



Department
for Transport

Seafarer Statistics – User Engagement Exercise

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2 Introduction

2.1.1 *Seafarer Statistics*¹ is an annual publication produced by the Department for Transport on the number of UK seafarers active at sea and non-UK nationals who are qualified to work as officers on UK registered ships.

2.1.2 The Department is reviewing these statistics and will be working with users to ensure that the publication is useful and accurate and that it continues to be fit for purpose. By continuously improving the series, we can ensure that it meets the requirements of informed decision-making by government, public services, business, researchers and the public.

2.1.3 *The Code of Practice for Official Statistics*² provides us with a framework for the review. It sets out the protocols and practices that should be followed for the production and publication of statistics, including (among others) meeting user needs, ensuring sound methods are used and that quality is assured.

2.1.4 Through this review, we aim to:

- Consult informally with users and stakeholders to determine their requirements;
- Review the publication's existing methodology;
- Determine potential alternative data sources and methodologies, and investigate their feasibility and accuracy;
- Assess and compare each option; and,
- Determine the most suitable options for future publications.

¹ <https://www.gov.uk/government/collections/maritime-and-shipping-statistics>

² <https://www.statisticsauthority.gov.uk/monitoring-and-assessment/code-of-practice/>

3 Background

- 3.1.1 The maritime sector is essential to the UK economy and contributes at least £11 billion towards it³. With around 95 per cent of UK imported and exported goods transported by sea (including about 40 per cent of our food⁴ and about one quarter of our energy⁵) our island nation has a huge reliance on the shipping industry.
- 3.1.2 An estimated 23,000 UK nationals were seafarers working regularly at sea in 2015⁶. This number decreased at an average annual rate of four per cent per annum between 2010 and 2014, before increasing by two per cent in 2015.
- 3.1.3 The Department for Transport's annual publication on the number of UK seafarers active at sea also includes statistics on non-UK nationals qualified to work as officers on UK registered ships. It is through these statistics that we are able to gain a better picture of the workforce, including the age, gender, nationality and rank of the seafarers.
- 3.1.4 Interest in the supply of, and demand for UK seafarers has grown in recent years, with attention from a number of areas. In 2014, the Transport Select Committee assessed⁷ the Government's shipping strategy. One of the focuses of the resulting report was the UK's maritime skills base and its future. The conclusions covered the training, skills and career progression of seafarers. The 2015 Maritime Growth Study⁸ reached similar conclusions on the maritime skills base, with recommendations including extending the range of apprenticeships offered.
- 3.1.5 A review of the Support for Maritime Training (SMarT) scheme is also being undertaken in 2016 to evaluate whether it is fit for purpose, and it is likely that in future there will be continued scrutiny on this scheme or any alternative future schemes, to gauge whether value for money is being delivered.
- 3.1.6 Other users of *Seafarer Statistics* include unions representing officers and ratings, academics and organisations within the maritime sector.
- 3.1.7 With the recent greater interest in this area, it is more important than ever that the statistics are fit for purpose, robust and timely, and that they meet user needs. The Department is proactively carrying out a review of these statistics to ensure that the publication continues to be both useful and accurate.

³ DfT analysis of ONS GVA from the Input-Output Supply and Use Tables, apportioned using detailed SIC data for approximate GVA from the ONS Annual Business Survey

⁴ UK Food Production to Supply Ratio ('Self-Sufficiency') all food, Agriculture in the United Kingdom, 2014, Department for Environment, Food and Rural Affairs
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/430411/aug-2014-28may15a.pdf

⁵ Digest of UK Energy Statistics, 2014, Department of Energy and Climate Change estimates that in 2013, net imports accounted for 47 per cent of energy used in the UK.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338750/DUKES_2014_printed.pdf
Applying some basic assumptions (that all coal imports are imported by sea, that half of all petroleum imports are imported by sea and 55 per cent of LNG imports come into the country by pipeline) therefore implies that approximately 28 per cent of UK energy used in the UK arrives in the UK by sea

4 Feedback

4.1.1 In order to establish users' needs and to understand the purposes for which the *Seafarer Statistics* series is being used, we would be interested in hearing your views. Section 12 invites users to respond to a number of specific questions relating to the publication. We encourage you to respond to these questions by completing the online survey or contacting us directly using the contact details provided.

5 Defining the UK seafarer population

5.1.1 One of the key questions that will need to be answered as part of this review is **which seafarer population should the statistics series capture?**

5.1.2 The series has historically focussed on UK seafarers, but the review should identify whether this is still what users require. Options include:

- UK seafarers – Seafarers with UK nationality (who normally live in the UK when they are ashore);
- European Economic Area (EEA) seafarers (including UK) – Seafarers that have the right to live and work in any part of the EEA and are therefore eligible to work as seafarers in the UK;
- Seafarers of any nationality working on UK vessels.

5.1.3 There are also a number of different definitions for the UK fleet. The options are:

- UK managed vessels – Vessels that could be owned and registered elsewhere in the world, but managed by a UK shipping company (this is the existing definition used in the series);
- UK registered ships – Ships listed on the Maritime and Coastguard Agency's (MCA) UK Ship Register; UK owned vessels – Vessels registered to any fleet in the world but still ultimately owned by a UK owned group of companies;
- Any vessels with a UK connection – any vessels that fit one or more of the above definitions, covering any vessels that are connected to the UK.

5.1.4 The data collection methods required to provide figures for the options above would differ from option to option. There are strengths and limitations to each option, and these will be discussed later in section 8.

