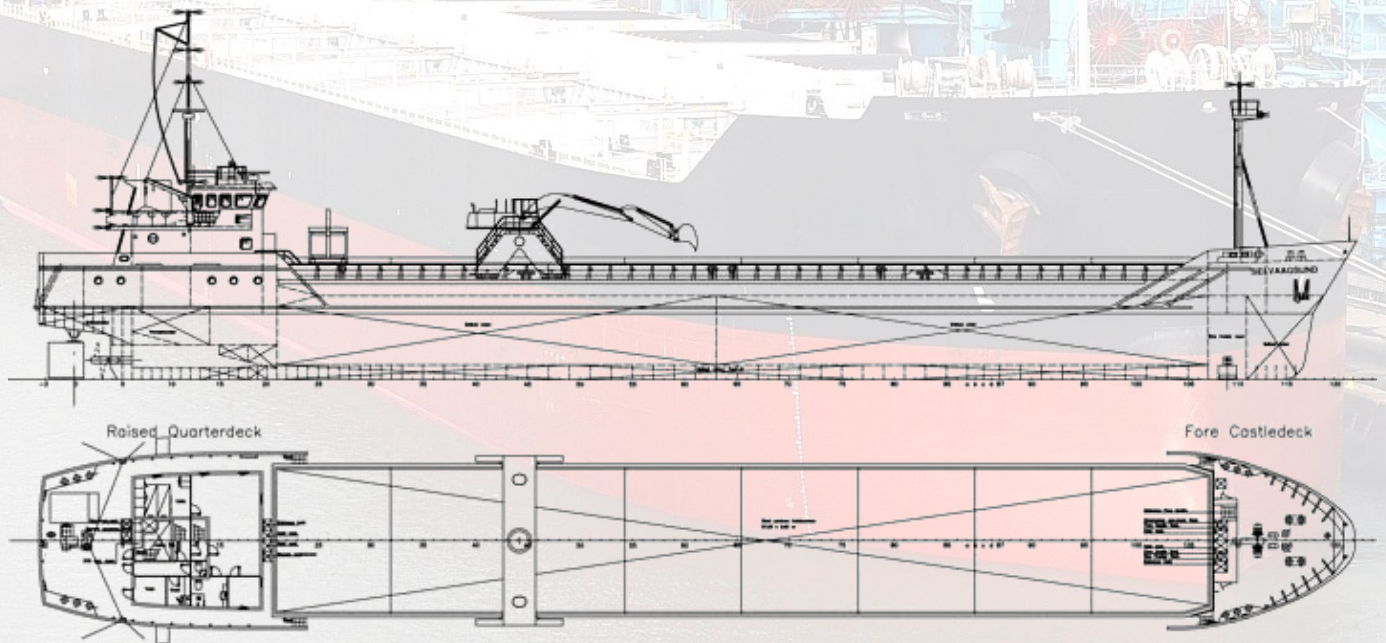


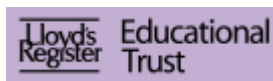
Seafarer Accommodation on Contemporary Cargo Ships

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Executive Summary

Background

The design of a ship impacts critically on the working lives of seafarers in a variety of ways. Vessel accommodation design can impact on the quality of rest accessible to seafarers, the levels of restoration which they can achieve in non-working hours and the degree of mental wellbeing they experience. Yet the design of vessel accommodation is an area which receives insufficient attention across the industry and as a result a high degree of variability can be found between ships in relation to accommodation, facilities, amenities, and the material condition of the accommodation block.

This study was funded by The Lloyd's Register Educational Trust (The LRET). It was designed to ascertain the levels of satisfaction seafarers experience in relation to the accommodation design of the vessels they work aboard. As such this report outlines the findings from a questionnaire completed by serving seafarers about their most recent sea-going experience.

Methods

Questionnaires were completed/analysed in three languages (English, Tagalog, Chinese (Mandarin)).

One thousand five hundred and thirty-three completed questionnaires were collected and analysed using SPSS 18 (Statistical Package for the Social Sciences).

Significance levels were established using chi squared tests and a significance level of 0.05.

Significant results are reported where these are associated with clear patterns and trends in the data.

Sample

Two percent of respondents were women.

The average age of respondents was 33.

Thirty-nine percent of respondents were from the Philippines, 32% were Chinese, 15% were Indian, 12% were UK nationals and 3% were of other nationality.

Twenty-four percent of the sample were senior officers, 42% were junior officers, 34% were ratings.

Respondents were asked to report on the accommodation and facilities aboard their current or most recent ship. 31% of these were reported to be bulk carriers, 27% were tankers, 23% were general cargo/specialist cargo/container vessels, 8% were passenger carrying vessels and 11% were other ship types. The mean gross tonnage was just under 40,000 gt and the average age of vessels was ten with the sample under-representing old ships. 33% of the vessels were constructed in Japan, 23% were constructed in China and 17% were constructed in South Korea with the remainder constructed in other shipbuilding nations.

Context of working life at sea

Three quarters of respondents lacked job security and worked on fixed term contracts.

More than half of the sample had contracts of over six months.

There were restricted opportunities for shore leave and vessels spent most of their time at sea. 59% of respondents had spent just one week or less in port in the period of the last 8 weeks .

Cabins and their facilities

Most seafarers had their own cabins however 14% reported that they shared a cabin.

A relatively high proportion of respondents (24%) shared bathroom facilities.

Almost a third of seafarers (30%) were dissatisfied with the size of their cabin and just over a third (34%) were dissatisfied with the amount of storage space in their cabins.

Seafarers were very limited in the extent of the control that they had over their living environment in terms of heat, light, noise, and vibration.

Forty-one percent were unable to control temperature in their cabins .

Fifty-two percent were unable to adjust levels of electric light.

Ten percent of cabins were reported to be without natural light.

Seven percent of seafarers by contrast could not block out natural light.

Twenty-seven percent had a restricted view from their cabin.

Sixty percent were disturbed by noise in their cabin.

Sixty-three percent were disturbed by vibration in their cabin.

Only 23% of seafarers living in these conditions reported that they were able to get adequate rest all of the time.

Furnishings and amenities

Eighteen percent reported standard of furnishings were poor or very poor and 16% reported that cabins were dirty and/or in poor condition.

Eighteen percent did not like the colours used in their cabins/furnishings.

Bedding, drawers, tables, towels, soap, and toilet paper, **were provided** to at least ninety percent of respondents (NB the % varies by item and is reported fully in the main text).

Significant numbers of respondents **lacked** reading lights (15%), wardrobes (20%), and comfortable chairs (24%) in their cabins.

Very few seafarers **had access** to televisions (30%), radios (17%), music systems (19%) and the internet (15%) in their cabins.

Communal messrooms and amenities

Most respondents (97%) reported access to messrooms. In twenty percent of cases these were mixed rank messrooms and in 80% of cases messrooms were divided along rank lines into messrooms for officers and ratings. Tables and chairs were almost universally provided along with TVs (in 94% of cases). Over 80% of respondents reported access to films/DVDs in the messroom (87%) and also to refrigerators (88%) and drinking water (83%). Hot drinks and radios/CDs were less prevalent (available in 76% and 70% of cases respectively) but most surprisingly only two thirds of respondents (66%) reported that messrooms included access to comfortable chairs.

Washing facilities

Washing machines were almost universally available (in 98% of cases) but driers and/or drying rooms were only available to 81% of respondents and irons and ironing boards were available to only 64% of respondents.

Communications

A small percentage of seafarers reported free and unlimited internet access (12%). The majority (61%) reported that they had no internet access available to them on board at all. The remainder (27%) experienced either time restrictions or charges or both or alternatively some other kind of restricted access.

Once again only a minority of seafarers (27%) reported free and unlimited access to email on board. A substantial proportion of respondents (41%) reported that they did not have any access to email on board and the remainder (32%) experienced either time restrictions or charges, or both, or some other kind of restricted access to email. Where seafarers reported charges for email the average hourly charge was reported to be \$US 11.89 per hour. This means that on a nine month contract (assuming a 30 day month on average) and using email for an average of one hour per day seafarers would accrue charges of \$US 3,210.30

The majority of seafarers (97%) reported that they took their own mobile phones on board with them. However, on average, respondents were without mobile coverage for 15.1 days per month. In this context, and bearing in mind the limited email access that has been reported, access to a ship's telephone may be seen as a vital requirement for seafarers. However, 20% of seafarers reported that they did not have access to their vessel's telephone facilities of any kind at all. Only three percent suggested that they had free and unlimited access to telephones. The remainder had access which was largely subject to some restrictions such as permission from the Captain (15%), financial charges (53%), or limited time (6%). The average reported charge for use of the vessel telephone was \$US43.12 per hour.

Welfare and leisure amenities

Sixty-five percent of respondents were aware that there was a budget on board for purchases related to crew welfare. Twenty-two percent reported that there was no welfare budget and the remainder did not know of such a budget.

Seventy-eight percent of seafarers reported access to a DVD library on board and 71% had access to a book library. Sixty-five percent had access to a music system, 52% to a karaoke system and just under 50% to games.

Seafarers were asked what they would like to have on board but did not. Of those who responded two thirds identified wi/fi internet access, 17% wanted a gym, 7% telephone and also games access, 5% satellite TV, 3% a computer terminal and 2% wanted access to a swimming pool.

Catering

The majority of vessels were reported to carry dedicated cooks (98%). Crew members took turns to cook for the whole crew in 2% of cases.

However, just over 20% of respondents reported that there was insufficient food on board and 18% reported that food was of a poor or very poor quality. Thirty-one percent of seafarers felt that food was not healthy and 48% reported that special dietary needs were not catered to on board.

Despite the hot conditions in which many seafarers work 28% reported that they **never** had access to free soft drinks on board while 50% reported that free soft drinks were occasionally provided. The remainder had more frequent access to free soft drinks.

Positive and negative aspects of working at sea

Many seafarers recognised and experienced negative aspects of shipboard life. Seventy-two percent reported work-related stress, 61% reported a lack of recreational facilities, 45% reported lack of space, 43% reported lack of career progression, 42% reported lack of training, 38% experienced job insecurity, 33% reported lack of privacy, 22% reported bullying/harassment, 19% reported discrimination.

Positive aspects of shipboard life were generally less well-recognised by seafarers however 35% suggested there was positive camaraderie on board, 34% felt positive about on board facilities, 32% felt that job opportunities were a positive aspect of life as a seafarer, 31% felt that job satisfaction characterised life as a seafarer and 31% felt that training opportunities were a positive dimension of life as a seafarer.

Variations between seafarers

Significant variations in the responses of seafarers of different nationality, rank and/or age are reported in detail in the main text. In general Filipino seafarers appeared to report the most positive experiences followed in descending order by UK nationals, Indian and finally Chinese seafarers. It was notable that Chinese seafarers appeared to be particularly badly catered for in terms of access to communication facilities (email, internet, telephone) on board. Ratings were more positive than officers a little more frequently than officers were more positive than ratings and few significant age differences are reported in the main text.

Variations between ships

Significant variations between ships were identified in the provision of space, amenities, facilities and issues relating to quality of life. These variations could be seen very strongly in conjunction with where vessels were built, their size, and their age. There were also variations by ship type. Thus seafarers reported more positive experiences on vessels built in Korea, on newer vessels (and on a number of occasions the 5-9 age group specifically), on larger vessels and on tankers.

Background

As researchers boarding and sailing upon vessels, in the course of our work we have observed, over a period of nearly fifteen years, a wide range in the standards of accommodation found on cargo ships. Some vessels have been well-maintained and have provided seafarers with clean and pleasant living environments whilst others have been neglected, unhygienic, and dispiriting. Facilities have varied tremendously as well. On one container vessel we found an indoor swimming pool, a sauna, a basketball court, and a dedicated and well-equipped gymnasium. On others we found no proper facilities for seafarers at all, other than the standard messrooms and/or crew/officer lounges.

