European Maritime Safety Agency

Seafarers' Statistics in the EU

Statistical review (2014 data STCW-IS)

EMSA.2016.001412
Date: 08.07.2016

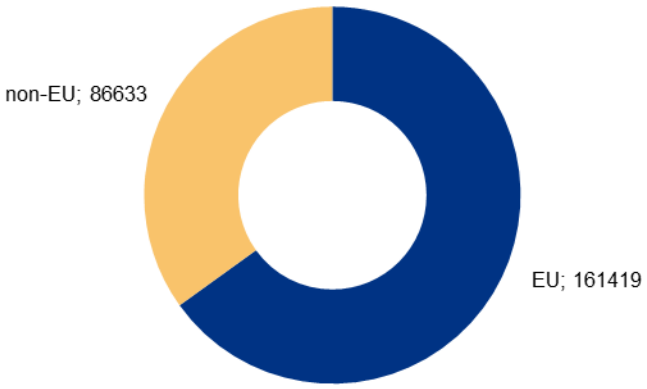
EMSA

Executive Summary

Reports on the maritime labour force in Europe have so far been the result of initiatives from the part of some individual EU Member States and have consequently covered a limited geographical scope. The amendments to Directive 2008/106/EC introduced by Directive 2012/35/EU established a mechanism for gathering information on certificates and endorsements issued to seafarers by the EU Member States with the objective of using it as a primary source of data for statistical analysis and for use by EU Member States and the Commission in policy-making.

The statistical review presented in this report is based on data extracted from certificates and endorsements registered by EU Member States until 31 December 2014 and recorded in the STCW Information System. It represents a snap-shot of the European labour market in terms of the number of seafarers holding valid certificates and endorsements in 2014. This is the first year in respect of which such data is available. As more data is collected in the coming years, this will make possible trend analysis that should hopefully contribute to a better understanding of the maritime labour force in Europe.

The data included now in the STCW-IS shows that 161,419 masters and officers hold valid certificates of competency (CoC) issued by EU Member States while another 86,633 masters and officers hold original CoCs issued by non-EU countries with endorsements issued by EU Member States attesting their recognition(EaR). Overall the end of 2014 saw almost a quarter of a million masters and officers as potential manpower to serve on board EU Member States flagged vessels.



The five EU Member States which issued more CoCs are the United Kingdom (28,865), Poland (20,082), France (12,884), Croatia (12,077) and Italy (10,104). In addition, the five EU Member States issuing more EaRs are Malta (48,720), Cyprus (28, 502), the United Kingdom (15,192), the Netherlands (7,550) and Luxembourg (6,493). Finally, the five non-EU countries which had more of their CoCs recognised by EU Member States are the Philippines (28,874), Ukraine (19,369), Russian Federation (13,615), India (6,401) and Turkey (4,830).

Table of Contents

1. Introduction 9
1.1 Legal background 9
1.2 Accuracy 9
1.3 Timeliness and punctuality 11
1.4 Coherence and comparability 11
1.5 Accessibility and Clarity, Dissemination Format 12
1.6 Confidentiality 12

2. Statistical processing 12
2.1 Masters and officers holding valid certificates of competency (CoC) in 2014 13
2.1.1 Total 13
2.1.2 Distribution by EU Member State 13
2.1.3 Distribution by department 14
2.1.4 Distribution by capacity 15
2.1.4.1 Distribution by deck capacity 15
2.1.4.2 Distribution by engine capacity 16
2.1.5 Gender distribution 16
2.1.6 Distribution by nationality 18
2.1.7 Age distribution 20
2.2 Masters and officers holding in 2014 valid endorsements attesting the recognition 23
2.2.1 Total 23
2.2.2 Distribution by EU Member State 24
2.2.3 Distribution by countries issuing the original CoCs 26
2.2.4 Distribution by department 27
2.2.5 Distribution by capacity 27
2.2.5.1 Distribution by deck capacity 27
2.2.5.2 Distribution by engine capacity 29
2.2.6 Gender distribution 30
2.2.7 Distribution by nationality 31
2.2.8 Age distribution 31
2.3 Masters and officers available to serve on board EU Member State flagged vessels in 2014 33
2.3.1 Total 34
2.3.2 Distribution by department 34
2.3.3 Distribution by capacity 34
2.3.3.1 Distribution by deck capacity 35
2.3.3.2 Distribution by engine capacity 36
2.3.4 Gender distribution 36
2.3.5 Distribution by nationality 37
2.3.6 Age distribution 38
2.4 Ratings holding valid certificates of proficiency (CoP) in 2014 39
2.4.1 Total 40
2.4.2 Distribution by EU Member State 40
2.4.3 Distribution by department 40
2.4.4 Distribution by capacity 41
2.4.5 Gender distribution 41
2.4.6 Distribution by nationality 41
2.4.7 Age distribution 41

Appendix A Data on masters and officers holding valid CoCs in 2014 43

Appendix B Data on masters and officers holding valid EaRs in 2014 47

Appendix C Data on ratings holding valid CoPs in 2014 54

List of Tables

Table 2-1 Distribution of masters and officers by departments and EU Member States 43
Table 2-2 Master and deck officers registered by EU Members States....43
Table 2-3 Engineer officers registered by EU Member States....44
Table 2-4 Distribution of gender groups by EU Member States 44
Table 2-5 Non-EU nationals holding CoCs issued by EU Member States 44
Table 2-6 Age distribution by EU Member States 45
Table 2-7 Age distribution by departments 45
Table 2-8 Age distribution for masters and deck officers 46
Table 2-9 Age distribution for engineer officers 46
Table 2-10 Age distribution by gender group 46
Table 2-11 EU and non-EU countries issuing the original CoCs per EU Member States issuing the EaRs 47
Table 2-12 EU and non-EU countries issuing the original CoCs per departments....47
Table 2-13 Engineer officers holding EaRs registered by EU Member States 47
Table 2-14 Master and deck officers holding EaRs registered by EU Member States....48
Table 2-15 EU Member States and EFTA countries issuing original CoCs endorsed by other EU Member States....49
Table 2-16 non-EU countries, recognised at EU level or under the process of recognition, issuing original CoCs endorsed by EU Member States 50
Table 2-17 Age distribution of holders of EaRs by departments....52
Table 2-18 Age distribution for engineer officers holding EaRs....52
Table 2-19 Age distribution for masters and deck officers holding EaRs 52
Table 2-20 Age distribution of officers holding EaRs by gender group....53
Table 2-21 Age distribution by region of the country issuing the original CoC 53
Table 2-22 Ratings holding CoPs registered by EU Member States....54

List of Figures

Figure 2-1 Masters and officers holding valid CoCs per EU Member State 13

Figure 2-2 Distribution of masters and officers holding valid CoCs by department 14

Figure 2-3 Distribution of masters and officers holding valid CoCs by departments in each EU Member State 14

Figure 2-4 Distribution of masters and deck officers holding valid CoCs by deck capacity 15

Figure 2-5 Distribution of engineer officers holding valid CoCs by engine capacity 16

Figure 2-6 Gender distribution of masters and officers holding valid CoCs 17

Figure 2-7 Distribution of masters and officers holding valid CoCs by department and by gender 17

Figure 2-8 Distribution of the deck capacities of masters and deck officers holding valid CoCs by gender 18

Figure 2-9 Distribution of the engine capacities of engineer officers holding valid CoCs by gender 18

Figure 2-10 Nationality distribution of masters and officers holding valid CoC's 19

Figure 2-11 Nationality distribution of non-EU nationals holding valid CoCs issued by EU Member States by region of origin 20

Figure 2-12 Age distribution of masters and officers holding valid CoCs 20

Figure 2-13 Age profile of masters and officers holding valid CoC's per departments 21

Figure 2-14 Distribution of the deck capacities of masters and deck officers holding valid CoCs by age groups 21

Figure 2-15 Distribution of the engine capacities of engineer officers holding valid CoCs by age groups 22

Figure 2-16 Age profile of masters and officers holding valid CoCs per gender 22

Figure 2-17 Average age of masters and deck officers holding valid CoCs per gender by deck capacity 23

Figure 2-18 Average age of engineer officers holding valid CoCs per gender by engine capacity 23

Figure 2-19 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC 24

Figure 2-20 Masters and officers holding valid EaRs per EU Member State 25

Figure 2-21 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC in each EU Member State 25

Figure 2-22 Distribution of masters and officers holding valid EaRs by region of the country issuing the original CoC 26

Figure 2-23 Countries issuing the original CoCs registering more than 0.75% of masters and officers holding valid EaRs 26

Figure 2-24 Distribution of masters and officers holding valid EaRs by department 27

Figure 2-25 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by department 27

Figure 2-26 Distribution of masters and deck officers holding valid EaRs by deck capacity 28

Figure 2-27 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by deck capacity 28

Figure 2-28 Distribution of the deck capacities of masters and deck officers holding valid EaRs by region of the country issuing the original CoC 29

Figure 2-29 Distribution of engineer officers holding valid EaRs by engine capacity 29

Figure 2-30 Distribution of engineer officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by engine capacity 30

Figure 2-31 Distribution of the engine capacities of engineer officers holding valid EaRs by region of the country issuing the original CoC 30

Figure 2-32 Gender distribution of masters and officers holding valid EaRs 31

Figure 2-33 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by gender 31

Figure 2-34 Age distribution of masters and officers holding valid EaRs 32

Figure 2-35 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by age group 32

Figure 2-36 Age profile of masters and officers holding valid EaRs per department 32

Figure 2-37 Average age of officers holding valid EaRs per EU and non-EU countries issuing the original CoC by capacity 33

Figure 2-38 Masters and officers holding valid CoCs and EaRs in 2014 per Member State 33

Figure 2-39 Distribution of masters and officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC 34

Figure 2-40 Distribution of masters and officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by department 34

Figure 2-41 Distribution of masters and deck officers available to serve on board EU Member State flagged vessels by deck capacity 35

Figure 2-42 Distribution of masters and deck officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by deck capacity 35

Figure 2-43 Distribution of available officers in the Engine Department 36

Figure 2-44 Distribution of engineer officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by engine capacity 36

Figure 2-45 Gender distribution of masters and officers available to serve on board EU Member State flagged vessels 37

Figure 2-46 Distribution of masters and officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by gender 37

Figure 2-47 Nationality distribution of masters and officers available to serve on board EU Member State flagged vessels by geographical region according to nationality 38

Figure 2-48 Country's nationalities registering more than 0.75% of masters and officers available to serve on board EU Member State flagged vessels 38

Figure 2-49 Age profile of masters and officers available to serve on board EU Member State flagged vessels per EU and non-EU countries issuing the original CoC 39

Figure 2-50 Average age of masters and officers available to serve on board EU Member State flagged vessels per deck and engine capacities 39

Figure 2-51 Ratings holding valid CoPs per EU Member State 40

Figure 2-52 Distribution of ratings holding valid CoPs by department 40

Figure 2-53 Gender distribution of ratings holding valid CoPs 41

Figure 2-54 Age distribution of ratings holding valid CoPs 42

Figure 2-55 Age profile of ratings holding valid CoPs per gender 42

List of Abbreviations

CoC	Certificate of Competency
CoP	Certificate of Proficiency
EaR	Endorsement attesting the recognition of a foreign certificate of competency
EC	European Commission
EMSA	European Maritime Safety Agency
ETO	Electro-technical Officer
EU	European Union
GT	Gross Tonnage
HV	High Voltage
kW	kilowatts
NCV	Near Coastal Voyages
OEW	Officer in charge of an engineering watch
OOW	Officer in charge of a navigational watch
STCW Convention	The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended
STCW-IS	STCW Information System, hosted and managed by EMSA

1. Introduction

The statistical review presented in this report is based on data extracted from certificates and endorsements, registered by EU Member States until 31 December 2014 and received in the STCW Information System (STCW-IS). This ensured that this first review considered the certificates and endorsements that were valid in 2014. Therefore this report presents a snap-shot of the number of seafarers holding valid certificates and endorsements in 2014. It should be noted that, because the data extracted from the national registers held by EU Member States did not include any information on whether the holders were active or not, it was not possible to determine how many of them were working on board vessels during 2014. The report will be followed by similar reports compiled in the coming years. This should in turn enable identification of trends which would hopefully contribute to enhanced insight into future possible analysis.

The main beneficiaries of the statistical review will be the EU Member States and the Commission for policy-making purposes. Ship owners and ship operators can also derive added value in terms of knowing the magnitude of manpower available in the EU to crew their vessels. Maritime education and training institutions in the EU would also find this review useful in estimating market needs for their services. Researchers may also be interested on some of the statistical outputs, as well as seafarers and the organisations that represent them.

1.1 Legal background

The EMSA founding regulation[1] establishes in Article 2 that "the Agency shall facilitate cooperation between the Member States and the Commission in gathering and analysing data on seafarers provided and used in accordance with Directive 2008/106/EC[2] on the minimum level of training of seafarers".

Gathering of information on the EU maritime labour force have so far been the result of initiatives by individual EU Member States[3]. The data presented in the resulting reports had a limited geographical coverage and sometimes the authors had to merge aggregated data with data resulting from surveys. Studies conducted or otherwise sponsored by other entities -, the Study on EU Seafarers' Employment (compiled by a task force established by DG-MOVE)[4], the BIMCO/ICS Manpower Study[5], published since 1990 and regularly updated or the Drewry Manning Annual Report[6] - were also conducted. It should be noted that the BIMCO/ICS Updates and the Drewry Manning Reports are based on surveys with global coverage, while the Study on EU Seafarers' Employment was the result of an extensive research and review of existing studies, aggregate statistics and documents.

The amendments to Directive 2008/106/EC introduced by Directive 2012/35/EU[7] established a mechanism for gathering information on certificates and endorsements issued to seafarers by EU Member States with the objective of using it as primary source of data for statistical analysis and for use by EU Member States and the Commission in policy-making. Article 25a of Directive 2008/106/EC establishes that "the information shall be made available by Member States to the Commission on a yearly basis and in electronic format and shall include information registered until 31 December of the previous year". This data is recorded in the STCW-IS, operated by EMSA.

1.2 Accuracy

This report is based on data extracted by the EU Member States from their national registries and made available to EMSA through the STCW-IS. To this effect, the information in this review must be qualified by the limitation in EMSA's ability to gauge the margin of error in the data extraction processes undertaken at Member State level. Some inconsistencies were, nevertheless, identified during the validation phase at EMSA:

- 539 seafarers were extracted and reported as holding certificates of competency (CoC), although their capacities were associated with capacities for ratings suggesting that they should have been reported as holding certificates of proficiency (CoP);

[1] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Al24245
[2] http://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX:32012L0035
[3] https://www.gov.uk/government/statistics/seafarer-statistics-2014; https://www.gov.uk/government/statistics/seafarer-statistics-2015
[4] http://ec.europa.eu/transport/modes/maritime/studies/doc/2011-05-20-seafarers-employment.pdf
[5] https://www.bimco.org/News/2015/04/13_Manpower_2015_prelim_results.aspx
[6] http://www.drewry.co.uk/publications/view_publication.php?id=435
[7] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012L0035

- 151 seafarers were extracted and reported as holding CoPs for ratings, although their capacities were associated with capacities for officers suggesting that they should have been reported as holding CoCs;
- 45 seafarers were extracted and reported as holding endorsements attesting the recognition of foreign certificates of competency (EaR), although their capacities were associated with capacities for ratings;
- one holder of a CoC issued by a non-EU country was reported as holding EaRs issued by two EU Member States that reported different genders for the same seafarer;
- one holder of a CoC issued by a non-EU country was reported as holding EaRs issued by two EU Member States that reported different nationalities for the same seafarer;
- 7 cases were identified of holders of EaRs recognising original CoCs issued by EU Member States where the nationalities reported in the CoCs and EaRs were different;
- 11 cases were identified of holders of EaRs recognising original CoCs issued by EU Member States where the seafarers' names or CoC numbers could not be matched between the data reported by the Member State issuing the original CoC and the data reported by the Member State issuing the EaR;
- 94 cases were identified of officers reported as holding EaRs issued by the same Member State that issued the original CoC.

The above mentioned inconsistencies demonstrate that in some cases seafarers' names and/or document numbers could be registered as different strings by different EU Member States. Although such cases could impair the counting of seafarers at EU level, it is assumed that such errors are negligible.

Taking into account that the CoCs and the EaRs may remain valid for five years, EU Member States were asked to provide information on certificates and endorsements registered since 2010, hence covering the period 2010-2014. However, two EU Member States made available information only on certificates and endorsements registered since 2011 and a third made available information only on certificates and endorsements registered since 2012.

It was not possible for this first report to draw comparisons with the results of previous set to establish the reliability of the statistical outputs. Instead, a comparison with the UK's Seafarer Statistics, 2014[8] was used to estimate the accuracy of the statistical outputs. It should be noted that these UK statistics combined data from the Maritime and Coastguard Agency with that originating from the Chamber of Shipping Manpower survey[9]. In addition, they focussed on data for all certificated seafarers registered until 30 June 2014, while the data analysed in this report focusses on seafarers holding valid certificates during 2014. Furthermore, the UK statistics determined the distribution of officers between the Deck and Engine departments based on the outcome of a survey conducted with the industry, while this report based the distribution directly on the capacities in which the officers were entitled to serve, i.e. as they were registered in their documents. Taking into account these differences, the comparison identified an acceptable level of deviation between the results of this report and the UK results (+2.4% deviation on the total number of certificated officers, +0.2% deviation on the total number of non-UK nationals holding UK CoCs and ±1.8% deviation in the gender distribution).

The original data received from the EU Member States included fields such as gender, nationality and the capacity together with its associated limitations. The information was made available in these fields as free text. To ensure harmonisation and comparability of data, these fields were subject to a coding phase conducted by EMSA. In order to estimate the human error introduced through this process, a sample was randomly selected from the data made available by each EU Member State. The dimension of the sample was established by the formula:

$$n = \frac{z^2 * 0.25 * N}{(N-1) * E^2 + 0.25 * z^2}$$

where,

n – is the dimension of the sample (number of documents to be randomly selected);

N – is the total number of documents belonging to the selected country;

z – is the level of confidence;

[8] https://www.gov.uk/government/statistics/seafarer-statistics-2014 published on 28 January 2015 by the Office for National Statistics of the United Kingdom.
[9] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/495073/seafarers-technical-note.pdf

E – is the maximum amplitude of the error.

A level of confidence of 90% (z = 1.645) and an amplitude of the error (E) of 10% were established for the evaluation of the errors introduced by human intervention. The verification conducted on a sample randomly selected from the data received from all EU Member States identified a level of error of 1.04% when coding the free texts received on capacities together with their associated limitations into generic STCW capacities.

1.3 Timeliness and punctuality

All EU Member States complied with their obligation to make available information on certificates and endorsements registered until 31 December 2014. The STCW-IS received the last set of data in December 2015.

1.4 Coherence and comparability

The information set subject to review comprised data from 27 EU Member States (Austria does not issue certificates and endorsements to seafarers).

Regarding the identification of the seafarers, a common application was used to encrypt the information subject to data protection, such as seafarer's name, seafarer's unique identifier and certificates number. The encryption algorithm used maintained the comparability of data in its encrypted format at the same level of comparability in its raw format.

