

Seafarer Statistics 2011

This Statistical Release presents estimates of the number and characteristics of UK seafarers, also including some statistics of non-UK seafarers qualified to serve on UK registered vessels, and indicative projections of the future number of UK certificated officers. Statistics are updated annually.



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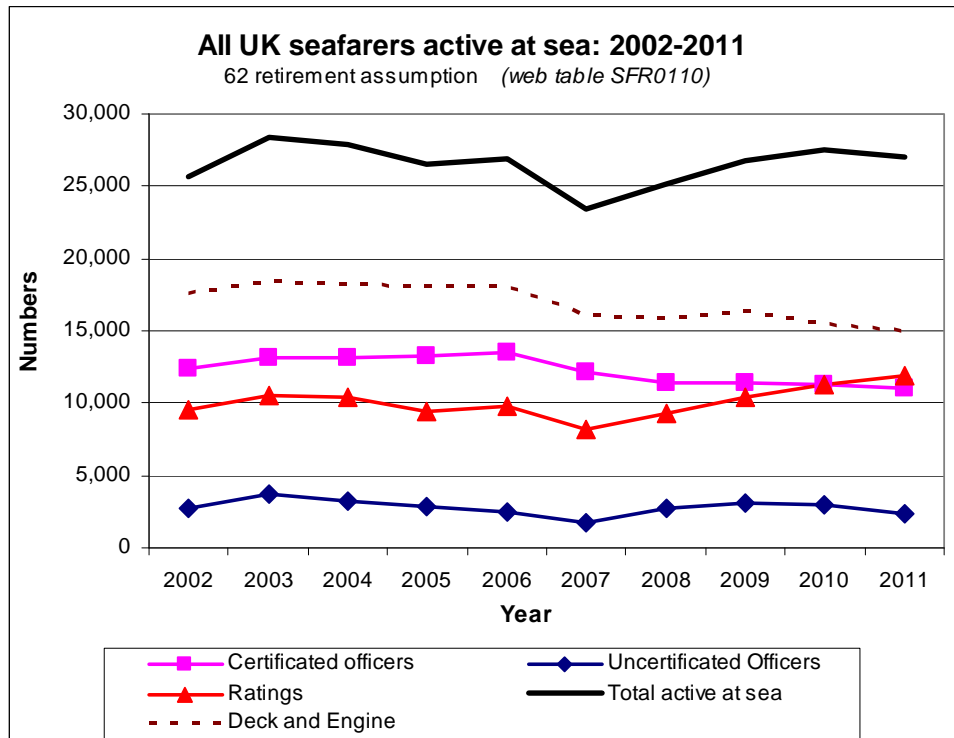
The key findings:

- In 2011, an estimated 27,000 UK nationals were working regularly at sea (*UK seafarers active at sea*).
- Of these, about 15,000 held qualifications related to handling ships or their engines, while the remainder were employed for other technical or customer service duties.
- The total number of UK seafarers active at sea was about 5 per cent higher in 2011 than in 2002, the earliest year for which estimates are available for all groups. However, the number of these with qualifications relating to ship and engine handling was 15 per cent lower over the same period.
- The estimated number of UK *certificated officers* active at sea in 2011 was about 11,000. This was about 28 per cent lower than in 1997 after taking into account changes in the certification system, and 2 per cent lower than in 2010.
- The average number of officer cadets in training during 2010/11 was 1,820, compared with about 1,000 in 1999/2000.
- The number of UK officer cadet new entrants was 850 in 2010/11 compared with around 500 in 1999/2000 and 754 in 2009/10.

1. All UK seafarers active at sea

Definition: Any UK national who works on a registered vessel in a regular sea-going activity is included in the estimates. This includes certificated and non-certificated officers, ratings and trainees. *Estimates are as at end June in each year.*

- The total number of UK seafarers active at sea in 2011, assuming a retirement age of 62, was estimated as 27,000 consisting of
 - 11,000 certificated officers
 - 2,300 uncertificated officers
 - 11,900 ratings (comprising 4,000 deck/engine, 7,900 catering/hotel)
 - 1,800 officer trainees.
- Overall seafarer numbers were 5 per cent higher in 2011 than in 2002, the earliest years for which estimates are available for all categories.
- Of these, 15,000 (56 per cent) held qualifications related to handling ships or their engines ('deck' or 'engine' officers and ratings), while the remainder were employed for other duties (e.g. technical or hotel/hospitality staff), or were trainees. (See Technical Notes for full classification).
- The number of seafarers with qualifications related to ship or engine handling was about 15 per cent lower than in 2002

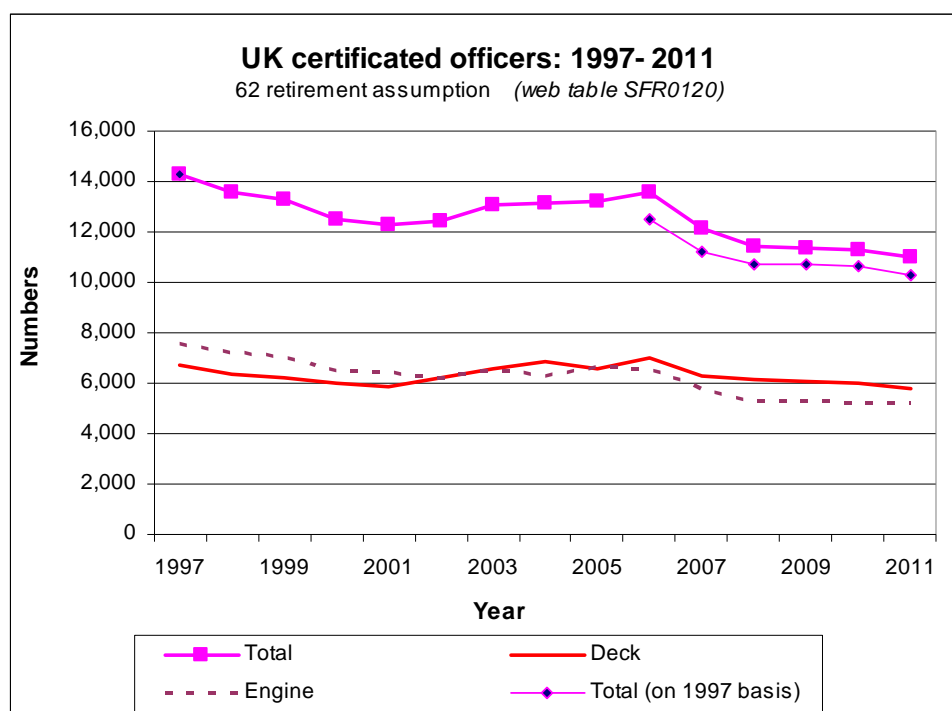


For data table and chart see: <http://assets.dft.gov.uk/statistics/tables/sfr0110.xls>

2. UK Certificated Officers

Definition: Officers holding a Certificate of Competency issued or recognised by the Maritime and Coastguard Agency (MCA) which qualifies them as watchkeeping officers, able to take responsibility for handling a ship (deck officers) or its engines (engineers). *These estimates are based on MCA administrative records of certificates held, adjusted to allow for those officers who still hold a valid certificate but are not "active at sea" or who have retired.*

- The number of UK certificated officers active at sea in 2010 was estimated to be 11,000. After excluding about 700 who hold forms of certificate introduced in recent years¹, this is about 28 per cent lower than in 1997.
- Deck officer numbers are estimated to have been about 5,800 in 2011, and engineer officer numbers about 5,200. After excluding the newer forms of certificate, these show an estimated decline of 19 per cent and 36 per cent respectively since 1997.
- The drop of 11 per cent between 2006 and 2007 may have been due to a surge in certificate revalidations prior to February 2002, the deadline for certification under STCW95. Certificates are valid for 5 years, and if not renewed, certificates issued in this period will have expired by June 2007.