⁶ Seafarers Statistics 2015, DfT

⁷ 'Forging Ahead?: UK Shipping Strategy':

<http://www.publications.parliament.uk/pa/cm201314/cmselect/cmtran/630/630.pdf>

⁸ 'Maritime Growth Study':

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/460861/maritime-growth-study-keeping-UK-competitive.pdf

6 Content and structure of the publications

- 6.1.1 Section 13 invites users to respond to a number of specific questions relating to the *Seafarer Statistics* publication. These include questions on the structure and content of the publication and the supporting technical notes.
- 6.1.2 The main release includes a combination of charts and commentary for each of the following topics:
- Key overall trends,
 - UK seafarers active at sea,
 - UK certificated officers, uncertificated officers and ratings active at sea,
 - Officer trainees
 - Gender of officers and ratings
 - Age bands of UK officers with Certificates of Competency and non-UK officers with Certificates of Equivalent Competency
 - Nationalities of non-UK officers with Certificates of Equivalent Competency
 - Nationalities of non-UK officers with Certificates of Competency
- 6.1.3 At the end of main release document, there are sections on user feedback, strengths and weaknesses of the data, links to further information, and a glossary.
- 6.1.4 The separate technical notes provide more detail on the data sources, methodology, assumptions and definitions.
- 6.1.5 Users can also access summary tables of data covering the topics listed above. Previously, these were published in Excel format, but in future releases they will be provided in Open Document Source (ODS) format, in line with guidance⁹ issued by Cabinet Office.

7 Current Methodology

- 7.1.1 This section sets out the data sources currently used for *Seafarers Statistics*, and the processing adjustments applied to this data to produce the annual results.

7.2 Data sources

- 7.2.1 Two data sources are currently used to compile *Seafarer Statistics*:

⁹ More information about this guidance can be found here:
<https://www.gov.uk/government/news/open-document-formats-selected-to-meet-user-needs>

- Figures on UK certificated officers are obtained from the Maritime and Coastguard Agency, and are drawn from an administrative system used to record certifications. The MCA also provides figures on cadets and the number of trainees being trained through the SMarT scheme.
- Figures on uncertificated¹⁰ officers and ratings are obtained from the UK Chamber of Shipping Manpower Survey. The Department commissions this survey, which is then completed by members of the Chamber, and provides information on the gender, age, nationality and department of officers and ratings.

7.3 Processing adjustments

- 7.3.1 The statistics series is badged as a National Statistic, meaning that it has been assessed by the UK Statistics Authority as being compliant with the Code of Practice for Official Statistics, and is therefore deemed to be trustworthy, high quality and of public value. However, the data sources have some limitations and this review will re-evaluate these and aim to address them where possible:
- 7.3.2 **“Active at sea” assumption** - Certificates are valid for a period of five years and the seafarer documentation system (SDS) does not hold any information regarding the current employment status of the officers, therefore the number of officers active at sea is estimated.
- 7.3.3 The majority of certificated officers will be working regularly at sea but a minority holding valid certificates will have shore based jobs and will never or rarely go to sea. Some officers work ashore but keep their certificates up to date. It is also possible that some officers who have revalidated their certificates subsequently leave the industry but their records remain in the SDS database until the end of the five year revalidation cycle.
- 7.3.4 At present there is no definitive estimate for the proportion of inactive seafarers, with propositions ranging from as low as 7 per cent to as high as 21 per cent. The statistics series assumes that 16 per cent of certificated seafarers are not currently active at sea. This is based on a 2004 study by London Metropolitan University¹¹.

¹⁰ ‘Uncertificated’ officers are officers who are not required to hold an MCA certificate but are engaged to meet company specific operational requirements. These can be broken down into those working in technical capacities (e.g. electrical officers, refrigeration engineers, etc.) and those working in the catering or hotel departments (individuals with equivalent officer status but without maritime training).

¹¹ United Kingdom Seafarers Analysis 2004, D Glen, J Dowden and R Wilson, London Metropolitan University

7.3.5 Two upcoming projects should provide opportunities to update this assumption. During 2016, updated supply and demand forecasts are being produced as part of the Seafarer Projections Review. The review, scheduled for completion in autumn 2016, includes a survey of 5,000 organisations in the UK maritime sector, asking industry about their seafarer employment levels and future needs. Also in 2016, the Chamber of Shipping will be conducting a survey of both Chamber members and non-members to determine the number of seafarers working on UK ships. The Chamber members' data will be used within the Seafarer Statistics series, as in previous years. However, the non-member data will be used to inform this review. The data collected will provide further insight into seafarer employment and contribute to updating this assumption. Without updating the assumption, there is a risk that if inaccurate, this factor may overestimate or underestimate the number of certificated officers. Table 1 illustrates the effect of applying this assumption over the past three years, through comparison to the unadjusted raw data.

Table 1: Number of UK certificated officers, with and without “active at sea” assumption, 2013 to 2015

UK certificated officers	2013	2014	2015
Without “active at sea” assumption applied	12,910	12,990	13,010
With “active at sea” assumption applied	10,850	10,910	10,930

*Note that all figures in this table include an assumption about officers retiring at age 62.

7.3.6 **Retirement assumption** - As some seafarers will retire before their certificate expires, estimates for the retirement ages have been made. Under the present Merchant Navy Officers Pension Plan, an employee can retire at any time between 61 and 75. However, the trade union Nautilus UK have stated that the typical retirement age is 61, i.e. on the 61st birthday. After 61 the employer has to agree to continuing employment and the employer and employee can continue to make further contributions to the pension.

