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UK Seafarer Statistics 2007

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Symbols and conventions (i) Unless otherwise specified, all tables relate to UK Seafarers

Rounding of figures: In tables where figures have been rounded to the nearest 10, there may be an apparent slight discrepancy between the constituent items and the total as shown.

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UK Seafarer Statistics 2007

This annual bulletin presents UK seafarer statistics for 2007, based on information provided from three sources, the Maritime and Coastguard Agency, the UK Chamber of Shipping, and the Merchant Navy Training Board. The bulletin also provides information related to non UK officers who have served on board UK registered vessels. Previous editions in this series have appeared under the title *UK Seafarers Analysis*.

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Executive Summary

In 2007, about 23,500 UK nationals were seafarers working regularly at sea, consisting of:

12,100	certificated deck and engine officers (assuming a retirement age of 62),
800	uncertificated technical officers,
1,000	uncertificated 'hotel & other' officers,
4,000	deck and engineroom ratings
4,100	catering/hotel ratings and
1,400	trainees in training.

Of these, about two thirds 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 staff), or were trainees.

The total number of *UK seafarers active at sea* in 2007 was about 9 per cent lower than in 2002, the earliest year for which estimates are available for all groups, and about 13 per cent lower than in 2006.

The number of *certificated officers* in 2007 was 15 per cent lower than in 1997. However, the certification system for deck and engine officers has been expanded in recent years, and if the newly eligible groups are excluded, the overall decrease since 1997 is 21 per cent.

The number of *certificated officers* was 11 per cent lower in 2007 than in 2006, but this difference may be exaggerated by 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.)

In 2006/7, there were around 730 *new entrant officer cadets*, the highest number since the current system began in 1999. Provisional figures for new starts in 2007/8 are higher again, standing at 800.

The number of *uncertificated technical officers* has remained fairly steady, at about 700 to 800, since 2003. The number of *uncertificated officers with hotel and other specialisations* is more variable, and decreased from 1,700 to 1,000 between 2006 and 2007.

The overall number of UK *ratings* in 2007 was about 14 per cent lower than in 2002. The number of *deck and engineroom ratings* was 18 per cent lower, and the number of *catering/hotel ratings* was 6 per cent lower.

In 2007 over two thirds of *certificated officers* were aged over 40. The pattern for deck and engineroom ratings is similar.

Projections have been made to 2023 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 more than 40 per cent by 2023, largely due to the high average age of officers currently in employment.

Among foreign officers with Certificates of Equivalent Competency who have served on UK registered vessels since 1997, and whose certificates remain in date, the most common nationalities are Polish (15 per cent), Ukrainian (11 per cent) and Filipino (11 per cent).

Section 1 Numbers of UK seafarers 'active at sea' 2002 –2007

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. For fuller details see the headings in the following sections.

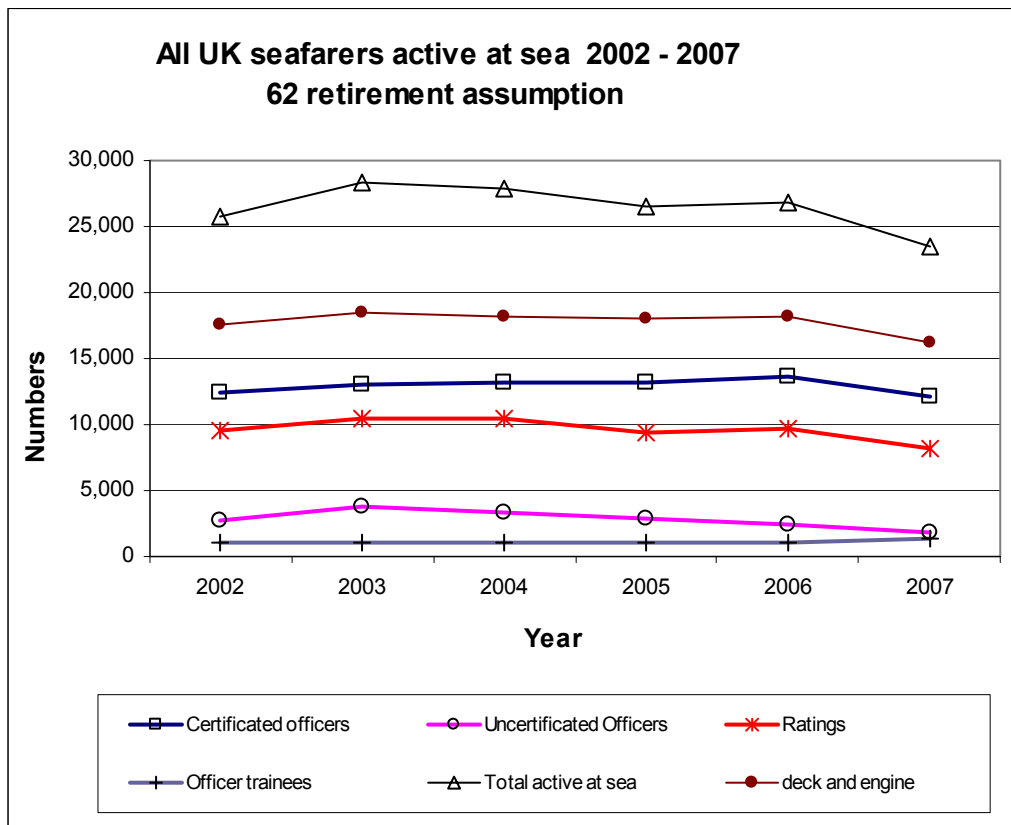
Commentary

- The total number of UK seafarers *active at sea*, assuming a retirement age of 62, is estimated as 23,500 consisting of
 - 12,100 certificated officers
 - 1,800 uncertificated officers
 - 8,200 ratings
 - 1,400 officer trainees.

- There has been a decline in seafarer numbers of 9% from 2002.

- Of the total seafarers active at sea, about 16,200 are officers or ratings classified to occupations involving handling a ship or its engines (deck, engine or dual purpose), while the remainder have other specialisations (e.g. technical, catering, customer service) not directly related to ship handling, or are trainees. (See Appendix 1 for full classification).

Figure 1.1



All UK Seafarers active at sea

Table 1.1 All UK seafarers³

	2002	2003	2004	2005	2006	2007
Adjusted data (active at sea)^{1,2}						
Retirement at 62						
Certificated officers	12,440	13,100	13,150	13,240	13,570	12,130
Uncertificated Officers	2,750	3,750	3,260	2,910	2,460	1,760
Ratings	9,510	10,490	10,270	9,320	9,750	8,150
Officer trainees	1,010	1,000	1,030	1,050	1,110	1,430
Total active at sea	25,710	28,340	27,710	26,520	26,890	23,470
of which, 'deck and engine' ⁴	17,570	18,530	18,200	18,070	18,140	16,160
Retirement at 65						
Certificated officers	13,060	13,580	13,640	13,900	14,370	12,760
Uncertificated Officers	2,750	3,750	3,260	2,910	2,460	1,760
Ratings	9,510	10,490	10,270	9,320	9,750	8,150
Officer trainees	1,010	1,000	1,030	1,050	1,110	1,430
Total active at sea	26,330	28,820	28,200	27,180	27,690	24,100
of which, 'deck and engine' ⁴	18,190	19,010	18,700	18,730	18,940	16,800

Notes:

1. Estimates are rounded to nearest 10. Actual raw figures are presented in Table 1.7.
2. See notes to Table 1.7 for details of adjustments made.
3. Excludes a small number of ratings, trainees and pre-qualified trainees - see Table 1.7.
4. This includes certificated officers and deck, engine and general purpose/technical ratings. It excludes officers and ratings without ship or engine handling roles, and officer trainees. See Tables 1.2, 1.4, 1.7 for detailed data.

Data Sources:

1. Certificated officers and officer trainees, Maritime and Coastguard Agency (MCA).
2. Uncertificated officers and ratings, UK Chamber of Shipping manpower (UKCoS) survey 2007.

UK Certificated Officers

Definition

Certificated officers include Masters, Chief Engineers and other certificated deck and engineering officers. They hold a statutory Certificate of Competency issued or recognised by the Maritime and Coastguard Agency (MCA) in compliance with STCW95.

These estimates are based on MCA records of certificates held, but are adjusted to allow for those officers who still hold a valid certificate but are not "active at sea" or who have retired.

Commentary

- The number of UK certificated officers active at sea in 2007 was estimated to be 12,100, about 15 per cent lower than in 1997.
- However, the certification system for deck and engine officers has been expanded in recent years, and if the newly eligible groups are excluded, the overall decrease is 21 per cent.
- The decrease of 11 per cent between 2006 and 2007 may have been exaggerated by 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.)
- Deck officer numbers stood at just over 6,300 in 2007, 6 per cent lower than in 1997, while engineer officer numbers stood at just over 5,800, 23 per cent lower than in 1997.