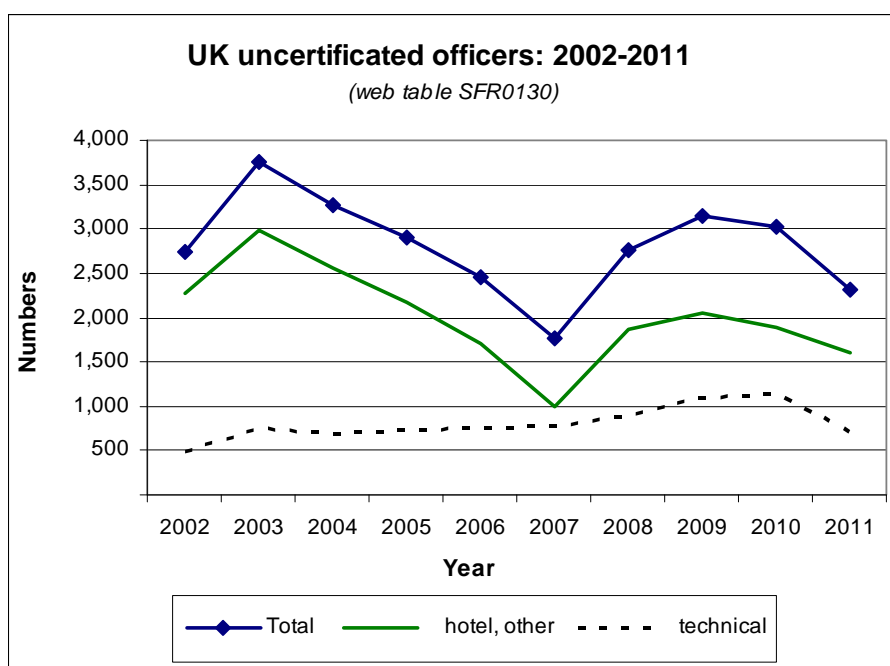
For data table and chart see: <http://assets.dft.gov.uk/statistics/tables/sfr0120.xls>

¹ See 'CEC/TIC/Yachts' in Glossary below

3. Uncertificated officers

Definition: Officers not required to hold MCA deck/engineering certificates of competency (i.e. not watchkeepers), for example electrical officers, electronic officers, electro-technical officers, refrigeration engineers; catering officers, pursers. *These estimates are based on a survey of members of the UK Chamber of Shipping. A small number of UK nationals may be employed in similar capacities by companies which are not UK Chamber members. Terminology varies between companies, so there may be some uncertainty in the classification of some individuals to specialisms, or between uncertificated officer and rating grades.*

- Technical officer employment had shown a steady increase from around 700 in 2003 to 1,100 in 2010, but appears to have dropped back to a little over 700 in 2011.
- The number of hotel and other uncertificated officers (including catering officers) are heavily influenced by the cruise and ferry sectors, in which large scale changes can rapidly take place. Following a significant reduction in this group between 2003 and 2007, numbers increased from 1,000 to 2,000 between 2007 and 2009, before dropping back to around 1,600 in 2011.

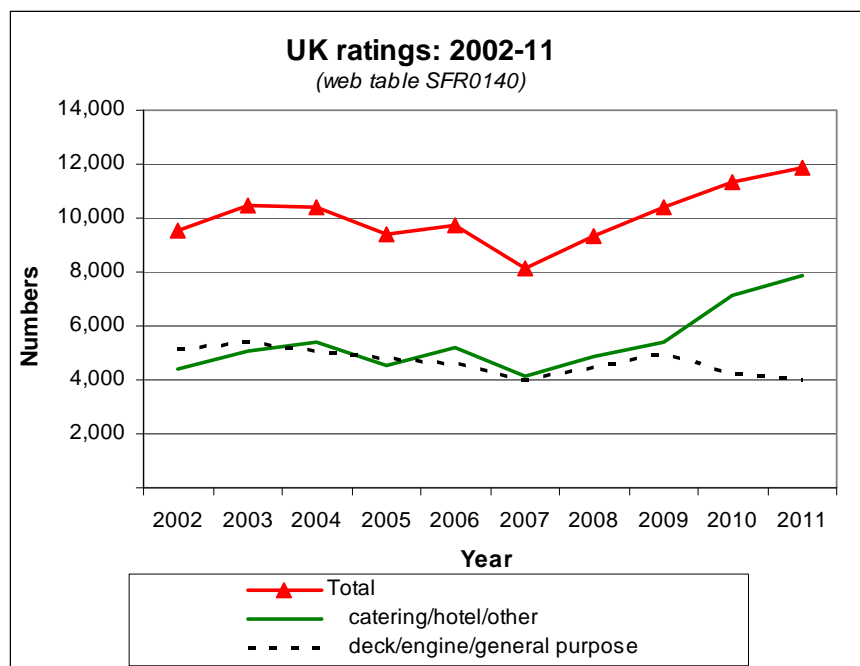


For data table and chart see: <http://assets.dft.gov.uk/statistics/tables/sfr0130.xls>

4. Ratings

Definition: Ratings are semi-skilled, experienced workers who are required to hold specific certificates, such as lifeboat or fire drill, but who are not required to revalidate their competencies as certificated officers are. Other staff without maritime training also have rating status (e.g. entertainment, hotel, and catering staff). *These estimates are from the same source as those for uncertificated officers, and are affected by the same data issues as described in the preceding section.*

- About 4,000 UK deck, engine room and general purpose ratings were active in 2011, about 22 per cent fewer than in 2002.
- Around 7,900 catering/hotel ratings were employed in 2011, about 80 per cent more than in 2002. Numbers in this group can be relatively volatile due to the influence of the cruise and ferry industry.