Although a seafarer unique identifier was requested in the set of data to be communicated by the EU Member States, such was not made mandatory because that information was not available in all EU Member States. Consequently, each individual was identified by name (in its anonymous format), date of birth and nationality. The combination of these three fields was expected to ensure an acceptable accuracy in identifying individuals in the statistics. Taking into account that different EU Member States may use different sets of characters in the name of the seafarers, all special characters identified in the original strings associated with the given-name, middle-name and family-name were replaced by their associated Latin characters before the name was encrypted and made anonymous. Nevertheless, because a seafarer may hold certificates and endorsements issued by more than one EU Member State, there might be cases where the same individual is identified as different persons in the datasets received from different EU Member States, just because the seafarers' name was registered in different ways. Since EMSA received and used only an encrypted string for seafarer's name, it was not possible to control, identify and estimate the number of errors introduced by registering/extracting the seafarers' name fields in different ways.

In order to ensure comparability of the data received from various sources, all data was subject to a coding phase, which ensured that all fields received as free text were linked to predefined internal values.

Taking into account the diversity of the capacities established by the national manning regulations, the information received on capacities in which the seafarers were entitled to serve together with their associated limitations was converted during the data validation at EMSA into generic capacities as defined by the STCW Convention. These were the most challenging fields to analyse during the coding phase. Consequently, some decisions had to be taken by EMSA, as such:

- where no limitations in terms of 'Gross Tonnage (GT)', 'Propulsion Power (kW)', 'Area of Navigation' or 'Type of Engine' were mentioned, the capacity fields were assigned the corresponding unlimited capacities as defined in the STCW Convention;
- where capacities included limitations above 3,000 GT or 3,000 kW, the capacity fields were assigned the corresponding unlimited capacities as defined in the STCW Convention;
- where the EaRs did not indicate clear limitations but instead included text like "cf. original Certificate of Competency", the capacity fields were assigned the corresponding unlimited capacities as defined in the STCW Convention. The limitations assigned to these records retained the information as 'not clearly defined';
- capacities such as "Chief mate of ships less than 500 GT on near coastal voyages" were assigned the STCW capacity "Officer in charge of a navigational watch on ships of less than 500 GT engaged on near coastal voyages";
- capacities such as "Master on ships of less than 500 GT" or "Chief mate on ships of less than 500 GT" without any indication on the limitation in area of navigation were assigned the corresponding STCW capacities for ships of less than 3,000 GT with unlimited area of navigation;

- capacities for engineers limited to serve on ships powered by a main propulsion machinery of less than 750 kW propulsion power were considered as not being related to generic STCW capacities and therefore were not included;
- where the same capacity in the same CoC/EaR was limited to different gross tonnages or propulsion powers depending on the area of navigation, the capacity assigned included the gross tonnage or propulsion power associated with the largest area of navigation;
- capacities with limitations restricting the seafarer to serve on board specific types of ship such as 'fishing vessels', 'governmental service vessels', 'sail training vessels', 'code vessels', 'rescue vessels' or 'yachts', were considered as being outside the scope of application of the STCW Convention and consequently were not included;
- capacities with limitations restricting the seafarer to serve on ships other than seagoing ships such as crafts operating in estuaries and inland waterways or in domestic waters were not included;
- where a document included a multipurpose capacity, such as "polyvalent officer", together with its corresponding capacities for the Deck and Engine Departments, the deck and engineering capacities were retained and the multipurpose capacity was disregarded;
- capacities with limitations restricting the seafarer to serve on ships such as tugs, offshore or dredging vessels, mobile offshore drilling vessels, HV ships, standby seismic survey & oceanographic research vessels, contracting material vessels were disregarded;
- limitations reported distinctly from any capacity as standalone text were disregarded.

It is to be noted that in the case of officers, their total does not tally with the sum of the total number of deck officers plus the total number of engineer officers. The reason for this is that some officers may hold certificates for both the Deck and the Engine Departments. Furthermore, because a person may hold certificates/endorsements issued by different EU Member States, the sum of the number of officers registered by individual EU Member States may not be equal to the total number of officers at EU level.

1.5 Accessibility and Clarity, Dissemination Format

User access to information featured in this report is restricted to the content of the written report. No direct access can be granted to the original data upon which the statistical compilation is based. EU Member States retain all property rights to the information in its raw data format and can amend their data at any time before the processing of it begins. Detailed statistics could be compiled by EMSA upon request from the European Commission and the EU Member States based on agreed terms of reference.

The report will be published on the STCW-IS portal (https://portal.emsa.europa.eu/web/stcw) hosted by EMSA.

1.6 Confidentiality

All publicly available statistics fully comply with the obligations established in Article 4 of Regulation (EC) 1406/2002[10]. In order to ensure protection of personal data, EMSA developed and made available to the EU Member States a software module which converted all personal data extracted in its raw format from the national registries into anonymous strings of characters by using a powerful encryption algorithm. EMSA received and compiled only data in its encrypted format.

2. Statistical processing

The data subject to review was extracted from the national registries on certificates and endorsements issued to seafarers maintained by the EU Member States. Taking into account the diversity of technologies used to register such data, each EU Member State developed a data extractor module to retrieve the information established in Annex V to Directive 2008/106/EC in a structured format defined by the technical specifications made available by EMSA. The data extracted was subject to a validation process to ensure consistency and an anonymization process by which all personal data was made anonymous at the EU Member State site. The software module built by EMSA and made available to all EU Member States for anonymization of personal data at origin also allowed a preliminary validation to be conducted to ensure that:

[10] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Al24245

- all mandatory fields were extracted and made available;
- all fields containing dates were registered in the agreed format;
- the relationship between the 'date of issue' and the 'date of expiry' of the documents followed the rules established by the STCW Convention.

After receiving the data in its anonymous format, EMSA conducted a further validation to ensure that only the documents with a valid status were considered (in principle a EU Member State may provide information on all documents registered, including those suspended, cancelled, declared lost or destroyed).

Only the data successfully passing the validation and coding phases was considered for statistical review.

2.1 Masters and officers holding valid certificates of competency (CoC) in 2014

2.1.1 Total

The total number of masters and officers holding valid CoCs at EU level was 161,419. Out of this number, 3.35% officers held CoCs entitling them to serve in both the Deck and Engine Departments and 0.04% of them were identified as holding multiple CoCs issued by different EU Member States.

2.1.2 Distribution by EU Member State

The data in Figure 2-1 shows the distribution of masters and officers as registered by EU Member State:

- Between them six Member States, namely the United Kingdom, Poland, France, Croatia, Italy and Spain, accounted for 58.06% of the total number of masters and officers holding valid CoCs;
- 20 Member States registered less than 10,000 masters and officers each;
- Luxembourg did not issue CoCs and consequently did not register masters or officers holding valid CoCs.

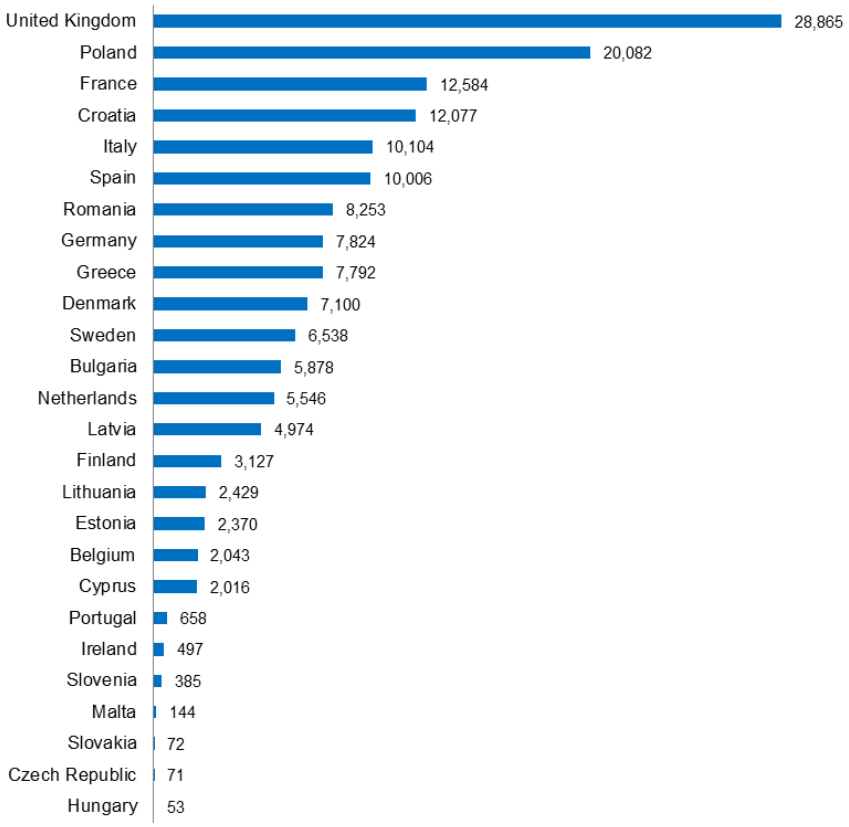


Figure 2-1 Masters and officers holding valid CoCs per EU Member State

2.1.3 Distribution by department

The number of masters and officers holding valid CoCs in each department are presented in Figure 2-2. It illustrates that the number of masters and officers entitled to serve in the Deck Department (Chapter II of the STCW Convention) was 50% higher than the number of officers entitled to serve in the Engine Department (Chapter III of the STCW Convention). The officers grouped under 'Alternative certification' (Chapter VII of the STCW Convention) were reported as holding a multipurpose capacity.

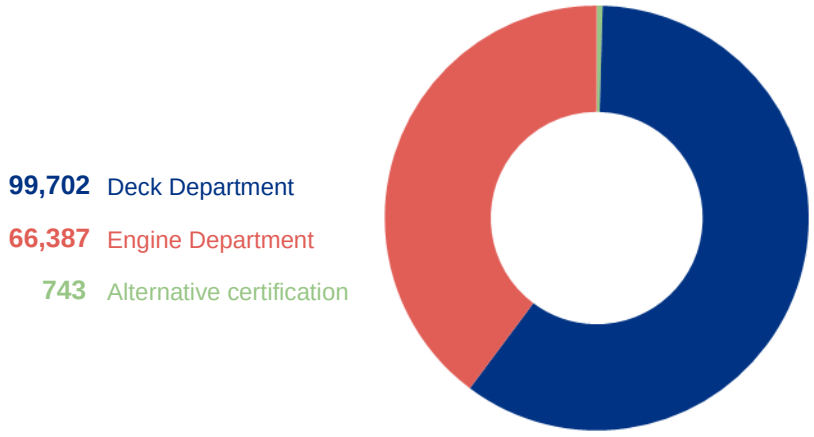


Figure 2-2 Distribution of masters and officers holding valid CoCs by department

The distribution by department for each EU Member State is presented in Figure 2-3 below and shows that:

- in four Member States, namely Bulgaria, Cyprus, the Czech Republic and Hungary, most of the officers were entitled to serve in the Engine Department;
- in Poland, the number of officers entitled to serve in the Deck and in the Engine Departments was similar (less than 1% difference).

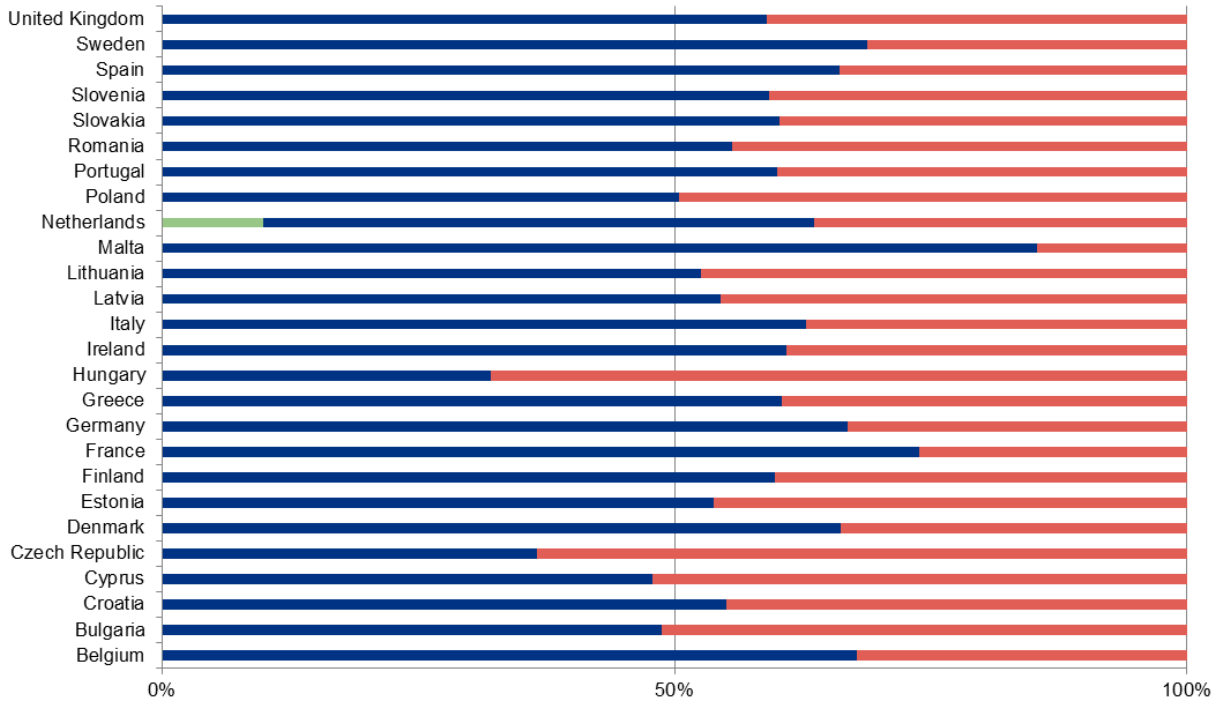


Figure 2-3 Distribution of masters and officers holding valid CoCs by departments in each EU Member State

2.1.4 Distribution by capacity

Taking into account the heterogeneity in naming the capacities in the manning regulations adopted by the EU Member States and in order to ensure comparability of data, all capacities reported in the CoCs were linked to the generic capacities established in chapters II and III of the STCW Convention. The review was conducted separately for the Deck Department and the Engine Department. The total number of officers was established by counting each person in his/her highest capacity.

2.1.4.1 Distribution by deck capacity

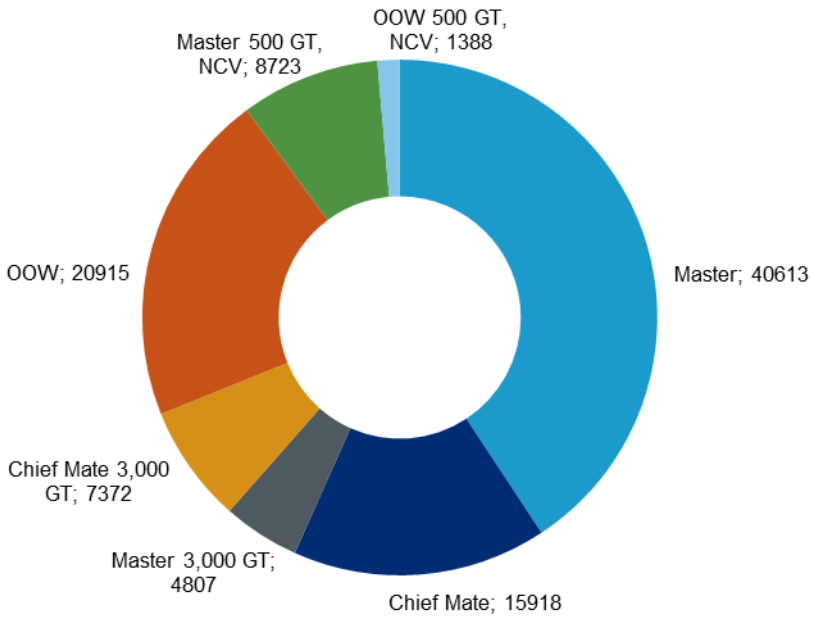


Figure 2-4 Distribution of masters and deck officers holding valid CoCs by deck capacity

The data in Figure 2-4 shows that 56.70% of the total number of masters and deck officers were entitled to serve at management level on ships of 3,000 GT or more.

When reviewing the detailed data on masters and officers presented in Table 2-2 of appendix A, the following could be stated:

- in six Member States, Cyprus (89%), the Czech Republic (73.08%), Germany (62.78%), Denmark (53%), Finland (56.47%) and Malta (50.41%), the majority of the deck officers were entitled to serve as 'Master';
- 57.06% of the officers entitled to serve as 'Master 3,000 GT' had CoCs issued by two Member States, Spain (38.32%) and Italy (18.74%);
- 50.32% of the officers entitled to serve as 'Chief Mate 3,000 GT' had CoCs issued by two Member States, Greece (28.85%) and Sweden (21.47%);
- Slovakia was the only Member State where the majority (52.27%) of the deck officers were entitled to serve as 'Officer in charge of a navigational watch (OOW)';
- 80.29% of the officers entitled to serve as 'Master 500 GT, NCV' had CoCs issued by France, which represented 65.03% of the total number of masters and officers holding CoCs for the Deck Department certified by this Member State;
- 61.16% of the officers entitled to serve as 'OOW 500 GT, NCV' had CoCs issued by two Member States, Denmark (46.61%) and the Netherlands (14.55%);
- Seven Member States had no masters or deck officers holding CoCs entitling them to serve exclusively on ships of less than 500 GT engaged on NCV.

2.1.4.2 Distribution by engine capacity

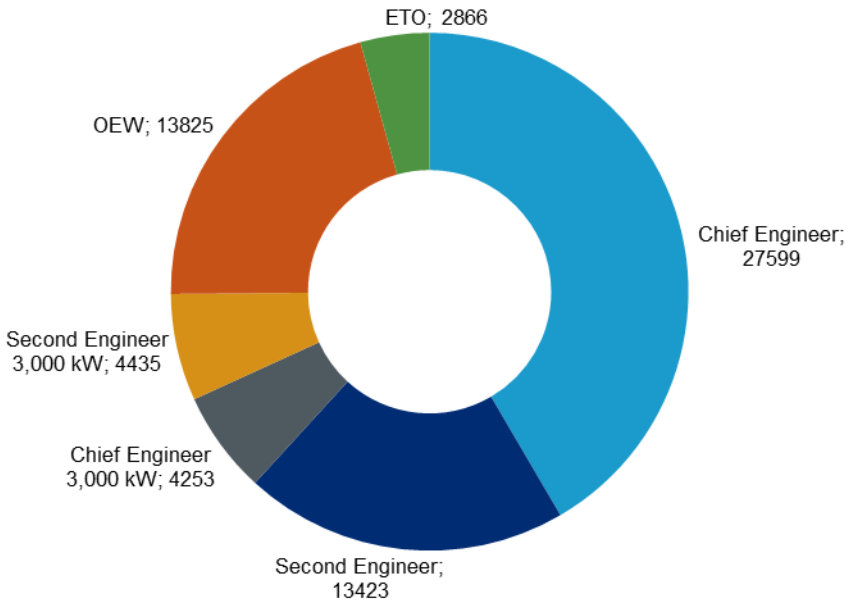


Figure 2-5 Distribution of engineer officers holding valid CoCs by engine capacity

The data in Figure 2-5 shows that 61.79% of the total number of engineer officers were entitled to serve at management level on ships of 3,000 kW or more.

When reviewing the detailed data on engineer officers presented in Table 2-3 of appendix A, the following could be stated:

- in seven Member States, namely Cyprus (72.74%), the Czech Republic (57.78%), Germany (68.85%); Finland (61.08%), Hungary (77.78%), Italy (54.38%) and Sweden (56.02%), the majority of the engineer officers were entitled to serve as 'Chief Engineer';
- 56.42% of the officers entitled to serve as 'Second Engineer 3,000 kW' had CoCs issued by two Member States, the United Kingdom (24.04%) and Poland (32.38%);
- in two Member States, namely Belgium (53.65%) and Malta (66.67%) more than 50% of the total number of engineer officers were entitled to serve as 'OEW' ;
- 13 Member States had no officers holding CoCs entitling them to serve exclusively as 'Electro-technical Officer (ETO)'.

