was suggested by the Secretariat of the CCNR. This system would have to be conceived in consultation with the river commissions.

#### *Other issues*

- As a general consideration, IWT is inherently regional. The geographical range of many companies is limited and the IWT infrastructure will never have the same reach as road, rail or maritime infrastructure. This is for example shown by the fact that only 11 EU member states issue documents under Directive 96/50/EC - of which 4 are CCNR member states and the rest are all on the Danube (plus the Czech Republic and Poland). The need for harmonisation in IWT may thus be less pressing than in other fields. Furthermore, harmonisation is not the end of the story. Mechanisms of exchange of information, communication and efficient controls have also to be designed in parallel. The process of mutual recognition launched within the CCNR does permit to carefully consider this aspect, in close cooperation with the third States involved.



- The main tools to address the issue of shortage of labour would rather be to offer more attractive education levels, career perspectives and working conditions. The CCNR may alleviate some of its requirements to facilitate access to the profession from other branches (as it did a couple of years ago for people with a maritime background experience). However, a systematic approach on the issue of qualifications cannot be conducted in the context of a working group. A round table on employment issues was organized in June by the CCNR. During this meeting, the creation of a group specifically charged with these matters was considered.

## **Danube Commission**

### *Legislative issues*

- The Danube Commission has so far generally used UNECE documents in its decisions, but is also following the developments taking place at the CCNR and EC.

### *Issues related to the harmonisation boatmasters' certificates*

- The Danube Commission will have an Assembly in Belgrade in which the original Belgrade convention (that established the Danube Commission) is expected to be changed; from that moment on, decisions taken by the Danube Commission will also be binding for member states (as is the case already in the Rhine and Sava commissions). All member states are expected to ratify..

### *Comments on harmonisation scenarios*

- The problem with EC initiatives is that IWT law needs to be updated frequently in order to reflect the latest state of technology and other development in the sector. The EC would be too slow for this process.
- None of the existing river commissions is mentioned in any of the scenarios

## **UNECE**

### *Legislative issues*

- The UNECE monitors the implementation of its resolutions in its member states. Although it has no enforcement instruments, it can apply political pressure, which is very effective normally. A big harmonisation was initiated by the UNECE which became Resolution 31. The CCNR went further, and the Danube regulations are very similar to the Rhine ones.

### *Issues related to the harmonisation boatmasters' certificates*

- The UNECE thinks it is not possible to have one rule for all waterway areas. Yet there is clearly a case for harmonisation, as all countries involved keep participating in the



meetings. There is a working group on IWT which involves the member states of the CCNR and the DC plus the UK and Russia, that is preparing further harmonisation

- A point that has not been addressed much so far is the harmonisation of requirements of the lower ranks, this could be a next step.

#### *Comments on harmonisation scenarios*

- The UNECE is of the opinion that option A does not exist - as it would mean stopping current action.
- The UNECE also wonders what the EC could do if option B would be selected - give money to countries?
- Regarding C, any EC legislation must always be in line with CCNR documents, as than cannot be in conflict with each other. The UNECE would be interested to know how new EU MS feel about the new level of rules imposed by the EU.
- Option B and C are not mutually exclusive.
- Option D would seem to go too far - UNECE resolutions are more general and more appropriate.
- The UNECE can propose a text with the EC, the UNECE is a good discussion platform - also because of the fact that its geographical scope is much bigger than the EC alone.

#### *Other issues*

- Regarding language harmonisation, the main language of communication is slowly but surely becoming English; the UNECE does not have any rule related to this, but this might be something to think of in the future.