Figure 1.2

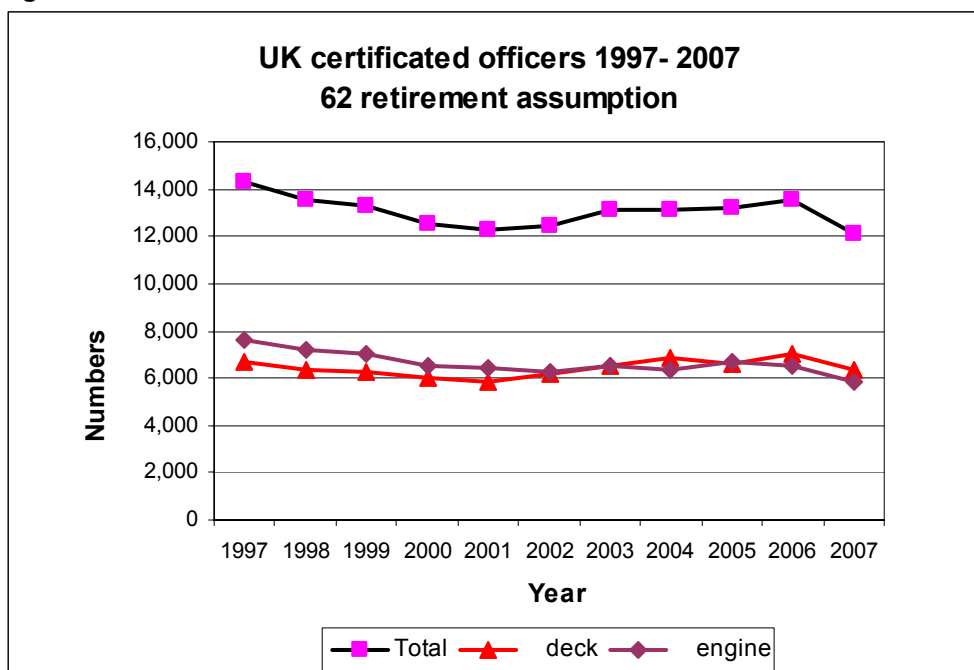


Table 1.2 UK certificated officers

	1997	1998	1999	2000	2001	2002	2003	2004 ³	2005 ³	2006 ³	2007 ³
Adjusted data (active at sea)^{1, 2, 4}											
Retirement at 62											
Total	14,300	13,550	13,300	12,510	12,300	12,440	13,100	13,150	13,240	13,570	12,130
of which:											
deck	6,720	6,370	6,240	6,010	5,880	6,210	6,550	6,840	6,600	7,020	6,320
engine	7,580	7,180	7,060	6,510	6,420	6,230	6,550	6,310	6,650	6,560	5,810
Total less yachts/TIC/CEC ⁵	14,300	..	..	..	..	..	..	12,890	12,490	12,530	11,230
Retirement at 65											
Total	14,400	14,580	13,920	13,100	12,880	13,060	13,580	13,640	13,900	14,370	12,760
of which:											
deck	6,770	6,850	6,530	6,280	6,150	6,520	6,790	7,100	6,920	7,430	6,650
engine	7,630	7,730	7,390	6,820	6,730	6,540	6,790	6,540	6,980	6,940	6,110
Total less yachts/TIC/CEC ⁵	14,400	..	..	..	..	..	..	13,370	13,130	13,250	11,800

Notes:

1. Numbers rounded to nearest 10. Components may not sum to totals due to rounding.
2. Proportion of Officers not active at sea i.e. in 'on-shore' jobs assumed to be 16% for all ages.
3. Includes UK officers holding: (i) CECs; (ii) endorsements for tug/Inshore craft only; (iii) endorsements for yachts only (below Master (yachts) who are excluded throughout). See Table 1.7 for details.
4. Figures for period 1999-2003 have been adjusted using a three year moving average.
5. Series adjusted to be consistent with original 1997 basis of data collection, to provide a longer term trend, by removing the following yacht/TIC/CEC numbers for 2004-2007 respectively: 312; 895; 1,245; 1,068 at age 62, or 326; 928; 1,328 and 1,150 at age 65 retirement.

Data Sources: MCA SDS database, LMU database (1997-2002).

UK uncertificated Officers

Definition

Non certificated officers are those officers not required to hold MCA deck/engineering certificates of competency but who are engaged to meet company-specific operational requirements e.g. electrical officers, electronic officers, electro-technical officers, refrigeration engineers; catering officers, pursers. In other words, they are not qualified as watchkeepers, that is staff responsible for the handling of the ship or its engines.

Commentary

- Overall trends in uncertificated officer numbers are the net result of differing trends within two sub-groups.
- Technical officer employment has remained fairly static for most of the period, at 700 to 800.
- The number of hotel and other uncertificated officers is more variable, being heavily influenced by a major company in the cruise sector. There was a significant reduction in this group between 2006 and 2007.
- Estimates for this group of seafarers are not available before 2002. The estimates for 2005 and earlier are to be reviewed and therefore may be subject to revision in future reports.
- Uncertificated officer numbers are derived from the UK Chamber of Shipping (UKCoS) manpower survey, and may be subject to some fluctuation because of varying response rates, and changes in UKCoS membership over time.

Figure 1.3

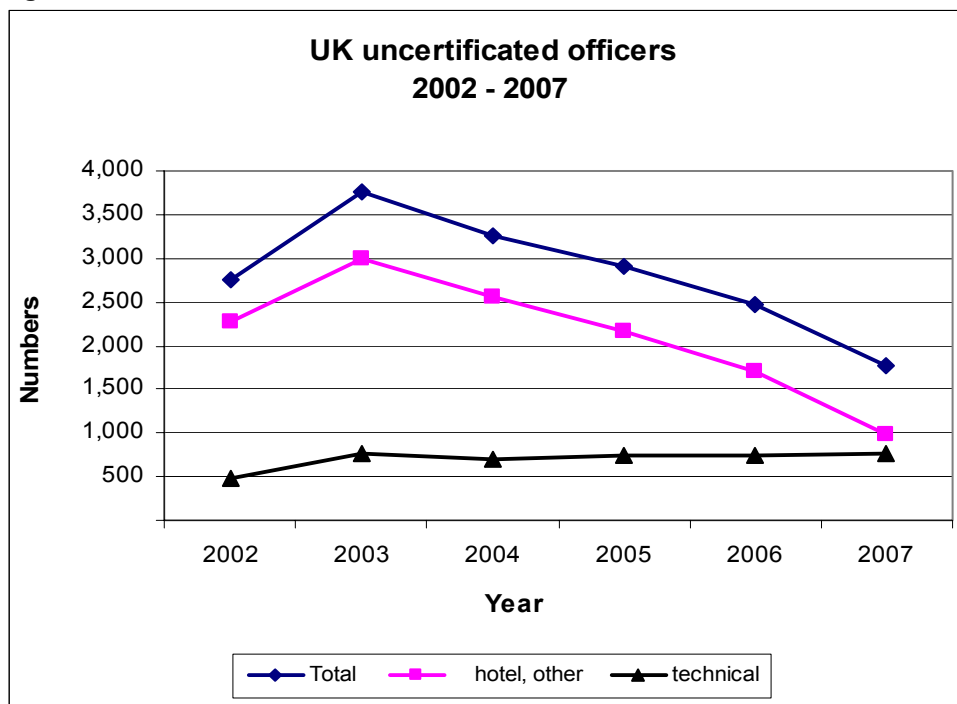


Table 1.3 UK uncertificated officers

	2002	2003	2004	2005	2006⁴	2007
Adjusted data (active at sea)^{1,2}						
Total	2,750	3,750	3,260	2,910	2,460	1,760
of which:						
technical ³	480	760	700	740	750	770
hotel, other	2,270	2,990	2,560	2,170	1,710	990

Notes:

1. Numbers rounded to nearest 10. Components may not sum to totals due to rounding.
2. The adjustments made are detailed in Note 3 to Table 1.7.
3. Technical includes electro-technical officers.
4. The numbers for 2006 have been revised following identification of double counting of ship company and manning agency figures for one specific company.

Data Sources: - UKCoS manpower surveys.

UK Ratings

Definitions

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. Ratings are classified by departmental structure. The principal ones are deck, engine, catering, and hotel. The latter have rating status but no maritime training (e.g. entertainment, hotel, and catering staff).

Commentary

- Ratings numbers have fallen by 14 per cent between 2002 and 2007. Overall, declines occurred in all departments, though with some variations over the period.
- Deck and engine room ratings both decreased by 18 per cent over the period
- General purpose/technical ratings decreased by a half
- Catering/hotel ratings declined by 6 per cent.
- Ratings numbers are derived from the UK Chamber of Shipping (UKCoS) manpower survey, and may be subject to some fluctuation because of varying response rates, and changes in CoS membership over time.