2.1.5 Gender distribution

The review on gender distribution was based on the data provided by 24 EU Member States which had such data available. Consequently, it was made for 135,821 masters and officers representing 84.14% of the total number of officers holding valid CoCs in 2014 at EU level.

In 2014 officers holding valid CoCs were predominantly men representing 82.38% of the total number of officers holding valid CoCs in 2014.

Considering the total number of officers for whom the gender was known, it can be stated with a level of confidence of 99% that the percentage of female officers was 2.09% ± 0.14% comparing with the one for the male officers which was 97.91% ± 0.14%.

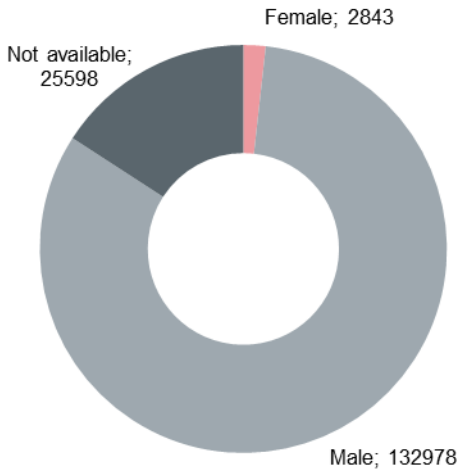


Figure 2-6 Gender distribution of masters and officers holding valid CoCs

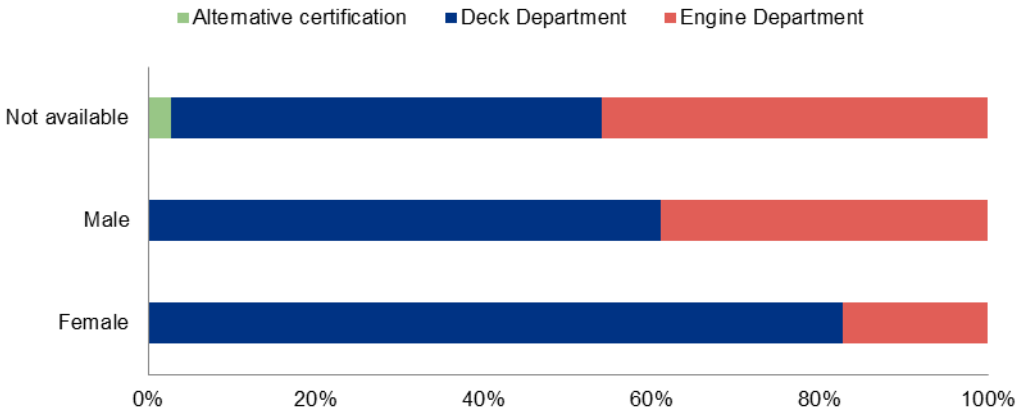


Figure 2-7 Distribution of masters and officers holding valid CoCs by department and by gender

The information presented in Figure 2-7 shows that male officers follow the general distribution on officers by department (60% entitled to serve in the Deck Department and 40% entitled to serve in the Engine Department) while most of female officers (88.39%) were entitled to serve in the Deck Department.

In addition, the data presented in Table 2-4 of Appendix A indicated that:

- Four Member States, namely the Czech Republic, Hungary, Slovakia and Croatia reported only male officers;
- out of the 20 Member States that reported both male and female officers, in seven of them, Cyprus, Estonia, Lithuania, Latvia, Malta, Romania and Slovenia, female officers were entitled to serve in the Deck Department only;
- 59.69% of the total number of female officers had CoCs issued by four Member States, Germany (11.40%), Spain (16.67%), France (17.09%) and the United Kingdom (14.53%);
- Four Member States, Germany (4.14%), Spain (4.74%), Finland (4.22%) and Malta (4.17%) registered more than 4% female officers in their total number of masters and officers.

The distribution of the deck capacities of masters and officers holding valid CoCs by gender is presented in Figure 2-8 below.

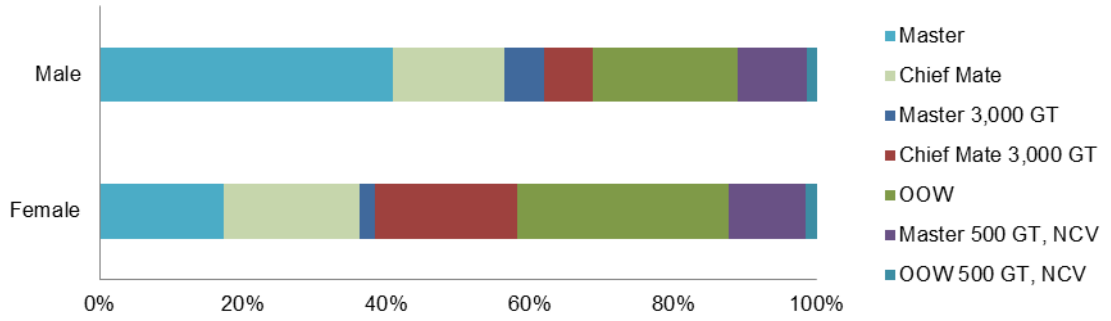


Figure 2-8 Distribution of the deck capacities of masters and deck officers holding valid CoCs by gender

As seen above (Figure 2-8) the main three capacities in which female officers were entitled to serve were OOW (29.41%), Chief Mate 3,000 GT (19.94%) and Chief Mate (18.98%) giving a total percentage of 68.32% of the total number of female officers entitled to serve in the Deck Department. The main three capacities in which male officers were entitled to serve were Master (40.83%), OOW (20.31%) and Chief Mate (15.66%) giving a total percentage of 76.80% of the total number of male officers entitled to serve in the Deck Department.

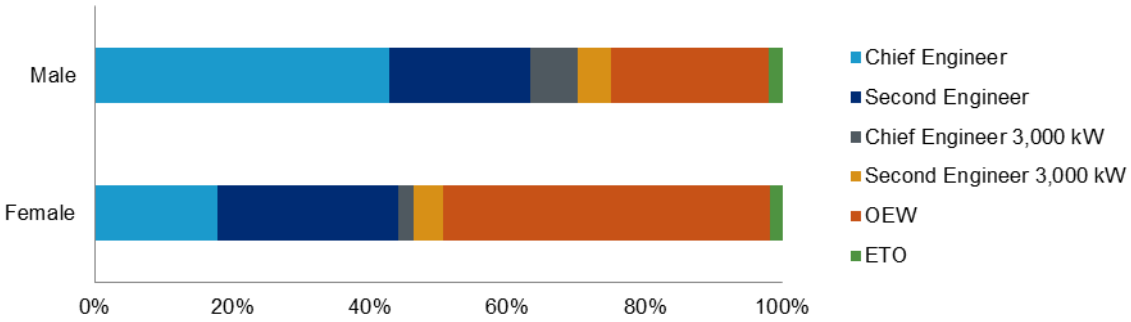


Figure 2-9 Distribution of the engine capacities of engineer officers holding valid CoCs by gender

As for the engine department (Figure 2-9) the main three capacities in which female officers were entitled to serve were 'OEW' (47.72%), 'Second Engineer' (26.24%) and 'Chief Engineer' (17.87%) giving a total percentage of 91.83% of the total number of female officers entitled to serve in the Engine Department. The main three capacities in which male officers were entitled to serve were 'Chief Engineer' (42.72%), 'OEW' (22.91%) and 'Second Engineer' (20.67%) giving a total percentage of 86.31% of the total number of male officers entitled to serve in the Engine Department.

2.1.6 Distribution by nationality

The review of the data received from 26 EU Member States issuing CoCs showed that information on nationality was available for 158,403 masters and officers, representing 98.13% of the total number of officers at EU level.

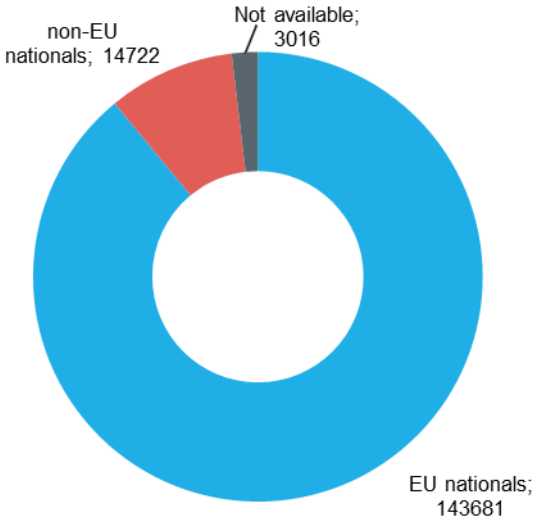


Figure 2-10 Nationality distribution of masters and officers holding valid CoC's

In addition to nationals from the EU Member States, 14,722 masters and officers holding valid CoCs issued by EU Member States were nationals of 103 non-EU countries. Grouping these non-EU countries per region of origin, 16 were located in Europe, 29 were located in Asia, 30 were located in Africa, 22 were located in the Americas and 6 were located in the Oceania.

The distribution of the non-EU nationals holding valid CoCs issued by the EU Member States presented in Figure 2-11 below shows that 84.85% of non-EU masters and officers were nationals of countries located in Asia.

The distribution by EU Member State is presented in Table 2-5 of Appendix A. The detailed data showed that:

- nationals of six, out of 103, non-EU countries reached more than 1% of the total number of non-EU masters and officers. Nationals from India (63.59%), Pakistan (7.20%), Bangladesh (5.41%), the Russian Federation (4.25%), Sri Lanka (3.90%) and Nigeria (2.89%) represented 87.24% of the total number of non-EU nationals holding CoCs issued by EU Member States;
- 90.85% of the non-EU nationals held CoCs issued by the United Kingdom;
- there were no nationals from countries in Asia and in the Oceania qualified to serve as 'Master 3,000 GT', 'Master 500 GT, NCV' or 'OOW 500 GT, NCV';
- there were no nationals from countries in Africa, Americas, Asia and the Oceania qualified to serve as 'ETO';
- 1.27% of the female officers holding valid CoCs were nationals of non-EU countries;
- the highest percentage of female officers was from countries located in the Americas (4.35%) and the lowest one was from countries located in Asia (0.05%).

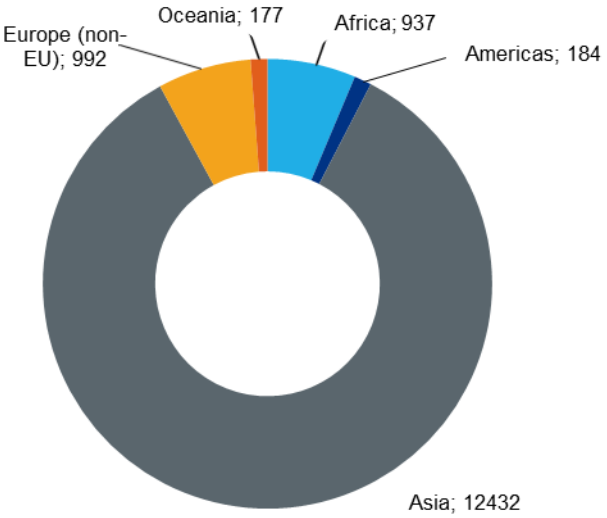


Figure 2-11 Nationality distribution of non-EU nationals holding valid CoCs issued by EU Member States by region of origin

2.1.7 Age distribution

The average age of masters and officers holding valid CoCs was 43,8 (years). Except for the age group under 25 (only 5,730 officers with a CoC), all other age groups had a similar number of officers with CoCs (between 16,000 and 21,000) and percentages out of the total between 10% and 13%.

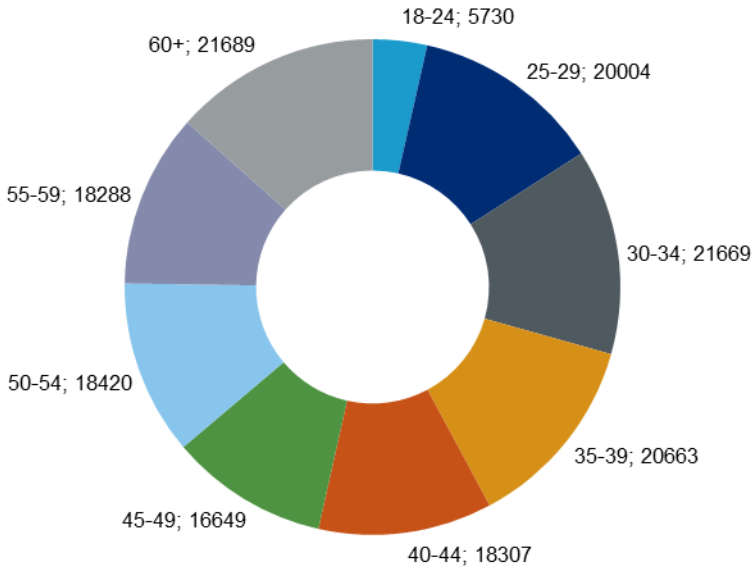


Figure 2-12 Age distribution of masters and officers holding valid CoCs

Furthermore, the review gave an account of the average age of the officers with only two Member States (Greece and Ireland) with the average age of less than 35, and three Member States (Cyprus, the Czech Republic and Hungary) with the average over 50. In addition, the Czech Republic had no officers younger than 30 years of age and Hungary had no officers of less than 40 years of age. Moreover, 42 officers of the age between 80 and 86 were noted in different Member States (see Table 2-6 of Appendix A).

The age profile per departments is presented in Figure 2-13 below.

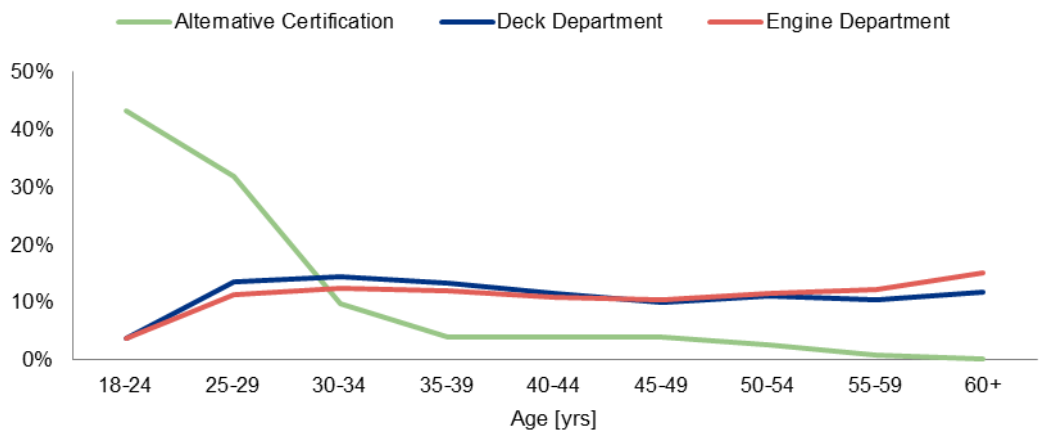


Figure 2-13 Age profile of masters and officers holding valid CoC's per departments

Reviewing the data in Table 2-7 of appendix A, the following conclusions could be stated:

- 74.97% of the number of officers holding certificates issued under chapter VII, 'Alternative certification' of the STCW Convention were younger than 30 years of age;
- the officers certified under chapters II (Deck Department) and III (Engine Department) of the STCW Convention were evenly distributed throughout the age groups older than 25 years of age;
- 56.60% of officers entitled to serve in the Deck Department and 50.67% of the officers entitled to serve in the Engine Department were younger than 45 years of age.

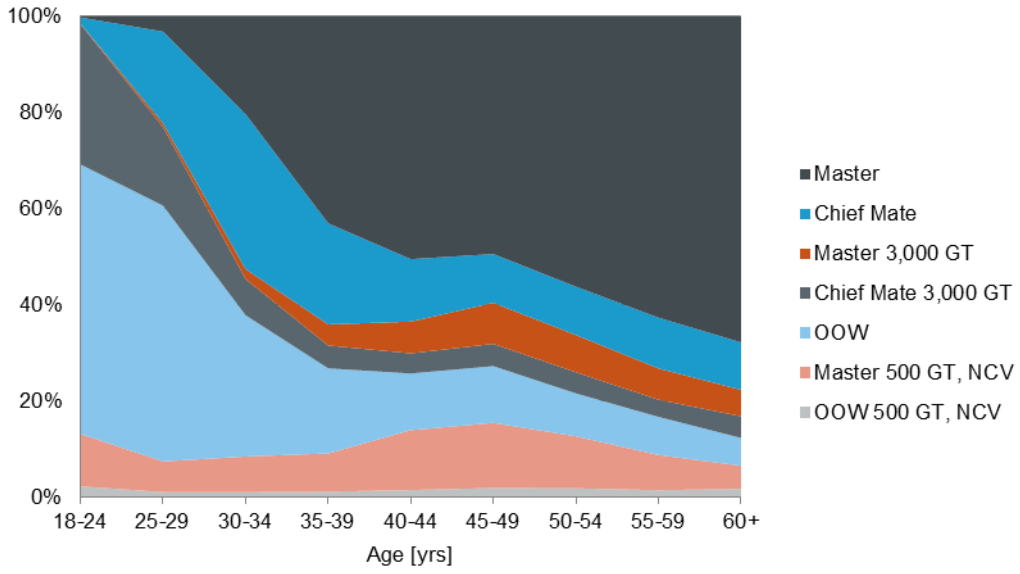


Figure 2-14 Distribution of the deck capacities of masters and deck officers holding valid CoCs by age groups

Considering the highest capacity in which masters and deck officers were entitled to serve:

- 51.20% of those entitled to serve as 'Master' were 50 years old or older;
- 62.61% of those entitled to serve as 'Chief Mate' were between 25 and 40 years old;
- 51.55% of those entitled to serve as 'Master 3,000 GT' were between 40 and 55 years old;
- 59.69% of those entitled to serve as 'Chief Mate 3,000 GT' were younger than 35 years of age;
- 64.66% of those entitled to serve as 'OOW' were younger than 35 years of age;
- 57.92% of those entitled to serve as 'Master 500 GT, NCV' were between 35 and 55 years old; and
- 52.02% of those entitled to serve as 'OOW 500 GT, NCV' were above 45 years old.