## National authorities

| Country               | Comment on issue   | Comment scenarios    | Other comments       |
|-----------------------|--|----------------------|----------------------|
| <b>Austria</b>        | <p>Regarding boatmasters' certificates, there should be a harmonisation of scope regarding non-commercial vessels;</p> <p>health prerequisites should be defined and more stringent, and the health certificate must be harmonised</p> <p>The 4 years practice requirement should be kept, clearer definition of eligible practice [trainee] time, definition of harmonised education and training modules with clear consequences for the reduction of required practice time, and a separate certificate for radar is not necessary, but there should be more detailed requirements on knowledge</p> | No comments made     | No comments made     |
| <b>Belgium</b>        | <p>The required experience of deck crew should be re-evaluated and the evidence (service booklet) should be modernised</p> <p>Modern training and examination methods should be used, such as the use of navigation simulators.</p>  | No comments made     | No comments made     |
| <b>Czech Republic</b> | Supports legislation valid in the whole EU as inland waterways are all-European ones   | No comments received | No comments received |



|                    |                      |  |                      |
|--------------------|----------------------|--|----------------------|
| <b>Finland</b>     | No comments made     | No comments made   | No comments made     |
| <b>France</b>      | No comments made     | Two scenarios seem to be possible:<br><br>Reinforcement of cooperation based on the experience of the River Commissions, especially the CCNR.<br><br>A new European Directive, as advocated in the NAIADES Action Program.                   | No comments made     |
| <b>Germany</b>     | No comments made     | In principle, Germany welcomes a harmonisation of the boatmasters' certificates, but is of the opinion that the work and experience of the river commissions must be used. For a Europe-wide regulation the added value must first be proven | No comments made     |
| <b>Hungary</b>     | No comments made     | The EU member states on the Danube and the Rhine have proper national and international legislative acts. Directive 96/50/EC also serves as a good basis for defining harmonised training and certification requirements.                    | No comments made     |
| <b>Italy</b>       | No comments received | No comments received   | No comments received |
| <b>Lithuania</b>   | No comments made     | No comments made   | No comments made     |
| <b>Netherlands</b> | No comments made     | No comments made   | No comments made     |
| <b>Poland</b>      | No comments received | No comments received   | No comments received |
| <b>Portugal</b>    | No comments made     | No comments made   | No comments made     |
| <b>Romania</b>     | No comments made     | Romania supports a legislative harmonization regarding inland  | No comments made     |





|                       |                      |                      |                      |
|-----------------------|----------------------|----------------------|----------------------|
|                       |                      | waterways.           |                      |
| <b>Slovakia</b>       | No comments received | No comments received | No comments received |
| <b>United Kingdom</b> | No comments received | No comments received | No comments received |

*Note: "no comments made" means that a national authority did respond to the questionnaire but did not wish to make any comments. "no comments received" means that the national authority did not respond to the questionnaire.*

## Stakeholders

### Feedback from ship owners and employers' organisations

#### *Legislative issues*

- Passenger transport requirements are not defined in 96/50, but they are defined in the Rhine regulations. This is generally not a problem. From 2010 on boatmasters will be required to take a passenger transport module as part of their course.
- Service Books of the (non-boatmaster) crew aren't harmonised and this is a big problem. This would be a task for the CCNR, or perhaps the EC.
- There are doubts as to whether CCNR boatmaster certificate recognition really implies full equivalency

#### *Issues related to the harmonisation boatmasters' certificates*

- An EU-wide certificate already exists effectively, it is the Rhine Patent. Even non-EU states such as Serbia and Ukraine have to obey Rhine rules if their vessels operate on the Rhine. The Rhine Commission is very important and may a more appropriate institute to govern IWT than the EC.
- The CCNR will stay have to stay, no matter what the EU decides. The CCNR has played a vital role in the past and will keep playing it in the future.
- A problem with harmonisation is that in the Rhine Patent system, the days registered in the service booklets are counted in different ways for days on the Rhine and days elsewhere (180 Rhine days are required per year), which means that it is more difficult to get the license even if the experience elsewhere might be perfectly relevant.
- It was noted that the biggest problem in license harmonisation is not the boatmasters, whose minimum requirements are pretty similar across Europe, but rather the lower ranking crew members, such as for example the sailor and the helmsman. Directive 96/50 does not state any requirements on the required skills for these functions, and that is a fundamental weakness. This issue is in fact more important than the harmonisation of the boatmaster certificates.