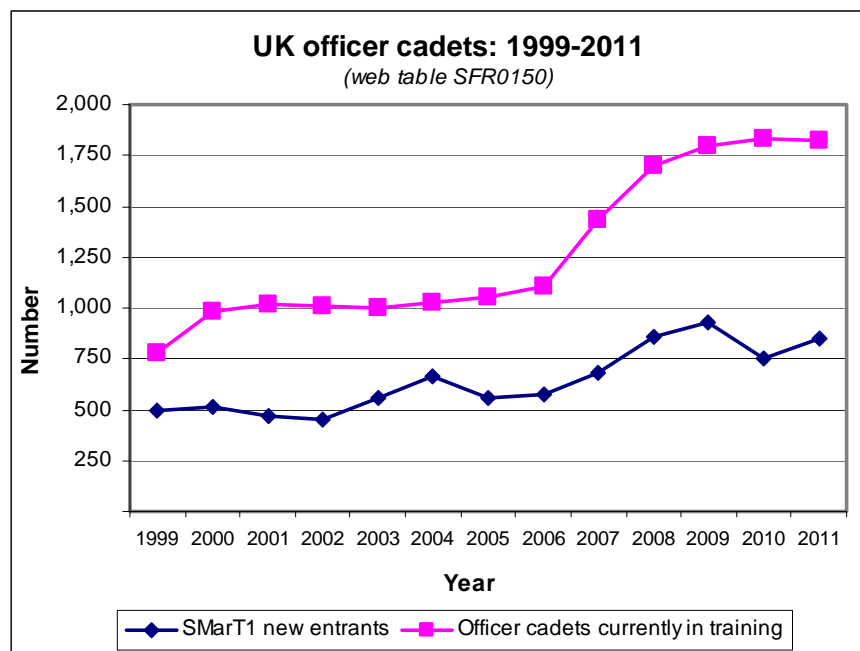


For data table and chart see: <http://assets.dft.gov.uk/statistics/tables/sfr0140.xls>

5. Officer trainees

Definition: Officer trainees ('cadets') entering an approved programme of training leading to a first certificate of competency or licence as a deck, engineer or dual officer, and which is supported under the SMarT1 scheme administered by the MCA. This can take up to four years. *These estimates are derived from monthly financial claims submitted by training providers. A small number of cadets are not eligible for SMarT funding, and therefore are not included. Also not included are other forms of maritime training not leading to a first certificate (e.g. for ratings, conversion courses for experienced personnel).*

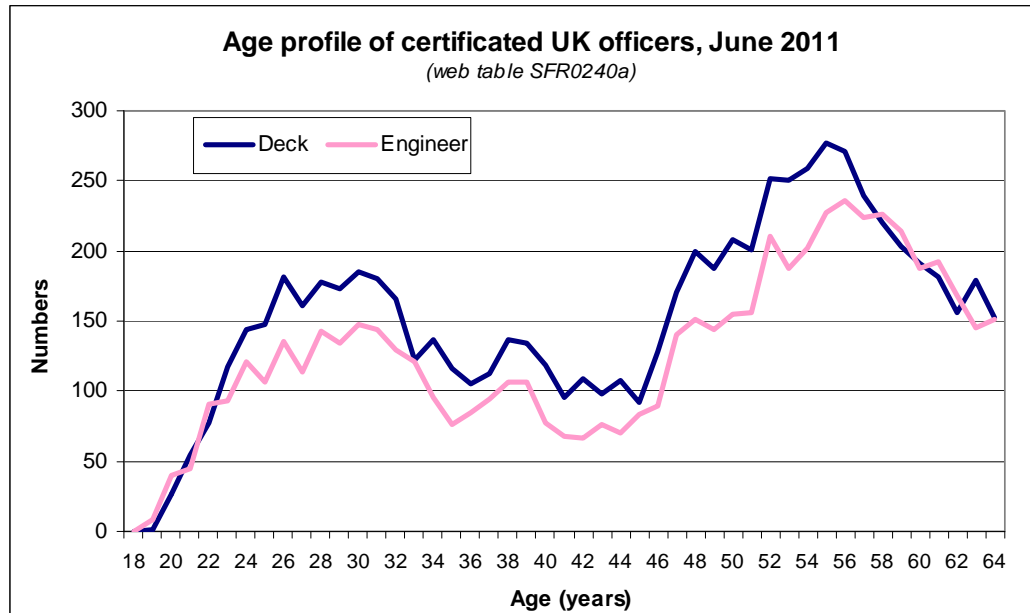
- Officer trainee new starts under the SMarT1 programme increased from around 500 in 1999/2000 to 925 in 2008/9, falling to 754 in 2009/10, and recovering somewhat to 850 in 2010/11.
- As a result the average number of officer cadets in training during the year rose to 1,820 in 2010/11, compared with about 1,000 in 1999/2000.



For data table and chart see: <http://assets.dft.gov.uk/statistics/tables/sfr0140.xls>

6. Demographic profiles of UK seafarers

The age distribution of UK certificated officers is shown in the chart in the following section. The UK officers show a relatively old profile, with the greatest numbers aged in their fifties, although there is now a second, smaller peak at around thirty, as a result of increased recruitment in recent years.



Projections have been made of the number of UK certificated officers, based on assumptions about wastage rates, retirement age and cadet intake. The number is projected to decline by 29 per cent by 2021, largely due to the high average age of officers currently in employment. The projections indicate a 'bottoming out' of the decline in around 2026, but this is dependent on the assumptions used in the model.

For projections see:

<http://assets.dft.gov.uk/statistics/releases/seafarer-statistics-2011/seafarer-projections-2011.pdf>

The chart above shows all officers with valid certificates – not all of these are necessarily active at sea, and the proportion not active might be greater among older age groups. Nevertheless, it is estimated from the Chamber of Shipping survey that about 60 per cent of UK certificated officers active at sea are aged 40 or over. The proportion is even higher for UK deck and engine ratings, at about 75 per cent.

It is also estimated that about 2.7 per cent of UK deck officers active at sea are female, along with about 0.5 per cent of engineer officers. The proportions for deck and engine ratings are 1.1 per cent and 0.3 per cent respectively. Women are much more strongly represented in the hotel and catering departments, accounting for about 37 per cent of officers and 42 per cent of ratings.

For demographics tables and charts see:

http://www.dft.gov.uk/statistics?orderby=title&post_type=table&s=sfr02

7. Non-UK officers with Certificates of Equivalent Competency

Information is also available from the MCA administrative system on foreign nationals holding Certificates of Equivalent Competency (CECs). These are required for an officer with qualifications gained overseas to serve on a UK registered ship, and remain valid until the officer's Certificate of Competency issued by their own country expires (a maximum of 5 years). Therefore not all officers holding a valid certificate will necessarily still be working on a UK registered ship, but they are very likely to have done so within the previous 5 years.

As at the end of June 2011, 16 per cent of holders of CECs were from the Philippines, 15 per cent were from Poland, and 11 per cent from the Ukraine. In total just under 12,500 valid CECs were held by foreign nationals under the age of 65.