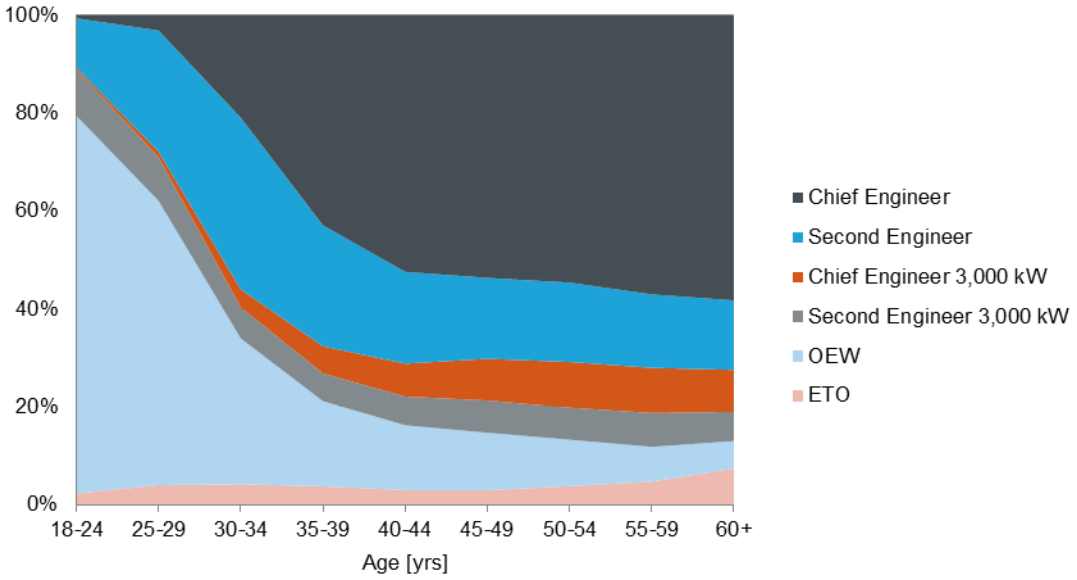


Figure 2-15 Distribution of the engine capacities of engineer officers holding valid CoCs by age groups

Considering the highest capacity in which the engineer officers were entitled to serve:

- 53.01% of those entitled to serve as 'Chief Engineer ' were 50 years old or older;
- 50.47% of those entitled to serve as 'Second Engineer' were between 25 and 40 years old;
- 54.60% of those entitled to serve as 'Chief Engineer 3,000 kW' were 50 years old or older;
- 52.20% of those entitled to serve as 'Second Engineer 3,000 kW' were younger than 45 years of age;
- 63.49% of those entitled to serve as 'OEW' were younger than 35 years of age; and
- 56.77% of those entitled to serve as 'ETO' were 45 years old or older.

Figure 2-16 below presents the age profile per gender, while Figure 2-17 and Figure 2-18 below present the average age per capacities for each of the two gender groups. It showed that:

- the average age for female officers was 33.1 years of age, while that for male officers was 43.8 years of age;
- 80.09% of the female officers were younger than 40 years of age, while the percentage of the male officers in the same age group was only 42.07%;
- the average age of the female officers entitled to serve in the Deck Department was higher than the average of those entitled to serve in the Engine Department.

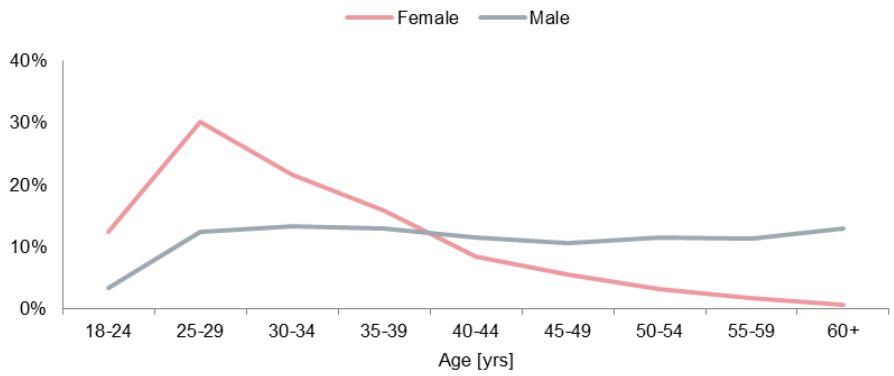


Figure 2-16 Age profile of masters and officers holding valid CoCs per gender

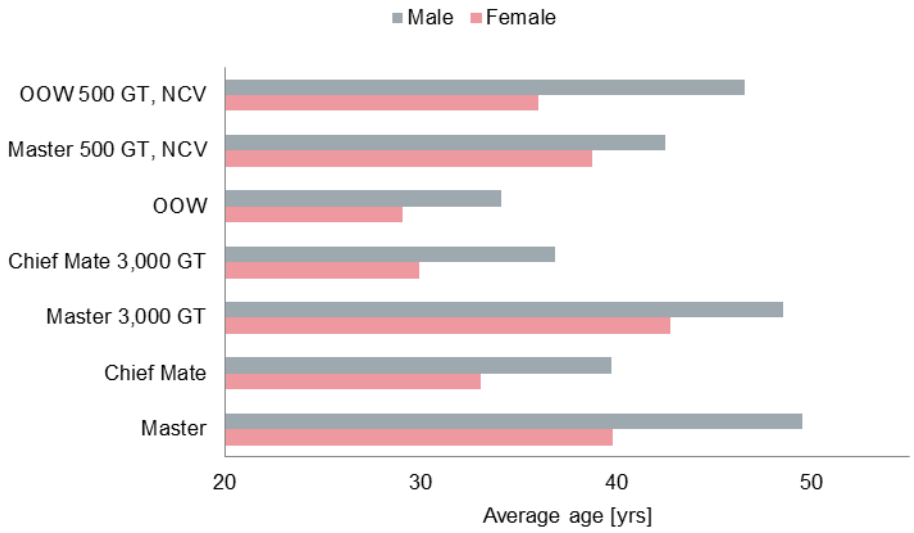


Figure 2-17 Average age of masters and deck officers holding valid CoCs per gender by deck capacity

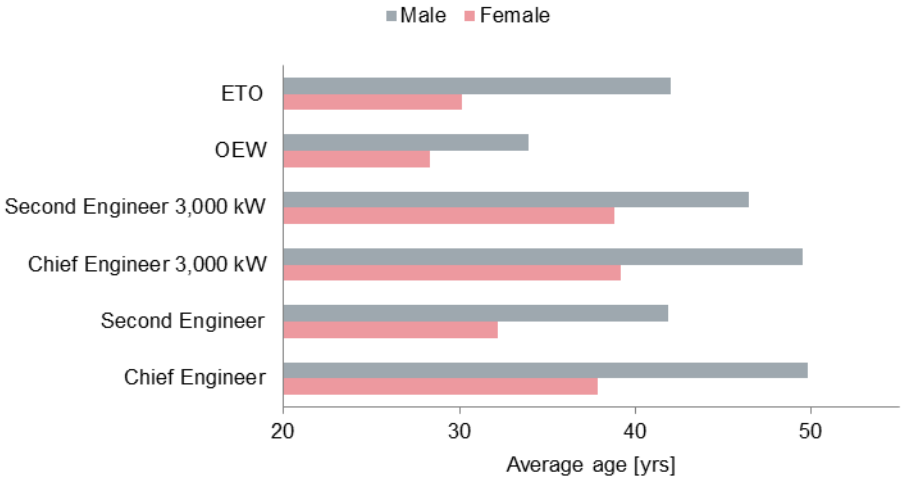


Figure 2-18 Average age of engineer officers holding valid CoCs per gender by engine capacity

2.2 Masters and officers holding in 2014 valid endorsements attesting the recognition

2.2.1 Total

The total number of masters and officers holding valid EaRs at EU level was 126,766. Out of this number, 0.21% officers held EaRs entitling them to serve in both the Deck and Engine Departments and 2.40% of them were identified as holding multiple EaRs issued by different EU Member States.

Reviewing the distribution by group of countries issuing the original CoC, 39,880 masters and officers held original CoCs issued by other EU Member States (24.71% of the total number of masters and officers holding valid CoCs, see section 2.1.1), 86,633 held original CoCs issued by non-EU countries and for 291 officers it was not possible to establish the country issuing the original CoC.

Out of those for whom the country issuing the original CoC was known 0.03% held CoCs issued by both EU Member States and non-EU countries.

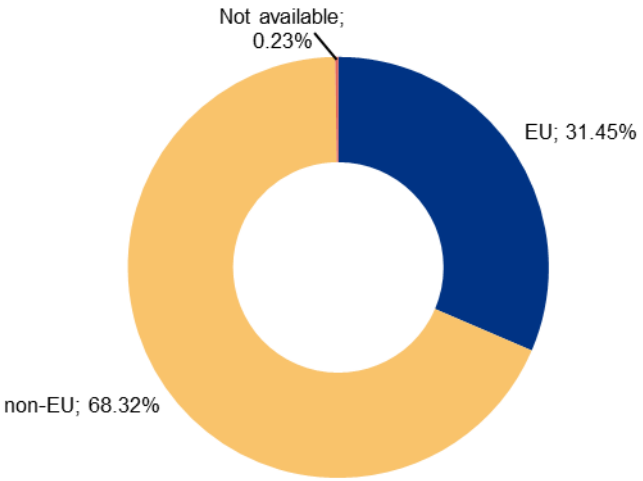


Figure 2-19 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC

2.2.2 Distribution by EU Member State

The distribution of the number of masters and officers holding valid EaRs by EU Member State is presented in Figure 2-20 below. It shows that together, Cyprus and Malta, registered 60.96% of the total number of masters and officers holding EaRs at EU level. When adding the valid EaRs issued by Denmark, Luxembourg, the Netherlands and the United Kingdom, that percentage increases to 88.26%.

The distribution of the masters and officers (holders of original CoCs issued by EU and non-EU countries) holding valid EaRs issued by EU Member is presented in Figure 2-21 below.

The review shows that:

- six Member States, namely Cyprus, Greece, Lithuania, Malta, the Netherlands and Slovakia, registered more masters and officers holding original CoCs issued by non-EU countries than the percentage (68.32%) registered at EU level;
- six Member States, namely Croatia, Estonia, Ireland, Italy, Luxembourg and Slovenia registered more masters and officers holding original CoCs issued by EU Member States than those holding CoCs issued by non-EU countries.

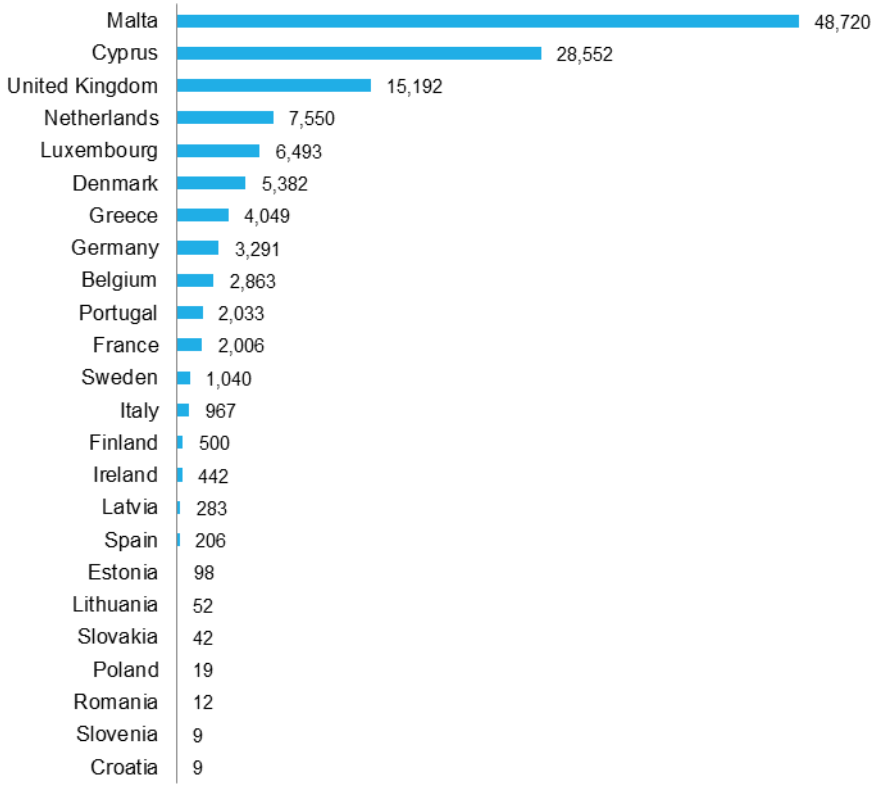


Figure 2-20 Masters and officers holding valid EaRs per EU Member State

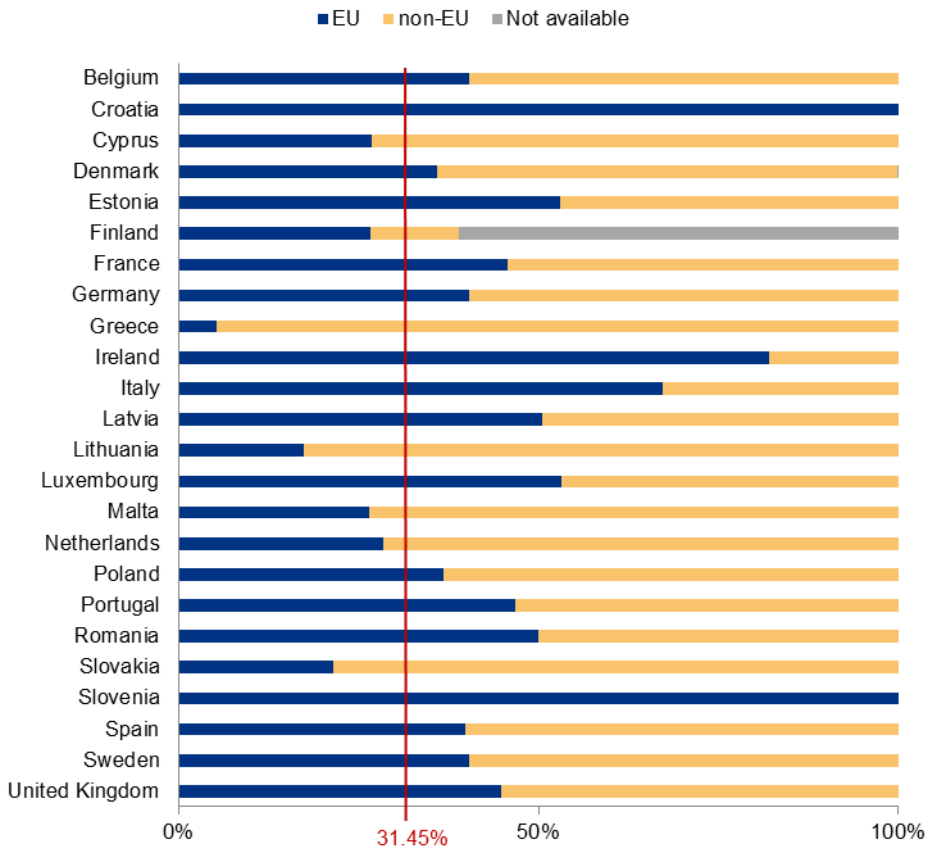


Figure 2-21 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC in each EU Member State

2.2.3 Distribution by countries issuing the original CoCs

The name of the country that issued the original CoC was made available for 126,475 masters and officers based on the data received from the 24 EU Member States that issued EaRs. This represents 99.77% of the total number of officers at EU level holding valid EaRs.

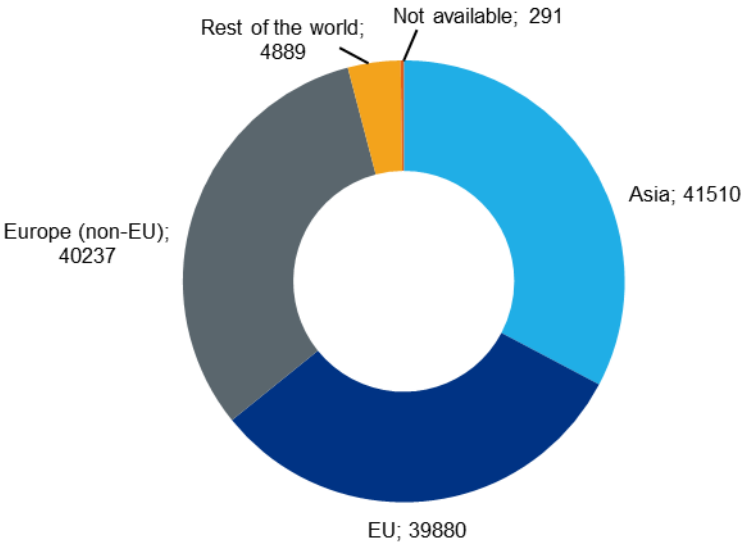


Figure 2-22 Distribution of masters and officers holding valid EaRs by region of the country issuing the original CoC

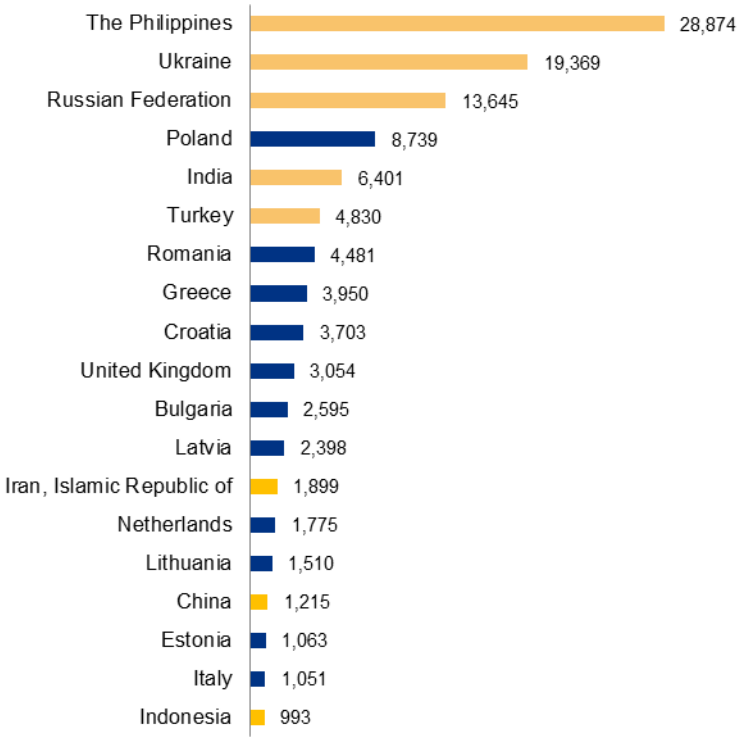


Figure 2-23 Countries issuing the original CoCs registering more than 0.75% of masters and officers holding valid EaRs

The masters and officers registered with valid EaRs held original CoCs issued by 86 countries. Figure 2-23 above identifies 19 countries, of which eleven are EU Member States and eight non-EU countries, which provided 88.05% of the total number of officers holding valid EaRs at EU level. Table 2-15 and Table 2-16 of appendix B present a more detailed list of countries issuing the original CoCs.

2.2.4 Distribution by department

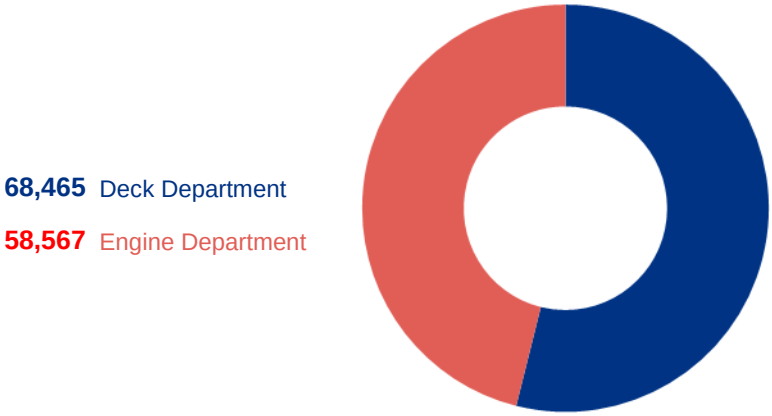


Figure 2-24 Distribution of masters and officers holding valid EaRs by department

The departments in which the holders of EaRs were entitled to serve are presented in Figure 2-24 above. It illustrates that the number of masters and officers entitled to serve in the Deck Department was 17% higher than the number of officers entitled to serve in the Engine Department.