7.3.7 The statistics series assumes a retirement age of 62, i.e. on the 62nd birthday, as some officers will retire after the age of 61. An alternative retirement age of 65 years is also provided; giving a maximum estimate.¹¹ The assumption has not been tested or updated recently and so if it is incorrect, it may bring bias into the results. The Seafarer Projections Review and the data collection being conducted by the Chamber of Shipping will provide us with up-to-date figures on seafarer employment and can subsequently be used to inform updated retirement age assumptions.

7.3.8 Table 2 displays the effects of applying the existing retirement assumptions, by comparing with the unadjusted figures. In each of the past three years, around 1,000 officers are removed by assuming a retirement age of 65 (compared to no retirement assumption at all) and an additional 1,000 have been removed when the assumed retirement age is lowered from 65 to 62.

Table 2: Number of UK certificated officers, with and without assumed retirement ages of 62 and 65, 2013 to 2015

UK certificated officers	2013	2014	2015
Assuming retirement at 62	12,910	12,990	13,010
Assuming retirement at 65	13,860	13,990	14,050
No assumption about retirement	14,841	14,968	15,227

*Note that the figures in the table above do not include any assumptions about the proportion active at sea.

7.3.9 **Chamber of Shipping survey coverage** - The Chamber of Shipping Manpower Survey only covers members of the Chamber, and so any uncertificated officers and ratings that are employed by shipping companies that are not members of the Chamber, are not included in the statistics.

Survey non-response and CoS membership changes over time could also introduce inaccuracies and inconsistencies into the statistics.

7.3.10 **Comparison with Balance of Payments methodology** – the Chamber of Shipping also collect data on behalf of the Office for National Statistics for use in the Balance of Payments methodology. However, the results are grossed-up to account for ship operators who are not CoS members. Data on the UK fleet available annually from a commercial supplier are used to weight (or ‘gross-up’) the results using gross tonnage of member vessels. Grossing factors are calculated for each ship type as follows¹²:

$$\text{Grossing factor} = \frac{\text{Commercial supplier ship tonnage}}{\text{CoS ship tonnage}}$$

8 Proposals

8.1.1 Three main options for data collection have been determined, and are presented in Table 3, alongside commentary on how well these cover the target populations of the UK fleet and UK seafarers. Two of these options – MCA certification data (1) and the manpower survey of Chamber of Shipping members (2) - are already used in the existing publication, whilst the third is for an enhanced version of the manpower survey expanded to include companies that are not members of the Chamber of Shipping.

8.1.2 It is assumed that data on cadet trainees under the SMarT1 scheme will continue to be collated by the MCA as an output of their administrative responsibilities, and is not presented within these options.

¹² Balance of Payments methodology:
<http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/balance-of-payments/index.html>

Table 3: Summary of data collection options and whether they capture the populations listed

Data collection options				
		MCA certification data (1)	Survey of Chamber of Shipping members (2)	Survey of Chamber of Shipping members and non-members (3)
Coverage of the target population of ‘seafarers’				
Does the option cover...	...Nationals of the UK?	Yes – but only certificated officers		Yes – but only those on UK managed, registered or owned vessels (not those without a UK connection)
	...Nationals of EEA Member States?	Yes – but only certificated officers	Yes – but only those on UK managed ships	
	...Seafarers of any nationality on UK vessels?	No – employment of seafarers is unknown in this dataset so it’s not possible to identify those working on UK vessels specifically		Yes
Coverage of the target population of seafarers working on ‘UK’ vessels				
Does the option cover...	...UK managed vessels?	No - employment of seafarers is unknown in this dataset so it’s not possible to identify those working on UK vessels specifically	Yes	
	...UK registered vessels?		No - the Chamber of Shipping survey covers UK managed vessels	Yes
	...UK owned vessels?			

8.1.3 These data collection options each capture different groups of seafarers and so we invite users’ views on which populations, and therefore data, would be most useful to them, and the purposes for which the data would be utilised.

- 8.1.4 Option (3) - carrying out a survey of Chamber of Shipping members and non-members - produces the widest range of possible metrics. All of the definitions of nationality and UK fleet mentioned would be captured to some extent. However, running a survey of all UK shipping companies every year is the most expensive option. Furthermore, as there are no exhaustive or regularly updated lists of non-members, it would be difficult to assess whether the companies contacted are truly representative of the population as a whole.
- 8.1.5 Option (1) - the MCA certification data - does not directly quantify seafarer employment. The existing assumptions about retirement ages and the proportion of seafarers that are 'active at sea' are used to estimate actual employment levels, but testing these assumptions is difficult. As an administrative data source, the data on certifications is complete, and includes details of all valid certificates so is not based on a sample or an estimate. This source could still be used to present information on certificates, even if not used to represent employment as it has in the past.
- 8.1.6 Within the current methodology, the CoS survey captures information on all officers and ratings, but we only *publish* the data for uncertificated officers and ratings, as we supplement this with the MCA data on certificated officers. Survey data could be used instead of the administrative source for certificated officers, so that all officers and ratings data is collected through the survey in a consistent way. Options (2) and (3) could provide this if the survey is carried out every year.