Figure 1.4

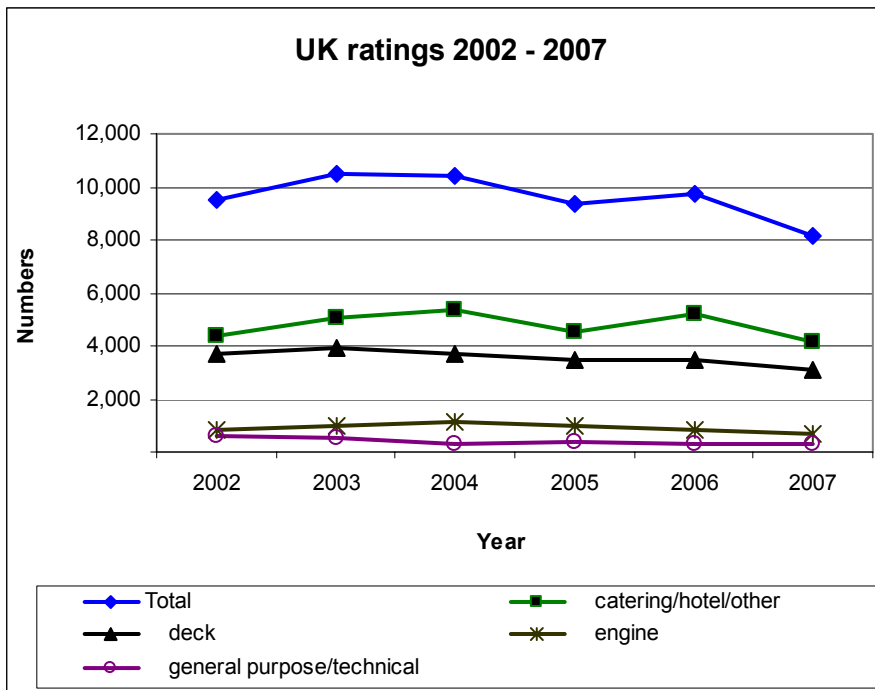


Table 1.4 UK ratings

	2002	2003	2004	2005	2006 ³	2007
Adjusted data (active at sea)^{1, 2}						
Total	9,510	10,480	10,270	9,310	9,760	8,150
of which:						
deck	3,720	3,940	3,810	3,610	3,460	3,060
engine	830	970	940	820	830	680
general purpose/technical	580	510	380	530	280	290
catering/hotel/other	4,380	5,060	5,140	4,350	5,190	4,120

Notes:

1. Numbers rounded to nearest 10. Components may not sum to totals due to rounding.
2. The adjustments made are detailed in Notes 3, 4 to Table 1.7.
3. The numbers for 2006 have been revised following identification of double counting of ship company and manning agency figures for one specific company.

Data Sources: UKCoS manpower surveys.

Officer cadets in training

Definition

Officer cadets in training is the total number of cadets estimated to be undertaking their training programme, which can take up to four years before a first certificate of competency is awarded.

Commentary

- Total trainees in training have risen slightly over the past four years, significantly in the last two.
- The figure for 2007 is 1,430, compared with 780 in 1999.
- The figures are derived from the MCA SMaRT returns and may not have complete coverage.
- The introduction of the new MCA cadet trainee database, due to be operational in 2008, will improve data coverage in this area.
- Numbers fluctuate within the year because of the start or end of specific training phases.

Figure 1.5

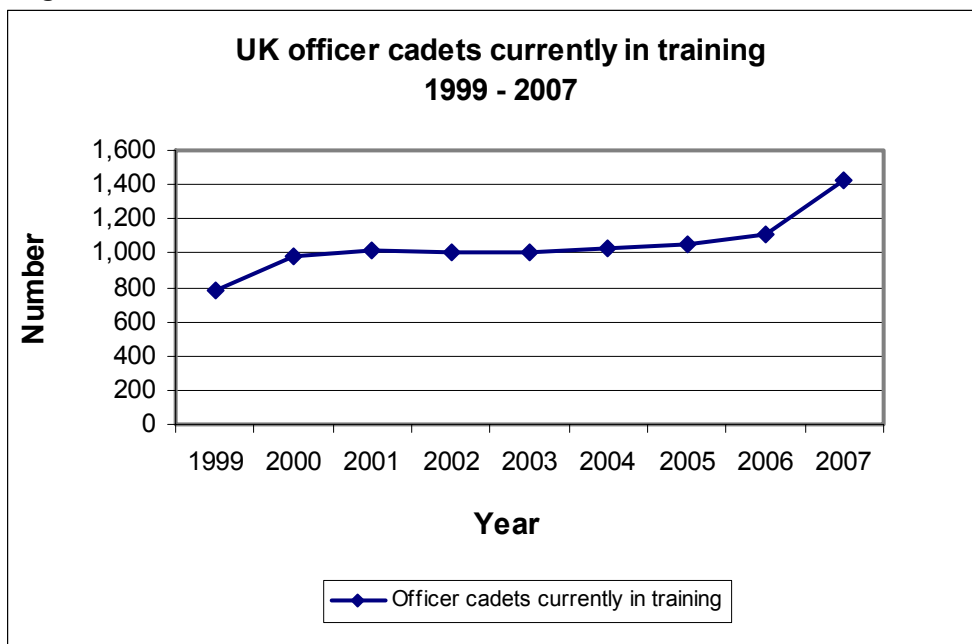


Table 1.5 UK officer cadets currently in training

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Officer cadets currently in training ^{1, 2, 3}	780	980	1,020	1,010	1,000	1,030	1,050	1,110	1,430

Notes:

1. Numbers rounded to nearest 10.

2. Data for trainees are for financial years, not calendar years, e.g. 2007 represents 2006/7.

3. The figures are derived from SMarT returns; they include a small number of EU trainees where trainees are resident in the UK. RFA trainees are excluded. They relate to financial years, not calendar years, e.g. 2007 represents 2006/7

Data Sources: Derived from SMarT returns to the MCA.

Trainees in Training; New starts

Definition

Trainees in training consist of officer cadets, apprentices, undergraduate officer trainees and rating trainees, generally with no prior relevant experience or qualifications, for whom full training is provided. There are in addition a number of ways through which someone can convert or upgrade if they already have some relevant experience.

Commentary

- Trainee new starts have shown significant increases since the start of the decade. In 2003 there were 600. By 2007 this had risen to 730. The provisional 2008 figure is 800.
- The numbers of ratings to officer conversions remain extremely small, as do most entries other than deck and engine cadets.
- The data includes information from the RFA as well as from the SMaRT database.

Table 1.6 Trainees in training – new starts^{1,2,6}

	1999	2000	2001	2002	2003	2004	2005	2006	2007
officer cadets ⁴	500	450	480	480	600	610	540	630	730
deck ⁵	..	250	270	270	290	320	280	330	410
engine ^{2,5}	..	200	210	210	310	250	220	280	240
technical/dual ³		40	40	20	80
rating to officer		30	20	20	10
deck		10	10	20	10
engine			10		
dual purpose					
ex-fishing, RN				10	
deck				10	
engine					
dual purpose					
pre qualified		20	40		
catering/hotel					
engineering etc		20	40		
ratings trainees	50	40	50	50	10
deck and engine ratings		30	40		10
deck		20	10		10
engine		10	30		
general purpose, technical					
catering		10	10	50	

Notes:

1. Numbers rounded to nearest 10.
2. The table is not complete - ' .. ' indicates that information is not available.
3. Data for electro-technical cadets for 2000-2003 is included in deck or engine cadets.
4. The figures are derived from both SMaRT returns and MNTB surveys; they include RFA trainees and also a small number of EU trainees where trainees are resident in the UK.
5. 2005 figures for deck and engine include 49 undergraduate trainees, and they have been allocated to deck and engine using the proportions in each category as for other officer cadets.
6. Data for trainees are for financial years, not calendar years, e.g. 2007 represents 2006/7.

Data Sources: MCA, MNTB (and officer trainee data pre 2000 from UK Seafarers Analysis 1999)