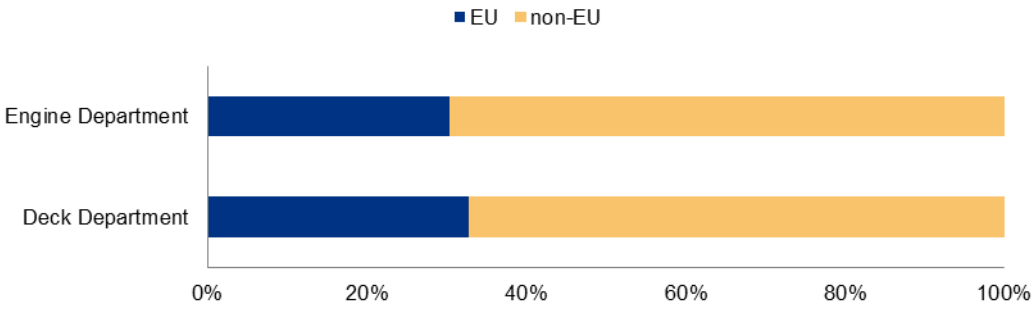


Figure 2-25 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by department

The ratio between the officers holding original CoCs issued by EU Member States and those holding original CoCs issued by non-EU countries follows the same pattern for both the Deck (33% to 67%) and the Engine (30% to 70%) departments, which is similar with the general distribution presented in Figure 2-19 above.

2.2.5 Distribution by capacity

There is heterogeneity in the manning regulations adopted by the different EU Member States when naming the capacities. For this reason, in order to ensure comparability of data, all capacities reported by the EU Member States in the EaRs were linked to the generic capacities established in chapters II and III of the STCW Convention. The review was conducted separately for the Deck Department and the Engine Department. The total number of officers was established by counting each person in his/her highest capacity.

2.2.5.1 Distribution by deck capacity

The information in Figure 2-26 shows that, out of the total number of masters and deck officers holding valid EaRs in 2014, 96.20% of them were entitled to serve on ships of 3,000 GT or more. In addition, the data also indicated that 55.39% of the total number of masters and deck officers were entitled to serve at management level on ships of 3,000 GT or more.

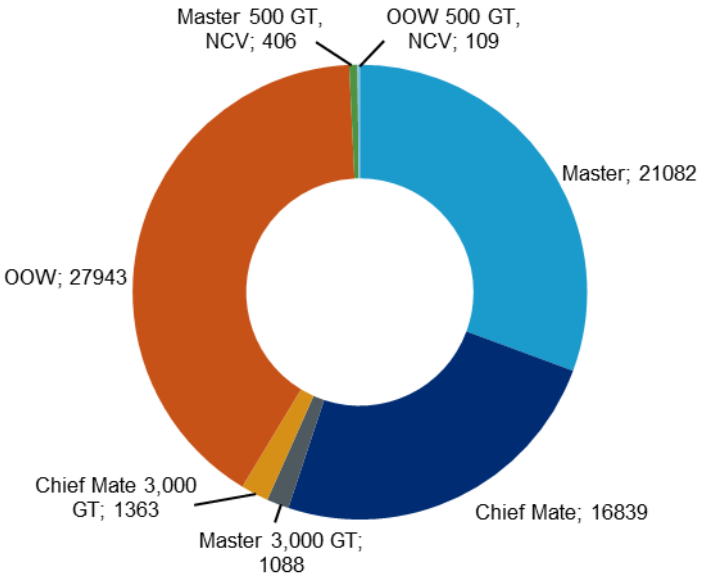


Figure 2-26 Distribution of masters and deck officers holding valid EaRs by deck capacity

The ratio between the officers holding CoCs issued by EU Member States and those holding CoCs issued by non-EU countries was 30% to 70%. Nevertheless, the majority of officers entitled to serve on board ships limited in tonnage or navigation area held CoCs issued by EU Member States (see Figure 2-27 below).

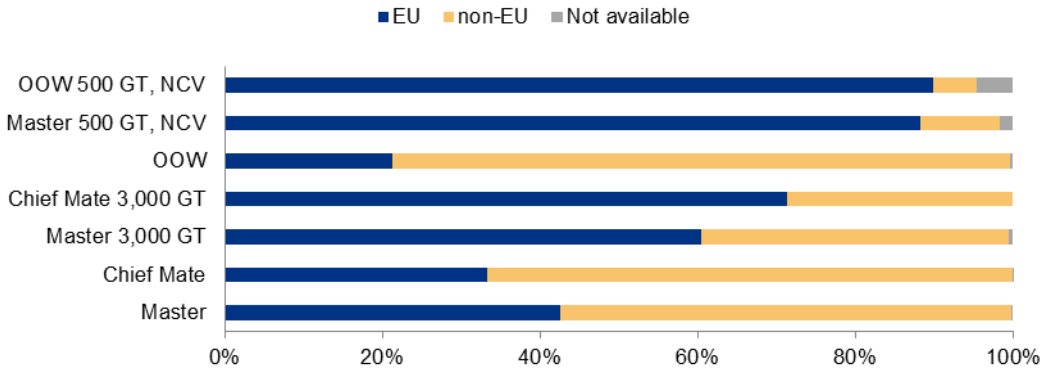


Figure 2-27 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by deck capacity

In addition, the data in Table 2-14 of Appendix B shows that:

- 62.68% of the officers holding valid EaRs entitling them to serve as ‘Master 3,000 GT’ were registered by three Member States, Cyprus (16.45%), Malta (23.99%) and the United Kingdom (22.24%);
- 59.94% of the officers holding valid EaRs entitling them to serve as ‘Chief Mate 3,000 GT’ were registered by two Member States, Malta (43.43%), the United Kingdom (16.59%);
- in six Member States, Denmark (59.32%), Finland (61.75%), France (61.86%), Germany (59.84%),Greece (74.18%) and Sweden (56.01%), the majority of the officers holding valid EaRs were entitled to serve as ‘OOW’;
- 53.94% of the officers holding valid EaRs entitling them to serve as ‘Master 500 GT, NCV’ were registered by three Member States, Belgium (13.30%), Luxembourg (25.62%) and Malta (15.02%);
- 54.13% of the officers holding valid EaRs entitling them to serve as ‘OOW 500 GT, NCV’ were registered by two Member States, Denmark (32.11%) and Germany (22.02%).

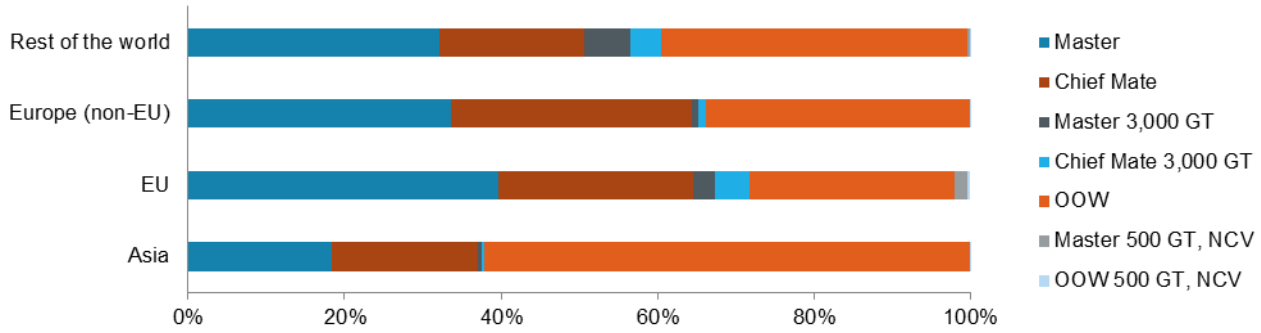


Figure 2-28 Distribution of the deck capacities of masters and deck officers holding valid EaRs by region of the country issuing the original CoC

The majority of the deck officers having the original CoC issued by Asian countries held EaRs entitling them to serve at operational level. Deck officers with CoCs issued by countries in other parts of the world, in their majority, held EaRs entitling them to serve at management level.

2.2.5.2 Distribution by engine capacity

The information in Figure 2-29 shows that, out of the total number of engineer officers holding valid EaRs, 95.80% of them were entitled to serve on ships of 3,000 kW or more. In addition, the data also indicated that 61.63% of the total number of engineer officers were entitled to serve at management level on ships of 3,000 kW or more.

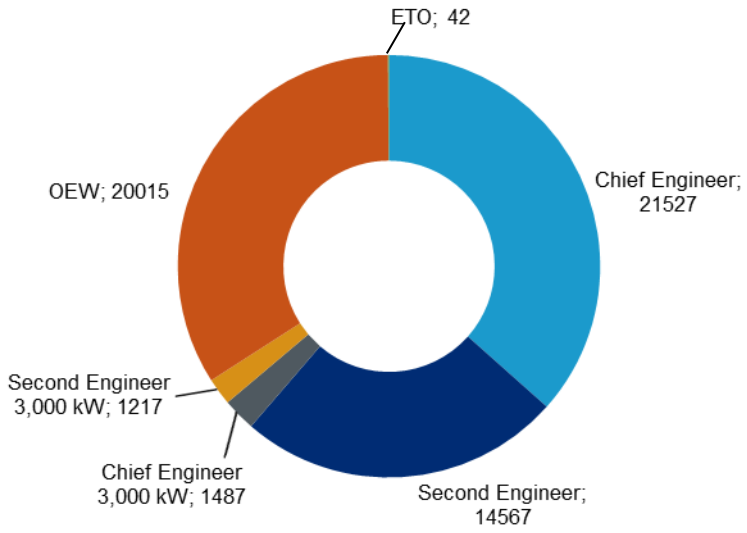


Figure 2-29 Distribution of engineer officers holding valid EaRs by engine capacity

The ratio between the officers holding CoCs issued by EU Member States and those holding CoCs issued by non-EU countries was 30% to 70%. Nevertheless, those entitled to serve as 'Chief Engineer 3,000 kW' held in majority CoCs issued by the EU Member States (see Figure 2-30 below).

In addition, the data presented in Table 2-13 of appendix B shows that:

- in seven Member States, Croatia (66.67%), Estonia (64.00%), Poland (83.33%), Portugal (51.08%), Romania (100%), Slovenia (100%) and Spain (66.39%) the majority of the officers holding valid EaRs were entitled to serve as 'Chief Engineer';
- in one Member State, Finland (62.50%), the majority of the officers holding valid EaRs were entitled to serve as 'Second Engineer';
- 58.84% of the officers holding valid EaRs entitling them to serve as 'Chief Engineer 3,000 kW' were registered by three Member States, Italy (13.72%), Malta (31.94%) and the United Kingdom (13.18%);

- 70.09% of the officers holding valid EaRs entitling them to serve as 'Second Engineer 3,000 kW' were registered by two Member States, Malta (45.19%), the United Kingdom (24.90%);
- in one Member State, Greece (63.59%), the majority of the officers holding valid EaRs were entitled to serve as 'OEW';
- 50.00% of the officers holding valid EaRs entitling them to serve as 'ETO' were registered by two Member States, Malta (28.57%) and the Netherlands (21.43%).

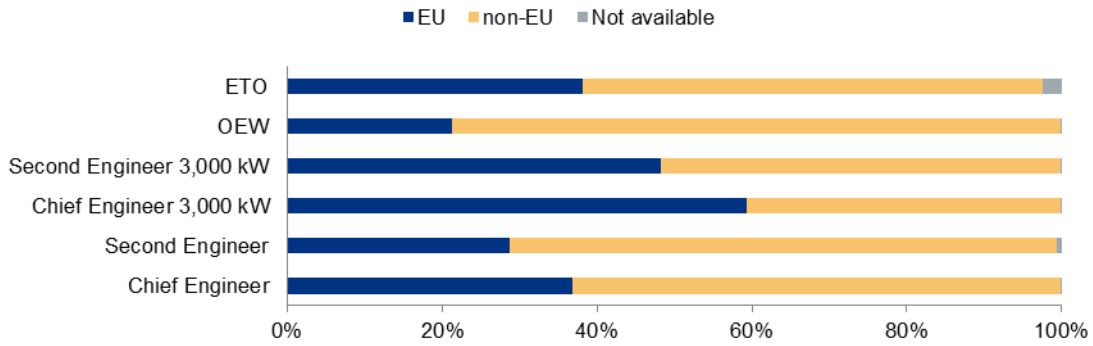


Figure 2-30 Distribution of engineer officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by engine capacity

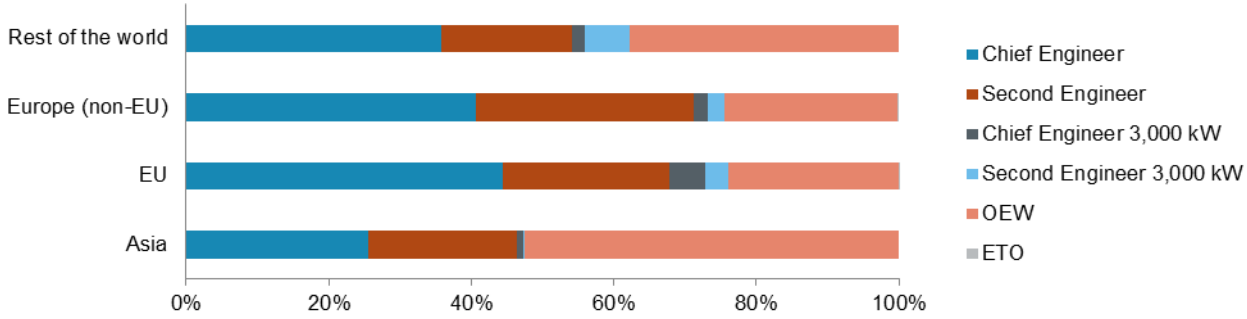


Figure 2-31 Distribution of the engine capacities of engineer officers holding valid EaRs by region of the country issuing the original CoC

The majority of the engineer officers having the original CoC issued by Asian countries held EaRs entitling them to serve at operational level. Engineering officers with CoCs issued by countries in other parts of the world, in their majority, held EaRs entitling them to serve at management level.

2.2.6 Gender distribution

The review of the gender distribution of the officers holding valid EaRs was made based on the data provided by 22 EU Member States, which had such data available. Consequently, it was made for 120,085 masters and officers holding valid EaRs that represented 94.73% of the total number at EU level.

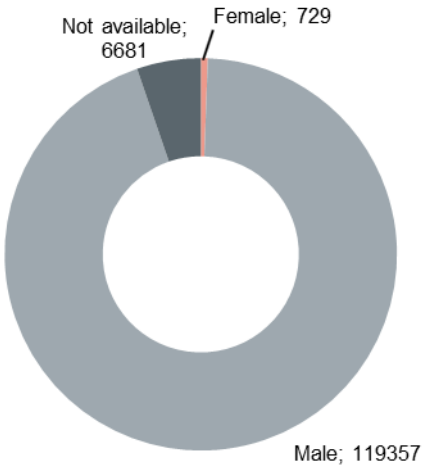


Figure 2-32 Gender distribution of masters and officers holding valid EaRs

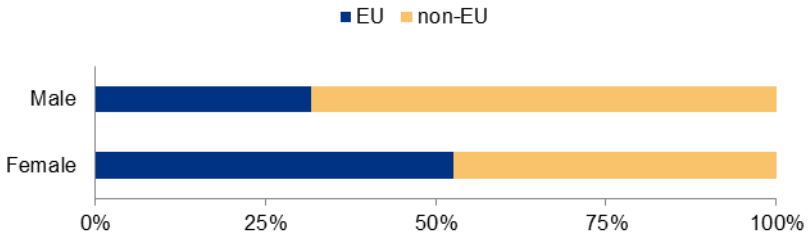


Figure 2-33 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by gender

52.69% of the total number of female officers holding valid EaRs held original CoCs issued by EU Member States, followed by 18.76% who had the original CoCs issued by countries located in the Americas.

2.2.7 Distribution by nationality

The data made available by those 24 EU Member States issuing EaRs showed that the officers holding valid EaRs were nationals of 124 countries and the distribution of these countries on region of origin does not show a significant deviation from the review on countries issuing the original CoCs.

2.2.8 Age distribution

The average age of masters and officers holding valid EaRs was 41years. Reviewing the average age per country issuing the original CoCs, the average age of officers holding CoCs issued by the EU Member States was 43 while of those holding original CoCs issued by non-EU countries was 40.1.

Considering the ratio between the officers holding valid EaRs of CoCs issued by the EU Member States and those holding valid EaRs of CoCs issued by non-EU countries (31.46% to 68.34%), the distribution by age groups shows a deviation for the officers younger than 30 and for those older than 54, especially for the age group older than 60 as presented in Figure 2-35 below.

The data in Table 2-17 of Appendix B and in Figure 2-36 below shows that:

- The number of those entitled to serve in the engine department was similar throughout the age groups which was not the case with the deck officers;
- 55.72% of the officers holding valid EARs in the deck department were younger than 40 years of age;
- the number of engineer officers was higher that the number of deck officers for all age groups over 45 years of age.

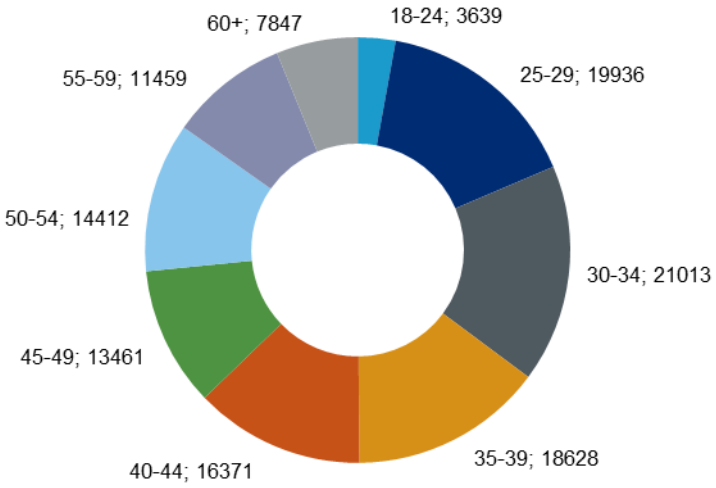


Figure 2-34 Age distribution of masters and officers holding valid EaRs

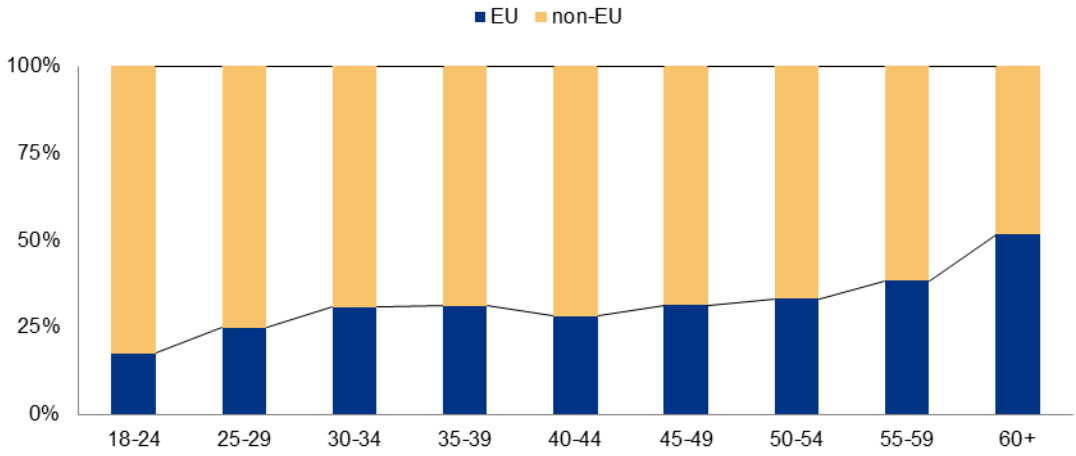


Figure 2-35 Distribution of masters and officers holding valid EaRs by EU and non-EU countries issuing the original CoC and by age group

