

# 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

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- 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

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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).

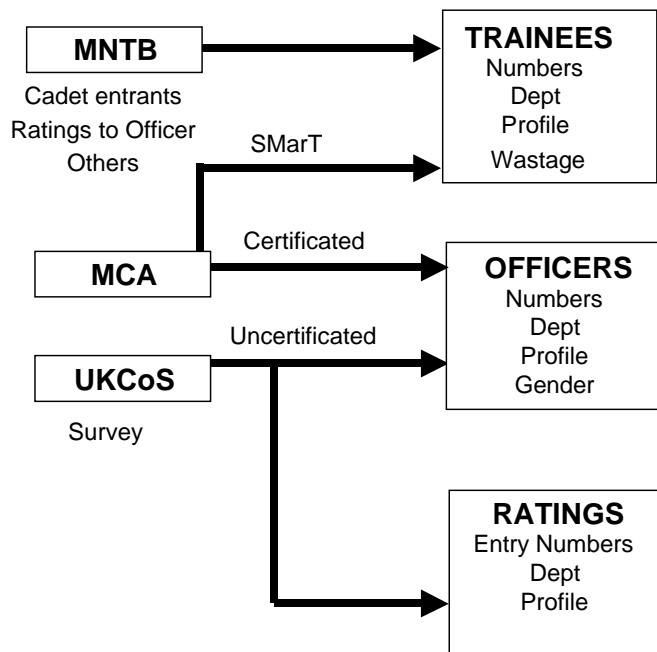
The Merchant Navy Training Board (MNTB) is the UK shipping industry's central body for promoting and developing seafarer training. For its own management purposes it compiles information from its membership on 'new starts' of seafaring trainees.

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-imbursement submitted by training providers to the MCA, for example because of students dropping out or changing their circumstances part-way through a course.

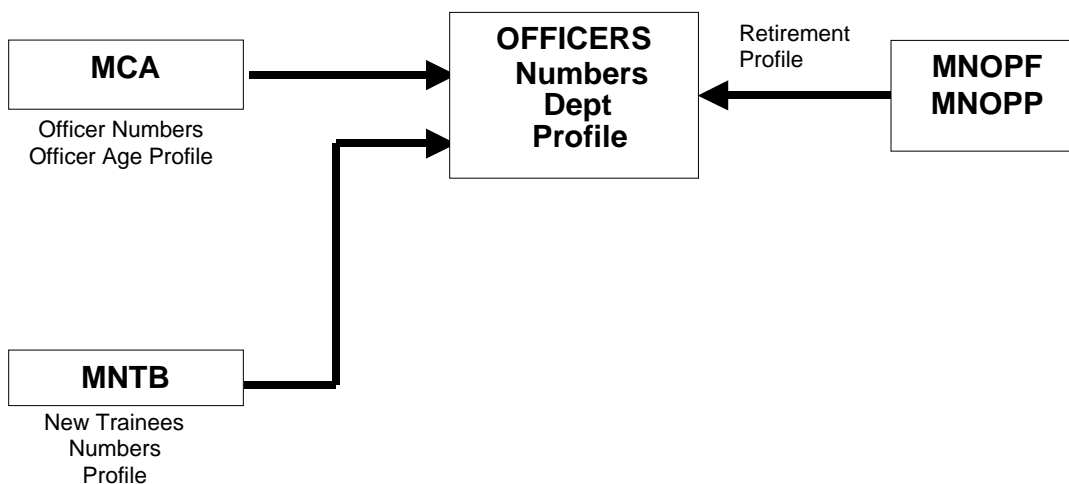
## Data flows

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**



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## 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 30<sup>th</sup> 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 30<sup>th</sup> 2010.

Certification, and Revalidations

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

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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.

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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



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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 Auxiliary 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.