It is unlikely that even when it comes into force the much commended Maritime Labour Convention (MLC) will impact greatly on these varied conditions. In an analysis comparing the new consolidated convention to the old ILO conventions associated with accommodation design we were unable to identify a basis for the view that the new MLC would create a great deal of change.

Yet, the evidence from studies of the effect of the built environment on individuals at work and at home (see Küller, *et al.*, 2006; Riediker and Koren, 2004; Evans, 2003) suggests that the accommodation provided on ships does make a difference to seafarer wellbeing. Furthermore, it is likely that it impacts on seafarer retention rates and it could play an important role in the incidence of ship casualties and seafarer injuries. The length of seafarer contracts, the increasing difficulty seafarers experience in getting shore-leave, the shrinking numbers of personnel aboard most ships, and the work intensification that has accompanied this trend, might in many cases be expected to amplify such effects. As such the study of seafarer experiences of vessel accommodation is timely and of some importance.

This report outlines the findings from a study of vessel accommodation undertaken by The Lloyd's Register Educational Trust Research Unit (The LRETRU) which is part of the Seafarers International Research Centre (SIRC) at Cardiff University. The study was carried out in 2011. It was largely questionnaire-based although pre-pilot work was conducted at a shipyard in China. The research design was informed by the experience of undertaking a similar study at SIRC which was focussed specifically upon commercial yachts (see Bailey, *et al.*, 2010).

Methods

The findings in this report are based upon the analysis of 1533 returned questionnaires which were filled in by active seafarers with reference to their experience aboard their current or most recent vessel. Questionnaires were piloted prior to distribution and they were ultimately produced in three languages to facilitate accuracy and accessibility: English, Chinese (Mandarin), and Tagalog.

Questionnaires were distributed and collected by researchers in China, the Philippines, and the UK. Seafarers were located at training centres and at seafarer missions but they were not contacted via companies as this would have served to both skew the sample (over-representing some company standards) and to bias it (seafarers may not have felt free to offer their real opinions). In most cases researchers were on hand to answer any queries respondents may have had about the meaning of particular questions. However, in answering any questions care was taken never to lead respondents to arrive at particular responses and respondent confidentiality was assured at all times.

Data from the completed questionnaires were entered into the computer based statistical package SPSS18. Chi squared analysis was used to test for statistical differences in reported experiences of accommodation and recreation facilities onboard. In this report we have only highlighted statistically significant results (using a significance level of 0.05¹) where clear patterns and trends emerge in the data. Figures have been rounded up/down to read as whole numbers which means that occasionally the cumulative total of the percentages reported may come to slightly over or under 100%.

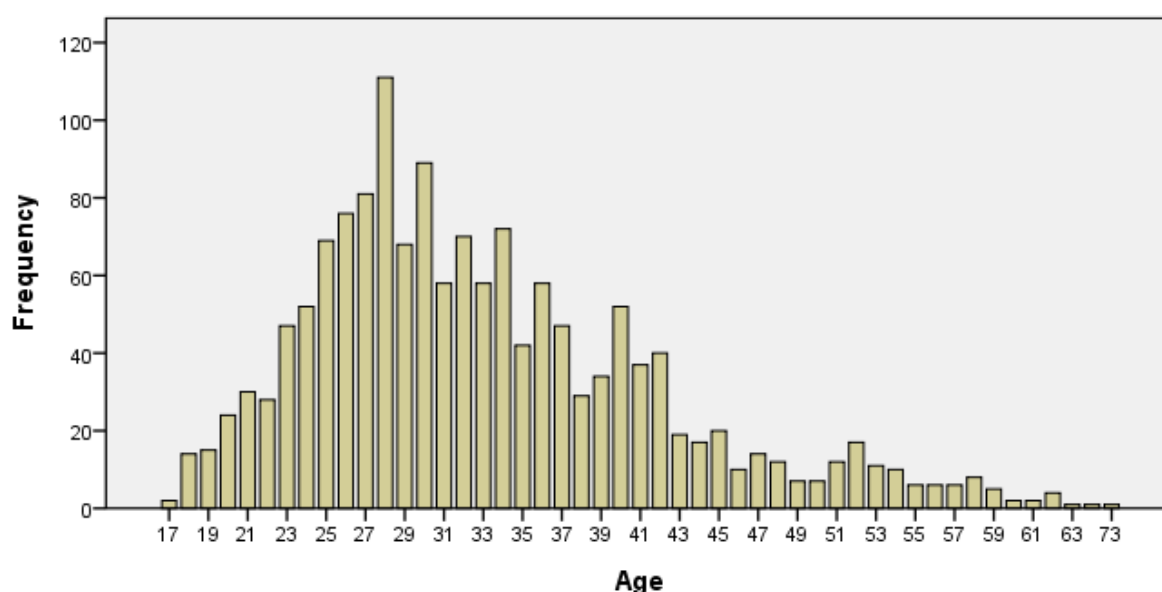
The sample - respondents

In line with most estimates of the proportions of women working aboard merchant cargo ships and in addition our own experience of recruitment for other studies, women made up just 2% of the overall sample.

In relation to age, the minimum age of respondents was found to be 17 and the maximum was 73. The average age of respondents was 33 years and the vast majority of respondents (89%) were under forty-five years old (see Figure 1).

¹ In interpreting significance results the rule of thumb is that the smaller the significance value the more significant the result. For example, a significance level of 0.00 is regarded as highly significant, results of 0.05 are regarded as significant, and those of 0.5 are not treated as significant.

Figure 1: The Age Distribution of Respondents



Four main nationality groups made up the sample which reflected our decisions about where to recruit respondents. These decisions were based on our understanding of the global labour market for seafarers and on practical constraints with regard to questionnaire administration. The largest single group within the sample was from the Philippines (39%) closely followed by respondents from China (32%). Indian nationals made up a smaller yet nevertheless significant proportion of respondents (15%) and UK nationals constituted 12% of the sample. Other nationalities when grouped together constituted just 3% of the total sample.

In terms of the ranks represented in the sample, a reasonable representation of senior officers (top four), junior officers and ratings was achieved. Senior officers represent 24% of the sample, which is very closely echoed in crew list data (where senior officers represented 22% of the sample) collected and collated in 2003 (Ellis and Sampson, 2008). However compared with that (same crew list) data our sample would appear to over-represent junior officers 42% (22% in the crew list data) and under-represent ratings (34% in our sample here but 56% of the crew list sample). For a detailed description of how seafarers were assigned to senior, junior and ratings rankings see Appendix 1.

In relation to experience the majority of respondents (67%) had worked at sea for less than eleven years. Twenty-seven percent of respondents had worked at sea for between 11 and 20 years and only very few (6%) had worked at sea for over 20 years. This is likely to be a reasonable reflection of experience across the workforce.

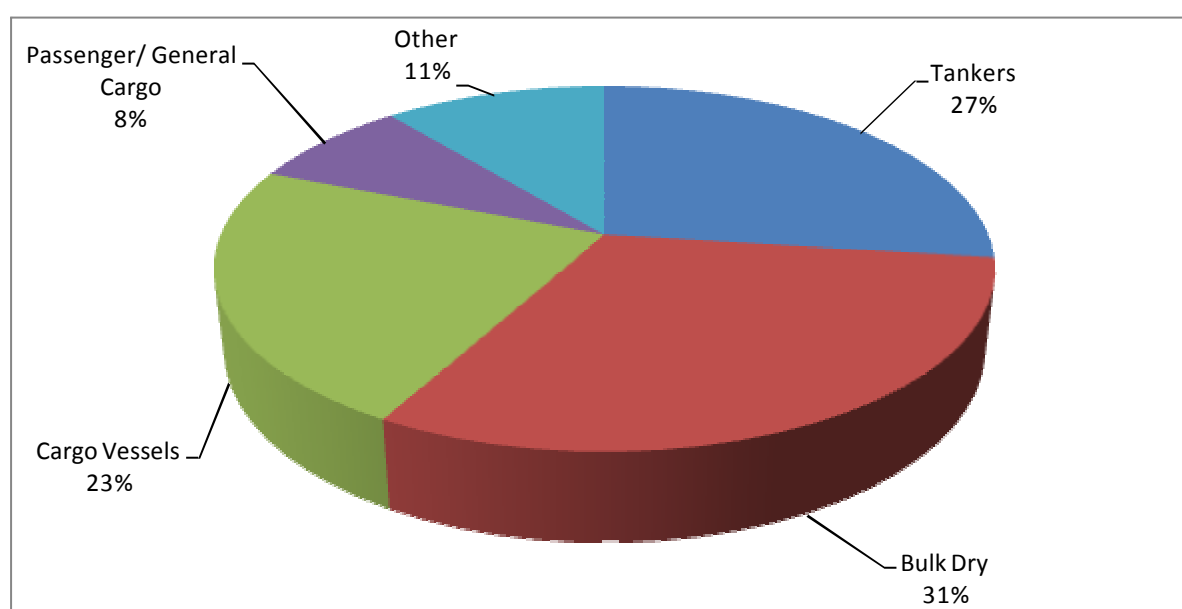
In summary the sample does not appear to be particularly skewed except in relation to nationality. With regard to nationality, there is a cross section of respondents from different regions of the world (Europe, East Asia, China, Indian subcontinent) and the most significant nationalities in the

labour market (primarily Filipinos) are represented. As a result although the sample is not representative of the global labour market for seafarers, there is no reason to assume that the sample composition will result in any particular bias in the results.

The sample – ships

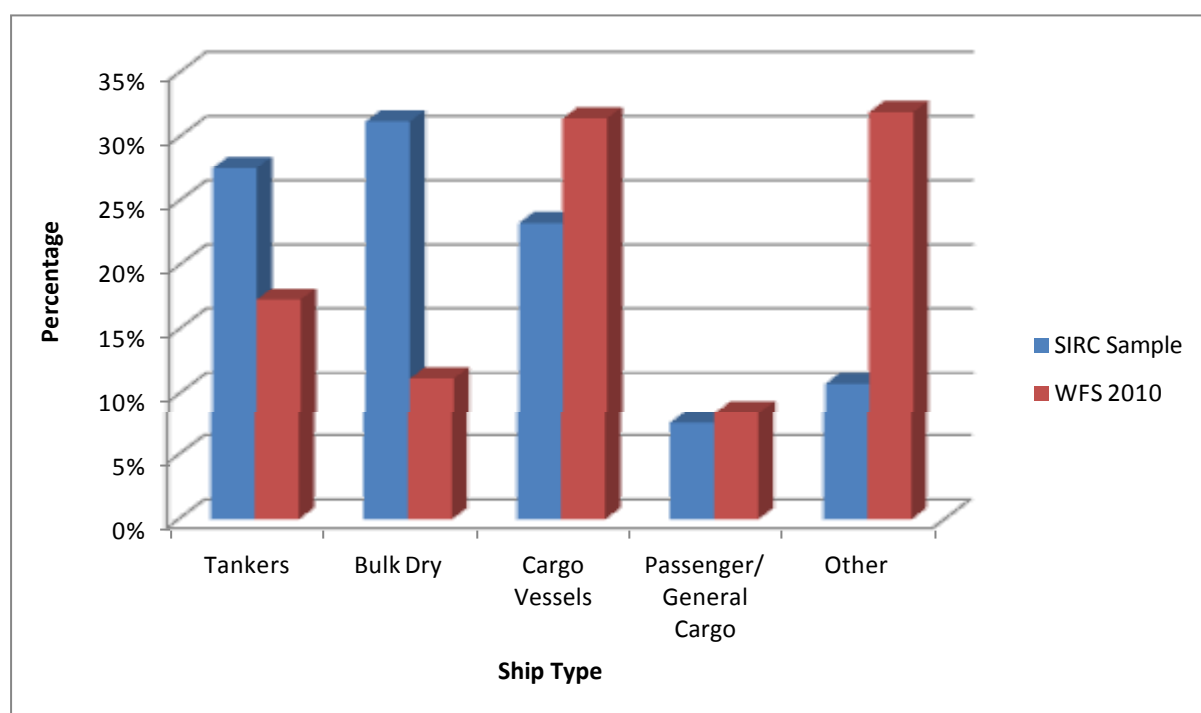
In relation to ship-type the sample was split fairly evenly between bulk carriers (31%) and tankers (27%) with slightly fewer (23%) specialist cargo/general cargo/container vessels (see Appendix 2 for details of these groupings). There were a smaller number of passenger carrying vessels (8%) and 11% of the vessels mentioned by respondents fell outside any of these categories (see Figure 2).