For data tables and charts see:
http://www.dft.gov.uk/statistics?orderby=title&post_type=table&s=sfr02

8. Strengths and weaknesses of the data

For more detail on strengths and weaknesses of the data, see the Technical Notes referred to in the Further Information section below.

- The data on certificated officers is from a good quality administrative source, but the proportion of certificate holders who are actually working at sea has to be estimated. There have also been small changes in the scope of the certification system, which cannot be fully adjusted for in the years 1998 to 2005.
- Data on uncertificated officers and ratings comes from a membership survey by the Chamber of Shipping. This achieves virtually complete coverage of the employees of Chamber members. However, some UK nationals will be employed by non Chamber members, although the numbers are suspected to be relatively small. Secondly, while the overall coverage of employment by Chamber members is good, some details are incomplete or hard to interpret, which may lead to some inaccuracies in the final results. Combining this consideration with the fact that some types of employment tend to be genuinely very variable from year to year, variations in the statistics from year to year should be treated with caution, and the results used rather as a general guide to broad levels of employment.
- Data on seafarer trainees are based mainly on claims from training providers for reimbursement under the Government's Support for Maritime Training (SMarT) scheme. A small minority of trainees (e.g. Royal Fleet Auxilliary employees) are not eligible for such schemes.

9. Further information

This release is a summary of a larger set of data tables, charts and documentation on seafarer statistics available from the Department for Transport web site at:

<http://www.dft.gov.uk/statistics/series/seafarers/>

Other documents which form part of this release include a note on projections of the number of UK certificated officers

<http://assets.dft.gov.uk/statistics/releases/seafarer-statistics-2011/seafarer-projections-2011.pdf>

and a technical note describing the data sources, methods, definitions and data issues in more detail <http://assets.dft.gov.uk/statistics/series/seafarers/seafarer-statistics-technical-note.pdf>

National Statistics are produced to high professional standards set out in the National Statistics Code of Practice. They undergo regular quality assurance reviews to ensure they meet customer needs.

<http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

Details of Ministers and officials who receive pre-release access to these statistics up to 24 hours before release can be found here:

<http://assets.dft.gov.uk/statistics/series/seafarers/seafarerstatsprerelease.pdf>

The next update in this annual series is due in early 2013.

10. Glossary

For definitions of the different categories of seafarer referred to in these statistics summary, see the individual sections on each category above.

- **Maritime and Coastguard Agency (MCA).** An executive agency of the UK Department for Transport. Among other things, it is responsible for the certification of seafarers.
- **STCW95.** The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers sets qualification standards for personnel working on seagoing merchant ships. It was adopted in 1978 and significantly amended in 1995 – the standards as amended being referred to as STCW95.
- **Certificates of Competency (CoC)** are issued by the MCA to UK nationals meeting the required standards under STCW for watchkeeping officers.
- **Certificates of Equivalent Competency (CEC)** are issued by the MCA in recognition of CoCs issued by certain overseas countries to allow non-UK officers to work on UK-registered vessels. Most CEC holders are foreign nationals, but a small number are UK nationals, and the latter are included in the ‘top line’ UK certificated officer statistics.
- **CEC/TIC/Yacht.** Among the administrative changes adopted by the MCA following the introduction of STCW95 was the recognition of Certificates of Equivalent Competency, and the introduction of Certificates of Competency with limited endorsements, specifically for Tugs and Inshore Craft only and for Yachts only. About 700 UK nationals now hold one of these types of certificate, and appear in the ‘top line’ UK certificated officer statistics.

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- **SMarT.** Government funding is available to support seafarer training under the Support for Maritime Training (SMarT) scheme administered by the Maritime and Coastguard Agency. Most UK residents undergoing training towards their first STCW Certificate of Competency are eligible for support under the SMarT1 element of the scheme.
 - **UK Chamber of Shipping.** The trade association representing the interests of UK ship owners. Organisations in some related fields are eligible for associate membership, including manning agencies, who are included in the Chamber membership survey on which some of these statistics are based.



Seafarer statistics 2011:

Projections of UK Seafarers from 2011-2031

In this section a simple model of officer entry and exit rates is combined with the detailed age profile information generated by the MCA SDS data on UK certificated officer ages. This permits the simulation of the trend in total numbers of UK certificated officers. These can be projected using different assumptions about officer loss rates and retirement ages, together with trainee completion rates.

It is important to note that the method of projection employed is independent of past trends, in order to avoid distortions in past data caused by changes in data sources. However this does mean that the calibration of the assumed parameters is critical to the model's performance.

Cadet entry numbers have been assumed to be 800 per year, a little lower than the actual entry figures in the last few years, except in 2009/10. This is a key assumption, in terms of its effect on the results.

It is assumed that new trainees leave training prior to completion at an average rate of 8 per cent per year. This figure has been employed in previous modelling work, and is derived from the analysis of GAFT data on cadets for 1995-6.

The age profile of new entrants has been modelled using detailed MNTB data for 2003-4, to construct an estimated age profile of trainees. This profile has been employed to derive an aggregated probability distribution to apply to the ages of new entrants. This means that the generated age profile of certificated officers for 10 or 20 years in the future, say, will reflect this age distribution, which is a more plausible profile than the assumption that all trainees entered the officer workforce at the same age. It should be noted that the ages of those entering via the 'ratings to officer' route have not been included. Their small number means that the year to year variation in ages may be too large to make use of just one year's data. It should be noted that this group of trainees tend to be significantly older than those entering by the 'normal' route.

The second key assumption is in the maintained 'wastage rate' of officers. This has been set at 6 per cent for the age range 20 – 50 years, and 1 per cent thereafter, until the age of retirement. These assumptions are 'consensus' estimates that are consistent with Cardiff University's study of seafarer numbers using 'backcasting techniques'. It is quite possible that the 'consensus' is incorrect - it has been suggested that this number is too high. If the assumed figure is larger than is actually the case, then the projections so obtained will be conservative estimates of future seafarer numbers (Gardner, BM, Marlow, PB, Naim, MM, Nair, R, Pettit, SJ. "The UK economy's requirements for people with experience of working at sea 2003". Report for the DfT, UKCoS, and the Marine Society, Contract no. PPAD9/70/15, Cardiff Business School, Cardiff University, 2004. 114pp.).

The final element in the projection model is the assumed age of retirement. Using data provided by the Merchant Navy Officers' Pension Fund (MNOFP) for retirees over the period 2000-2007, it has been possible to construct a probability distribution, to allow for the proportions who take up their pension earlier (or later) than the official retirement age of 62. It is important to note that this profile is not an estimate of the age at which an officer leaves the sea and moves on shore to work, since the officer concerned may not claim the pension until they reach the age of retirement from all occupations. Nevertheless, the use of this information means that the age profile of officers is more 'realistic' when projections of future numbers are made. The MNOFP data were last updated in 2007, which made only minor differences to the modelled age distribution of retirees.