Box 1: Strengths and limitations of the methodological approach to using these options

Three main data collection options have been presented, alongside their strengths and limitations. However, there are also multiple ways of processing and adjusting the data once collected, and each of these result in different estimates of the number of seafarers.

By bringing these data collection and processing options together, **we have determined four overall methodologies** that could be used within the *Seafarer Statistics* series.

These are **presented in Annex A**, on page 21.

Users are invited to comment on the methodologies and provide views on which they would prefer and why.

- 8.1.7 None of the options specifically cover UK or EEA seafarers working on vessels that do not have a connection to the UK. The MCA certification database covers officer certificates – these certificated officers could be working anywhere in the world, the database only holds information on the certificates, and not the employment status of the officers. It is therefore not possible to identify those working on non-UK ships explicitly.

9 Alternative data sources

9.1.1 A number of papers and studies were reviewed to determine whether alternative existing data sources might be suitable for use in the statistics series (see Literature Review, section 11). A number of studies have been concluded on the topic of seafarers but have largely relied on a small number of considerable dated studies, small scale surveys and the data sources that are already used within the publication.

9.1.2 However, one other data source has been identified: data from the trade unions that represent UK seafarers offers potential and could be further investigated. It is understood that many officers and ratings are members of Nautilus or the Rail, Maritime and Transport workers trade union (RMT). Administrative data held by these trade unions could be used to produce summaries of their membership.

Strengths

9.1.3 This method may capture a large number of seafarers for a relatively low cost, and provide good coverage of the population. There is also potential for demographic data to be used to present a richer picture of the characteristics of seafarers.

Limitations

9.1.4 It is possible that the population of the trade union membership of UK seafarers may under-cover the target population of UK seafarers. This could introduce bias into the statistics if the seafarers who are trade union members are not representative of the wider seafarer population.

9.1.5 Administrative data sources pose a number of challenges. Data cleaning may be required (for example, dealing with missing or anomalous values), and it may be difficult to assess whether the data covers the target population. There is a risk of relying on data for which control is held by a third party: the availability, content and quality of the data might change over time, which could affect the robustness of the outputs. Gaining access to external administrative data sources can take time, and this could cause delays to publishing the data, leading to statistics that are not timely.

9.1.6 As this method would be very different to the current method, there would be a clear break in the time series. Comparisons over time could only be made if it was possible to gain access to historic data.

9.1.7 This data would not qualify as Official Statistics and would not be eligible for National Statistics branding.

9.1.8 It is possible that that other data sources are available that our research has not identified. If users are aware of any such sources please do inform us using the contact details provided at the end of this document.

10 Expanding the coverage of the series

- 10.1.1 Some additional data sources have been identified that could be added to supplement the existing series if users would find this useful.
- 10.1.2 The series already includes data on officer trainees as reported to the Maritime and Coastguard Agency, but some options for further breakdowns of this data, and an alternative data source for officer trainee data are presented below. We are also aware that data on apprenticeships are available to cover a small part of the seafarer population that has not previously been covered in the series. A database covering Royal Fleet Auxiliary personnel is another source that could be further investigated, as a major employer of ratings.

10.2 Additional data on officer trainees

- 10.2.1 Each year, the *Seafarer Statistics* publication includes the number of officer cadets currently in training, and of these, the number that are new entrants to the SMarT1 scheme.
- 10.2.2 It is now possible to publish figures on the age, gender and nationality of new entrants. At present, no additional demographics are available for those continuing their training, although the total number of cadets completing their training each year is available.
- 10.2.3 The Merchant Navy Training Board (MNTB) also collates data on officer cadets each academic year, as reported by sponsoring companies and training management organisations. This largely comprises companies that claim SMarT funding, but also includes Royal Fleet Auxiliary officer trainees, who are not eligible for SMarT funding.
- 10.2.4 We welcome users' views on whether it would be useful if the annual series included additional data on trainees, and what this data would be used for.

10.3 Data on apprenticeship frameworks and standards

- 10.3.1 Though the number of seafarer apprentices is relatively small, especially in the context of the overall trainee population, there is substantial national and political interest. It is therefore important to monitor and assess numbers and ensure that a robust evidence base is in place so that progress against targets can be monitored.
- 10.3.2 Groups of employers (Trailblazers) are leading the way in carrying out the changes to apprenticeships, and they have been working with government to create new apprenticeship standards: short descriptions of the skills, knowledge and attitudes employees need to demonstrate in a particular industry, and how they should be assessed. Four of the new apprenticeship standards within the Trailblazer¹³ scheme are within the maritime industry – able seafarer (deck), maritime mechanical fitter, advanced systems engineering and boatbuilding apprenticeships. Further apprenticeships are

¹³ Read more about the new apprenticeship standards ('Trailblazers') here: <https://www.gov.uk/government/collections/apprenticeship-standards>

also being developed. The first of these apprenticeships will commence in September 2016.