Figure 2: Ship Types



While this relatively even split is helpful for our research in giving us responses from seafarers who are fairly evenly spread across the fleet it does not match very closely to the world fleet data compiled in the *Lloyd's Register World Fleet Statistics*. These suggest that our sample over-represents bulk carriers and to a lesser extent tankers, and that it under-represents 'other ship types' (see Figure 3). For a full comparison of the proportion of ship types see Appendix 3.

Figure 3: Comparison of Ship Types in the SIRC Sample to those in Lloyd's Register World Fleet Statistics 2010 (WFS 2010)



The mean gross tonnage of the vessels described by respondents (their last or current ship) was just under 40,000gt (39,264.62gt). The mean deadweight tonnage of the vessels described by respondents was 58,599.56dwt.

The majority of the ships (72%) included in the findings were less than fifteen years old and the average age of the vessels discussed was ten. The *Lloyd's Register World Fleet Statistics* suggest that the sample under-represents old ships. In relation to some ship types in the sample the over-representation of younger vessels is marked. For example, oil product tankers were on average 14 years younger than those in the world fleet, with passenger/ general cargo ships being 23 years younger on average (for more detail see Appendix 4)

Ships were built in a range of countries with most having been constructed in Japan (33%), China (23%) and South Korea (17%). This is representative of shipbuilding trends in the world over the period of the last thirty years although today China and South Korea have taken larger shares of the shipbuilding market, with Japan losing its place as the leading player in vessel construction when such relative placement is assessed by deadweight tonnage (see UNCTAD, 2011).

Findings

The significance of the shipboard environment

Three quarters of respondents (75%) worked on fixed-term (per voyage) contracts. We found significant nationality differences in terms of the nature of these contracts however with both Chinese and UK seafarers being significantly more likely to be working on a permanent contract and Indian and Filipino seafarers being significantly more likely to work on fixed-term contracts (see Figure 4). Similarly officers were much more likely to be working on permanent contracts than ratings and these differences were significant (see Figure 5).

Figure 4: Contract Type by Seafarer Nationality

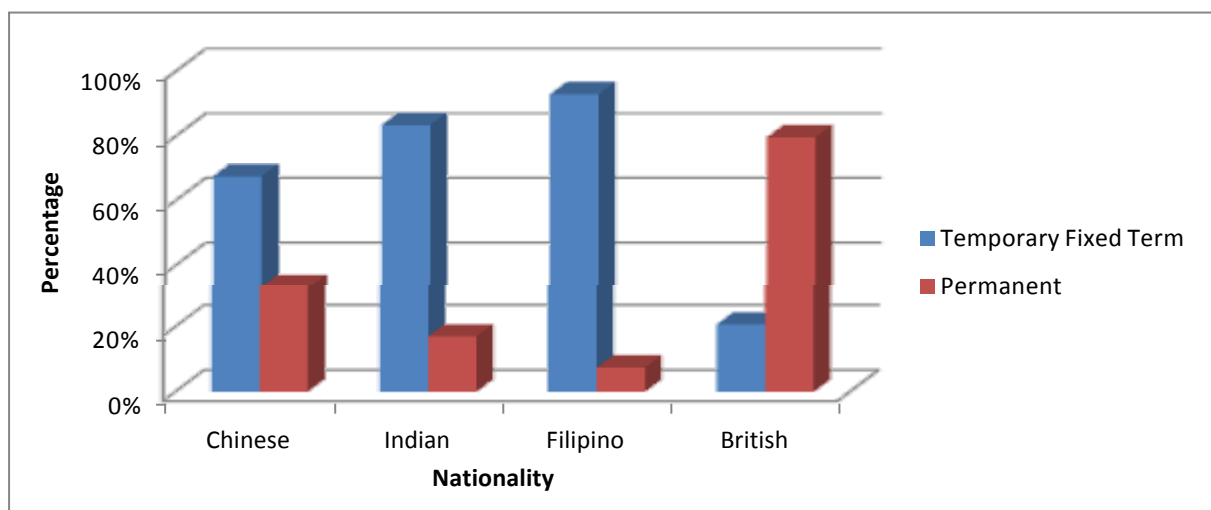


Figure 5: The Percentage of Seafarers on Temporary Fixed Term Contract by Rank



The majority of respondents (just over 80%) had contracts which kept them on board for more than three months at a time. More than half of the sample had 'tour lengths' of over six months with 19% of respondents remaining on board for periods of more than nine months at a time. In sharp contrast most seafarers (66%) spent three months or less on leave in between contracts. Thus a very significant proportion of seafarers (83%) were spending the majority of their working lives on board. In this context the quality of the environment on board becomes of even greater significance. There were once again significant differences in these findings relating to nationality. UK seafarers were much less likely than would be expected (in the absence of an impact from nationality) to be working tours of duty of over six months (indeed only four of 172 UK seafarers did so). In contrast Filipino seafarers were much more likely to be working tours of duty of over six months than would be expected and of 578 Filipino seafarers, 431 did so (see Figure 6). Rank differences with regard to length of tour of duty were also found to be statistically significant and confirm the general understanding in the sector that officers tend to work shorter tours of duty than ratings (see Figure 7).

Figure 6: The Percentage of Seafarers Working Over 6 Month Tours by Nationality

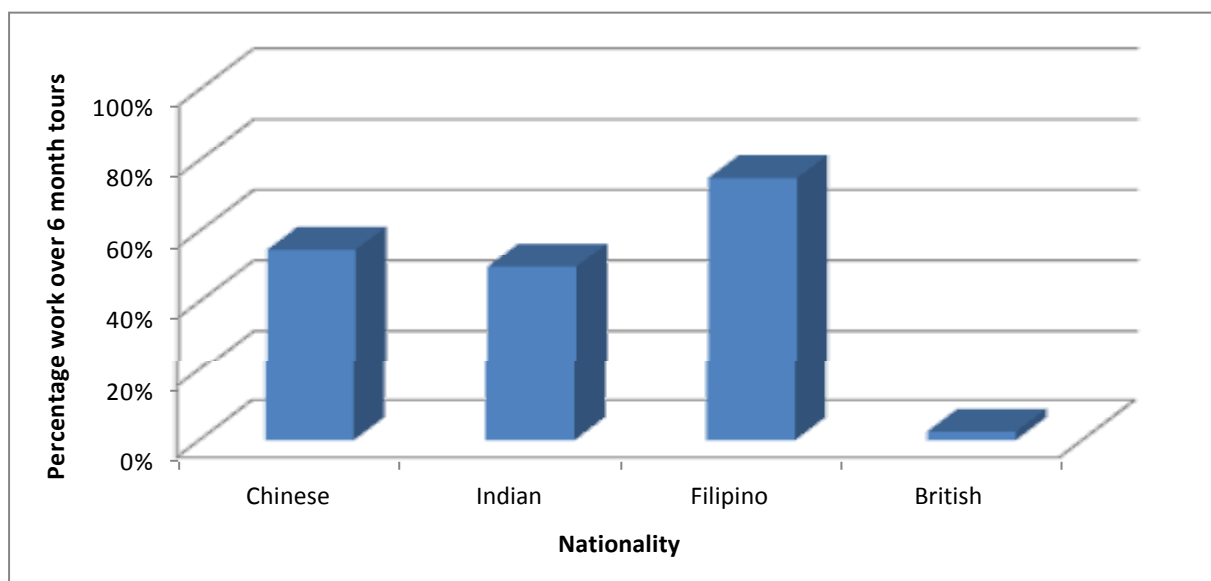
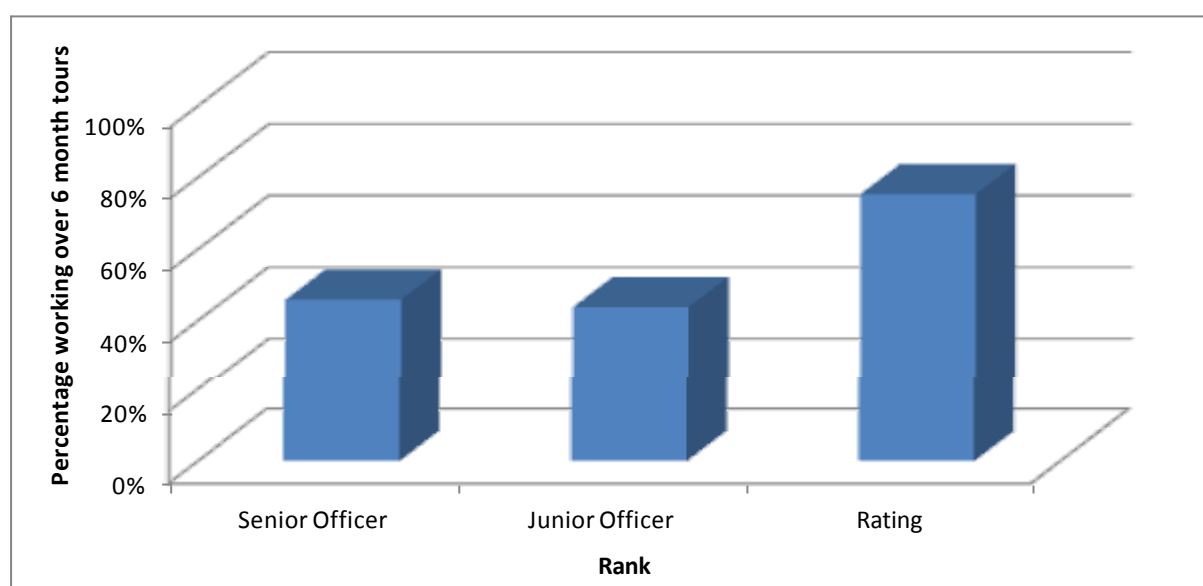


Figure 7: The Percentage of Seafarers Working Over 6 Month Tours by Rank



In the preceding eight weeks seafarers reported having spent an average of 9.5 days in port. More than half of respondents had spent a week or less in port (59%) in the last eight weeks. Thus the ratio of sea:port time was relatively high with seafarers spending most of their tours of duty at sea. On the occasions when they were in port, seafarers reported very restricted opportunities to get ashore. Some seafarers (11% of senior officers, 7% of junior officer and 3% of ratings) reported never being able to get ashore and in total almost half of the sample (48%) were able to get ashore less frequently than once in every three days (see Figure 8). Once they were ashore seafarers reported fairly limited durations of shore-leave. Eighty-four percent enjoyed six hours of shore-leave or less whilst nearly half (47%) of the sample reported opportunities for three hours shore-leave or less (see Figure 9). Once again these findings highlight the significance of the shipboard environment to seafarers as they are exposed to it, and only it, for very long periods of time.