The assumptions underlying the present projection remain the same as last year. The base year (now 2011) has been adjusted slightly to exclude officers with CECs or with endorsements for tugs & inshore craft or yachts only, since these enter the population by routes other than UK training courses. The deck and engine split of officers, previously based on information from the Chamber of Shipping manpower survey, is now based on the actual split for all certificated officers in the relevant age range in the base year.

Forecast sensitivity to input assumptions

Table 3.2 shows the impact on the forecast numbers of varying each of the main input assumptions (individually) by 25 per cent. For example, a 25 per cent increase in the assumed officer wastage rate reduces the forecast numbers in 2020 by about 9%.

The table shows that the two most significant assumptions are the cadet entry numbers and the officer wastage rates prior to retirement. Variations in cadet wastage rates have less impact.

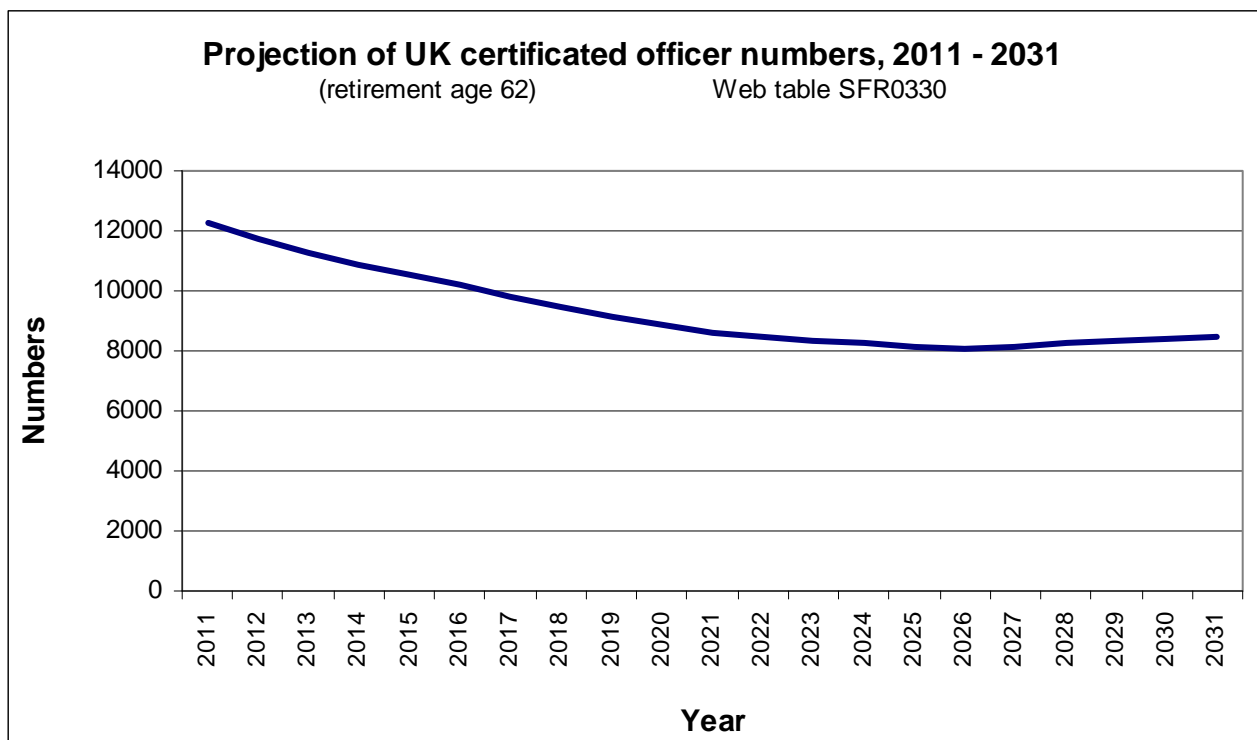


Table SFR0310 Projection of UK certificated officers for 2011-2031

Age 62		Year	2011	2016	2021	2026	2031
Total	Numbers		12,240	10,172	8,630	8,099	8,491
Deck	0.51		6,234	5,180	4,395	4,125	4,324
Engineer	0.49		6,006	4,992	4,235	3,974	4,166

Age 65		Year	2011	2016	2021	2026	2031
Total	Numbers		13,191	10,946	9,248	8,420	8,588
Deck	0.55		7,205	5,979	5,052	4,599	4,691
Engineer	0.45		5,986	4,967	4,197	3,821	3,897

Input Assumptions

Cadet Entry Rates		Wastage Rates	
Input	800	At ages 20 < 30	0.06
Wastage	0.08	At ages 30 < 50	0.06
Output	573	At age 50 plus	0.01

Notes:

1. Deck/engine split assumed to remain fixed at 2011 ratio.
2. Numbers in table may not sum to 1 due to rounding

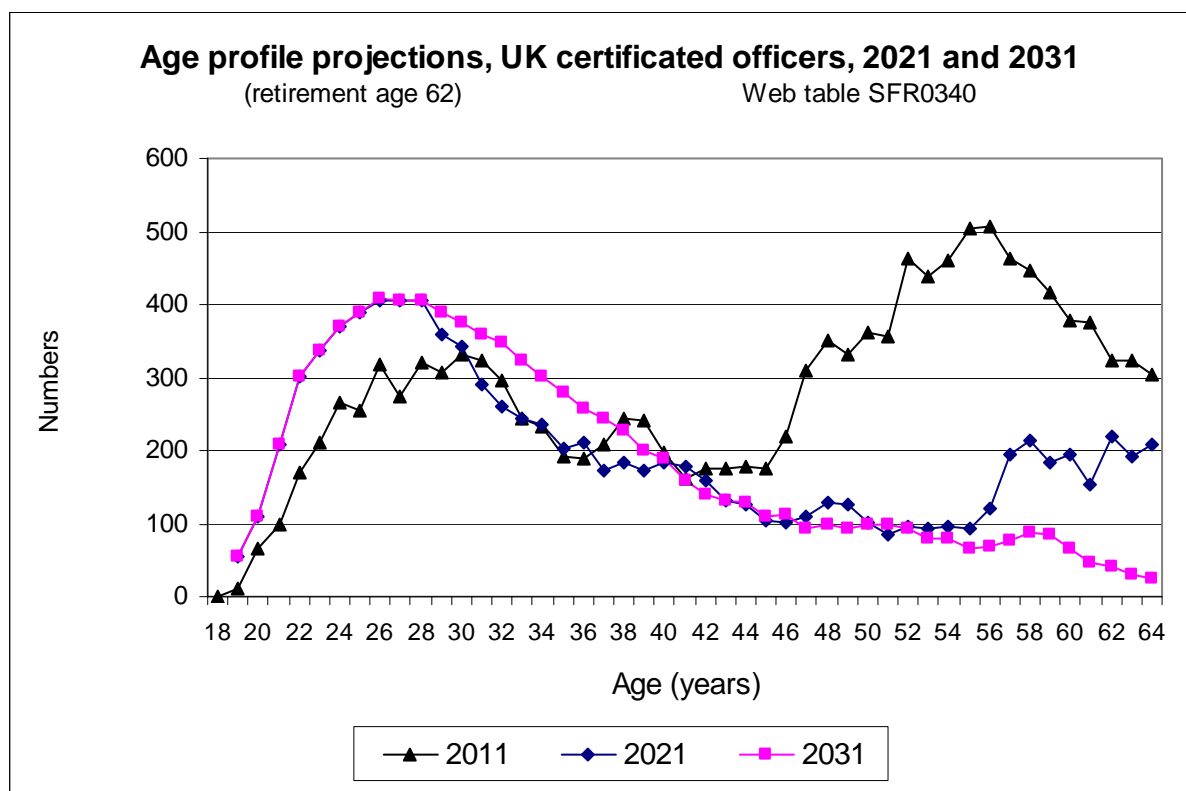


Table SFR0320: Forecast Sensitivity: Effect of a 25 per cent change in modelling assumptions on 2021 forecast

Model assumption	Sensitivity testing:			% change in 2021 forecast:		Elasticity
	Low	Base	High	Low	High	
Cadet entry numbers	600	800	1,000	-12.8	12.8	0.51
Cadet wastage rate	0.060	0.080	0.100	4.6	-4.3	-0.18
Officer wastage rate	0.045	0.060	0.075	9.8	-8.8	-0.37
Base case scenario forecast for 2021 (officer numbers)					8,630	

Source: Derived from projection model

Useful links

Seafarer statistics section of the Department for Transport web site:

<http://www.dft.gov.uk/statistics/series/seafarers/>

Seafarer Statistics 2011 release:

<http://assets.dft.gov.uk/statistics/releases/seafarer-statistics-2011/seafarer-statistics-2011.pdf>

Seafarer statistics technical note:

<http://assets.dft.gov.uk/statistics/series/seafarers/seafarer-statistics-technical-note.pdf>

Seafarer statistics: methods and quality

1: Classification of Seafarers

Below is listed the detailed categories of seafarers considered in the Seafarers statistical series.

A Officers

A1 Certificated officers

Those categories listed in the Safe Manning Document and required to hold statutory Certificates of Competency (CoCs) issued or recognised by the Maritime and Coastguard Agency in compliance with STCW95. i.e. Masters, Chief Engineers and other certificated deck and engineering officers

A11 Deck

A12 Engine

A13 Dual purpose

A2 Non certificated officers

Officers not required to hold MCA deck/engineering Certificates of Competency but engaged to meet company-specific operational requirements e.g. electrical officers, electronic officers, electro-technical officers, refrigeration engineers; catering officers, pursers;

A21 Technical (electrical officers, electronic officers, electro-technical officers, refrigeration engineers)

A22 Other (catering officers, pursers)

A23 Hotel (individuals with equivalent officer status but without maritime training e.g. entertainment/hotel staff)

B Ratings

B1 Deck and engine room ratings

B11 Deck

B12 Engine

B13 Dual purpose

B2 Catering ratings & other hotel service staff (especially relevant to cruise & passenger ferries)

B21 Catering

B22 Hotel (individuals with equivalent rating status but without maritime training e.g. entertainment/hotel staff)

C Trainees

Officer cadets, apprentices, under-graduate officer trainees and rating trainees, generally with no prior relevant experience or qualifications, for whom full training is provided.

C1 Cadets and other officer trainees

-
- C11 Deck
 - C12 Engine
 - C13 Dual purpose
 - C2 Trainee deck and engine room ratings
 - C21 Deck
 - C22 Engine
 - C23 Dual purpose
 - C3 Trainee catering ratings

D Conversion/upgrading training for experienced personnel

- D1 Rating to officer (deck/engineer) candidates
 - D11 Deck
 - D12 Engine
 - D13 Dual purpose (currently no seafarers in this category)
- D2 Ex fishing vessel or Royal Navy personnel
 - D21 Deck
 - D22 Engine
 - D23 Dual purpose (currently no seafarers in this category)

E Pre-qualified trainees

Those who have obtained relevant qualifications and/or experience prior to joining and who would undergo accelerated or 'top up' training to meet industry and statutory requirements as appropriate.

- E1 Catering/hotel service staff – officers and ratings (mainly for passenger ferries/cruise ships)
- E2 Engineering, electrical, electronic, electro-technical officers (including degree-level graduates)

2: Principal Data Sources and Data Flows

MCA Seafarer Documentation System

The MCA Seafarer Documentation System (SDS) is an electronic database maintained by the Maritime and Coastguard Agency (MCA), which contains records of all UK-issued Certificates of Competency, together with records of Certificates of Equivalent Competency issued for service on UK registered ships. It is an administrative system designed to support the MCA in carrying out its responsibilities for certifying seafarers in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)

SDS information has been used to generate comprehensive statistical profiles of age, department and levels of qualification for these '**certificated**' officers. If the seafarer is qualified in more than one capacity then each of the endorsements will be recorded separately in the system. The presence of individuals holding multiple endorsements has had to be allowed for to arrive at an estimate of the number of individuals who hold valid certificates.

Allowance also has to be made for changes over time in the administrative system – in particular the introduction into the system of Certificates of Equivalent Competency for seafarers with foreign certifications, and also limited endorsements for Tugs and Inshore Craft and for Yachts only. Such certificates began to appear in the system from 1998 as a result of amendments to the Convention

in 1995 (STCW95), initially in small numbers, but there was a period of some years before they could be separated out in the statistics.

This information provides the basis for the certificated officer estimates in Tables SFR0110, 0120 and 0170 (after adjustment to allow for those 'not active at sea'), the profiles in SFR0210, 0220, 0260 and 0270, and the baseline for the projections in SFR0310-0340.

UK Chamber of Shipping (UKCoS) manpower survey

The UK Chamber of Shipping carries out a survey of its membership which collects information on the number and type of seafarers they employ. These surveys have been annual since 2002.

They provide the basis for the estimates of **uncertificated** officers (officers who are not required to hold Certificates of Competency) and **ratings** (SFR0130, 0140, 0230, 0230-0250 and 0275). This is also the only source of data that provides easily accessible information on the gender distribution of UK seafarers, and is a useful source of estimates for UK certificated officer numbers in UK employment (since the MCA SDS data does not contain information on the nationality of the employer). The split between deck and engine specialisms for the estimate of UK certificated officers 'active at sea' (SFR0120 and 0170) is also based on the split amongst such officers employed by Chamber members.

SMarT and MNTB

The DfT supports maritime training through the Support for Maritime Training (SMarT) scheme administered by the MCA. Data derived from the SMarT payment administration system have been used to obtain figures on both trainee new starts, particularly cadet trainees, and overall trainees continuing in training (SFR0150).