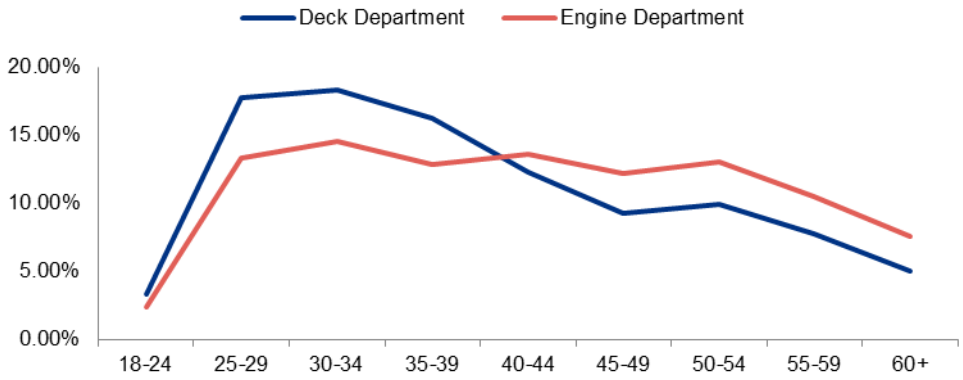


Figure 2-36 Age profile of masters and officers holding valid EaRs per department

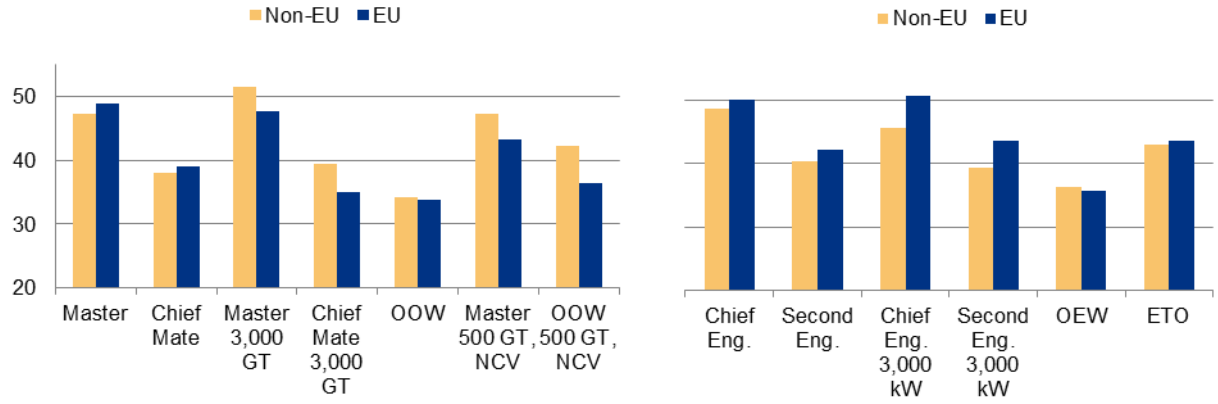


Figure 2-37 Average age of officers holding valid EaRs per EU and non-EU countries issuing the original CoC by capacity

The data in the graphs presented in Figure 2-37 shows that, the average age of the officers holding valid EaRs at management level was higher for those holding original CoCs issued by the EU Member States, except when holding management level capacities limited in terms of gross tonnage.

2.3 Masters and officers available to serve on board EU Member State flagged vessels in 2014

Figure 2-38 below aggregates the number of masters and officers holding valid CoCs and EaRs. This encompasses EaRs issued to holders of EU and non-EU CoCs and previously analysed in sections 2.1 and 2.2.

Figure 2-38 Masters and officers holding valid CoCs and EaRs in 2014 per Member State

It should be noted that six Member States, namely Belgium, Cyprus, Luxembourg, Malta, the Netherlands and Portugal had more masters and officers holding valid EaRs than holding valid CoCs.

2.3.1 Total

The total number of masters and officers available to serve on board EU Member State flagged vessels was 248,052, distributed as presented in Figure 2-39 below. This number considered the total of masters and officers holding valid CoCs and the number of masters and officers holding valid EaRs of CoCs issued by non-EU countries.

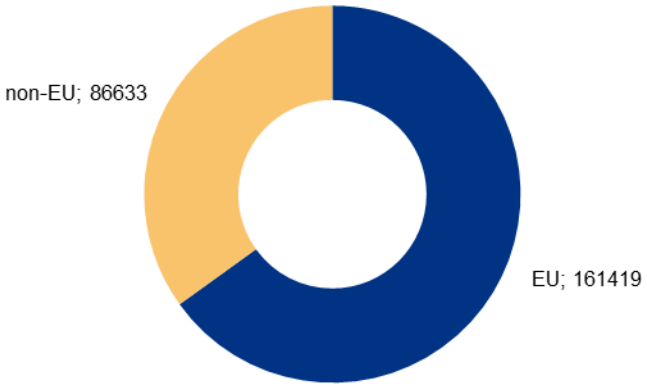


Figure 2-39 Distribution of masters and officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC

2.3.2 Distribution by department

Figure 2-40 below presents the distribution by department of masters and officers available to serve on board EU Member State flagged vessels. It excluded officers holding original CoCs issued by EU Member States under chapter VII 'Alternative Certification' of the STCW Convention because no officers from non-EU countries held such certification.

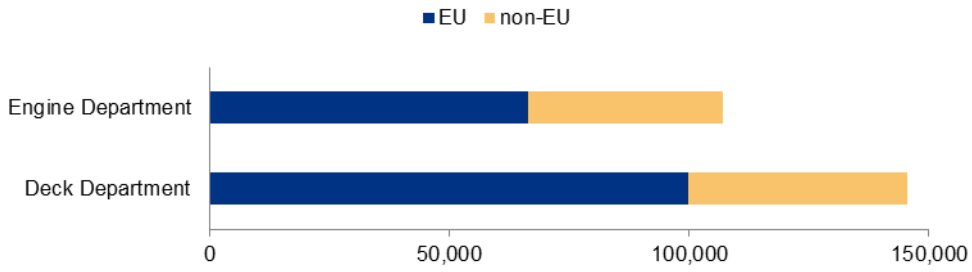


Figure 2-40 Distribution of masters and officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by department

In total, the number of masters and officers available to serve in the Deck Department (145,608) was 36% higher than the number of officers available to serve in the Engine Department (107,138). This percentage changes depending on whether the CoCs were issued by EU Member States or non-EU countries. In the first case it was 50% while in the second case it was 13%.

In both departments the number of officers holding valid CoCs issued by EU Member States and available to serve on board EU Member State flagged vessels was higher than those holding CoCs issued by non-EU countries.

2.3.3 Distribution by capacity

Taking into account the heterogeneity in naming the capacities in the manning regulations adopted by the EU Member States and in order to ensure comparability of data, all capacities reported by them were linked to the generic capacities established in chapters II and III of the STCW Convention. The review was conducted separately

for the Deck Department and the Engine Department. The total number of officers was established by counting each person in his/her highest capacity.

2.3.3.1 Distribution by deck capacity

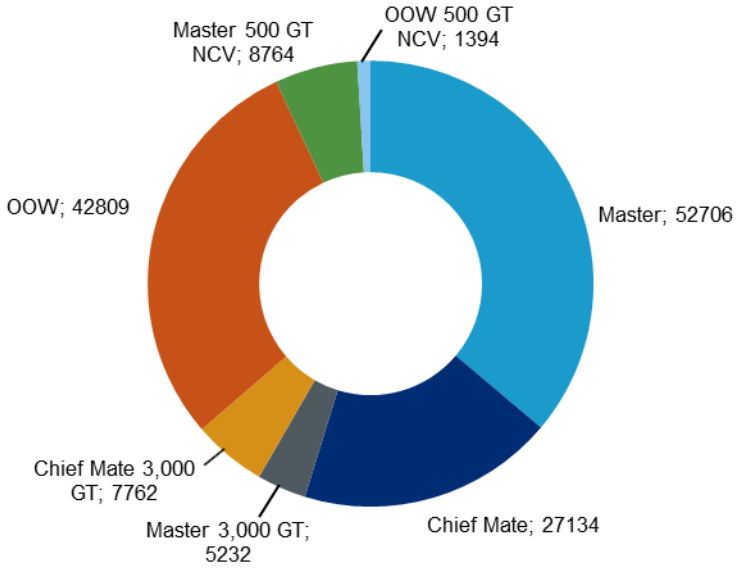


Figure 2-41 Distribution of masters and deck officers available to serve on board EU Member State flagged vessels by deck capacity

The information in Figure 2-41 shows that 54.83% of the total number of available masters and deck officers were entitled to serve at management level on ships of 3,000 GT or more.

Although the ratio between officers holding CoCs issued by EU Member States and those holding CoCs issued by non-EU countries was 65% to 35% for the Deck Department, it changed significantly for officers entitled to serve on board ships limited in gross tonnage or area of navigation where more than 90% were holders of CoCs issued by EU Member States. In the case of those officers entitled to serve as OOW more than 50% were holders of CoCs issued by non-EU countries. The above described is presented in Figure 2-42 below.

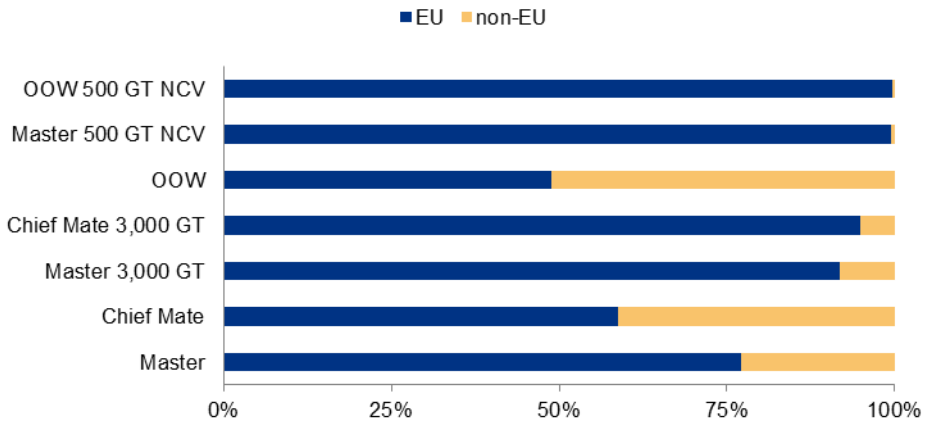


Figure 2-42 Distribution of masters and deck officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by deck capacity

2.3.3.2 Distribution by engine capacity

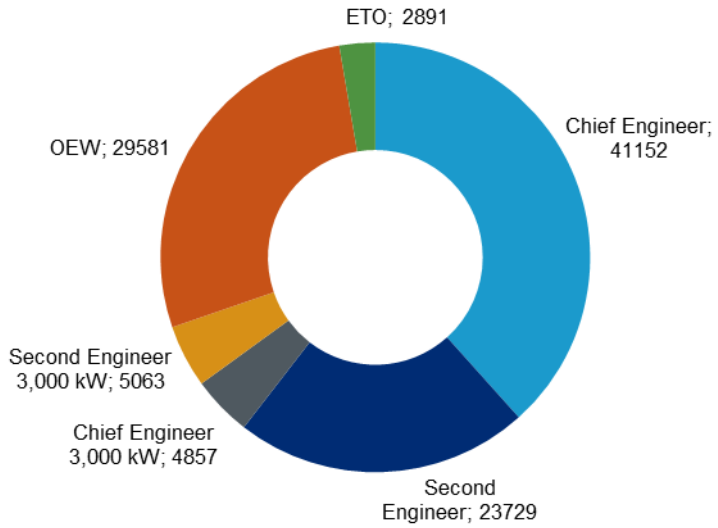


Figure 2-43 Distribution of available officers in the Engine Department

The information in Figure 2-43 shows that 60.56% of the engineer officers were entitled to serve at management level on ships powered by a main propulsion machinery of 3,000 kW propulsion power or more.

Although the ratio between the officers holding CoCs issued by EU Member States and those holding CoCs issued by non-EU countries was 65% to 35% for the Engine Department, it changed significantly for the officers entitled to serve on board ships limited in propulsion power or as ETO where more than 87% were holders of CoCs issued by EU Member States. In the case of those entitled to serve as OEW more than 50% were holders of CoCs issued by non-EU countries. This is illustrated in Figure 2-44 below.

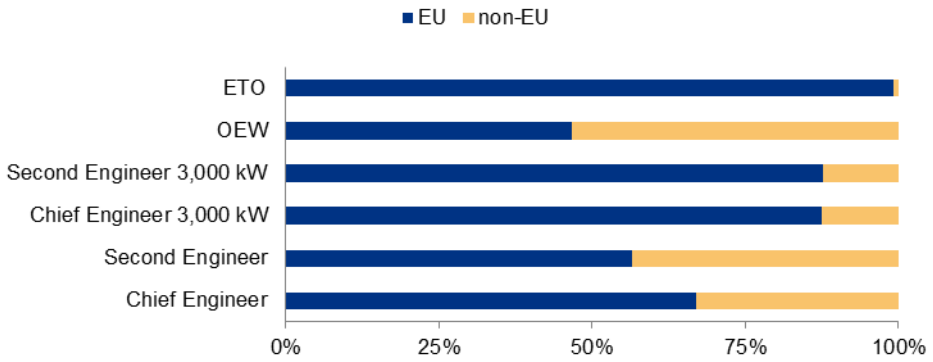


Figure 2-44 Distribution of engineer officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by engine capacity

2.3.4 Gender distribution

The review on gender distribution of masters and officers available to serve on board EU Member State flagged vessels was made based on data provided by the 25 EU Member States, which had it available. Consequently, it was made for 217,525 masters and officers representing 87.69% of the total number of those available to serve on board EU Member State flagged vessels.

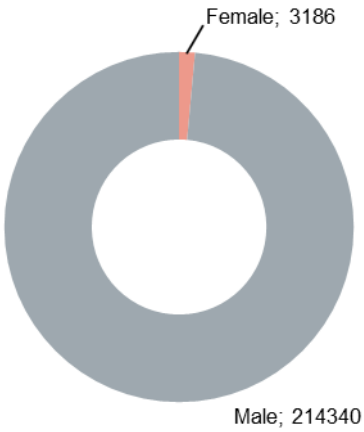


Figure 2-45 Gender distribution of masters and officers available to serve on board EU Member State flagged vessels

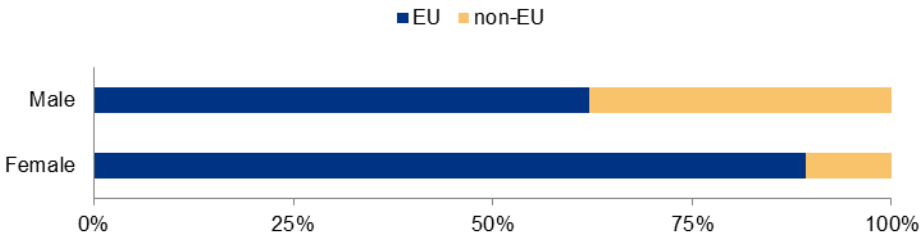


Figure 2-46 Distribution of masters and officers available to serve on board EU Member State flagged vessels by EU and non-EU countries issuing the original CoC and by gender

The officers for whom the gender was known were predominantly males. Female officers represented 1.46% of the total number of officers available, with 89.23% of them holding CoCs issued by the EU Member States.

Within the total number of officers holding valid CoCs issued by EU Member States and available to serve on board EU Member State flagged vessels female officers represented 2.09% of their total while for CoCs issued by non-EU countries they represented 0.42% of their total.

2.3.5 Distribution by nationality

The review of the data made available by the 27 EU Member States indicated that information on nationality was available for 244,481 masters and officers, representing 98.56% of the total number of officers available to serve on board EU Member State flagged vessels. It also showed that the officers were nationals of 146 countries, with the distribution by region as presented in Figure 2-47 below.

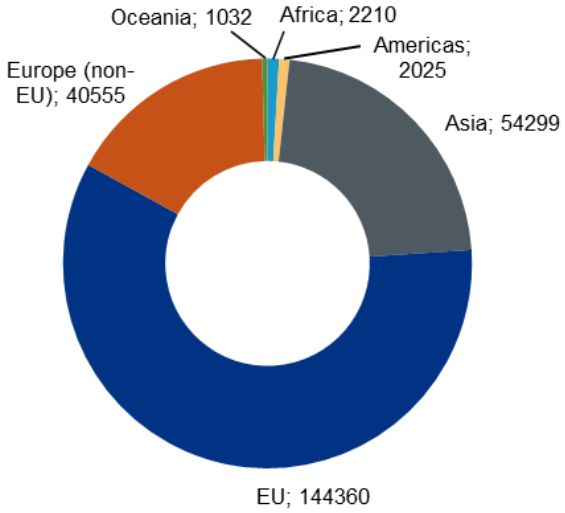


Figure 2-47 Nationality distribution of masters and officers available to serve on board EU Member State flagged vessels by geographical region according to nationality

The data in Figure 2-48 below identifies the 23 countries whose nationals represented 92.11% of the total number of masters and officers available to serve on board EU Member State flagged vessels.

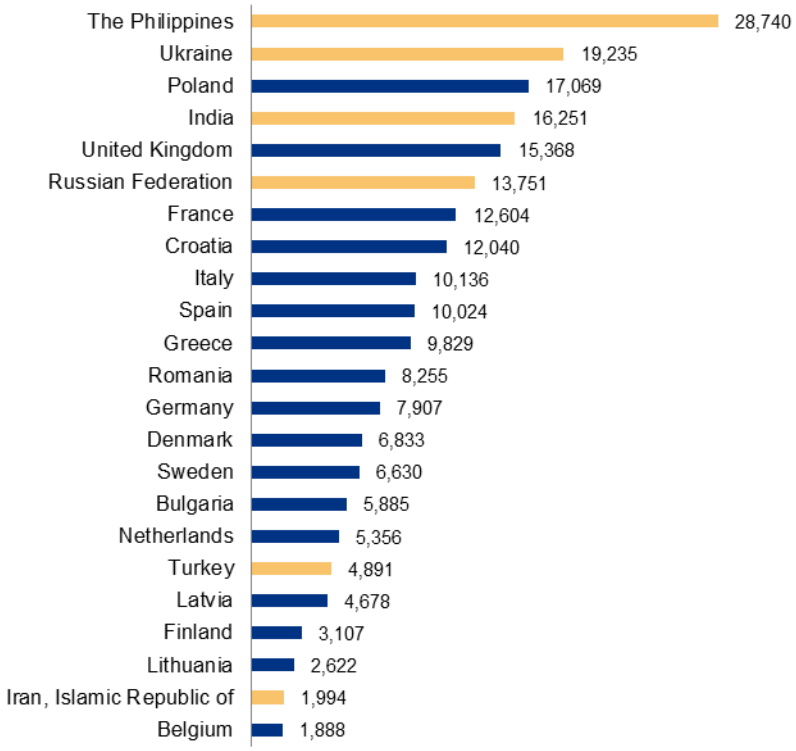


Figure 2-48 Country's nationalities registering more than 0.75% of masters and officers available to serve on board EU Member State flagged vessels

2.3.6 Age distribution

The average age of masters and officers available to serve on board EU Member State flagged was 42.5 years.

The average age of officers holding CoCs issued by the EU Member States was 43.8 years while for those holding original CoCs issued by non-EU countries was 40.1 years.

The age profile per country issuing the original CoC is presented in Figure 2-49 below and shows that those holding EU CoCs were more evenly distributed throughout the age groups than those holding non-EU CoCs.