Figure 8: How Often Seafarers Were Able to Get Ashore

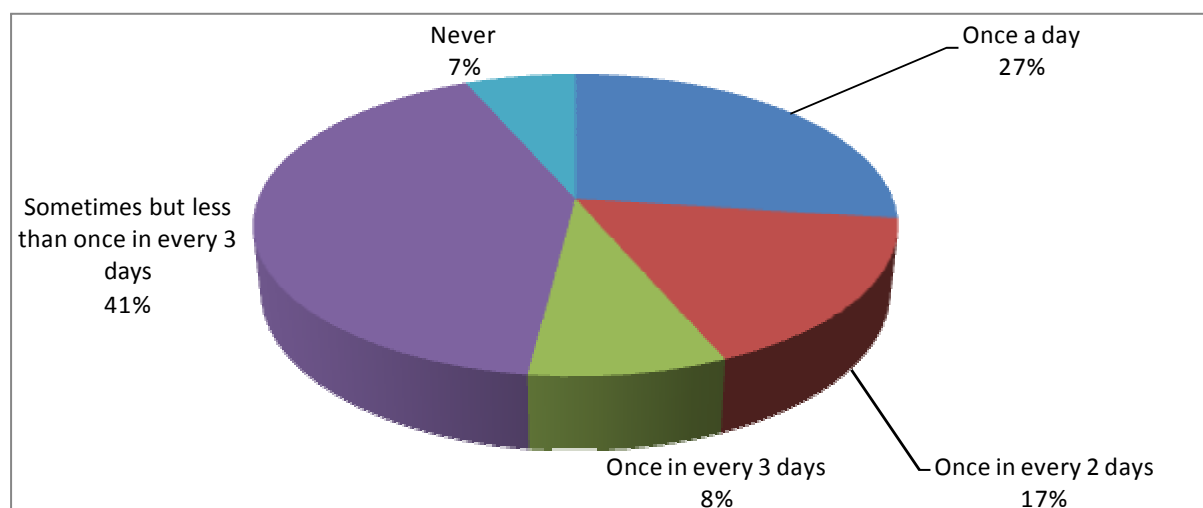
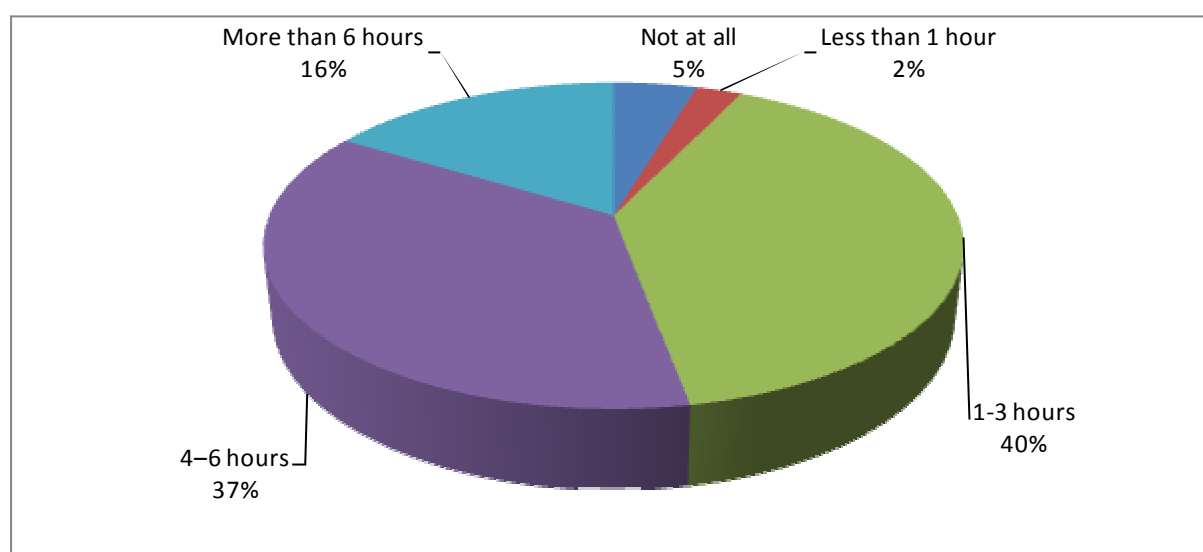


Figure 9: Duration of Shore Leave



One final aspect of seafarers' lives which has to be considered in relation to the relative importance of the shipboard environment is their hours of work. In contexts where people experience stress and fatigue a good physical environment can provide a context for 'restoration' and 'recovery' (Maas, *et al.*, 2009; Neuner and Seidel, 2006; Evans, 2003). Seafarers working long hours may be particularly in need of access to such restorative spaces and the findings relating to their environment are therefore of greater significance. In this study seafarers reported working an average of just over ten hours in every twenty-four in port² and almost nine and a half hours per twenty four hours at sea. In port ten percent of seafarers reported working over twelve hours in each twenty-four whilst at sea this percentage fell to just over 3%. The vast majority of respondents (70%) worked seven days every week³. In this context it would appear that once again the shipboard environment is of some heightened significance to this group of workers.

² Indian seafarers were the most likely to report working long hours in port and of 220 Indian seafarers 183 indicated that they worked 11 hours or more in port. At sea both Indian and UK seafarers were the most likely to report longer working hours. Such nationality differences were statistically significant. Differences in rank were also found to impact on working hours with junior officers reporting working longer hours than other groups in port and ratings working longer hours than others at sea.

³ NB differences in rank were significant with officers being more likely to work seven-day weeks.

Features of the shipboard environment

Cabins and associated facilities

Seafarers were asked whether or not they **shared a cabin** with other seafarers. The majority (86%) reported that they had a single occupancy cabin but 14% percent reported that they did share a cabin and on average this was with just over two other seafarers. Ten respondents reported that they shared a cabin with seafarers of a different sex but the majority (95%) shared with colleagues of the same sex. Of those seafarers who reported sharing a cabin, 86% reported that they did not have a choice about this and most reported that they minded sharing with only 7% stating that they did not 'mind sharing at all'. Twenty one percent of respondents who shared a cabin reported that they minded sharing 'a great deal' suggesting that for a significant number of seafarers sharing a cabin is an unwelcome and uncomfortable experience (see Figure 10). Younger seafarers, aged under 30, were significantly more likely to share cabins than older seafarers and ratings were significantly more likely to share cabins than officers. In relation to nationality Filipino and British seafarers were more likely to share cabins than the other main nationality groups. However in numeric terms the sample of British seafarers was relatively small and further analysis revealed that of 31 British respondents who reported sharing a cabin 22 were cadets. By contrast of the much larger number of Filipino respondents reporting sharing a cabin (104 in total) only nine were cadets (see Figure 11).

Figure 10: Attitudes to Sharing a Cabin

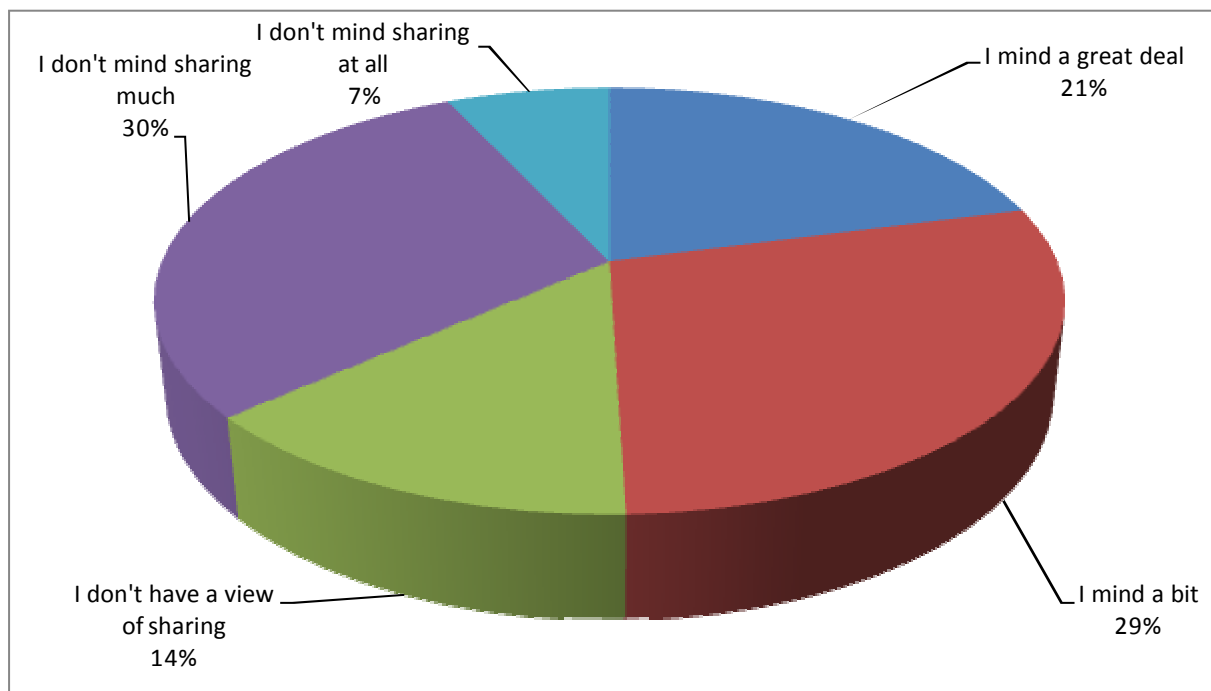
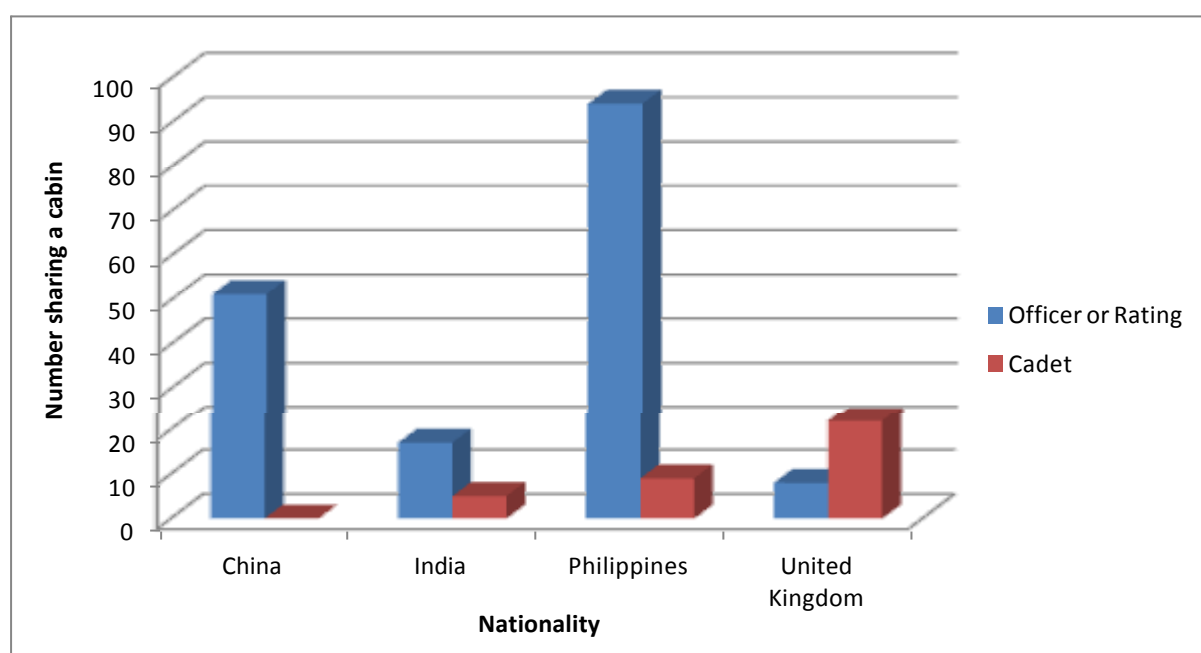
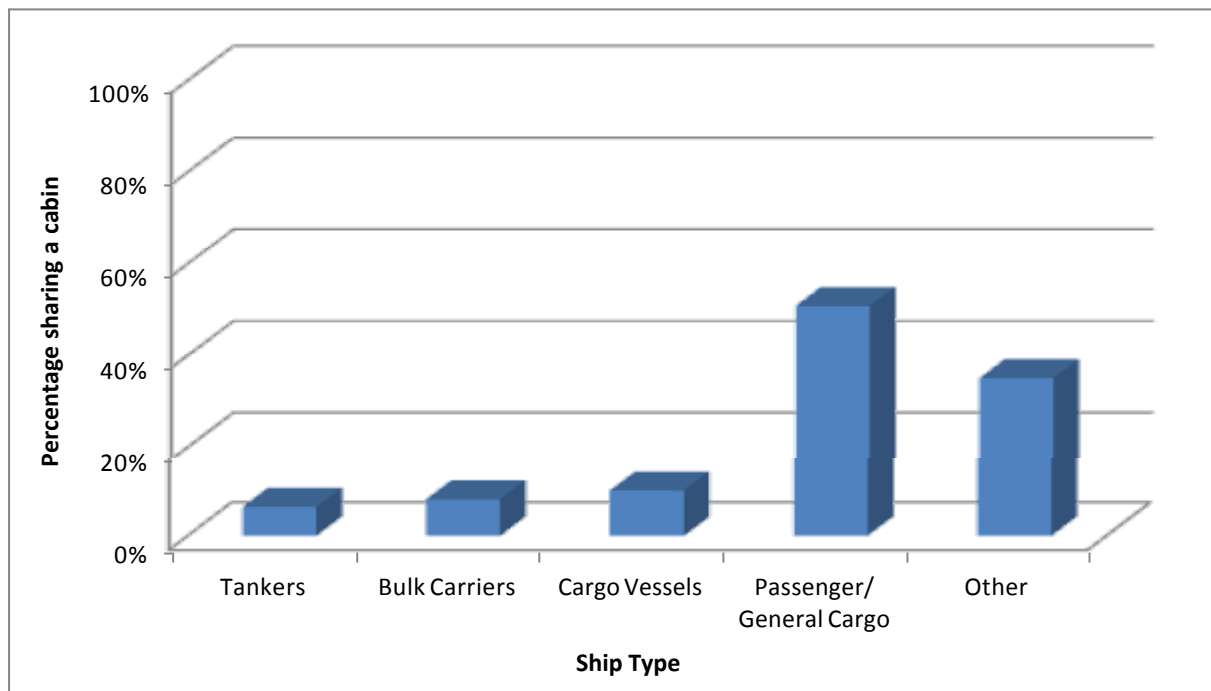