The Merchant Navy Training Board (MNTB) is the UK shipping industry's central body for promoting and developing seafarer training. For its own management purposes it compiles information from its membership on 'new starts' of seafaring trainees.

Data from the SMarT scheme is cross-checked with MNTB estimates for new cadet trainees. These differ slightly because i) certain cadet trainees are ineligible for support under SMarT (such as those employed by the Royal Fleet Auxilliary (RFA)), ii) all EU nationals can obtain SMarT support if residential conditions are met, iii) differences in reporting may arise between employers reporting new trainee numbers to the MNTB and claims for re-imbusement submitted by training providers to the MCA, for example because of students dropping out or changing their circumstances part-way through a course.

Data flows

Figures A.2.1 and A.2.2 summarise the sources of data and how they have been used to produce the seafarer estimates and projections for 2010 in this report.

Figure A.2.1 Data flows for seafarer estimates

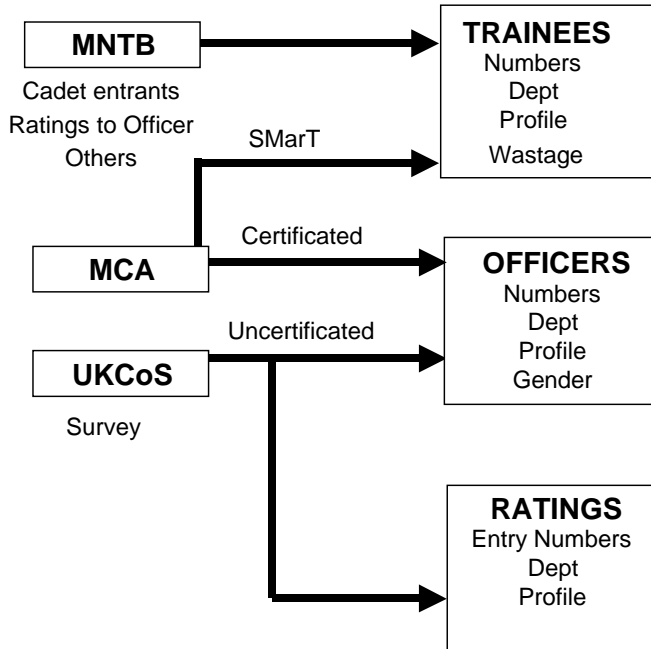
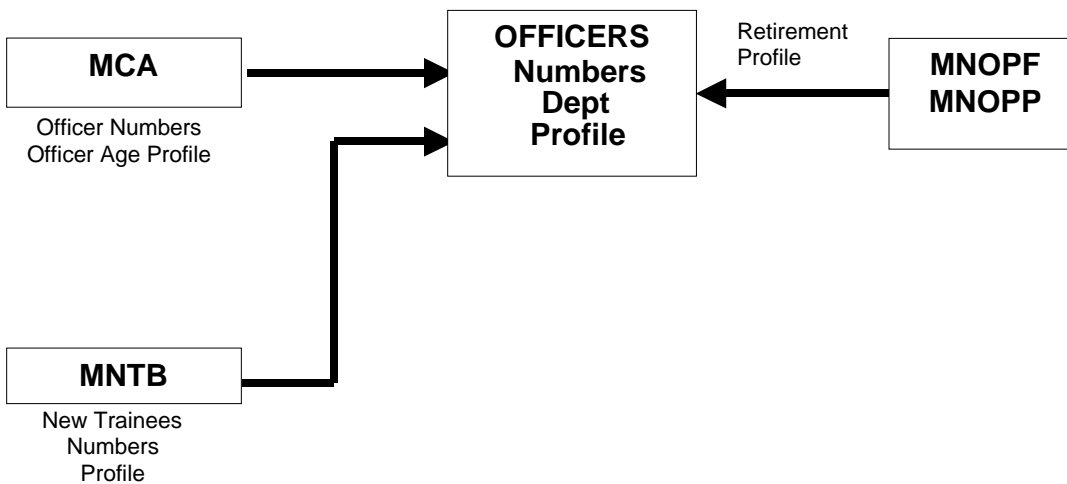


Figure A.2.2 Data flows for projection exercise



3 Methodology

3.1 Definition of 'seafarers' and 'seafarers at sea'

An important distinction is made between the estimated total number of UK 'seafarers' and 'seafarers active at sea'. This distinction is only of significance in this report for certificated officers, as estimates for other seafarers are from a manning survey, and so by definition relate to active seafarers.

'Seafarer'

Any person who holds an officer's Certificate of Competency, which gives the holder the potential to work on board a registered vessel, together with any other person who is identified as working regularly at sea (e.g. an uncertificated technical or catering officer, a trainee, or a rating). The term includes officers who hold a valid Certificate of Competency but who may be working in on-shore positions, and thus are not engaged in sea-going activity. It would also include, as a subset;

'Seafarer active at sea'

Any seafarer identified as working regularly in a sea-going activity. This includes those certificated officers who are identified as working regularly at sea, together with uncertificated officers, trainees, and ratings, who also work regularly at sea.

The data presented in Section 1 relates to 'Seafarers Active at Sea'.

3.2 Determining seafarer numbers

3.2.1 Certificated officers

The data source for certificated officers is the MCA Seafarer Documentation System (SDS) database, which holds records for all certificated officers with valid certificates. The procedure adopted to extract STCW records from the SDS database was as follows: -

Only those records fitting the selection criteria below, as at the census date of 30th June 2010, were included:-

1. *Country of Nationality*

All those registered as national citizens of the United Kingdom

2 *Age*

Anyone aged 16 years or more as at June 30th 2010.

Certification, and Revalidations

Any certificate issued, or revalidated between 1st July 2005 and 30th June 2010, and with an expiration date of no later than 30th June 2015.

It is important to note that certificates are valid for a period of five years, and the SDS does not hold details of a certificate holder's current status or employment through this period. The majority of officers with certificates fitting the above criteria will be working regularly at sea and are therefore 'active at sea', but a significant minority who hold valid certificates have shore based jobs and never, or rarely, go to sea. Some officers work ashore but keep their certificates up to date either because the certificate is desirable in their present employment, or because they may return

to sea at some time in the future. Some officers who have revalidated subsequently leave the industry but their records remain in the SDS database until the end of the five year revalidation cycle.

At present there is no definitive estimate of the 'true' proportion of certificated officers working on shore. There have been a number of attempts to estimate this proportion, which have put it as low as 7% or as high 21%. For the purposes of this report it has been assumed that the proportion of officers with valid certificates but who work on shore is 16% for all ages, a mid-range assumption.

Under the present Merchant Navy Officers Pension Plan (MNOFF), an employee can retire at any time between 61 and 75. However, the trade union Nautilus UK confirmed that the typical retirement age is 61, i.e. at the 61st birthday. After 61, the employer has to agree to continuing employment, and the employee and employer can continue to make further contributions to the pension.