Table 1.7 Complete Data Set

Table 1.7 Complete data set including unadjusted figures ¹

		1997	1998	1999	2000	2001	2002	2003	2004 ⁵	2005 ⁵	2006 ^{5,10}	2007 ⁵
Certificated Officers												
62 retirement assumption												
UNADJUSTED												
A1	Total	17,026	16,128	15,419	15,970	13,300	14,655	16,477	15,656	15,767	16,157	14,436
	of which:											
	deck	9,116	8,436	8,403	8,667	7,756	8,219	9,188	8,191	8,594	8,987	8,182
	engine	7,910	7,692	7,016	7,303	5,544	6,436	7,289	7,465	7,173	7,170	6,254
ADJUSTED ²												
	Total	17,026	16,128	15,839	14,896	14,642	14,811	15,596	15,656	15,767	16,157	14,436
	Active at sea ⁷	14,302	13,548	13,305	12,513	12,299	12,441	13,101	13,151	13,244	13,572	12,126
	of which:											
A11	deck ⁹	6,722	6,367	6,240	6,006	5,879	6,208	6,550	6,839	6,596	7,017	6,318
A12	engine	7,580	7,181	7,065	6,507	6,420	6,233	6,551	6,312	6,648	6,555	5,808
A13	dual purpose ⁸										22	
Certificated Officers												
65 retirement assumption												
UNADJUSTED												
A1	Total	17,144	17,356	15,897	16,464	14,395	15,125	17,126	16,244	16,554	17,106	15,194
	of which:											
	deck	9,156	9,208	8,674	8,942	8,252	8,458	9,573	8,499	9,057	9,561	8,678
	engine	7,988	8,148	7,223	7,522	5,837	6,577	7,553	7,745	7,497	7,545	6,516
ADJUSTED ²												
	Total	17,144	17,356	16,572	15,585	15,328	15,549	16,165	16,244	16,554	17,106	15,194
	Active at sea ⁷	14,401	14,579	13,921	13,092	12,876	13,061	13,579	13,645	13,905	14,369	12,763
	of which:											
A11	deck ⁹	6,768	6,852	6,528	6,284	6,154	6,517	6,789	7,095	6,924	7,428	6,649
A12	engine	7,633	7,727	7,393	6,808	6,722	6,544	6,790	6,550	6,981	6,941	6,114
A13	dual purpose ⁸										22	
A2	Uncertificated officers active at sea											
UNADJUSTED												
	Total			976	1,684	1,704	1,778	2,136	2,799	2,541	2,462	1,758
	of which:											
A21	technical			472	682	1,053	892	901	971	734	749	765
A22, A23	hotel, other			504	1,002	651	886	1,235	1,828	1,807	1,713	993
A2	Uncertificated officers active at sea											
ADJUSTED ³												
	Total						2,753	3,743	3,260	2,915	2,462	1,758
	of which:											
A21	technical						480	755	698	741	749	765
A22, A23	hotel, other						2,273	2,988	2,562	2,174	1,713	993

		1997	1998	1999	2000	2001	2002	2003	2004 ⁵	2005 ⁵	2006 ^{5,10}	2007 ⁵
B	Ratings											
	UNADJUSTED											
	Total		8,925	10,331	6,395	8,897	10,554	9,621	8,749		9,752	8,150
	of which:											
B11	deck		2,617	2,450	1,924	2,983	3,265	3,479	3,174		3,459	3,060
B12	engine		884	835	710	911	1,164	989	745		832	682
B13	general purpose/technical		346	520	57	699	612	462	524		276	291
B21	catering/hotel/other		5,078	6,526	3,704	4,304	5,513	4,691	4,306		5,185	4,117
B	Ratings											
	ADJUSTED⁴											
	Total						9,511	10,491	10,269	9,316	9,752	8,150
	of which:											
B11	deck						3,715	3,944	3,807	3,614	3,459	3,060
B12	engine						830	973	935	818	832	682
B13	general purpose/technical						583	514	383	530	276	291
B21	catering/hotel/other						4,383	5,060	5,144	4,354	5,185	4,117
	Officer cadets currently in training⁶		779	981	1,020	1,012	1,002	1,033	1,050		1,109	1,426
	Trainees in training⁶ - new starts		498	446	481	483	655	696	640		716	753
	of which:											
C1	officer cadets		498	446	481	483	604	605	538		633	733
C11	deck			249	269	271	291	322	283		330	414
C12	engine			197	212	212	313	245	220		281	244
C13	dual purpose, electro-technical							38	35		22	75
	conversions							25	20		33	9
D1	rating to officer							25	20		23	9
D11	deck							9	12		20	8
D12	engine							4	8		3	1
D13	dual purpose							12			0	
D2	ex-fishing, RN										10	
D21	deck										10	
D22	engine										0	
D23	dual purpose										0	
E	pre qualified trainees							18	38		0	
E1	catering/hotel										0	
E2	engineering etc							18	38		0	
	trainee ratings						51	48	44		50	11
C2	deck and engine ratings							34	35		1	11
C21	deck							22	9		1	7
C22	engine							12	26		0	4
C23	general purpose, technical										0	
C3	catering							14	9		49	

See overleaf for Notes to this table

Notes to Table 1.7

1. This table gives all the figures shown in Tables 1.1 - 1.6 (shaded sections) plus original (unadjusted) figures. Subsequent notes explain the basis for these adjustments. Blank entries indicate data not available.

2. The unadjusted data for certificated officers over the period 1999 to 2003 has been smoothed by using a three year moving average. Then "active at sea" is derived based on the assumption that 16% of officers with valid certificates are shore based.

3. The unadjusted CoS uncertificated officer data has been adjusted by: removing anomalies in the data by averaging adjacent years; deriving a consistent respondent data set - only those companies in Chamber membership in the past four years and who made at least two completed returns during that period were taken; then the 2005 results were "grossed" to cover all Chamber members (where a return was not completed, the most recent was used); finally earlier years' figures were uplifted based on the ratio of the grossed to the 4 year consistent figure for 2005. From 2006 onward, the grossed returns are used.

4. Adjustments for ratings were made in the same way as described for uncertificated officers in note 3.

5. (i) Certificated Officer totals for 2004 to 2007 include the following UK officers holding CECs only. Figures for earlier years are not available.

	(aged 62 retirement assumption)	(aged 65 retirement assumption)
2004	142	154
2005	150	161
2006	136	145
2007	100	111

(ii) The scope of STCW95 was widened to include officers with endorsements for tug and inshore craft only. Figures for these have been included for 2004 to 2007 and are estimated as:

	(aged 62 retirement assumption)	(aged 65 retirement assumption)
2004	141 deck and 29 engine	not available
2005	428 deck and 317 engine	441 deck and 326 engine
2006	524 deck and 248 engine	570 deck and 271 engine
2007	432 deck and 232 engine	478 deck and 242 engine

(iii) From 2006 it was also possible to identify officers holding only yacht endorsements, other than Master (yachts), who are already excluded. These were identified as:

	(aged 62 retirement assumption)	(aged 65 retirement assumption)
2006	137 deck and 200 engine	141 deck and 201 engine
2007	106 deck and 194 engine	114 deck and 195 engine

6. Data for trainees are for financial years, not calendar years, e.g. 2005 represents 2004/5.

7. See Appendix 3.1 for the definition of active at sea.

8. A13 dual certificated officers also included in deck and engine (A11 or A12).

9. Deck share for active certificated officers is derived from UKCoS survey data. The shares for individual years 1997 - 2007 are as follows, respectively: 0.470, 0.470, 0.469, 0.480, 0.478, 0.499, 0.500. 0.520, 0.498, 0.517, 0.521

10. The numbers for 2006 have been revised following identification of double counting of ship company and manning agency figures for one specific company.

Section 2 Detailed profiles for UK and other seafarers

Age profiles of UK seafarers

The following four tables show age profiles for the main groups of UK officers and ratings covered in Section 1, with a gender profile in a fifth table.

Table 2.1 Age & certificate profile, UK certificated deck officers, June 2007

Age (yrs)	Master	Chief Mate	OOW Deck	All Deck
16 < 20	0	0	6	6
20 < 25	3	18	395	416
25 < 30	115	228	470	813
30 < 35	292	275	109	676
35 < 40	389	194	50	633
40 < 45	603	183	50	836
45 < 50	1,081	222	43	1,346
50 < 55	1,329	204	31	1,564
55 < 60	1,157	194	28	1,379
60 < 62	444	61	8	513
Total 16 to 61	5,413	1,579	1,190	8,182
<i>Percentage</i>	<i>66</i>	<i>19</i>	<i>15</i>	<i>100</i>
<i>Percentage 40+</i>	<i>85</i>	<i>55</i>	<i>13</i>	<i>69</i>
Ages 60 < 65	872	121	16	1,009
Total 16 to 65	5,841	1,639	1,198	8,678
<i>Percentage</i>	<i>67</i>	<i>19</i>	<i>14</i>	<i>100</i>
<i>Percentage 40+</i>	<i>86</i>	<i>56</i>	<i>14</i>	<i>71</i>
Age 65+	210	24	3	237
All ages	6,051	1,663	1,201	8,915
<i>Percentage</i>	<i>68</i>	<i>19</i>	<i>13</i>	<i>100</i>

Source: derived from MCA data.

Notes: 1. Records officer's highest capacity.