Figure 11: The Number of Seafarers Sharing a Cabin by Nationality and Rank



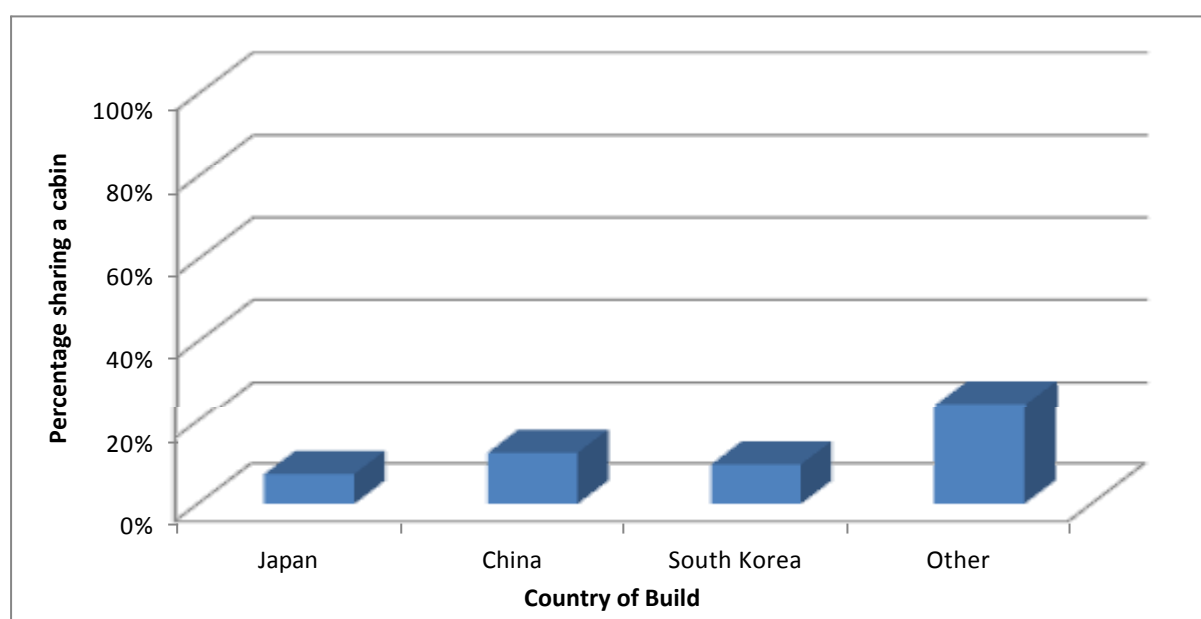
The type of ship which seafarers were working on had a significant impact on whether or not they reported sharing a cabin. Passenger/general cargo ships only made up a small proportion of the overall sample of vessels (there were 109 passenger/general cargo vessels in a sample of 1423 identified ships). However on these ships a very high proportion of seafarers (51%) reported sharing a cabin (see Figure 12). This contrasted dramatically with between six and ten percent of seafarers reporting sharing a cabin on the other main categories of vessel (6% tankers, 8% bulkers, 10 % cargo vessels). Aboard the variety of ship types which constituted the remaining 'other' category of vessels 35% of seafarers reported sharing a cabin.

Figure 12: The Percentage of Seafarers Sharing a Cabin by Ship Type



Older ships and smaller ships were also more likely to provide seafarers with shared, as opposed to single, cabin accommodation and where a vessel had been built also seemed to make a difference to cabin accommodation. Seafarers working aboard vessels built in China were a little more likely to share cabin accommodation than those aboard Korean and Japanese-built ships. Seafarers working aboard vessels which were not built in the three major ship producing nations of Japan, Korea, and China were also more likely to provide seafarers with shared cabin accommodation (see Figure 13). Of these 44 'other' shipbuilding nations Germany was the most represented country with 66 respondents working on German built vessels while other significant nations were Italy (32) the UK (32) and Norway (29). Of these four nations it was only ships built in the UK where seafarers were less likely to share a cabin than on average aboard Japanese, Korean, and Chinese ships (combined).

Figure 13: The Percentage of Seafarers Sharing a Cabin by Country of Build



In terms of **bathroom facilities** more seafarers were required to share these than were required to share cabins. Twenty four percent of seafarers shared bathroom facilities with other colleagues. The majority of seafarers who had access to private bathroom facilities were provided with a shower, a toilet, and a hand basin for their use (95% of those with private facilities had all three of these). Of those who shared bathroom facilities the majority (57%) shared a toilet with five seafarers or more. Similarly, 57% of those sharing facilities shared showers with five or more seafarers, and 60% of seafarers shared hand basins with three or more seafarers. Of the 320 respondents who shared bathroom facilities almost a quarter (24%) reported sharing with colleagues of a different gender. This is a surprising finding given the very small numbers of women seafarers employed across the world fleet. As with cabin sharing rank was a strong factor influencing whether or not respondents shared bathroom facilities⁴. Senior officers, and to a slightly lesser extent junior officers were more likely to have private bathroom facilities than ratings. This confirms established understandings of the privileges often associated with rank in the industry (see Figure 14). However, it is worth pointing out that ratings generally serve on longer tours of duty than officers and a question does arise as to the appropriateness of such sharing amongst adults in an institutionalised work-related context in the twenty-first century.

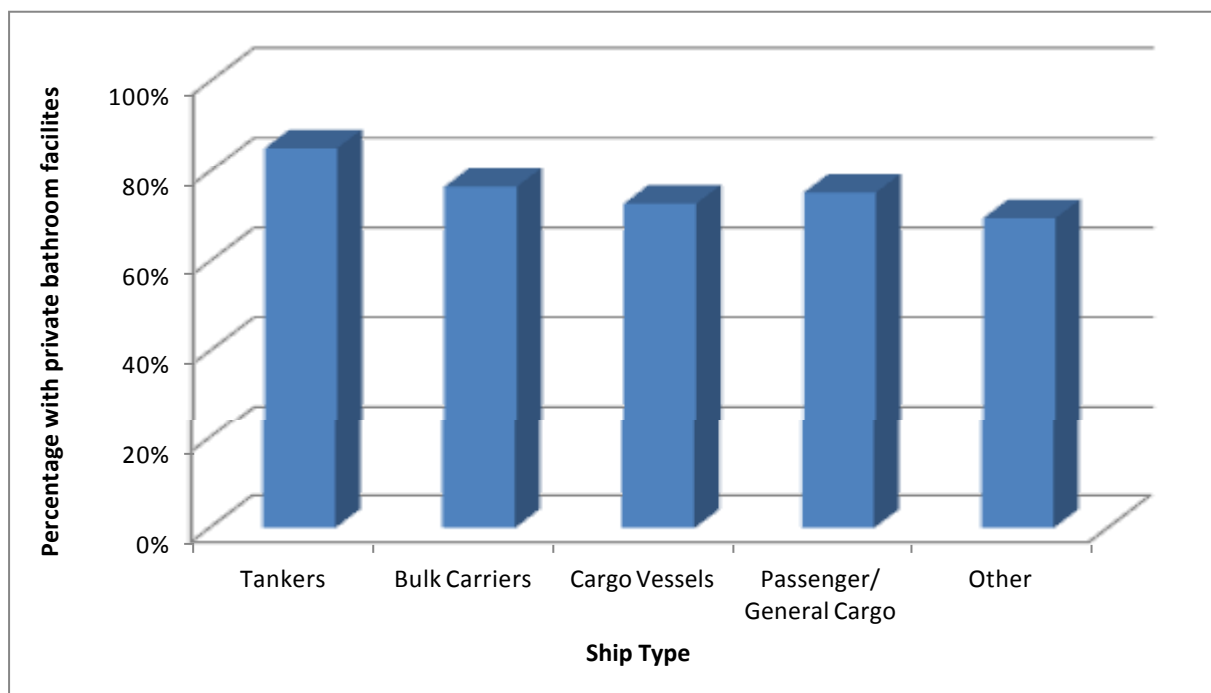
⁴ NB we did not find the significant age variations that were present in relation to shared cabins.

Figure 14: The Percentage of Seafarers Sharing a Bathroom by Rank



The ships which seafarers were working aboard had a significant impact on whether or not they shared a bathroom. Aboard tankers seafarers were less likely to share a bathroom than aboard other vessel types. Eighty-five percent of seafarers working aboard tankers had private bathroom facilities compared with 76% of the seafarers working on bulk carriers, 75% of those on passenger/general cargo ships and 73% of seafarers working on general cargo ships. Seafarers working on the remaining vessels in the sample which were included in the 'other' category were the least likely to enjoy private bathroom facilities with only 69% doing so (see Figure 15).

Figure 15: The Percentage of Seafarers with a Private Bathrooms by Ship Type



Smaller (see Figure 16) and older vessels were the least likely to have private bathroom facilities along with vessels built in China (75% had private bathroom facilities) and Japan (66% had private bathroom facilities). Seafarers aboard Korean-built vessels were the most likely to report having access to private bathroom facilities (91%) (see Figure 17).