A retirement age of 62, (i.e. on the 62nd birthday) has been taken as the most plausible age to base calculations of seafarer numbers. This is one year later than the present official retirement age. A second assumed retirement age has also been taken for certificated officers, 65 years. This can be regarded as giving a maximum estimate, which also permits comparisons with data from previous work.

For the purposes of the projections in Section 3, more detailed retirement age assumptions are used, based on MNOFF data.

As noted above, the SDS database includes holders of CECs and TIC only or Yacht only endorsements. These are shown separately in Section 1 where statistics are available. They are generally excluded from or treated separately in analyses in Sections 2 and 3, since in many respects they constitute populations which are distinct from (and much smaller than) the largest group, holders of unlimited CoCs (who would be available for employment on the full range of merchant ships).

3.2.2 Uncertificated officers

The source of the estimates of UK uncertificated officer numbers are the returns made by members of UKCoS to their annual manpower survey. The survey was not conducted on a regular basis prior to 2002, so that some of the data for uncertificated officers were estimated. The survey became part of the UK Chamber's regular information collection exercise from 2002 on. Therefore the main results in this report are presented from 2002 onwards only, despite the existence of some estimates for this group of seafarers back to 1999, since the more recent data are considered to be more robust.

There are several issues which need to be taken into account when considering the UKCoS data for these officers:

although overall response rates have always been good, individual company responses vary across the years of the survey, so that numbers fluctuate because of differential non-response. That said, the response rate to the survey has been progressively improved to the extent that in recent years it gives a comprehensive and up-to-date virtual census of the Chamber's members;

companies in Chamber membership may vary from year to year;

the membership of the UK Chamber does not represent the entire population of UK companies or those companies who employ UK certificated officers, so coverage of the population is incomplete;

companies which do respond may not have done so on a complete or consistent basis, leading to anomalous results.

employment by some companies can change very substantially from year to year, due to changes in fleets or operations. This is particularly notable for the cruise sector, which is a relatively large employer of a diverse range of personnel.

The profile of employees may vary considerably between different shipping companies, even different subsidiaries of the same group, according to the nature of their fleet, their operations and their management practices. This reduces the scope for reliable imputation of missing information.

Various problems may arise as a result of the above. For example, if there is under-reporting by cruise operators then there will be a disproportionate effect on 'hotel/other' uncertificated officer totals compared to certificated officers; the inclusion of particular groups of employees which are out of scope (e.g. concessionaires) can lead to distortions (in one instance a company increased its return for 'hotel/other' employees from 500 in 2003 to over 1,200 in 2004). If a large employer does not provide information on nationality, estimates of UK seafarers may be deficient (or even over-estimated if imputed incorrectly). Some job titles (particularly for uncertificated officers and technical ratings) may not be consistent between employers, opening up the possibility of misclassification, or inconsistencies over time – for instance some companies may employ individuals with engineer certificates in technical posts. Some seafarers are provided via manning agencies, and reporting practices may differ between the shipping line and the manning agency.

To address some of these difficulties various actions were carried out on the data for the years 2002-2005. Clear anomalies in the data series to date were removed by averaging adjacent years. A 'respondent consistent basis' was used to avoid differential non-response and changes to Chamber membership - only those companies in Chamber membership in all four years and who made at least two completed returns during that period were taken, to give a consistent time series even though the absolute level may be understated. For the latest year available at the time (i.e. 2005) the results were 'maximised' to cover all Chamber members (where a return was not completed for the most recent year, the most recent return was used without adjustment). New estimates for the preceding three years were then adopted, based on the 4 year consistent series scaled to match the 'maximised' figure for 2005). It is important to note that this adjustment may *reduce* the numbers for certain years, if the adjustment ratio for the final year is less than unity (as it was, in 2005, for technical officers). Finally it was assumed that Chamber member companies employ the very large majority of UK uncertificated officers (all major UK shipping companies are in membership) so therefore the absolute level estimates derived by the above were realistic.

This 'consistent series' for 2002-2005 has been retained in this report.

Figures for 2006 on are based directly on 'maximised' Chamber of Shipping estimates. These differ slightly from the maximised estimate for 2005 in that if no return was made for say 2008, only 2007 data were used to estimate missing figures. This more stringent approach was made possible by the improving response rate to the survey.

3.2.3 Ratings

The primary source for ratings data in this report is also the UKCoS. Information on gender, age, and department is obtained from this source. The same data problems as described above for uncertificated officers also apply to ratings, which is why the presentation of data in the main tables starts from 2002. The same adjustments to remove anomalies and produce a 'respondent consistent basis' were carried out in 2005 as described for uncertificated officers above. Again, this series for 2002-2005 has been retained, with maximised figures for 2006 onward added.

3.2.4 Trainees

Trainee data are derived from two main sources, MNTB and SMarT. The MNTB data form the main basis of the historic estimates of the various types of trainee. These data have been

maintained in Table 1.7. This year, the main time series for new entrant officer trainees presented in Table 1.6 has been based on entrants to the SMarT1 training programme, for ease of comparison with MCA administrative sources.

Training may take up to four years to complete, and SMarT has been used in the past and will continue to be used to estimate the total number of trainees (under SMarT1) who are continuing in training.

4 Strengths and Weaknesses of the Data

- The data on certificated officers is comprehensive and high quality to the extent that these individuals have to hold certificates issued or recognised by the Maritime and Coastguard Agency in order to work in their profession. However, the certificates are valid for 5 years, and the certification system does not maintain information on an individual's status and employment in between re-validations, so it is necessary to estimate how many individuals with valid certificates are actually active at sea. There have also been small changes in the scope of the certification system, which cannot be fully adjusted for in the years 1998 to 2005.
- Data on uncertificated officers and ratings comes from a membership survey by the Chamber of Shipping. This achieves virtually complete coverage of seafarers employed by Chamber members. However, not all UK seafarers will be employed by Chamber members - the numbers employed elsewhere are thought to be small (except for certificated officers, for whom an upper bound is available from the MCA certificates), but there is little practical scope for collecting data or making robust estimates of these. Also, while the coverage of Chamber employees is complete, some returns provide incomplete demographic details, or are hard to interpret consistently, so that some inaccuracies and inconsistencies are liable to be introduced into the statistics from year to year. Combining this consideration with the fact that some types of employment tend to be genuinely very variable from year to year, variations in the statistics from year to year should be treated with caution, and the results used rather as a general guide to broad levels of employment.
- Data on seafarer trainees are based primarily on claims from training providers for reimbursement under the Government's Support for Maritime Training (SMarT) scheme. A small minority of trainees (e.g. Royal Fleet Auxilliary employees) are not eligible for such schemes, and there may be some anomalies between what is claimed for and training actually provided (e.g. trainees dropping out or changing their details). Information on some forms of training other than officer cadets has been included where available but is not necessarily complete.
- The projections of seafarer numbers are of course dependent on the assumptions used in the simple model applied. They become more speculative the further forward they go.