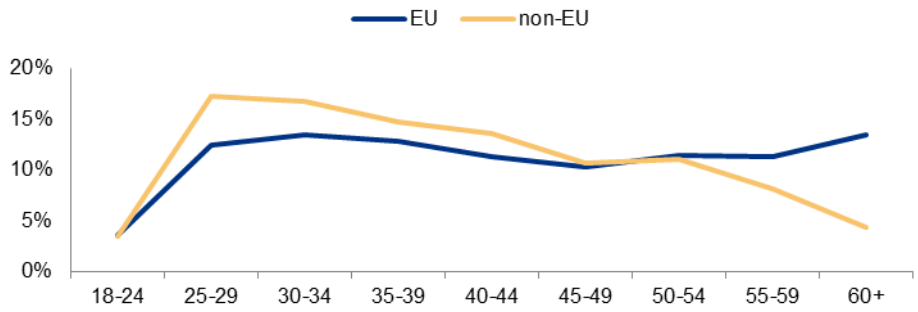


Figure 2-49 Age profile of masters and officers available to serve on board EU Member State flagged vessels per EU and non-EU countries issuing the original CoC

The highest average age was identified in masters entitled to serve on ships of 500 GT or more and on Chief Engineers entitled to serve on ships powered by a main propulsion machinery of 750 kW propulsion power or more, as presented in Figure 2-50 below.

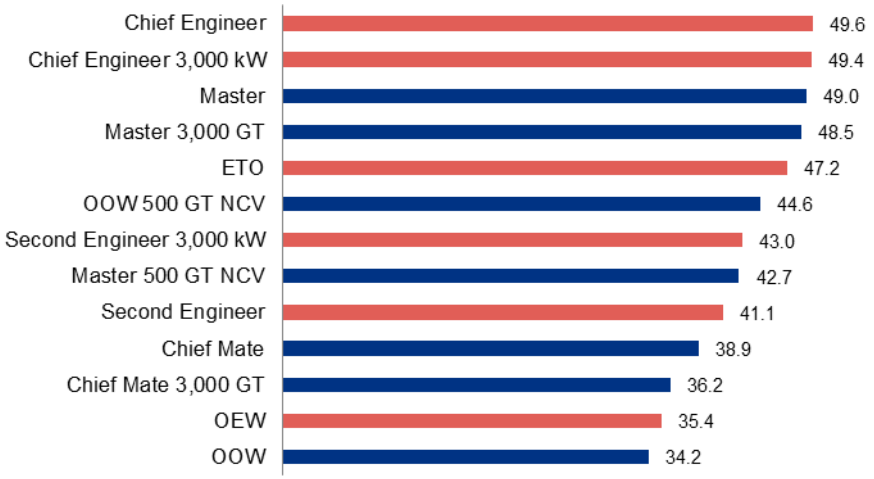


Figure 2-50 Average age of masters and officers available to serve on board EU Member State flagged vessels per deck and engine capacities

In the capacities of Master, Chief Mate, Chief Engineer, Second Engineer and OEW there was a variation ranging between 1 and 2 years in the average age of those holding CoCs issued by EU Member States and non-EU countries. With the exception of the OEW, the highest average age was found in holders of CoCs issued by EU Member States.

In the case of OOW the average age was similar irrespectively of whether the country issuing the CoC is an EU Member State or not.

2.4 Ratings holding valid certificates of proficiency (CoP) in 2014

The data presented below is based on the information provided on certificates of proficiency (CoP) issued to ratings under regulations II/4, II/5, III/4, III/5, III/7 and VII/2 of the STCW Convention. This data is not mandatory under Directive 2008/106/EC but was submitted voluntarily by 14 EU Member States.

2.4.1 Total

The total number of ratings holding valid CoPs in 2014 in the 14 EU Member States reporting such data was 65,751 with 7.91% of them entitled to serve in both the Deck and the Engine Departments.

2.4.2 Distribution by EU Member State

The data presented in Figure 2-51 below shows that between them four EU Member States, namely France, Germany, Spain and Sweden, registered 51.69% of the total number of ratings holding valid CoPs.

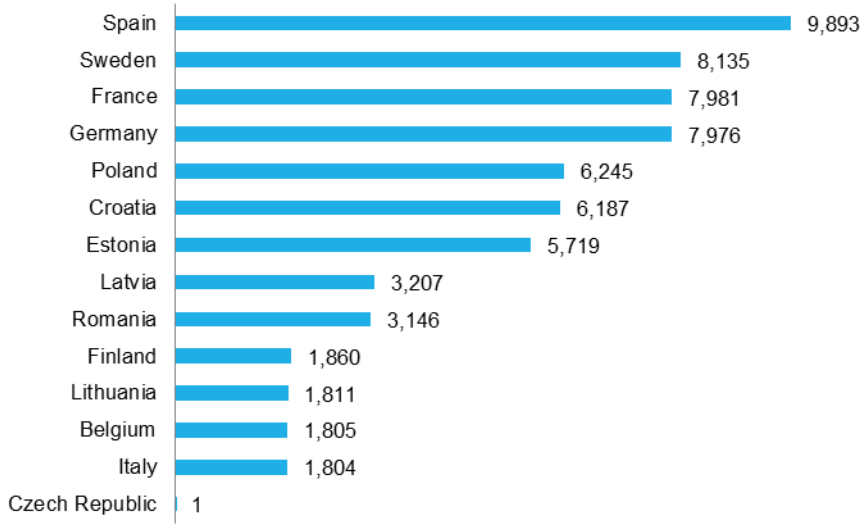


Figure 2-51 Ratings holding valid CoPs per EU Member State

2.4.3 Distribution by department

The distribution by department on which the ratings were entitled to serve is presented in Figure 2-52 below. It shows that the number of ratings entitled to serve in the Deck Department (chapter II of the STCW Convention) was 98% higher than the number of ratings entitled to serve in the Engine Department (chapter III of the STCW Convention). It identifies that 9.50% of them reported as being qualified under 'Alternative Certification' held CoPs issued under chapter VII of the STCW Convention.

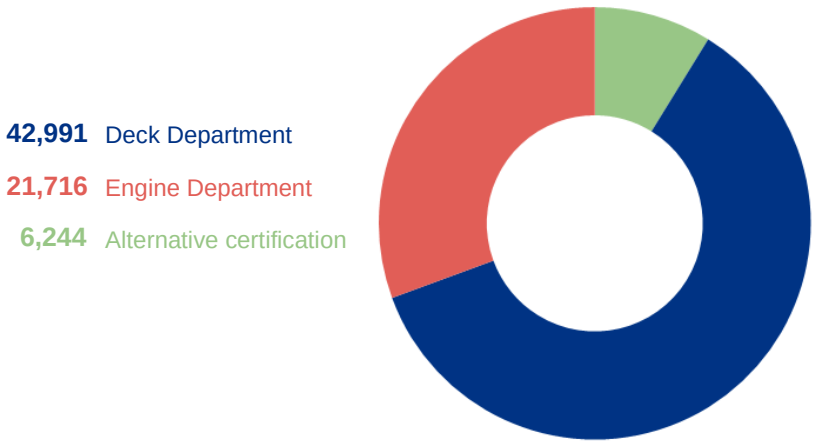


Figure 2-52 Distribution of ratings holding valid CoPs by department

2.4.4 Distribution by capacity

The distribution of the ratings by capacity is illustrated in Table 2-22 of Appendix C. Taking into account that the amendments to the STCW Convention that entered into force on 1 January 2012 added new capacities for ratings and 2014 was in the middle of the transitional period for their implementation a detailed review on capacities assigned to ratings was considered unnecessary at this stage.

2.4.5 Gender distribution

The review of the gender distribution was made based on the data provided by the 11 EU Member States, which had it available. Consequently, it covered 59,507 ratings representing 90.50% of the total number of ratings holding valid CoPs.

It shows that the ratings holding valid CoCs were predominantly males. Considering the data provided as a sample of the total number of ratings at EU level, it can be stated with a level of confidence of 99% that the percentage of the female ratings was 3.46% ± 0.53%.

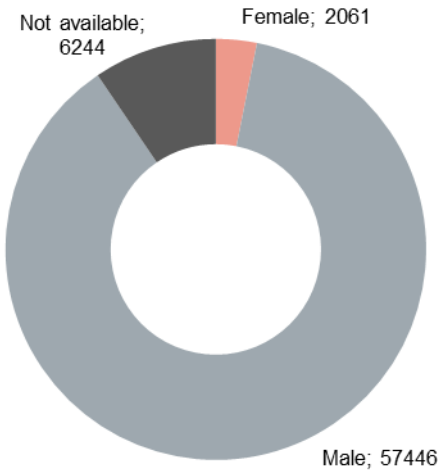


Figure 2-53 Gender distribution of ratings holding valid CoPs

2.4.6 Distribution by nationality

The review of the data made available by the 14 EU Member States showed that ratings holding valid CoPs were nationals from 99 countries (27 EU Member States and 72 Non-EU countries). 95.40% were nationals from the same 14 EU Member States that provided the data.

2.4.7 Age distribution

The average age of ratings holding valid CoPs was 40.8 years. Except for the 25-29 year age group, all other groups had a similar number of seafarers (percentages between 9.22% and 12.36%). The average age for female ratings was 33.5 years, while that for male ratings was 42.2 years. 76.08% of the female ratings were younger than 40, while the percentage of male ratings in the same age group was 45.45%.

The distribution of the gender groups by age intervals is presented in Figure 2-55 below.

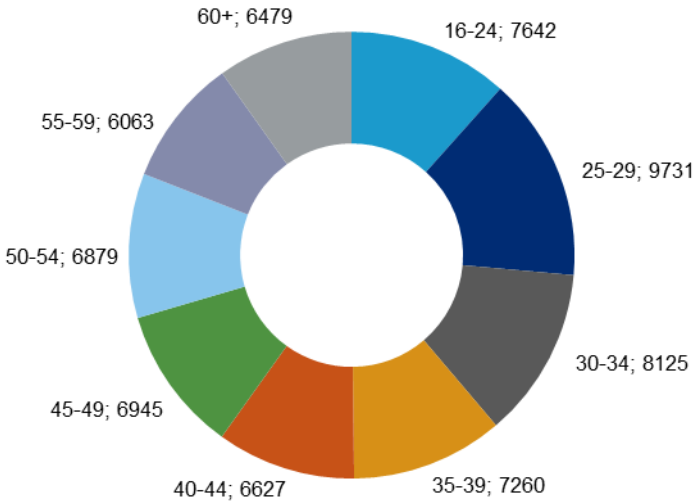


Figure 2-54 Age distribution of ratings holding valid CoPs

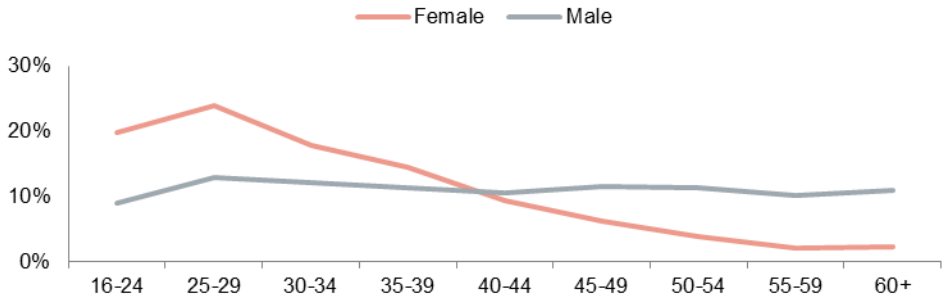


Figure 2-55 Age profile of ratings holding valid CoPs per gender

Appendix A Data on masters and officers holding valid CoCs in 2014

Table 2-1 Distribution of masters and officers by departments and EU Member States

Department	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
Alternative certification	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	743	0	0	0	0	0	0	0
Deck	1386	2869	964	26	5279	4923	1275	4714	6969	1877	10771	6656	17	303	6509	1276	2712	123	4075	10127	395	4588	4586	229	44	17056
Engine	658	3012	1053	45	2616	2509	1095	3078	3576	1264	3800	5437	36	194	3847	1153	2263	21	2758	9967	263	3665	2076	158	29	11833
Total[11]	**2043**	**5878**	**2016**	**71**	**7824**	**7100**	**2370**	**7792**	**10006**	**3127**	**12584**	**12077**	**53**	**497**	**10104**	**2429**	**4974**	**144**	**5546**	**20082**	**658**	**8253**	**6538**	**385**	**72**	**28865**

Table 2-2 Master and deck officers registered by EU Members States

Capacity	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
Master	551	1457	858	19	3314	2609	530	930	1922	1060	1707	2553	5	63	3078	480	1065	62	1605	4682	170	1598	2039	95	13	8152
Chief Mate	142	561	71	2	765	318	362	1440	871	242	485	1188	1	117	530	485	644	6	361	2082	77	1164	799	33	7	3167
Master 3,000 GT	9	22	2	0	82	143	23	98	1842	138	352	522	6	2	901	2	69	3	251	0	23	7	165	13	0	132
Chief Mate 3,000 GT	17	11	0	0	2	386	25	2127	1171	10	169	197	0	13	70	10	50	0	1065	154	12	15	1583	9	1	280
OOW	393	807	33	5	1069	741	272	0	1163	423	961	1658	5	105	1793	269	810	52	158	3163	96	1794	0	68	23	5054
Master 500 GT, NCV	184	11	0	0	46	79	52	119	0	4	7004	364	0	3	103	30	60	0	433	0	5	10	0	9	0	209
OOW 500 GT, NCV	90	0	0	0	1	647	11	0	0	0	93	174	0	0	34	0	14	0	202	46	12	0	0	2	0	62
TOTAL	**1386**	**2869**	**964**	**26**	**5279**	**4923**	**1275**	**4714**	**6969**	**1877**	**10771**	**6656**	**17**	**303**	**6509**	**1276**	**2712**	**123**	**4075**	**10127**	**395**	**4588**	**4586**	**229**	**44**	**17056**

[11] The sum of the rows may not be equal to the total because some officers held CoCs for both Deck and Engine Departments

Table 2-3 Engineer officers registered by EU Member States

Capacity	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
Chief Engineer	241	1154	766	26	1801	1249	544	621	1352	772	1214	1823	28	33	2092	488	1086	0	981	3821	92	1563	1163	70	7	4615
Second Engineer	53	535	34	3	361	409	322	896	128	469	765	1372	0	57	751	405	708	7	581	1717	23	971	413	40	5	2399
Chief Eng. 3,000 kW	5	42	0	1	33	281	1	58	1041	3	558	653	6	4	461	0	115	0	164	420	18	1	20	21	0	348
Second Eng. 3,000 kW	6	42	0	0	1	55	33	78	792	1	113	164	0	98	41	33	58	0	380	1436	15	0	14	9	0	1066
OEW	353	701	253	2	420	494	186	1425	263	0	1150	1243	2	1	502	194	187	14	652	744	115	1072	466	18	14	3354
Electro-technical Officer	0	538	0	13	0	21	9	0	0	19	0	182	0	1	0	33	109	0	0	1829	0	58	0	0	3	51
TOTAL	**658**	**3012**	**1053**	**45**	**2616**	**2509**	**1095**	**3078**	**3576**	**1264**	**3800**	**5437**	**36**	**194**	**3847**	**1153**	**2263**	**21**	**2758**	**9967**	**263**	**3665**	**2076**	**158**	**29**	**11833**

Table 2-4 Distribution of gender groups by EU Member States

Gender	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
Female	66	12	1	0	324	206	19	245	474	132	486	0	0	17	92	5	30	6	not available		25	64	221	5	0	413
Male	1977	5866	2015	71	7500	6894	2351	7547	9532	2995	12098	12077	53	480	10012	2424	4944	138	not available		633	8189	6317	380	72	28452
TOTAL	**2043**	**5878**	**2016**	**71**	**7824**	**7100**	**2370**	**7792**	**10006**	**3127**	**12584**	**12077**	**53**	**497**	**10104**	**2429**	**4974**	**144**			**658**	**8253**	**6538**	**385**	**72**	**28865**

Table 2-5 Non-EU nationals holding CoCs issued by EU Member States

Region of origin	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	Total
Africa	98	2	3	0	1	4	0	0	15	0	37	35	0	31	0	0	0	0	3	40	0	0	0	0	0	668	**937**
Americas	0	0	0	0	2	2	0	0	16	0	5	4	0	1	4	0	1	0	2	0	0	0	1	0	0	146	**184**
Asia	23	0	0	0	0	2	0	0	1	1	1	18	0	2	0	1	0	0	2	4	0	0	0	0	0	12377	**12432**
Europe (non-EU)	3	3	0	0	45	159	380	0	3	4	3	11	0	0	0	53	250	0	8	20	0	14	14	1	0	21	**992**
Oceania	0	0	1	0	3	3	0	0	0	0	0	1	0	0	2	0	1	0	1	2	0	0	0	0	0	163	**177**
Not available	0	0	0	0	0	0	185	0	4	1	0	1	0	0	0	6	14	0	0	2803	0	0	0	0	0	2	**3016**
TOTAL	**124**	**5**	**4**	**0**	**51**	**170**	**380**	**0**	**35**	**5**	**46**	**69**	**0**	**34**	**6**	**54**	**252**	**0**	**16**	**66**	**0**	**14**	**15**	**1**	**0**	**13375**	**17738**

Table 2-6 Age distribution by EU Member States

Age	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
age<25	58	59	1	0	192	59	49	1000	113	95	716	278	0	51	535	107	124	17	605	174	12	125	78	5	3	1274
25≤age<30	260	658	2	0	1117	549	268	2442	683	338	1719	1229	0	158	1345	314	534	27	777	1929	53	1428	615	32	16	3517
30≤age<35	279	750	21	1	1117	708	328	1804	1109	400	1939	1697	0	119	1052	309	717	12	629	2684	64	1159	670	49	9	4054
35≤age<40	210	888	4	3	779	736	192	1159	1580	418	1743	1993	0	71	1060	233	635	11	599	2454	71	1130	717	39	5	3946
40≤age<45	238	909	5	1	613	756	248	374	1444	342	1911	1511	1	27	1103	210	578	7	704	2017	64	1025	704	26	5	3488
45≤age<50	264	754	25	6	638	888	280	233	1384	335	1632	1375	5	35	1154	290	487	4	667	1718	56	1083	748	42	2	2553
50≤age<55	312	667	266	11	749	929	355	354	1552	370	1449	1406	8	14	1310	366	616	8	609	2443	92	962	638	50	12	2884
55≤age<60	232	569	584	14	837	905	317	287	1364	357	1047	1152	16	12	1311	343	687	19	434	2814	95	849	748	55	9	3242
age≥60	190	624	1108	35	1782	1570	333	139	777	472	428	1436	23	10	1234	257	596	39	522	3849	151	492	1620	87	11	3907
TOTAL	**2043**	**5878**	**2016**	**71**	**7824**	**7100**	**2370**	**7792**	**10006**	**3127**	**12584**	**12077**	**53**	**497**	**10104**	**2429**	**4974**	**144**	**5546**	**20082**	**658**	**8253**	**6538**	**385**	**72**	**28865**

Table 2-7 Age distribution by departments

Department	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Alternative certification	320	237	72	29	29	30	19	6	1	**743**
Deck Department	3826	13448	14324	13241	11489	10047	11077	10408	11842	**99702**
Engine Department	2463	7571	8308	8036	7258	6973	7658	8108	10012	**66387**
TOTAL[12]	**5730**	**20004**	**21669**	**20663**	**18307**	**16649**	**18420**	**18288**	**21689**	**161419**

[12] The sum of the rows may not be equal to the total because some officers held CoCs for both Deck and Engine Departments