- As the salaries in new member states are relatively low, any harmonisation will mean a loss of workforce [as people will migrate to countries with higher salaries].

*Issues related to local knowledge*

- The clause in the Directive 96/50 on local knowledge could be eliminated with better markings, and the EU should put pressure on the MS to improve the markings. The Danube states are generally slower in their national implementation, as the Danube Convention decisions (unlike the CCNR decisions taken unanimously) is not legally binding.
- Navigating locally has different requirement from the general requirements. If a local knowledge certificate is required, this means that navigation marks are inadequate. Electronic means make markings cheaper, at least in those stretches where the riverbed is stable. Unstable stretches may be stabilised by building spur dikes. Of course any electronic system works only when data is kept up to date

*Issues related to institutional aspects*

- The EU should however maintain the existing expertise and structure as the EC possesses little specialist knowledge, while expertise is easily available through the CCNR and other professional organisations. Moving all initiative to the EC would waste a lot of time and money. Existing knowledge is very important.
- How can the CCNR system be expanded? There must be system to get all parties together. Both a top-down and bottom-up approach a required - the EU only thinks in top-down approaches it seems. Harmonisation must take place in all areas.

*Issues related to administrative aspects*

- Companies have no costs at all regarding boatmaster certificates, this is a cost that is entirely absorbed at individual level. It costs about €90 in France to get a Rhine Patent (the exam). A pilot can cost about €700-800 per stretch (e.g. Mannheim-Iffezheim).

*Issues related to technical requirements*

- The EU shall take action to support the necessary harmonisation of technical requirements throughout Europe.
- There is a clear need for harmonisation - when there is no body with central governing power, then that creates a suboptimal situation. Technical aspects could be handled faster by the EU than by the CCNR, perhaps

*Comments on harmonisation scenarios*

- One respondent stated that none of the suggested scenarios considers the existing situation very well. Scenarios C and D do not even mention the CCNR. The EC



should think more in terms of river basins and let those basins cooperate, rather than countries. At least there is already a working group between the CCNR and the EC, in which both have committed themselves to dialogue and cooperation.

- For another respondent, C seems the best option. It would be the best to have one single European IWT authority but the EC has yet to produce anything substantial in terms of IWT legislation. The CCNR and DC must be more active.
- Option A does not exist really. The current situation is in fact Option B, because voluntary action already exists and will continue. The best scenario would in fact be a combination of option B and C, as they could complement each other.
- For the third respondent, option D is out of the question. Most transport modes have their dedicated EU agencies - IWT does not. Possibly the existing agencies (CCNR, DC) become an EU agency.

#### *Other issues*

- Language. While German was long used as the lingua franca of the Rhine, German language skills are no longer obvious among the new Member States – English is becoming the most common language. It would be good if this aspect could be harmonised too, by setting an official international communication language.
- Unlike other sectors, consolidation into big firms is not taking place, in fact rather the opposite. Most companies are family companies with one vessel. Owning a vessel reduces maintenance costs as skippers are more careful.

#### **Feedback from Unions**

##### *Issues related to the harmonisation boatmasters' certificates*

- The EC harmonization move comes long after earlier harmonization moves. Rhine guilds are 650 years old, the Mannheim convention was established 140 years ago, the Danube commission is newer, but still older than the EEG/EU. Therefore a lot of harmonization experience already exists.
- The problem with harmonization is that some of the basic license requirements outside the main basins can be much lower, e.g. in the UK someone can be a boatmaster with 6 months experience, whereas in the Rhine and Danube countries this is normally only possible after 4 years of experience or more. It is very important that quality of the boatmaster skills is maintained, because an inexperienced captain may cause accidents that subsequently may result in huge traffic disruptions.
- The potential direct cost savings by licence harmonisation are limited, local licenses are relatively cheap to get, the only significant cost is the pilot that needs to be hired when no local knowledge certificate is owned. The Rhine Patent does not have any chapter on the requirements of boatmaster training.