2. Includes 71 UK nationals with CEC qualifications.

3. COC includes 478 deck endorsed for TIC only.

4. Section 1 included only officers under 62 or 65 (retirement age assumptions)

Figure 2.1

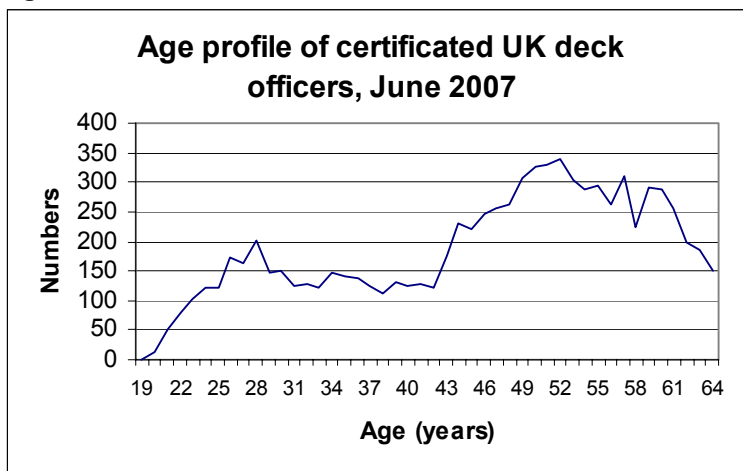


Table 2.2 Age & certificate profile, UK engineer officers, June 2007

	Chief Engineer	Second Engineer	OOW Engineering	All Engineers
Age (yrs)				
16 < 20	0	0	1	1
20 < 25	4	15	333	352
25 < 30	50	206	451	707
30 < 35	206	239	70	515
35 < 40	330	124	30	484
40 < 45	448	93	25	566
45 < 50	732	142	36	910
50 < 55	1,031	169	10	1,210
55 < 60	927	201	6	1,134
60 < 62	319	56	0	375
Total 16 to 61	4,047	1,245	962	6,254
<i>Percentage</i>	<i>65</i>	<i>20</i>	<i>15</i>	<i>100</i>
<i>Percentage 40+</i>	<i>85</i>	<i>53</i>	<i>8</i>	<i>67</i>
Ages 60 < 65	526	111	0	637
Ages 16 < 65	4,254	1,300	962	6,516
<i>Percentage</i>	<i>65</i>	<i>20</i>	<i>15</i>	<i>100</i>
<i>Percentage 40+</i>	<i>86</i>	<i>55</i>	<i>8</i>	<i>68</i>
Age 65+	136	25	0	161
All ages	4,390	1,325	962	6,677
<i>Percentage</i>	<i>66</i>	<i>20</i>	<i>14</i>	<i>100</i>

Source: derived from MCA data.

Notes: 1. Records officer's highest capacity.

2. Includes 40 UK nationals who hold CEC qualifications.

3. COC includes 242 engineers endorsed for TIC only.

4. Section 1 included only officers under 62 or 65 (retirement age assumptions)

Figure 2.2

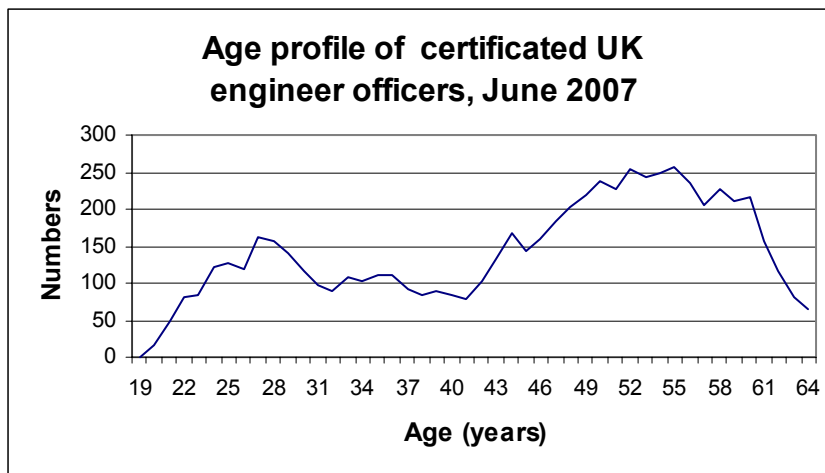


Table 2.3 Age & department profile, UK officers in the UKCoS survey, 2007

Age (yrs)	Deck	Engine	Hotel	Other	Technical	Total
16 < 20	0	2	0	0	0	2
20 < 25	211	133	18	19	2	383
25 < 30	366	287	72	59	33	817
30 < 35	257	219	82	62	37	657
35 < 40	236	202	95	52	68	653
40 < 45	267	225	103	48	89	732
45 < 50	415	365	60	52	90	982
50 < 55	452	518	42	34	143	1,189
55 < 60	437	462	38	32	123	1,092
60 < 62	120	128	14	10	26	298
Total 16 to 61	2,761	2,541	524	368	611	6,805
<i>Percentage</i>	<i>41</i>	<i>37</i>	<i>8</i>	<i>5</i>	<i>9</i>	<i>100</i>
<i>Percentage 40+</i>	<i>61</i>	<i>67</i>	<i>49</i>	<i>48</i>	<i>77</i>	<i>63</i>
Ages 60 < 65	218	210	29	10	44	511
Total 16 < 65	2,859	2,623	539	368	629	7,018
<i>Percentage</i>	<i>41</i>	<i>37</i>	<i>8</i>	<i>5</i>	<i>9</i>	<i>100</i>
<i>Percentage 40+</i>	<i>63</i>	<i>68</i>	<i>50</i>	<i>48</i>	<i>78</i>	<i>64</i>

Source: UKCoS manpower survey 2007.

Notes: 1. Total records for UK nationals, 7,442.

2. Table excludes 25 officers had no or invalid DoB data.

3. Table excludes 399 officers aged 65 years or more.

4. Total records excludes 1,132 officers who are only in the aggregated returns (i.e. individual characteristics are not reported).

Table 2.4 Age & department profile, UK ratings in the UKCoS survey, 2007

Age (yrs)	Deck	Engine	Catering	Hotel	General Purpose	Other	Total
16 < 20	11	7	46	38	0	0	102
20 < 25	86	44	271	236	8	10	655
25 < 30	164	54	246	234	19	43	760
30 < 35	187	46	187	162	20	34	636
35 < 40	258	71	207	157	24	70	787
40 < 45	353	80	290	126	47	64	960
45 < 50	485	112	338	129	56	79	1,199
50 < 55	423	108	286	84	47	57	1,005
55 < 60	402	74	189	46	35	35	781
60 < 62	138	29	60	20	10	4	261
Total 16 to 61	2,507	625	2,120	1,232	266	396	7,146
<i>Percentage</i>	35	9	30	17	4	6	100
<i>Percentage 40 +</i>	72	65	55	33	73	60	59
60 < 65	232	47	106	34	23	6	448
Total 16 < 65	2,601	643	2,166	1,246	279	398	7,333
<i>Percentage</i>	35	9	30	17	4	5	100
<i>Percentage 40 +</i>	73	66	56	34	75	61	60

Source: UKCoS manpower survey 2007.

Notes: 1. Total records for UK nationals, 7,480.

2. Table excludes 93 ratings with invalid date of birth data.

3. Table excludes 54 ratings aged 65 years or more.

4. Total records excludes 599 ratings who are only in the aggregated returns (i.e. individual characteristics are not reported).

Figure 2.3

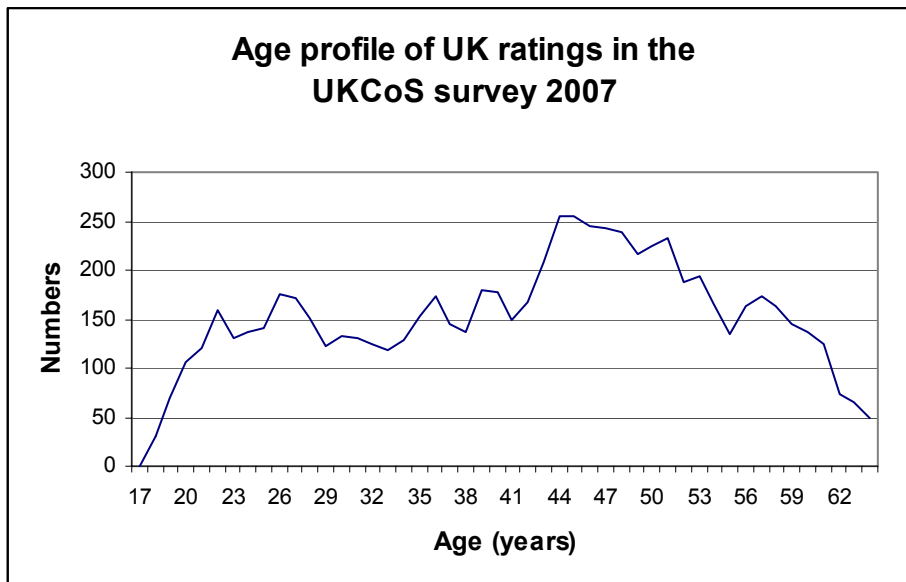


Table 2.5 Gender analysis of officers and ratings in the UKCoS survey 2007

UK officers

	Percent	
	Male	Female
Deck	98.0	2.0
Engine	99.6	0.4
Technical	98.9	1.1
Catering/Other	66.1	33.9
Total	94.3	5.7

UK Ratings

	Percent	
	Male	Female
Deck	98.8	1.2
Engine	99.4	0.6
General Purpose	100.0	
Technical	n/a	n/a
Catering/Other	73.9	26.1
Total	85.8	14.2

Source: UKCoS manpower survey, 2007

Note: 'Technical' department not used in ratings coding in 2007

Age profiles of Non-UK (CEC) officers working on UK registered vessels

The MCA have also provided information on the age profiles of officers who are foreign nationals, holding Certificates of Equivalent Competency (CECs). This information relates to all such officers who have been employed on UK registered vessels, since 1997, and their details stored on the MCA database. The records are cumulative, and relate to those officers whose certification was valid at the 30th June 2007 census date, the same criteria that was applied to the UK officer data.