Maritime industry apprenticeship framework pathways

- 10.3.3 Prior to the introduction of the new Trailblazer scheme, apprenticeships were run under industry frameworks. These frameworks were much more detailed than the new standards, and included all of the statutory requirements for an apprenticeship programme. They were used by colleges, employers and training providers to make sure that all apprenticeship programmes were delivered consistently, and included information on the qualifications achieved on completion of these apprenticeships.
- 10.3.4 Migration from apprenticeship frameworks to standards will take place over the course of this Parliament, and there is an aim to complete as much of this migration as possible by 2017/18.
- 10.3.5 There are eleven maritime apprenticeships under the old framework structure: seven at intermediate and four at advanced level. These cover both deck and engine room ratings, sea fishing, inland waterways, workboats and marina and boatyard operatives. It should be noted that these are not all related to seafaring.
- 10.3.6 The full list of apprenticeships for maritime occupations that fall under the Maritime Occupations framework can be found in the online frameworks library¹⁴.
- 10.3.7 Figures published¹⁵ by BIS and the Skills Funding Agency indicate that 90 learners started maritime occupation apprenticeships in 2014/15. Tables B1-B3 (Annex B) set out the total number of apprenticeships that started under the Maritime Occupations framework, the number of achievements and the number on each specific pathway.
- 10.3.8 Although the maritime apprenticeships under the new standards have not commenced yet, BIS has started to publish figures for the standards that have commenced in other sectors (for example, installation electricians and manufacturing engineers). The published tables exemplify the data that will be available for the maritime apprenticeship standards in the future. There is an option to request and publish additional detail on these maritime apprenticeships to provide a more complete narrative of the seafarer population.

Strengths

- 10.3.9 By including the data on apprenticeships, users will have a more complete picture of the seafarer population and can consider these numbers against the other data on seafarer trainees.

¹⁴ Read more about the maritime occupations apprenticeship frameworks here: <http://www.afo.sscalliance.org/frameworkslibrary/index.cfm?id=FR03245>

¹⁵ See the bottom section of the table in the workbook: 'Apprenticeships by framework (SASE grouped): starts 2002/03 to 2015/16 reported to date' <https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships>

Limitations

- 10.3.10 The small numbers show that, at present, apprentices are not a big part of the trainee seafarer population and so the figures may only become useful in future years when volumes are higher and trends can start to be analysed. However, starting to compile these statistics now will be easier than waiting until numbers are higher and compiling them retrospectively.
- 10.3.11 Figures are not available for what happens to a learner once an apprenticeship has been completed – we can see how many apprenticeships have been achieved but not whether this then leads to a job at a shipping company or other maritime organisation.

10.4 Data on Royal Fleet Auxiliary personnel

- 10.4.1 The Ministry of Defence publishes quarterly¹⁶ and monthly¹⁷ figures on Royal Fleet Auxiliary personnel. The RFA is a civilian-manned fleet, owned by the MOD, which supports Royal Navy ships around the world, supplying warships with fuel, ammunition and supplies. The data is relevant to the *Seafarer Statistics* series as the RFA is a major employer of UK registered ratings. Tables 4-5 present recent summary figures.

Table 4: Headcount of Royal Fleet Auxiliary personnel, January 2015 to July 2016¹⁶

	2015 1 Jan	2015 1 Apr	2015 1 Jul	2015 1 Oct	2016 1 Jan	2016 1 Apr	2016 1 Jul
Apprentices	10	40	50	80	100
Cadets	80	80	90	80	90	80	80
Civilians	190	180	180	180	170	170	170
Sponsored Reserves	1,570	1,640	1,630	1,620	1,620	1,620	1,610
Total	1,840	1,890	1,910	1,920	1,930	1,950	1,960

* Strengths are rounded to the nearest ten. ‘..’ Indicates data were not available. Totals may not sum due to rounding.

Table 5: Royal Fleet Auxiliary Sponsored Reserves, by rank, January 2015 to July 2016¹⁷

	2015 1 Jan	2015 1 Apr	2015 1 Jul	2015 1 Oct	2016 1 Jan	2016 1 Apr	2016 1 Jul
Officers	520	550	560	570	580	590	600
Other Ranks	1,050	1,090	1,070	1,050	1,040	1,030	1,010

* Strengths are rounded to the nearest ten.

- 10.4.2 There are also options to provide data on age, gender and grade for RFA personnel, none of which has previously been published.

¹⁶ See Table 3, MOD quarterly civilian personnel statistics report

<https://www.gov.uk/government/collections/mod-civilian-personnel-quarterly-statistics-index>

¹⁷ See Table 8b, MOD monthly service personnel statistics: <https://www.gov.uk/government/statistics/uk-armed-forces-monthly-service-personnel-statistics-2016>

11 Literature Review

- 11.1.1 A list of papers evaluated through the literature review can be found in the bibliography in Annex C.
- 11.1.2 A short literature review was carried out to explore recent seafarer-related papers and studies, examine the sources used within them, and identify areas that could inform the methodology review. The review focused on academic papers that were available online.
- 11.1.3 The papers studied through the review came from a wide range of different sources, including governments, research companies, shipping associations, unions, consultants, economic organisations and academics. Some were solely focused on seafarers, whereas others mentioned seafarers in the wider context of the maritime industry.
- 11.1.4 Although a large amount of research has been carried out in the area of seafarers, the number of existing data sources was found to be relatively small. Many papers mentioned the difficulty of finding comprehensive sources of information, and most used evidence collected by several dated studies within their research, alongside small surveys of their own that were carried out to look in more depth at their specific area of interest.
- 11.1.5 A number of the papers used data sources that are already regularly used by, or even produced by, the department, including *Seafarer Statistics*, the Deloitte and Oxford Economics review of the economic requirement for trained seafarers **Error! Bookmark not defined.**, the Gardner study¹⁸ which underpinned the economic review, and the Maritime Growth Study⁸. Several papers used data from the Maritime and Coastguard Agency and the Chamber of Shipping Manpower Survey – the sources used in the *Seafarer Statistics* publication.
- 11.1.6 Two sources we identified that might be useful for furthering our statistical data collection are:
- Administrative databases held by seafarer unions - explored further in the *Alternative data sources* section (page 1211), and,
 - Records from the UK nautical colleges - data from the Merchant Navy Training Board is investigated in the *Expanding the coverage of the series* section (page 12).