Table 2-8 Age distribution for masters and deck officers

Capacity	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Master	7	423	2912	5703	5803	4970	6233	6528	8034	**40613**
Chief Mate	50	2559	4622	2785	1494	1022	1115	1101	1170	**15918**
Master 3,000 GT	4	110	298	584	760	859	859	679	654	**4807**
Chief Mate 3,000 GT	1117	2203	1080	630	482	466	488	372	534	**7372**
OOW	2147	7162	4215	2348	1354	1189	990	825	685	**20915**
Master 500 GT, NCV	418	859	1061	1053	1434	1364	1201	763	570	**8723**
OOW 500 GT, NCV	83	135	142	143	163	184	197	145	196	**1388**
TOTAL	**3826**	**13448**	**14324**	**13241**	**11489**	**10047**	**11077**	**10408**	**11842**	**99702**

Table 2-9 Age distribution for engineer officers

Capacity	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Chief Engineer	14	232	1735	3447	3802	3739	4181	4621	5828	**27599**
Second Engineer	248	1873	2915	1987	1363	1153	1244	1217	1423	**13423**
Chief Eng. 3,000 kW	10	88	307	445	487	594	715	748	859	**4253**
Second Eng. 3,000 kW	233	673	527	456	426	460	502	562	596	**4435**
OEW	1901	4400	2476	1399	961	821	725	578	564	**13825**
Electro-technical Officer	57	306	351	305	220	207	295	383	742	**2866**
TOTAL	**2463**	**7571**	**8308**	**8036**	**7258**	**6973**	**7658**	**8108**	**10012**	**66387**

Table 2-10 Age distribution by gender group

Gender	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Female	351	859	616	451	243	157	93	52	21	**2843**
Male	4600	16442	17743	17163	15343	14113	15282	14992	17300	**132978**
Not available	779	2703	3310	3049	2721	2379	3045	3244	4368	**25598**
TOTAL	**5730**	**20004**	**21669**	**20663**	**18307**	**16649**	**18420**	**18288**	**21689**	**161419**

Appendix B Data on masters and officers holding valid EaRs in 2014

Table 2-11 EU and non-EU countries issuing the original CoCs per EU Member States issuing the EaRs

Country issuing the original CoC	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
EU Member State	1157	7673	1330	1939	52	215	82	133	917	9	363	653	9	3450	143	12888	2157	7	952	6	419	9	9	6804
non-EU country	1707	20879	1961	3446	46	3834	124	62	1090	0	79	317	43	3044	140	35832	5411	12	1081	6	621	0	33	8388
Not available	0	0	0	6	0	0	0	305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL[13]	**2863**	**28552**	**3291**	**5382**	**98**	**4049**	**206**	**500**	**2006**	**9**	**442**	**967**	**52**	**6493**	**283**	**48720**	**7550**	**19**	**2033**	**12**	**1040**	**9**	**42**	**15192**

Table 2-12 EU and non-EU countries issuing the original CoCs per departments

	Deck Department		Engine Department		Total[14]
Country issuing the original CoC	Numbers	Percentage	Numbers	Percentage	Numbers
EU Member State	22420	56.22%	17700	44.38%	**39880**
non-EU country	45906	52.99%	40751	47.04%	**86633**
Not available	158	54.30%	134	46.05%	**291**
TOTAL[12]	**68465**	**54.01%**	**58567**	**46.20%**	**126766**

Table 2-13 Engineer officers holding EaRs registered by EU Member States

Capacity	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
Chief Engineer	450	5383	585	917	32	266	81	73	231	2	90	148	11	1169	45	8337	1006	5	448	4	117	2	2	2621
Second Engineer	357	3154	437	583	7	412	16	135	195	0	55	17	11	758	25	5640	919	0	221	0	114	0	3	1875
Chief Eng. 3,000 kW	96	156	14	30	0	0	4	2	29	0	23	204	3	130	12	475	113	0	5	0	14	0	3	196
Second Eng. 3,000 kW	25	179	3	29	1	0	0	2	7	0	1	5	0	58	6	550	48	0	4	0	2	0	2	303
OEW	460	4212	645	1407	10	1184	21	6	413	1	11	102	4	619	25	7753	945	1	199	0	214	0	7	2092
Electro-technical Officer	1	0	0	0	0	0	0	1	4	0	1	0	0	7	0	12	9	0	0	0	1	0	0	6
TOTAL	**1387**	**13084**	**1684**	**2958**	**50**	**1862**	**122**	**216**	**879**	**3**	**181**	**474**	**29**	**2738**	**113**	**22767**	**3033**	**6**	**877**	**4**	**462**	**2**	**17**	**7093**

[13] The sum of the rows may not be equal to the total because some officers held EaRs recognising original CoCs issued by EU Member States and non-EU countries
[14] The sum of the columns may not be equal to the total because some officers held EaRs for both Deck and Engine Departments

Table 2-14 Master and deck officers holding EaRs registered by EU Member States

Capacity	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
Master	492	5718	166	355	13	78	41	59	133	5	73	170	8	1398	68	9253	879	13	500	1	127	2	9	1791
Chief Mate	310	3532	414	534	7	487	14	24	284	0	69	124	10	1023	49	5945	1415	0	288	1	77	1	7	2574
Master 3,000 GT	60	179	13	8	10	0	1	6	9	0	19	6	1	153	6	261	68	0	5	0	39	3	2	242
Chief Mate 3,000 GT	75	222	15	17	1	0	8	1	6	0	9	3	1	112	5	592	50	0	18	0	9	1	0	225
OOW	479	5815	988	1445	14	1623	14	176	699	1	91	164	3	1079	41	9834	2106	0	345	4	326	0	7	3283
Master 500 GT, NCV	54	4	31	45	3	0	5	14	0	0	0	46	0	104	1	61	13	0	0	2	3	0	0	21
OOW 500 GT, NCV	11	2	24	35	0	0	1	15	0	0	0	0	0	4	0	8	1	0	0	0	1	0	0	8
TOTAL	**1481**	**15472**	**1651**	**2436**	**48**	**2188**	**84**	**285**	**1130**	**6**	**261**	**513**	**23**	**3867**	**170**	**25954**	**4527**	**13**	**1156**	**8**	**582**	**7**	**25**	**8144**

Table 2-15 EU Member States and EFTA countries issuing original CoCs endorsed by other EU Member States

Country issuing the original CoC	Member State issuing the EaR																								Total[15]
	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	
Belgium	0	15	3	1	0	3	2	0	88	0	0	0	0	443	0	36	114	0	0	0	0	0	0	8	**705**
Bulgaria	173	284	89	25	0	22	0	0	86	0	0	97	0	55	0	1354	27	0	57	1	1	0	0	448	**2595**
Croatia	297	477	31	89	0	0	5	1	34	0	0	129	0	759	0	1041	290	0	45	3	0	4	1	646	**3703**
Cyprus	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	321	0	0	0	0	0	0	0	0	**334**
Czech Republic	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	2	0	0	0	0	0	**8**
Denmark*	1	48	5	0	0	0	0	1	1	0	0	0	0	6	7	58	40	0	0	0	52	0	0	42	**259**
Estonia	1	227	18	33	0	0	0	113	2	0	3	15	7	19	110	166	172	0	8	0	6	0	0	206	**1063**
Finland	0	17	3	6	39	0	0	0	0	0	0	0	0	6	0	39	19	0	2	0	269	0	0	19	**401**
France	23	32	0	2	0	0	5	0	0	0	0	21	0	466	0	47	5	0	0	0	2	0	0	80	**681**
Germany	0	176	0	5	0	0	26	1	4	0	0	0	0	182	1	302	85	5	79	0	0	0	0	97	**938**
Greece	3	1197	1	0	1	0	0	0	1	0	6	0	0	2	0	2648	25	0	23	0	6	0	0	41	**3950**
Hungary	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	0	0	0	0	**11**
Iceland	0	4	4	9	12	0	2	0	0	0	0	0	0	2	0	0	0	12	0	0	6	0	0	4	**55**
Ireland	0	31	1	6	0	0	0	0	0	0	0	0	0	7	0	24	12	0	2	0	0	0	0	291	**370**
Italy	1	81	3	0	0	3	3	1	3	0	0	0	0	13	0	282	14	0	61	0	1	5	0	597	**1051**
Latvia	26	427	48	139	9	3	0	2	70	0	2	36	2	84	0	608	308	1	69	0	25	0	0	723	**2398**
Lithuania	9	374	101	54	1	0	12	0	23	0	24	11	0	191	18	201	191	1	46	0	5	0	2	479	**1510**
Malta	0	3	2	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	9	**17**
Netherlands	384	488	112	33	0	0	6	3	9	5	1	0	0	419	2	218	0	0	7	2	3	0	0	109	**1775**
Norway	0	178	1	27	0	0	1	2	9	0	0	0	0	6	0	319	18	0	0	0	32	0	0	197	**786**
Poland	54	2495	717	390	0	15	2	1	74	0	288	44	0	348	4	2208	206	0	263	0	35	0	5	1933	**8739**
Portugal	1	9	2	8	0	0	5	0	0	0	0	0	0	2	0	55	4	0	0	0	0	0	0	16	**101**
Romania	65	416	168	259	0	145	1	0	448	0	0	93	0	224	0	1752	214	0	120	0	9	0	0	797	**4481**
Slovakia	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	2	0	0	0	0	0	**14**

[15] The sum of the columns may not be equal to the total because some officers held EaRs issued by different EU Member States

Country issuing the original CoC	Member State issuing the EaR																								Total[15]
	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	
Slovenia	1	50	1	1	0	0	10	0	2	4	0	22	0	15	0	44	7	0	10	0	0	0	1	27	**169**
Spain	10	113	5	6	0	10	0	0	5	0	0	5	0	33	0	342	29	0	134	0	1	0	0	161	**837**
Sweden	1	100	7	384	1	0	1	10	2	0	0	0	0	3	1	90	12	0	1	0	0	0	0	83	**692**
United Kingdom	93	608	8	498	1	1	4	0	65	0	39	180	0	179	0	1071	309	0	19	0	5	0	0	0	**3054**

*Includes Faroe Islands

Table 2-16 non-EU countries, recognised at EU level or under the process of recognition, issuing original CoCs endorsed by EU Member States

Country issuing the original CoC	Member State issuing the EaR																								Total[16]
	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	
Algeria	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Argentina	48	20	1	0	0	0	7	0	0	0	0	1	0	11	0	0	0	0	6	0	0	0	0	0	**94**
Australia	37	111	2	58	9	0	0	0	5	0	0	0	0	140	0	189	121	0	0	0	0	0	0	180	**831**
Azerbaijan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	364	0	0	0	0	0	0	0	0	**364**
Bangladesh	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Brazil	0	273	0	205	0	0	0	0	0	0	0	5	0	23	0	0	0	0	3	0	0	0	0	67	**565**
Canada	3	32	0	14	0	11	0	0	1	0	1	0	0	4	0	79	13	0	0	0	0	0	0	109	**265**
Cape Verde	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Chile	0	32	0	0	0	0	5	0	0	0	0	0	0	15	0	0	0	0	1	0	0	0	0	0	**53**
China	0	175	4	0	0	0	0	0	0	0	0	0	0	0	0	304	37	0	2	0	0	0	0	698	**1215**
Cuba	0	71	0	0	0	0	92	0	0	0	0	0	0	0	0	162	0	0	58	0	0	0	0	0	**383**
Egypt	0	187	1	1	0	0	0	0	0	0	0	0	0	46	0	567	0	0	13	0	0	0	0	0	**814**
Ethiopia	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Fiji	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Georgia	0	70	0	0	0	17	0	0	0	0	0	0	0	0	0	208	0	0	3	0	0	0	0	0	**298**
Ghana	0	88	0	0	0	0	0	0	0	0	0	0	0	24	0	4	0	0	0	0	0	0	0	0	**116**
Hong Kong	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	6	**19**
India	219	842	5	990	1	3	0	0	137	0	0	280	0	168	0	2510	53	0	7	0	0	0	0	1228	**6401**

[16] The sum of the columns may not be equal to the total because some officers held EaRs issued by different EU Member States

Country issuing the original CoC	Member State issuing the EaR																							Total[16]
	BE	CY	DE	DK	EE	EL	ES	FI	FR	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	
Indonesia	9	442	0	0	0	12	0	0	2	0	0	8	0	95	0	165	235	0	28	0	0	0	0	0	**993**
Iran, Islamic Republic of	1	633	0	0	0	0	0	0	0	0	0	0	0	0	0	1260	0	0	0	0	0	0	0	7	**1899**
Israel	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	0	0	0	0	**71**
Jamaica	39	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	25	**70**
Japan	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**9**
Jordan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0	0	0	0	0	0	0	0	**53**
Korea, Republic of	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	201	0	0	0	0	0	0	0	14	**260**
Lebanon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	0	**31**
Madagascar	0	0	0	0	0	0	0	0	52	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	**111**
Malaysia	1	18	0	0	0	0	0	0	7	0	0	0	0	3	0	0	0	0	0	0	0	0	0	9	**38**
Mexico	1	25	0	0	0	0	6	0	0	0	0	0	0	8	0	0	0	0	4	0	0	0	0	0	**44**
Montenegro	0	254	18	0	0	11	0	0	0	0	0	0	0	41	0	343	0	0	0	0	0	0	1	193	**834**
Morocco	0	37	0	0	0	0	0	0	26	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	**76**
Myanmar	0	123	24	0	0	0	0	0	1	0	0	0	0	17	0	241	0	0	43	0	0	0	0	121	**566**
New Zealand	7	49	0	37	6	0	0	0	2	0	0	0	0	33	0	77	47	0	2	0	0	0	0	154	**408**
Pakistan	0	19	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	**37**
Peru	1	61	1	0	0	0	10	0	0	0	0	0	0	0	0	107	0	0	72	0	0	0	0	0	**252**
Russian Federation	307	4162	361	153	17	0	0	8	10	0	38	21	38	531	97	5148	1821	0	211	0	3	0	2	1070	**13645**
Senegal	0	0	0	0	0	0	0	0	16	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	**28**
Serbia	0	2	0	0	0	10	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	**21**
Singapore	7	64	0	181	0	0	0	0	5	0	0	2	0	16	0	126	11	0	0	0	0	0	0	93	**502**
South Africa	33	45	0	5	0	0	0	0	0	0	0	0	0	15	0	0	1	0	0	0	0	0	0	148	**218**
Sri Lanka	3	117	9	0	0	0	0	0	0	0	0	0	0	6	0	155	0	0	4	0	0	0	0	91	**383**
The Philippines	152	6907	1102	1384	0	3254	0	51	566	0	31	0	0	491	0	10689	1714	0	235	6	579	0	0	2073	**28874**
Tunisia	0	0	0	0	0	0	0	0	15	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	**39**
Turkey	0	3	3	0	0	0	0	1	0	0	0	0	0	2	0	4800	2	0	17	0	0	0	3	0	**4830**
Ukraine	819	5480	423	367	1	515	0	0	194	0	9	0	5	1125	43	7545	1318	0	372	0	0	0	27	1762	**19369**
United States	13	11	1	19	0	0	0	0	0	0	0	0	0	10	0	47	0	0	0	0	0	0	0	108	**208**
Uruguay	0	13	0	0	0	0	1	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	**43**
Vietnam	0	86	0	0	0	0	0	0	2	0	0	0	0	9	0	34	25	0	0	0	0	0	0	0	**156**

Table 2-17 Age distribution of holders of EaRs by departments

Department	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Deck	2277	12181	12533	11157	8390	6334	6822	5347	3424	**68465**
Engine	1380	7821	8532	7513	8000	7148	7620	6124	4429	**58567**
TOTAL[17]	**3639**	**19936**	**21013**	**18628**	**16371**	**13461**	**14412**	**11459**	**7847**	**126766**

Table 2-18 Age distribution for engineer officers holding EaRs

Capacity	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Chief Engineer	1	99	1144	2666	3298	3348	4179	3710	3082	**21527**
Second Engineer	37	1456	3418	2472	2219	1742	1490	1055	678	**14567**
Chief Eng. 3,000 kW	1	53	143	176	175	194	233	225	287	**1487**
Second Eng. 3,000 kW	25	207	217	159	133	125	121	137	93	**1217**
OEW	1318	6041	3674	2086	2203	1762	1624	1009	298	**20015**
Electro-technical Officer	0	2	7	8	6	9	3	5	2	**42**
TOTAL	**1380**	**7821**	**8532**	**7513**	**8000**	**7148**	**7620**	**6124**	**4429**	**58567**

Table 2-19 Age distribution for masters and deck officers holding EaRs

Capacity	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Master	3	148	1548	3198	3376	3068	3912	3288	2541	**21082**
Chief Mate	62	2396	4678	3491	2310	1475	1188	823	416	**16839**
Master 3,000 GT	1	11	87	144	143	190	183	168	161	**1088**
Chief Mate 3,000 GT	66	406	305	171	106	94	85	92	38	**1363**
OOW	2137	9228	5949	4125	2423	1469	1423	948	241	**27943**
Master 500 GT, NCV	4	28	50	79	65	61	55	37	27	**406**
OOW 500 GT, NCV	6	33	20	12	11	8	12	5	2	**109**
TOTAL	**2277**	**12181**	**12533**	**11157**	**8390**	**6334**	**6822**	**5347**	**3424**	**68465**

[17] The sum of the rows may not be equal to the total because some officers held EaRs for both Deck and Engine Departments

Table 2-20 Age distribution of officers holding EaRs by gender group[18]

Gender	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Female	57	322	171	73	37	29	22	13	5	**729**
Male	3118	18222	19629	17538	15548	12835	13753	11051	7663	**119357**
TOTAL	**3175**	**18544**	**19800**	**17611**	**15585**	**12863**	**13775**	**11064**	**7668**	**120085**

Table 2-21 Age distribution by region of the country issuing the original CoC

Region of the country issuing the original CoC	age<25	25≤age<30	30≤age<35	35≤age<40	40≤age<45	45≤age<50	50≤age<55	55≤age<60	age≥60	Total
Asia	1217	6562	6985	6952	6303	4078	4271	3714	1428	**41510**
EU	634	4972	6442	5790	4603	4216	4780	4393	4050	**39880**
Europe (non-EU)	1603	7475	6776	5305	4929	4626	4766	2840	1917	**40237**
Rest of the World	185	907	760	559	507	504	556	479	432	**4889**
TOTAL	**3639**	**19911**	**20950**	**18595**	**16337**	**13420**	**14372**	**11425**	**7826**	**126475**

[18] Poland and the Netherlands not included

Appendix C Data on ratings holding valid CoPs in 2014

Table 2-22 Ratings holding CoPs registered by EU Member States

Capacity	BE	CZ	DE	EE	ES	FI	FR	HR	IT	LT	LV	PL	RO	SE
Able seafarer deck	0	1	0	2786	0	252	0	1	0	109	878	0	1473	181
Rating forming part of a navigational watch	982	0	2941	1188	7971	165	6558	3723	1257	1322	1561	4243	0	5882
Able seafarer engine	0	0	0	0	0	210	0	0	0	0	285	74	0	2059
Rating forming part of an engineering watch	455	0	803	2666	3264	141	3283	1824	576	398	853	1992	1642	48
Electro-technical rating	0	0	0	16	0	39	0	956	0	0	14	58	33	296
TOTAL[19]	**1805**	**1**	**7976**	**5719**	**9893**	**1860**	**7981**	**6187**	**1804**	**1811**	**3207**	**6245**	**3146**	**8135**

[19] The sum of the rows may not be equal to the total because some ratings held certificates for both the Deck and the Engine Departments

European Maritime Safety Agency
Praça Europa 4
1249-206 Lisbon, Portugal
Tel +351 21 1209 200
Fax +351 21 1209 210
emsa.europa.eu