Table 2.6 Nationality profile of non UK officers working on UK registered vessels

2007 Rank	Country	Numbers	Percentage	Cumulative Percentage	2006 Rank
1	Poland	1,780	15.5	15.5	1
2	Ukraine	1,296	11.3	26.8	2
3	Philippines	1,222	10.6	37.4	4
4	Russia	888	7.7	45.1	3
5	Romania	829	7.2	52.3	6
6	India	778	6.8	59.1	5
7	Croatia	758	6.6	65.7	7
8	Bulgaria	571	5.0	70.6	8
9	Latvia	524	5.0	75.2	10
10	Italy	376	3.3	78.5	9
11	South Africa	250	2.2	80.6	11
12	Lithuania	246	2.1	82.8	17
13	Germany	204	1.8	84.6	14
14	Republic of Ireland	182	1.6	86.1	13
15	United States of America	163	1.4	87.6	12
16	Norway	157	1.4	88.9	18
17	Canada	141	1.2	90.2	16
18	Australia	132	1.2	91.3	19
19	Serbia & Montenegro	128	1.1	92.4	New Entry

Source: derived from MCA data on officers serving on UK registered vessels.

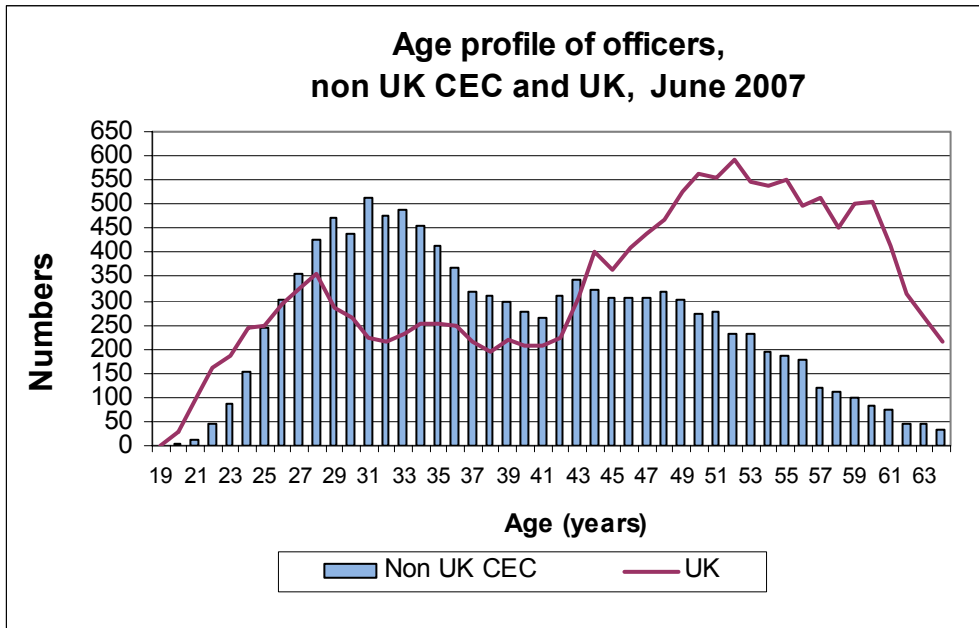
Notes: 1. Shows only those with a share of 1 per cent or more.

2. Retirement age of 65 is assumed.

It is clear from Table 2.6 that the nationalities are quite widely dispersed, with the ten largest accounting for 81% of all officers identified in the database. They include several European countries, the largest being Poland, as well as including India and the Philippines. There is a long 'tail' of nationalities which have been ignored. The Table is in most respects very similar to last year's results, with the exception that Ukrainian nationals edged ahead of the Russia compared to 2005.

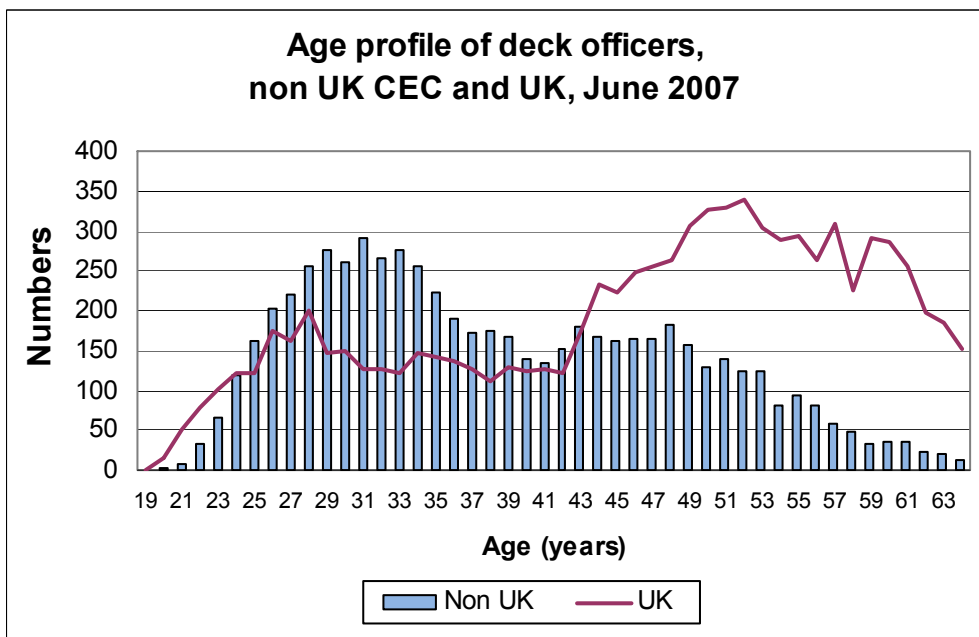
Age profiles for all the combined set of all such officers are shown in Figure 2.4. The age profile so described is very different from the one which defines UK officers, which is also shown as a line in the figure for comparison. Figures 2.5 and 2.6 show the profiles for deck and engineer officers of all nationalities, whilst Figure 2.7 shows the age profile of all officers for the three largest, Poland, Philippines and Ukraine, which account for 37% of all the records, as shown in Table 2.6.

Figure 2.4



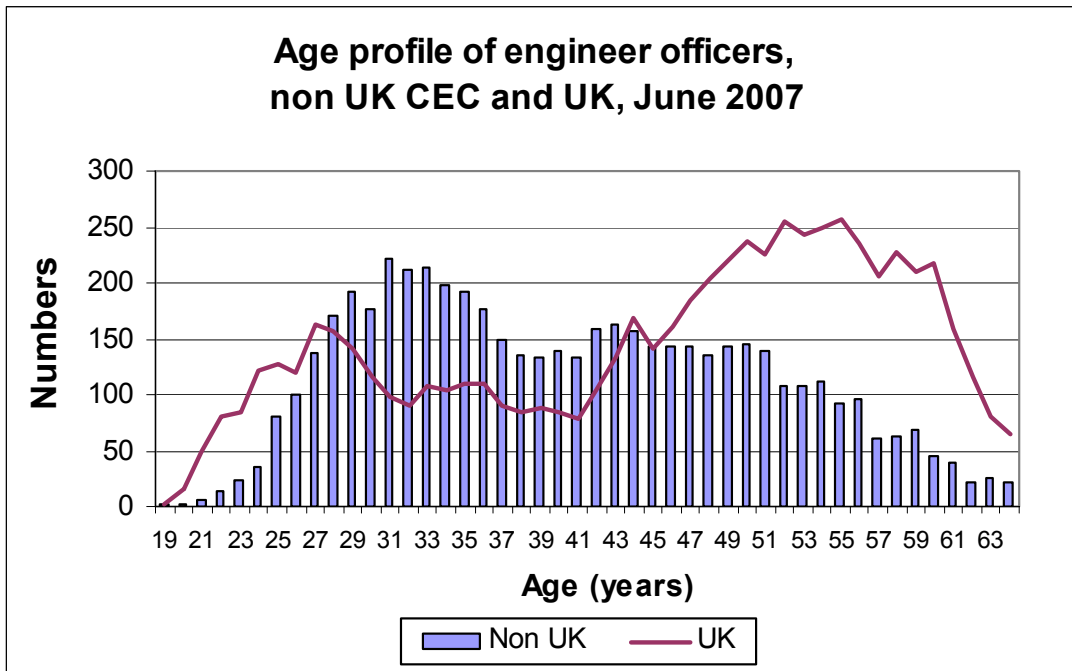
Source: derived from MCA data.