¹⁸ The UK economy's requirements for people with experience of working at sea, Gardner et al, 2003: www.fisherassoc.co.uk/dbimgs/Seafaring%20Skills%20Demand%20in%20UK.pdf

12 How to respond

12.1.1 We would be grateful for feedback on the options proposed or other suggestions for changes to the methodology of *Seafarer Statistics*, so that we can consider how the release can better meet user needs and how the dissemination of information can be improved.

12.1.2 You can provide feedback by completing our [short user feedback survey](#). Alternatively, you can contact us by **email** to Maritime.Stats@dft.gsi.gov.uk or **phone** 020 7944 4892.

12.2 Specific points for feedback

12.2.1 We would be particularly interested in your answers to the following questions.

Section 1 – Who you are and why you are interested in these statistics

1. What field do you work in?
 - Central government or executive agency
 - Local government
 - Media – local/ national
 - Media – transport/ specialist
 - Transport interest group
 - University/ researcher
 - Student
 - Consultancy
 - Maritime industry body
 - Maritime training organisation
 - Shipping company
 - Not applicable
 - Other (please specify)

2. For what purposes do you use *Seafarer Statistics*?

Section 2 – Definitions, data sources and methodology

3. Which types of seafarer are you interested in? (please tick all that apply)
 - Deck and engine officers ('certificated' officers)
 - Other officers ('uncertificated' officers)
 - Officer trainees
 - Ratings
 - Other (please specify)
4. Which population of seafarers are you interested in? (please tick all that apply)
 - UK seafarers – Seafarers with UK nationality (who normally live in the UK when they are ashore)

- European Economic Area seafarers (including UK) – Seafarers that have the right to live and work in any part of the EEA and are therefore eligible to work as seafarers in the UK
- Seafarers of any nationality working on UK vessels
- Don't know / Don't mind
- Other (please specify)

5. Which definition of the UK fleet are you interested in? (please tick all that apply)

- UK managed vessels – Vessels that could be owned and registered elsewhere in the world, but managed by a UK shipping company
- UK registered ships – Ships listed on the MCA UK Ship Register
- UK owned vessels – Vessels registered to any fleet in the world but still ultimately owned by a UK owned group of companies
- Don't know / Don't mind
- Other (please specify)

6. Annex A summarises four options for overall methodologies that could be used within the series, covering both data collection and data processing. The following question sets out these four methodologies and asks users to comment. Users without a technical background or who only wish to comment on the topics covered, should go straight to Question 7.

Which of the methodologies presented below would be suitable for your needs? (please tick all that apply)

- Methodology 1 – Continue with the current methodology
- Methodology 2 – 'Boost' the coverage of the Chamber of Shipping manpower survey for specific years and weight the CoS member data in non-boost years
- Methodology 3 – Run a survey to collect data on all seafarers
- Methodology 4 - Gross the CoS survey data to match the number of UK ships

Please provide any comments you have on the methodologies presented.

Table: Summary of methodologies for data collection and processing

	Methodology 1	Methodology 2	Methodology 3	Methodology 4
Data collection				
MCA certification data	x	x		
Survey of CoS members	x			x
Survey of CoS members and non-members		x	x	
Data processing				
Apply existing assumptions about the proportion active at sea to the MCA certification data	x			
Use CoS survey data to adjust MCA certification data		x		
Weight CoS survey to represent larger population including non-CoS employers		x		
For certificated officers, switch from using MCA data to data collected by CoS survey			x	x
Gross the CoS survey to match the number of UK managed ships				x

7. Which of the following additional or alternative data sources would you be interested in? (please tick all that apply)
- Data from the unions
 - Data on apprenticeships
 - Data on the Royal Fleet Auxiliary
 - Other (please specify)
 - None

If you have indicated that any of the additional or alternative data sources would be useful, for what purposes would you intend to use these?

Please provide any other comments you have on additional or alternative data sources.

8. Please provide any further comments you may have regarding the data sources and methodology used to produce *Seafarer Statistics*?

Section 3 – Structure and content of the statistical releases

9. How useful do you find the statistical release summary (the PDF document with the text and charts summarising the key figures)?
- Not at all useful
 - Not very useful
 - Somewhat useful
 - Very useful
 - I don't read the summary/ Not applicable

Please elaborate on your answer (e.g. what is useful / not useful?)

10. How useful do you find the technical notes?
- Not at all useful
 - Not very useful
 - Somewhat useful
 - Very useful
 - I don't read the technical notes/ Not applicable

Please provide any comments you have on the technical notes.

11. How useful do you find the data tables?
- Not at all useful
 - Not very useful
 - Somewhat useful
 - Very useful
 - I don't use the data tables/ Not applicable

Please provide any comments you have on the data tables.

12. Please indicate the extent to which each of the topics covered in the release are, or may be, of interest for your work. (Please tick the relevant option for each row).

	High interest	Some interest	Little interest	No interest
Age				
Gender				
Rank (certificated officers only) – e.g. Chief Engineer, Master, Chief Mate, etc.				
Department – e.g. deck, engine, catering/hotel, technical, etc.				
Nationality				
Certificate type (certificated officers only) – e.g. Certificate of Competency, Certificate of Equivalent Competency, Tugs and Inshore Craft, Yachts				

13. If there are any other topics not covered in the release, but that you would find useful, please list these, and let us know how these would be used.