Figure 16: The Percentage of Seafarers with Private Bathroom by Ship Size

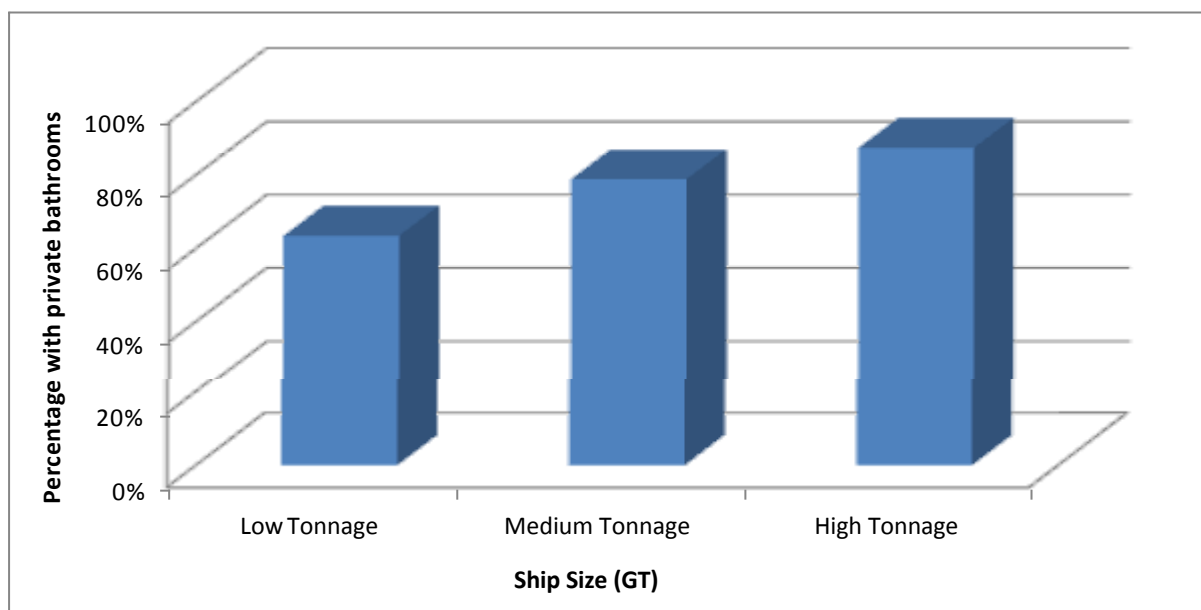
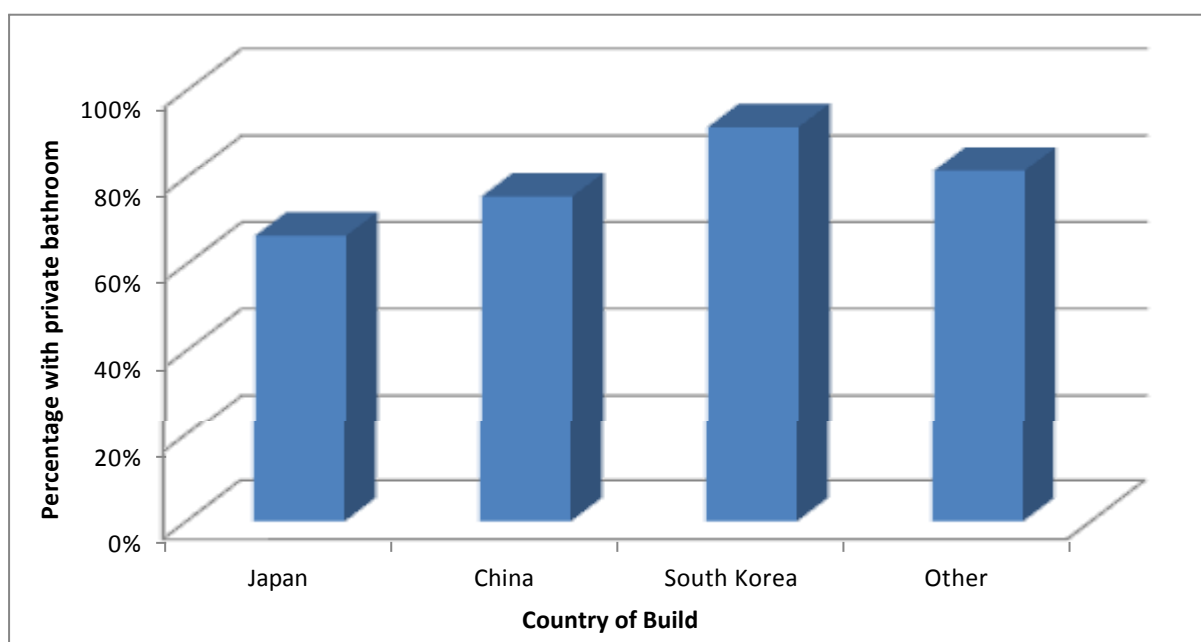
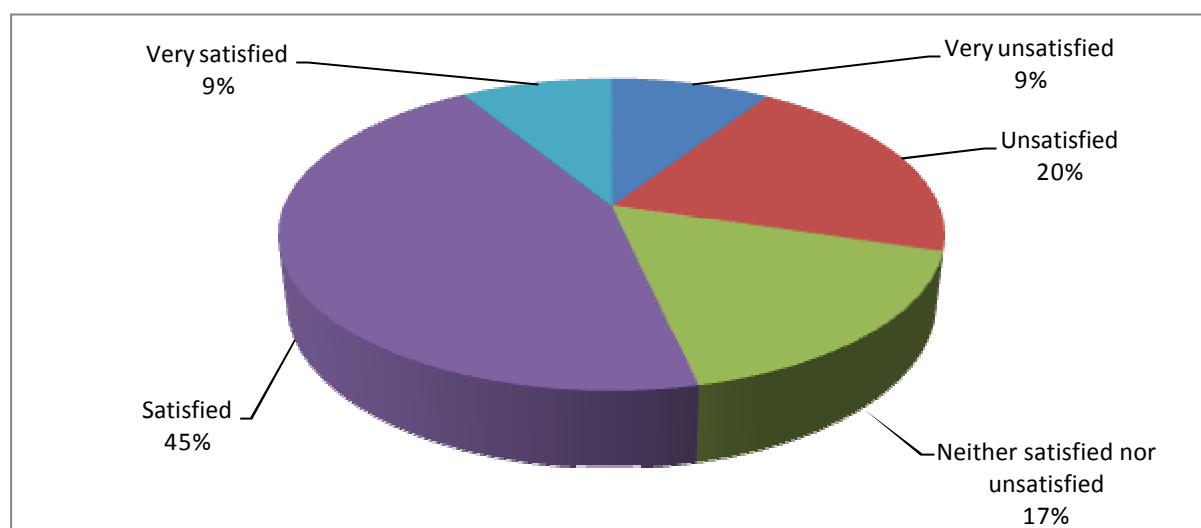


Figure 17: The Percentage of Seafarers With Private Bathroom by Country of Build



We asked seafarers if they were satisfied with the **size of their cabins**. Almost one in three seafarers (30%) described themselves as being ‘unsatisfied’ or very ‘unsatisfied’ with the size of their cabins whilst just over half (54%) of respondents suggested they were ‘satisfied’ or ‘very satisfied’ (see Figure 18).

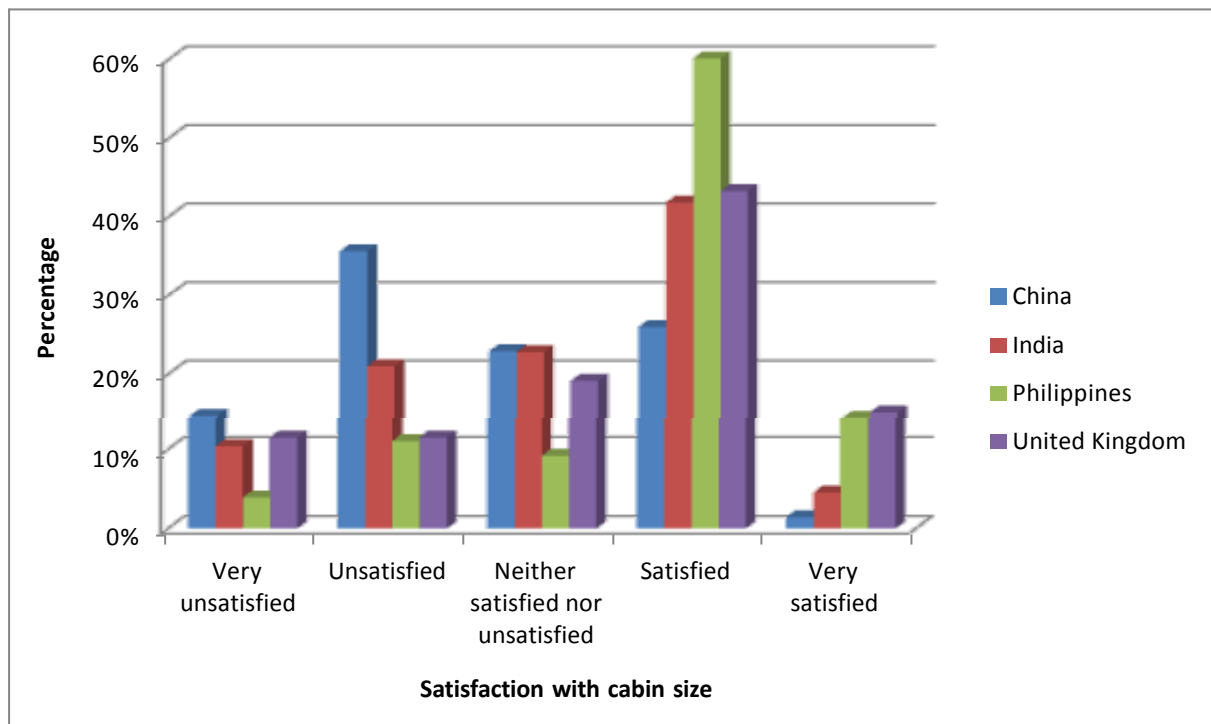
Figure 18: Seafarers Satisfaction With The Size of Their Cabins



Clearly experience of the shipboard environment influences seafarer expectations (and therefore satisfaction rates) and rank may also impact on response – higher ranking seafarers generally enjoying better cabin facilities than others. It is therefore worth considering this response carefully with regard to these respondent characteristics and it is also worth considering satisfaction levels according to differences in the characteristics of ships (i.e. by ship type, age, place of build, and size).