Figure 2.5



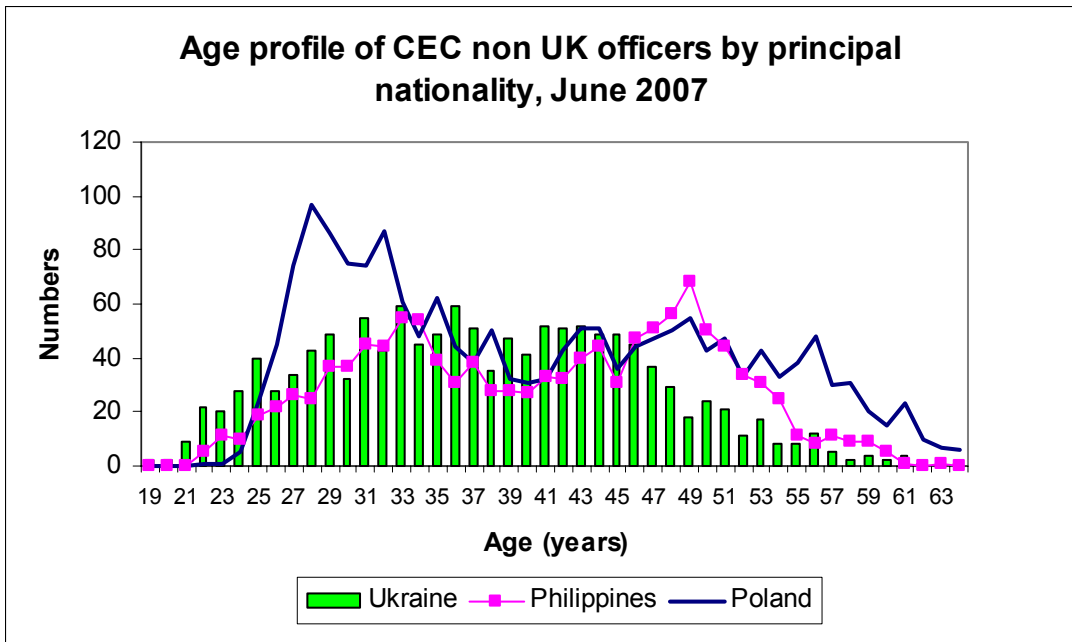
Source: derived from MCA data.

Figure 2.6



Source: derived from MCA data.

Figure 2.7



Source: derived from MCA data.

Section 3 Projections of UK Seafarers from 2007 – 2023

A simple model of officer entry and exit rates has been 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 emphasise here 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, in line with recent and anticipated entry rates. 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 the GAFT data on cadets for 1995-6, so has an empirical base. As the new MCA cadet database builds up from 2008, it may be possible to replace this assumption with estimates derived from actual recent data.

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 15 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 of course, quite possible that the 'consensus' is incorrect:- it has been suggested that this number is too high. If indeed, the figure is larger than is actually the case, then the figure so obtained will be a conservative estimate of future seafarer numbers.

The final element in the projection model is the assumed age of retirement. A retirement age of 62 has been incorporated into the model, with an allowance made for earlier retirements. Using data provided by the MNOPF for retirees over the period 2000-2007, it has been possible to construct a probability distribution, derived from information on pension take up in the past seven years, to allow for the proportions who take up their pension earlier (or later) than the official retirement age of 62.

However, it is recognised that not all certificated officers will retire at the official maximum age. Since 2004, the Merchant Navy Officers' Pension Fund (MNOPF) provided information on the age profile of those retiring in recent years. This sample has been utilised to generate an empirically based probability distribution for the age of retirement, defined as the difference between date of birth and start date of the pension. 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 MNOF has provided an update on retirees for 2007. The incorporation of the new information made minor changes to the 2006 age distribution of retirees, and the modified distribution has been employed in the 2007 report.

The assumptions underlying the present projection remain the same as last year, except that the rate of cadet entry has been raised from 650 to 800.

Table 3.1 Projection of UK certificated officers for 2008 - 2023

Age 62	2007	2008	2013	2018	2023
Total	14,336	13,728	11,265	9,276	8,257
Deck	7,455	7,139	5,858	4,824	4,294
Engineer	6,881	6590	5,407	4,453	3,963
Age 65	2007	2008	2013	2018	2023
Total	15,132	14,654	12,011	10,105	8,614
Deck	7,869	7,620	6,246	5,255	4,480
Engineer	7,263	7,034	5,765	4,850	4,135
Input Assumptions					
Cadet Entry Rates			Wastage Rates		
Input	800		20 < 30	0.06	
Wastage	0.08		30 < 50	0.06	
Output	573		50 plus	0.01	

Note: Deck/engine split derived from UKCoS survey results and is assumed to remain fixed at 52%:48% respectively.

Source: Authors

Figure 3.1

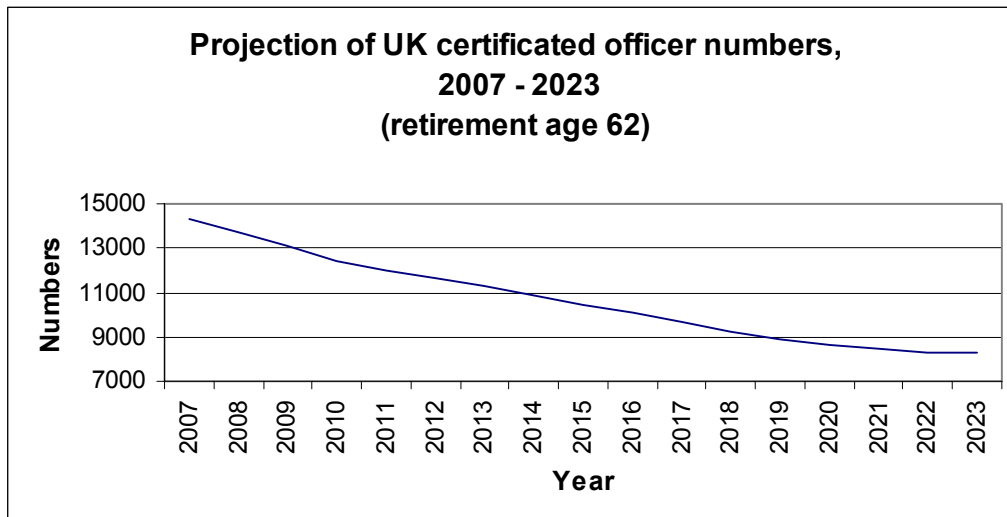
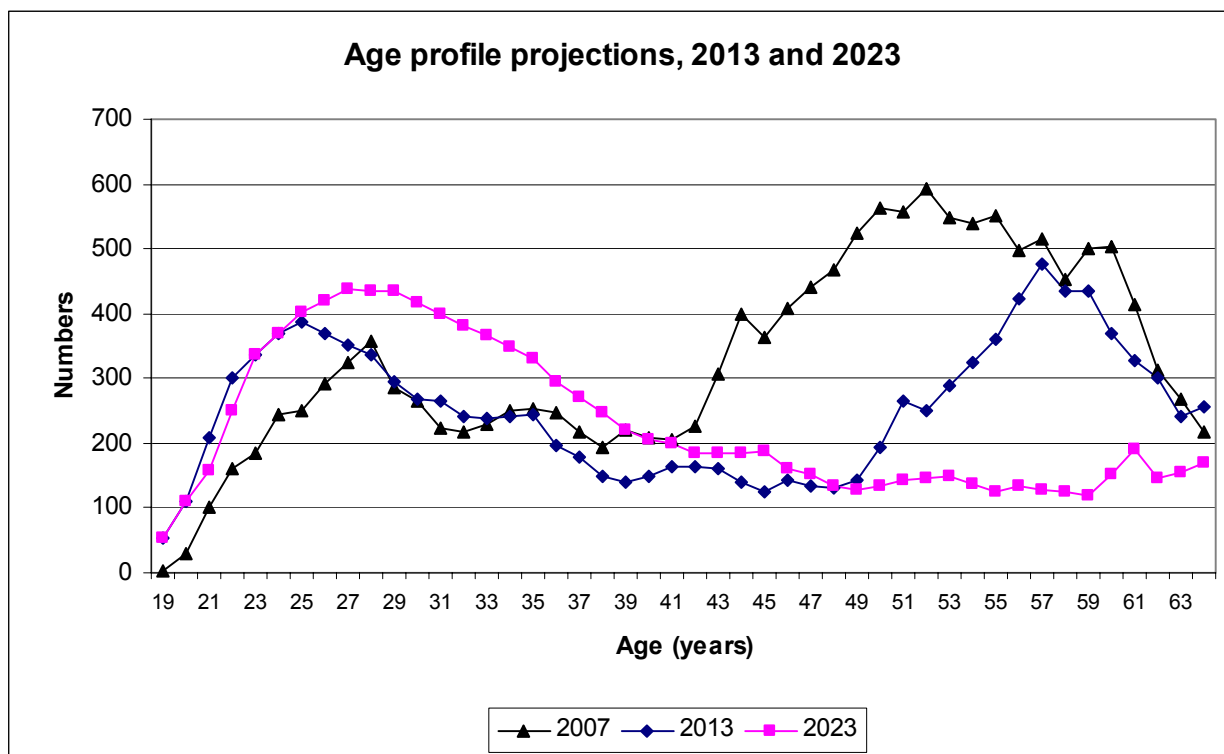


Figure 3.2



Source: derived from MCA data.