14. Please provide any further comments you have regarding the structure and content of the statistics series.

15. If you would like to be added to our *Seafarer Statistics* user email list, please provide your name, organisation and email address. People on this list will be informed about important updates and be asked their views on topics relating to the statistics series.

12.2.2 Comments are requested by 30 October 2016.

12.2.3 An update on the methodology review will be published alongside the *Seafarer Statistics* release in January 2017.

12.2.4 Any published conclusions based on responses to this user engagement exercise will be anonymised. However, respondents should be aware that any information provided in response to this review - including personal information - may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes.¹⁹

¹⁹ Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and Environmental Information Regulations 2004.

13 Annex A – Methodology Options

13.1.1 As presented in Section 8, there are three main data collection options.

However, there are also multiple ways of processing and adjusting the data once collected, and each of these result in different estimates of the number of seafarers.

13.1.2 By bringing these data collection and processing options together, we have determined four overall methodologies that could be used within the *Seafarer Statistics* series. These could change based on users' views on which populations should be captured, but in general, the methodologies presented below are the core choices. Amongst these is the existing methodology.

13.1.3 Users are invited to comment on the methodologies and provide views on which they would prefer and why.

Table A1: Summary of options for data collection and processing

	Meth. 1	Meth. 2	Meth. 3	Meth. 4
Data collection				
Option 1 - MCA certification data	x	x		
Option 2 - Survey of CoS members	x			x
Option 3 - Survey of CoS members and non-members		x	x	
Data processing				
Apply existing assumptions about the proportion active at sea to the MCA certification data	x			
Use CoS survey data to adjust MCA certification data		x		
Weight CoS survey to represent larger population including non-CoS employers		x		
For certificated officers, switch from using MCA data to data collected by CoS survey			x	x
Gross the CoS survey to match the number of UK managed ships				x

13.2 Methodology 1 – Continue with the current methodology

13.2.1 This methodology would involve continuing to use MCA certification data for certificated officers, and running a survey of Chamber of Shipping members to provide figures for uncertificated officers and ratings (as is currently provided by the Chamber of Shipping Manpower Survey).

Strengths

13.2.2 This method provides a high response rate as a result of the relationship that the CoS has with its members. Companies are familiar with the survey and this helps to achieve a consistent response each year. Deciding to continue with this method would also mean that there would be no break in the time series.

Limitations

13.2.3 The MCA certification data counts certifications rather than seafarers active at sea, and the current assumptions applied to correct for this are difficult to quality assure.

13.2.4 The CoS survey excludes any seafarers that are employed by non-CoS members, and as CoS membership changes over time, this method does not necessarily provide a full picture of UK seafarer employment.

13.3 Methodology 2 – ‘Boost’ the coverage of the Chamber of Shipping manpower survey for specific years and weight the CoS member data in non-boost years

13.3.1 This methodology would involve ‘boosting’ the coverage of the Chamber of Shipping manpower survey for specific years to include relevant companies who are not members. These results would then be used to weight the CoS member data in non-boost years to represent the ‘complete’ population, including non-members. Certification data from the MCA would still be used to estimate certificated officers.

13.3.2 Boost years would:

- Produce estimates on what proportion of certificated officers are active at sea. These could be used in the periods between boosts to adjust the MCA certification data to reflect employment rather than certification holding.
- Quantify the number of seafarers working for non-CoS affiliated companies and thereby produce a weighting factor to adjust the CoS members’ results in the years between boosts to represent the wider population.

13.3.3 The contract for the data collection for the 2016 *Seafarer Statistics* publication has been tendered such that data will be collected for seafarers working for both members and non-members of the Chamber of Shipping. Whilst the data will be filtered so that the 2016 Seafarers Statistics are produced on a consistent basis with previous results, we will use the additional data for non-members to produce experimental adjustment factors and weights as described above to test the feasibility of this approach.

Strengths

13.3.4 This approach could capture a number of UK seafarers that are currently excluded from the statistical series, and therefore provide a more accurate picture of the seafarer population.

13.3.5 With a robust grossing factor, the certification data can be calibrated to a more accurate estimate of those active at sea, so that we no longer rely upon the static “16 per cent not active at sea” assumption and the assumptions about retirement ages that have been used since they were derived fourteen years ago in *United Kingdom Seafarers Analysis 2004* (see section 7.3).

Limitations

13.3.6 As there are no exhaustive or regularly updated lists of non-members, it would be difficult to compile a sampling frame or to assess whether the companies contacted are truly representative of the population as a whole. Previous work by the CoS found at least 250 companies that were not affiliated to the CoS, but it may not be possible to detect the exact number or to easily monitor changes in the list over time.

13.3.7 Response rates for the responding companies who are not Chamber members could be lower than for members, and risk introducing bias into the results.

13.3.8 In boost years, this option would cost more than the current method, as the survey would need to capture a larger number of respondents. However, if the experimental adjustment factors and weights derived in boost years were assumed to be stable in the short-term, they could be used in the intervening years, reducing long term costs. The exact number of years between boosts would also need to be determined, however, we envision the boost could run at least once every three to five years.

13.3.9 There is a risk that the adjustment factors and weights derived from the boost survey may not be stable so the accuracy of the statistics could diminish over time.