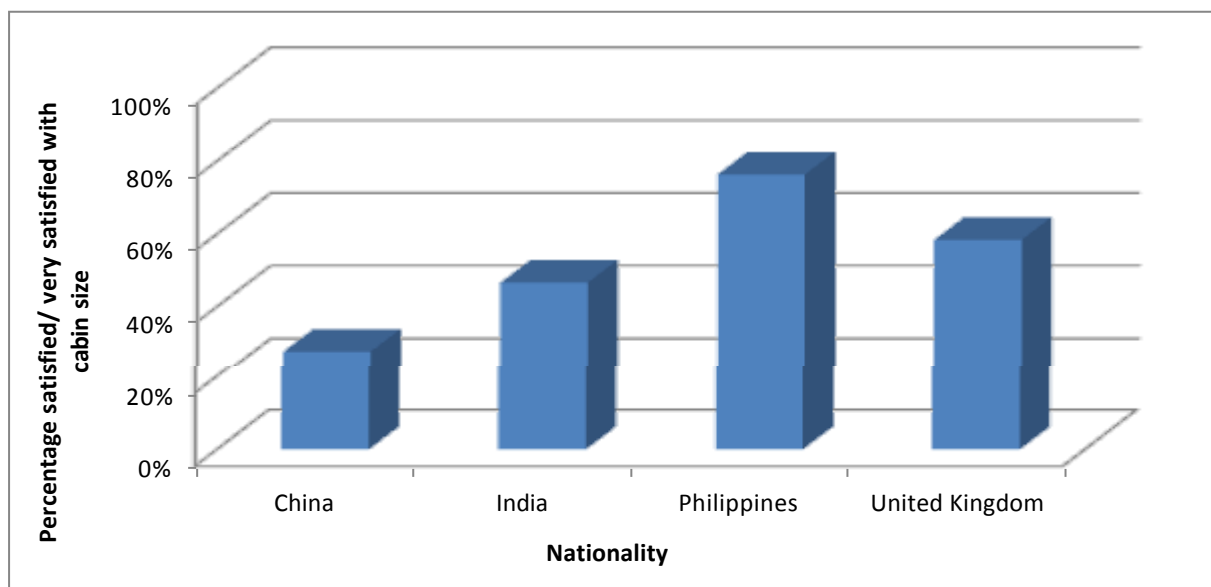
In relation to seafarers nationality there were significant differences found in the satisfaction levels of Filipino, Indian, Chinese and UK seafarers. UK seafarers were polarised in their responses and were more likely to suggest that they were either ‘very satisfied’ or ‘very unsatisfied’ with the sizes of their cabins than others. Filipino seafarers tended to be much more positive about the size of their cabins than other nationalities whilst Chinese and Indian seafarers were more likely to be dissatisfied with the size of their cabin (see Figure 19). Fifty percent of the Chinese seafarers who answered this question stated that they were either ‘unsatisfied’ or ‘very unsatisfied’ with their cabin size compared with just under a third of Indian seafarers (31%). This contrasted with just 15% of Filipino respondents and 23% of UK respondents being dissatisfied with the size of their cabins.

Figure 19: Satisfaction with Cabin Size by Seafarer Nationality



Despite the fact that officers generally enjoy access to larger cabins than ratings we found that it was officers who were more likely to be dissatisfied with cabin size than ratings, with junior officers expressing stronger levels of dissatisfaction than seniors. It is possible that this is a manifestation of the correlation of some nationalities with certain ranks. Ratings were predominantly Filipino and looking at nationality and satisfaction with cabin size we found Filipinos significantly more likely to be satisfied than other nationalities (see Figure 20).

Figure 20: The Percentage of Those Satisfied With the Size of Their Cabin by Nationality



In terms of the differences found between ships, seafarers onboard tankers and passenger/ general cargo vessels more frequently indicated that they were satisfied with the size of their cabin compared to those on bulk carriers. There were also significant differences in terms of country of build with higher levels of satisfaction with the size of their cabin amongst seafarers on ships built in South Korea, than amongst those of ships built in Japan or China (see Figure 21). Ship size was also an important factor in relation to satisfaction with cabin size. Those on larger ships were happier with the size of their cabins than those aboard smaller ships (see Figure 22).

Figure 21: Satisfaction with Cabin Size by Country of Build

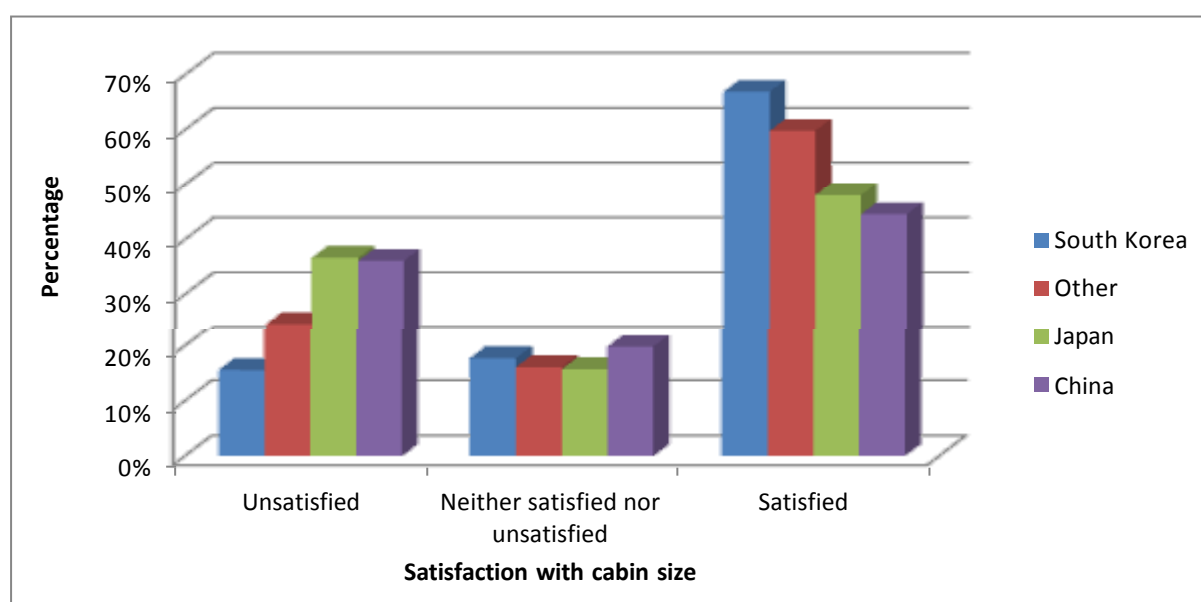
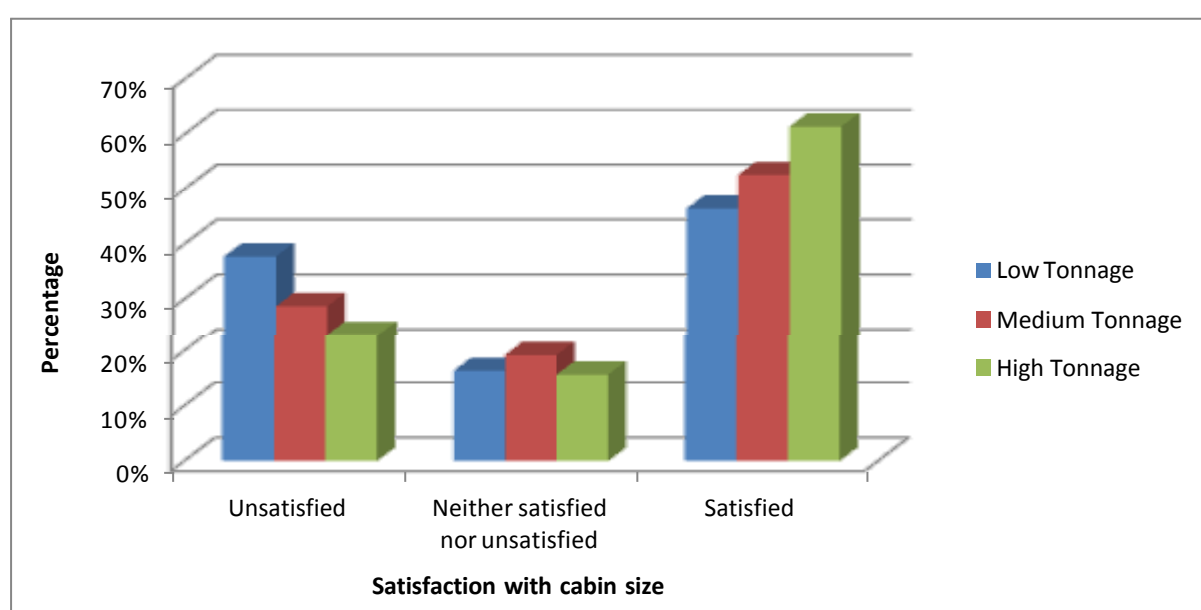


Figure 22: Satisfaction with Cabin Size by Ship Size



Whilst the majority of seafarers felt that they had **sufficient storage space** in their cabins significant numbers of respondents (34%) felt that they did not. Seafarers from the UK and the Philippines were more likely to state that they had sufficient storage space in their cabins whereas Chinese and Indian seafarers were more likely to state that they **did not** have enough space to store their personal possessions in their cabins (see Figure 23). Senior and junior officers were also significantly more likely to say they did not have enough storage space compared to ratings (see Figure 24).

Figure 23: Ratings of Storage Space Adequacy by Nationality

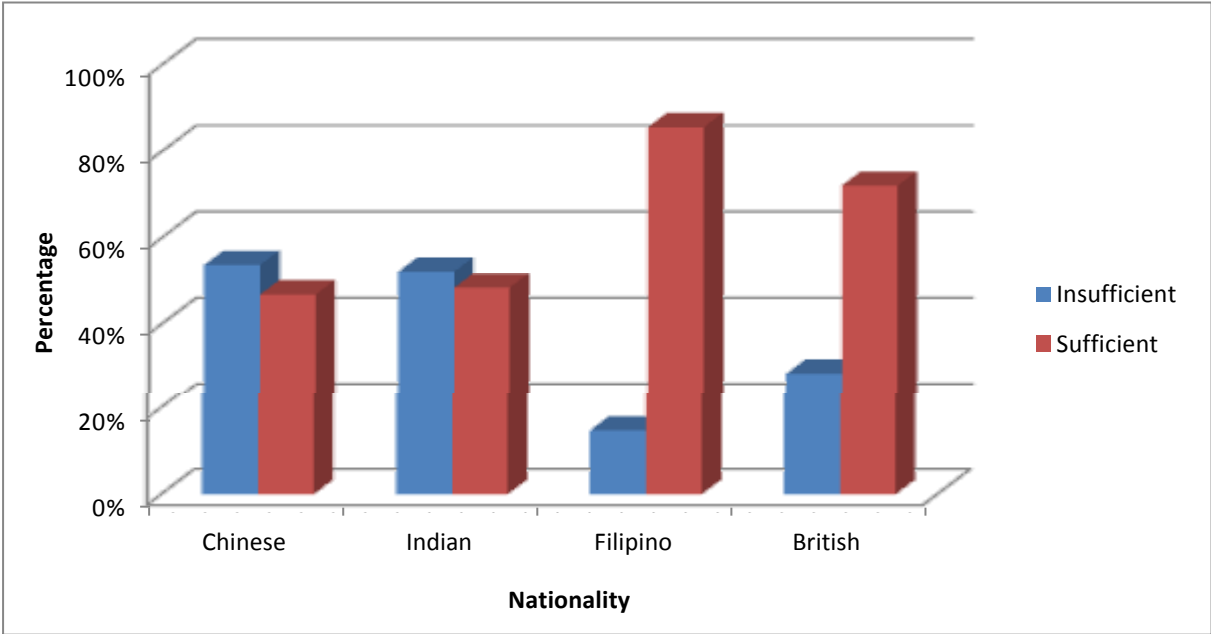
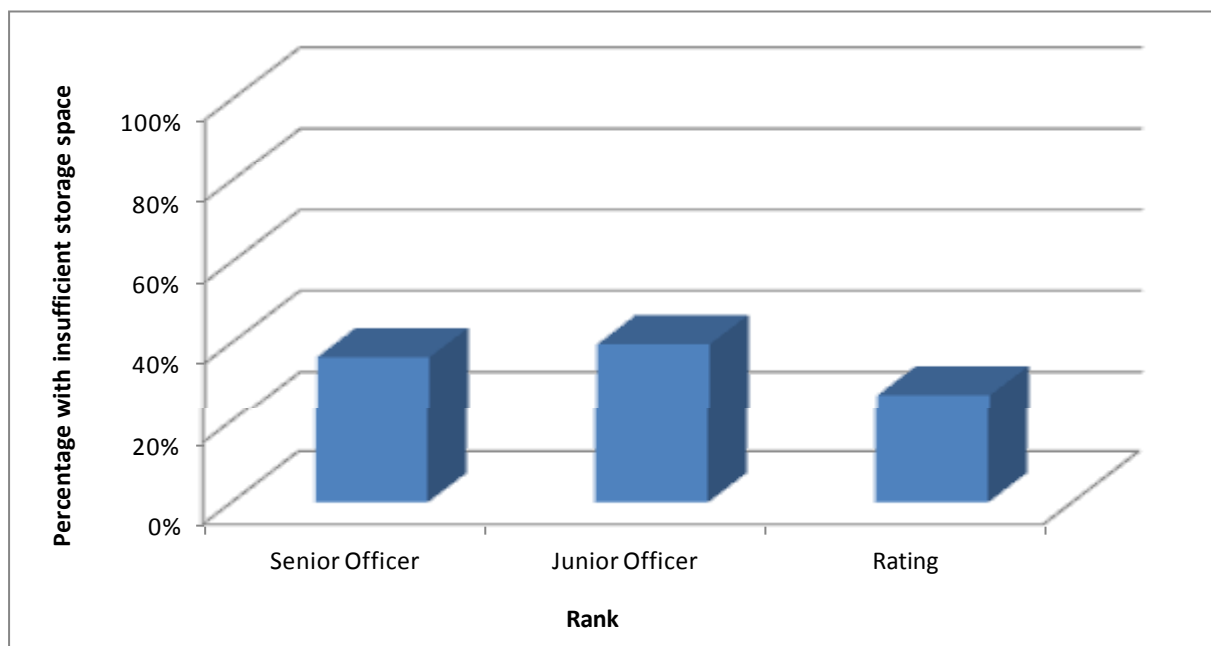