Forecast sensitivity to input assumptions

The impact on the forecast numbers of varying the input assumptions is explored by examining the changes in the forecast values consequent to a 25 per cent change in the assumed values of both cadet entry numbers, and cadet and officer wastage rates. The change in the forecast relative to a 'base case' for the year 2013 was then calibrated, and the results are presented as percentage changes. A twenty five per cent increase in officer wastage rates reduces the forecast number by 5.5%. Officer wastage rates have been assumed to alter *pro rata* for the three age categories.

Table 3.2 Forecast Sensitivity

Effect of a 25 per cent change on 2013 forecast numbers	
	per cent change
Cadet Entry Numbers	6.1
Cadet wastage rate	-2.4
Officer wastage rate	-5.5
Base case scenario forecast 2013	11,270

Source: Derived from projection model

The table shows (not surprisingly) that the two most significant assumptions are the cadet entry numbers and the officer wastage rates prior to retirement. Variations in cadet wastage rates are far less important.

Appendix 1: Classification of Seafarers

Below is listed the detailed categories of seafarers considered in the Bulletin. All UK merchant navy seafarers are included, and the Royal Fleet Auxiliary but not the Royal Navy. Fishermen are excluded.

A Officers

A1 Certificated officers

Those categories listed in the Safe Manning Document and required to hold statutory certificates of competency issued or recognised by the Maritime and Coastguard Agency in compliance with STCW 95. 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)

Appendix 2: Data Sources and Data Flows

MCA Seafarer Documentation System

There are three principal sources of data that have been used to produce the statistics. First, the MCA Seafarer Documentation System (SDS), an electronic database maintained by the MCA in Southampton, 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. This information has been used to generate comprehensive profiles of age, department and levels of qualification for these 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.

The MCA has provided the data in a form that permits an analysis of age profiles, qualification profiles, and departmental splits for both UK nationals, and in addition, non UK nationals holding Certificates of Equivalent Competency.

UK Chamber of Shipping (UKCoS) manpower survey

The second principal source of data is that obtained from the UKCoS manpower surveys of its membership which was re-introduced in 2002 on an annual basis. It provides the basis for the estimates of uncertificated officers (those who are not required to hold Certificates of Competency), and for rating numbers. 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 (the MCA certification process in SDS data does not contain information on the nationality of the employer).

MNTB and SMaRT

The third principal source of data used in this report is the MNTB. The MNTB has provided information on the 'new starts' for the academic/financial year 2006/7. The financial year is the most appropriate time frame for trainees, because many trainees commence their course in September/October of each year, and the financial disbursements (monitored by SMaRT) relate to financial years. The data for this part of the UK Seafarer population estimates are therefore defined in terms of the financial year 2006/7, rather than the calendar year 2007.

The SMaRT data is held by the MCA, which is responsible for managing the scheme. Certain SMaRT documents have been used to obtain figures on both trainee new starts, particularly cadet trainees, and overall trainees continuing in training. 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, and ii) all EU nationals can obtain SMaRT support if residential conditions are met.

The estimate of the remaining trainees continuing in training has been derived by deducting the MNTB figure for new trainees from the estimated total number of cadets supported by SMaRT, data provided by the MCA.

From 2008 the MCA will be implementing a new database for cadet trainees, using the SMaRT data as a primary resource. This will improve the quality of information currently available on numbers, cohort progression, and wastage rates

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 in this report. The solid lines indicate primary input data, and the dotted or dashed lines indicate sources that have been used, or have the potential to be used, in producing estimates. For example, in Figure A.2.1, the MCA is the dominant source of detailed information that has been employed to estimate total UK certificated officer numbers, departmental split, and age profile. The results from the UKCoS manpower survey provide supplementary information, for example on gender split. The same survey is the main source of information on uncertificated officers, as well as ratings.

Figure A.2.1 shows that the primary source of information on new trainees is the MNTB. In previous years Nautilus UK has also provided independent information on the numbers of ratings to officer conversions.

Figure A.2.1 Data flows for seafarer estimates

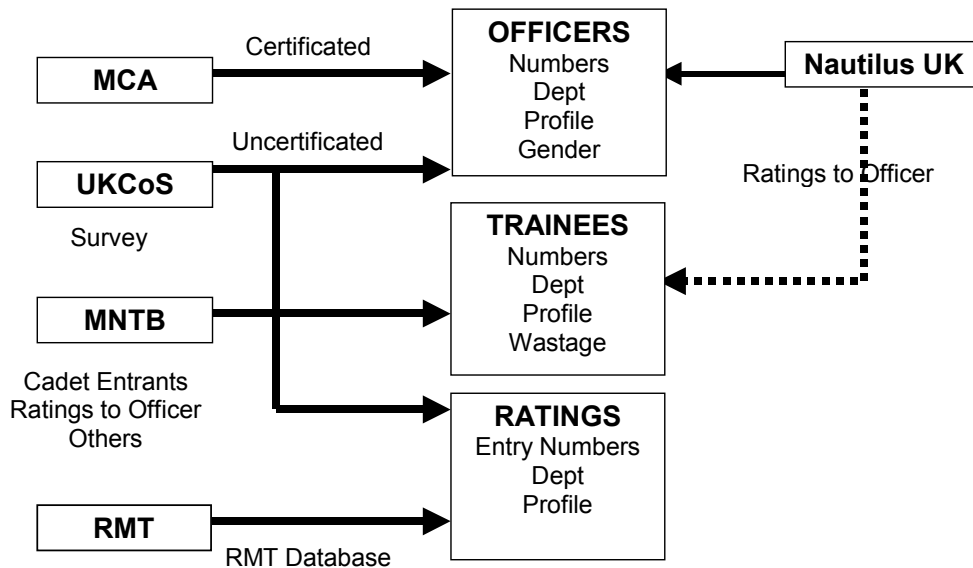
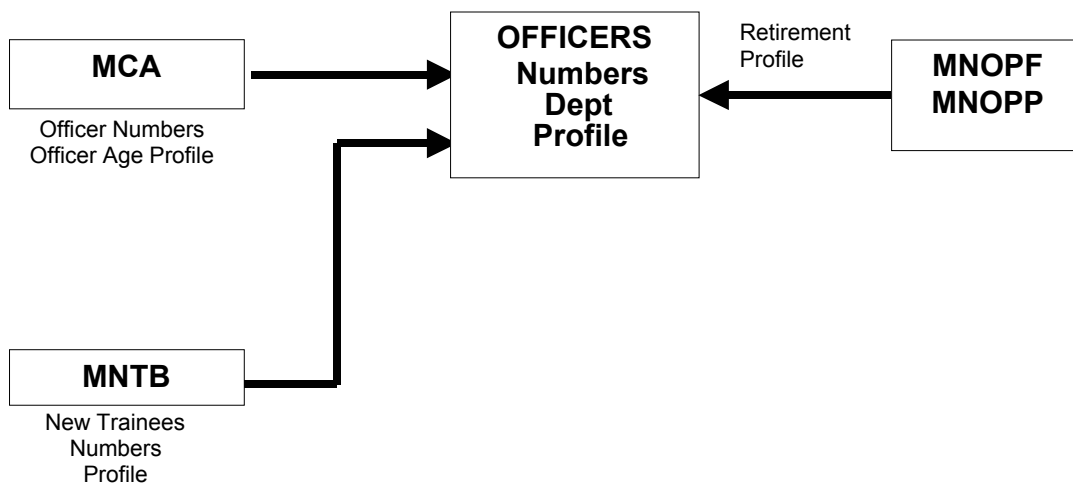


Figure A.2.2 Data flows for projection exercise



Appendix 3

Methodology

A3.1 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'.

A3.2 Determining seafarer numbers

A3.2.1 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 2007, 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 2007.

Certification, and Revalidations

Any certificate issued, or revalidated between 1st July 2002 and 30th June 2007, and with an expiration date of no later than 30th June 2012.

The majority of these officers work 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 (MNOPP), an employee can retire at any time between 61 and 75. However, Nautilus UK have confirmed that the typical retirement age is now 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.

A3.2.2 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. There are several issues which need to be taken into account when considering the UKCoS data for these officers: individual company responses vary across the years of the survey, so that numbers fluctuate because of differential non-response; 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; and companies which do respond may not have done so on a consistent basis, leading to anomalous results.

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 has increased its return for 'hotel/other' employees from 500 in 2003 to over 1,200 in 2004); the reporting of 'technical' officers may lead to inconsistent reporting where specific companies employ individuals with engineer certificates in technical posts.

To overcome these difficulties various actions were carried out in 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 the past 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 and 2007 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 2007, only 2006 data were used to estimate missing figures (the basis for this change was a concern that inserting figures for earlier years where more recent data were not available was not reliable when data returns are volatile).

A3.2.3 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, so 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 in the current publication, with maximised figures for 2006 and 2007 added.

A3.2.4 Trainees

Trainee data are currently derived from two sources, MNTB and SMarT. The MNTB data form the basis of the estimated total numbers of new trainees. In future it is planned to get the information needed from an improved data collection system from the administration of the SMarT scheme run by the MCA. Once this database is operational, improved information on trainee numbers, and their transition to officer certification, should be possible.

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 who are continuing in training.