- An earlier EC initiative for IWT harmonisation was “buried” at the Vienna congress several years ago. A new attempt may well run into similar obstacles. The Rhine commission is a very concentrated, and therefore efficient, decision-taking body, even if binding decision always require unanimity. Having the EC as the main decision-maker would probably slow things down considerably.

#### *Comments on harmonisation scenarios*

- The unions stated no immediate opinion in favour or against any of the four suggested scenarios.

#### *Other issues*

- The Rhine commission focuses a lot on technical and safety requirements, but less on the social aspects. It would be nice if this could be changed

#### **Feedback from educational entities**

##### *Current legislative aspects*

- One aspect of Directive 96/50/EC is the passenger service module that has not been implemented.
- The Rhine Patent may be too broad in its scope. It requires boatmasters to be able to sail on open waters whereas this would be a rather useless skill for someone who is based in Basel and would only travel the upper Rhine.
- Therefore it would make sense to have a base package with specialised modules, which would be connected to different types of waterways, or operation skills as radar use, dangerous goods transport and being an independent employer (which would require business skills in addition to sailing skills). On top of this, national curricula could be added

##### *Issues related to the harmonisation boatmasters' certificates*

- The sector and the EU should work on a list of common competences. It would be good to have a minimum set of rules that harmonised certificates should have.
- A European certificate can be accepted at the Rhine when three conditions are met: same nautical skills, same exam conditions and mutual recognition. (as defined in the 7th amendment to the Mannheim Convention)
- One problem is that while the requirements for boatmasters are reasonably well defined, the lower rankings have no such specifications. New rules should simply specify what professional skills the graduates should have. So the final product is specified, not the process of getting there. This will simplify and speed up the harmonisation process much more than curriculum specification would.



- Mutual recognition of certificates is the ultimate stage but does not lead to a harmonised system of education and training for inland waterway personnel. First it comes to the examination, following the curriculum, as to prove that certain standards were met.
- The level of knowledge and skills should be at the same level across EU;

*Issues related to educational aspects*

- There is need of a kind of common backbone to test each individual as to see if they have achieved the standards necessary to fulfil the task of various functions in inland waterway ships. In different countries, there exist different diplomas; one can acquire qualifications through different ways;
- This is possible through vocational education at various levels but also through short training courses for adults. Especially through vocational education a student must acquire, not only, professional qualifications but also qualifications to allow a student to enter a higher level in education according to the national curriculum
- Directive 96/50/EC therefore could be revised/modified. Or a new document, "Standards of Training and Certification Inland Shipping (STCIS) could be developed as to have a common basic structure. In addition each country can apply their own national curriculum and use both in vocational training. The countries which feel that specific knowledge is necessary for certain waterways (local knowledge) can apply this on top of the common basic structure.
- Modern training opportunities such as simulators can be implemented in the education and training system. However simulators alone cannot allow somebody to really get the skills but it will speed up the learning process and thus makes it possible to shorten the mandatory practical sailing time
- A difference for new MS could be that the distinction between nautical and technical courses could be eliminated by offering joint courses, so that people have both skills. This would make the crew more versatile and deployable.

*Issues related to institutional aspects*

- There should be a dialogue between employers, workers and schools that should discuss the required skills. EDINNA came out of this, it involves 18 schools from all Rhine and Danube countries that signed an MoU about this.

*Comments on harmonisation scenarios*

- One respondent said that of the four scenarios, the favoured option would be C, but remarked that the EC must give the sector sufficient freedom for own initiatives. And in case the sector becomes profitable, subsidies should not be cut, as this would give a counterincentive.



- The other respondent had no comments to make on the harmonisation scenarios.

*Other issues*

- There is a general education standard being developed, similar to the STCW '95, called STC-IS. The basic level of educations should be equalised