13.4 Methodology 3 – Run a survey to collect data on all seafarers

13.4.1 This option would involve collecting data on all types of seafarers (i.e. certificated officers, uncertificated officers and ratings) from both CoS members and non-members every year (as in the boost survey proposed in the second methodology above). However, published figures on certificated officers active at sea would be based upon the survey data rather than adjusted certification data from the MCA (as in Methodologies 1 and 2).

Strengths

13.4.2 This method would give a consistent picture of seafarers across all types, as all of the data would come from one source (certificated officers data would be coming from the same source as the data on uncertificated officers and ratings). This would make analysis of trends more reliable, as we could be fairly sure that any changes would be due to genuine fluctuations and not resulting from the use of two different methodologies.

13.4.3 Data from the MCA on certifications can still be used to illustrate the number of certificates issued, and demographic breakdowns of this can still be presented. There would no longer be any need to take into account assumptions regarding those active at sea. Users would have access to data on all types of seafarer based on a robust survey, plus data on certificates issued. The survey data would present figures on employment while the MCA data would present certification trends.

Limitations

13.4.4 This would be the most expensive option, as the survey would need to collect data from CoS members and non-members covering all types of seafarer every year.

13.4.5 This method requires a reliable list of companies employing seafarers working at sea. As with Methodology 2, this would be difficult and costly, as there are no exhaustive or regularly updated lists of non-members.

13.5 Methodology 4 – Gross the CoS survey data to match the number of UK ships

13.5.1 This method is similar to Methodology 1, but with an additional grossing element similar to the one used in the ONS Balance of Payments methodology. This uses the tonnage of all UK affiliated (managed, owned or registered) vessels from DfT data purchased from IHS global, to rescale the value of Chamber members' activities to represent the whole of the UK.

13.5.2 On the basis that all UK vessels (managed, owned or registered) must be either (a) affiliated to a member of the UK Chamber of Shipping, or (b) to a UK company that is not a member of the Chamber of Shipping, we can theoretically produce a similar weight that rescales the number of UK seafarers working on Chamber members' vessels to represent the population of UK seafarers working on all UK owned, registered or managed vessels.

That is:

$$\frac{\text{Gross Tonnage of all UK affiliated vessels}}{\text{Gross Tonnage of vessels affiliated to UK Chamber of Shipping}} = \text{weighting factor}$$

Strengths

- 13.5.3 This is a simple way to expand the coverage of the existing survey without introducing additional costs or respondent burden. This would be more complete than the current methodology, as figures would be adjusted to more closely represent the total seafarer population and not just CoS members. However, it is still not certain that this would cover the entire seafarer population accurately, as some companies may still be missed from the list.
- 13.5.4 Similarly to Methodology 3, a strength of this method is that all of the data would come from the same source and would present a consistent picture of all seafarers.
- 13.5.5 Data from the MCA on certifications can still be used to illustrate the number of certificates issued, and demographic breakdowns of this can still be presented. There would no longer be any need to take into account assumptions regarding those active at sea. Users would have access to data on all types of seafarer based on a robust survey, plus data on certificates issued.

Limitations

- 13.5.6 The major issue with this approach is the implicit assumption that the average number of UK seafarers working on vessels affiliated to Chamber members has is similar to the number of UK seafarers employed on other UK owned/ managed/ registered vessels. This is a weak assumption as these vessels are not required to employ any UK seafarers, or – in the case of vessels that are not UK registered - any non-UK nationals holding a UK certificate of competency or equivalent competency.

14 Annex B – Summaries of the number of apprenticeships started, achievements and pathways taken under the Maritime Occupations framework

Table B1 Intermediate level apprenticeships started under the Maritime Occupations framework, by age, 2013/14 and 2014/15

Pathway	2013/14				2014/15			
	Age 16-18	Age 19-24	Age 25+	Total	Age 16-18	Age 19-24	Age 25+	Total
Able seafarer/ tug rating (deck)	-	-	-	-	10	10	-	20
Able seafarer/ tug rating (engine)	-	-	-	-	-	10	-	10
Port operations Rivers, inland waterways and limited distances to sea	-	20	30	50	-	10	10	10
Sea fishing	10	10	-	30	10	10	-	30
Workboat operations	20	20	-	30	10	10	-	20
Total	-	-	-	-	-	-	-	10
	40	50	30	110	30	50	10	90

* Volumes are rounded to the nearest ten. '-' Indicates a base value of less than five.

Table B2 Apprenticeships started under the Maritime Occupations framework, by age and level, 2012/13 to 2014/15

Apprenticeship type	Age group	2012/13	2013/14	2014/15
Intermediate level	16-18	20	40	30
	19-24	60	50	50
	25+	80	30	10
Advanced level	16-18	10	-	-
	19-24	30	-	-
	25+	-	-	-
Total		200	110	90

* Volumes are rounded to the nearest ten. '-' Indicates a base value of less than five.

Table B3 Apprenticeship achievements under the Maritime Occupations framework, by age and level, 2012/13 to 2013/14

Apprenticeship type	Age group	2012/13	2013/14
Intermediate level	16-18	-	20
	19-24	10	30
	25+	-	-
Advanced level	16-18	40	10
	19-24	40	10
	25+	-	-
Total		90	70

* Volumes are rounded to the nearest ten. '-' Indicates a base value of less than five. Figures for achievements for 2014/15 are not yet available.

15 Annex C – Bibliography (Literature Review)

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