Figure 24: Ratings of Storage Space Adequacy by Rank



In relation to rank, we again found a counter-intuitive result inasmuch as whilst officers should be expected to have more storage space than ratings they nevertheless stated that they had insufficient storage space more often than ratings (see Figure 25). Thus 36% of senior officers and 39% of junior officers stated they did not have sufficient storage space compared with 27% of ratings. These differences are of statistical significance.

Figure 25: The Percentage of Seafarers Stating They Had Insufficient Storage Space by Rank



In relation to the association between country of build and storage space the pattern was similar to that found with cabin size. That is to say that those aboard South Korean built vessels were generally more satisfied than those aboard Chinese and Japanese ships (see Figure 26). In relation to vessel size, satisfaction levels in relation to storage space rose with the size of vessels and seafarers aboard larger ships were more likely to report sufficient storage space than those aboard smaller ships (see Figure 27). There were no significant differences identified between vessels of different ages or type in relation to satisfaction with storage space.

Figure 26: The Percentage of Seafarers Who Were Satisfied With Storage Space by Country of Build

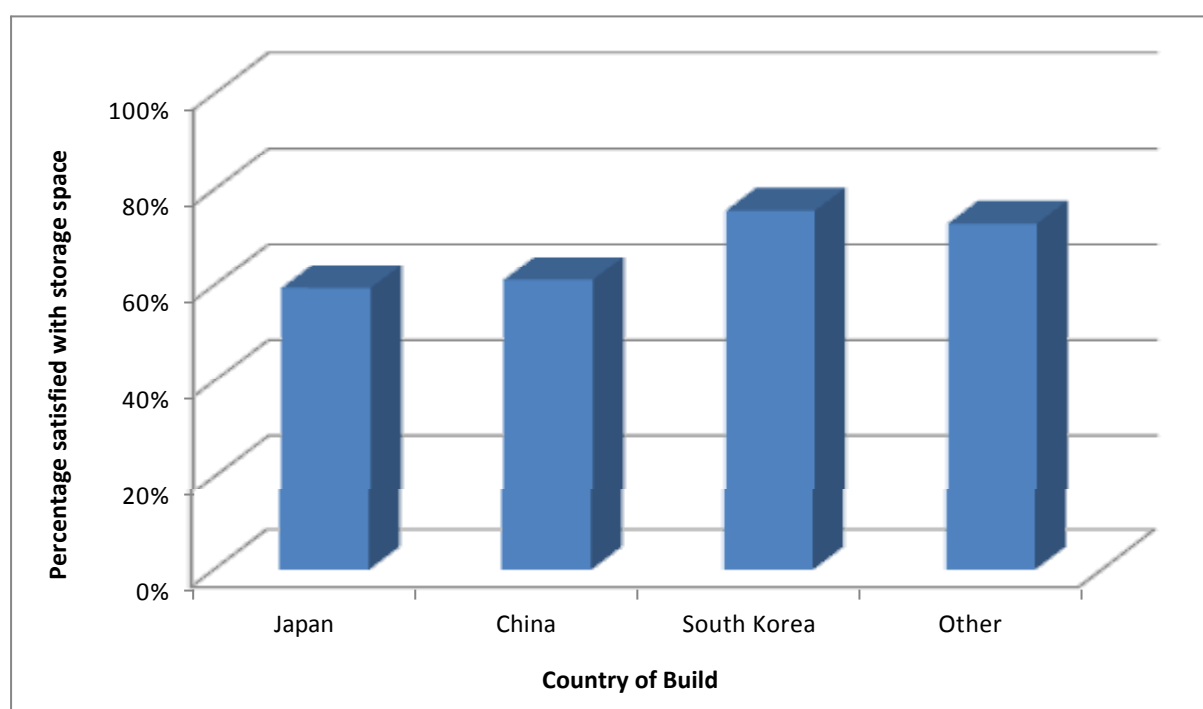
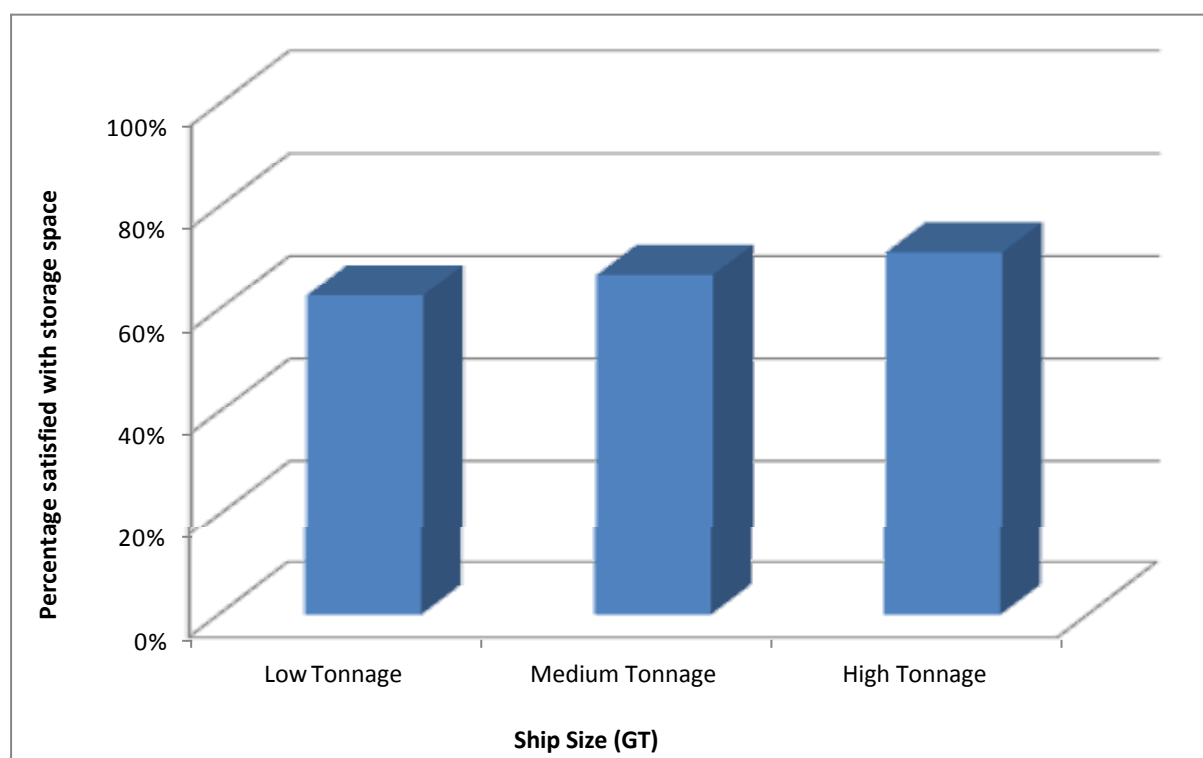


Figure 27: The Percentage of Seafarers Who Were Satisfied With Storage Space by Ship Size

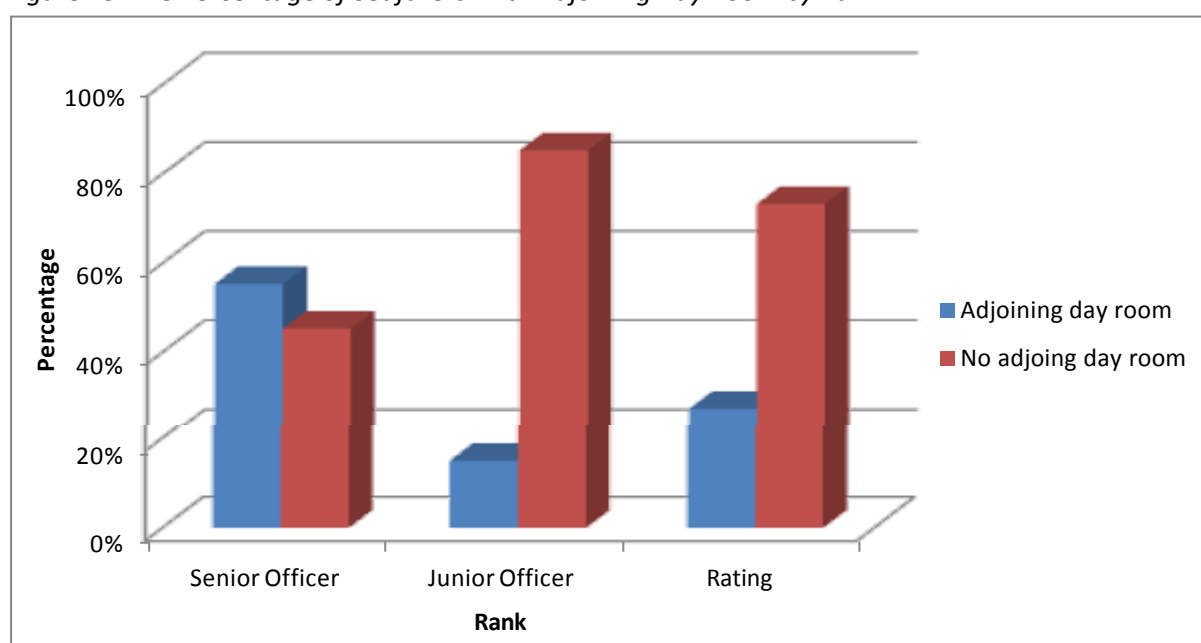


Some seafarers' cabins have **adjoining day rooms/sitting rooms**. In our sample just over a quarter of seafarers (28%) enjoyed such facilities. However, this result may be misleading. In relation to nationality we were surprised to find that Chinese, Indian and UK seafarers were less likely to have adjoining day rooms or sitting rooms than Filipino seafarers. We considered this finding in greater

detail and came to the conclusion that a translation/communication error may be behind this result suggesting that the prevalence of dayrooms may be overstated in the 28% Figure which indicates that over a quarter of the total sample had access to dayrooms. Whilst in the Tagalog version of the questionnaire the equivalent of the word 'adjoining' is used it remains a possibility that there was some misunderstanding here and that some Filipino respondents believed the question was asking about shared messrooms/lounges. Both the overall and the nationality specific results here therefore need to be treated with caution.

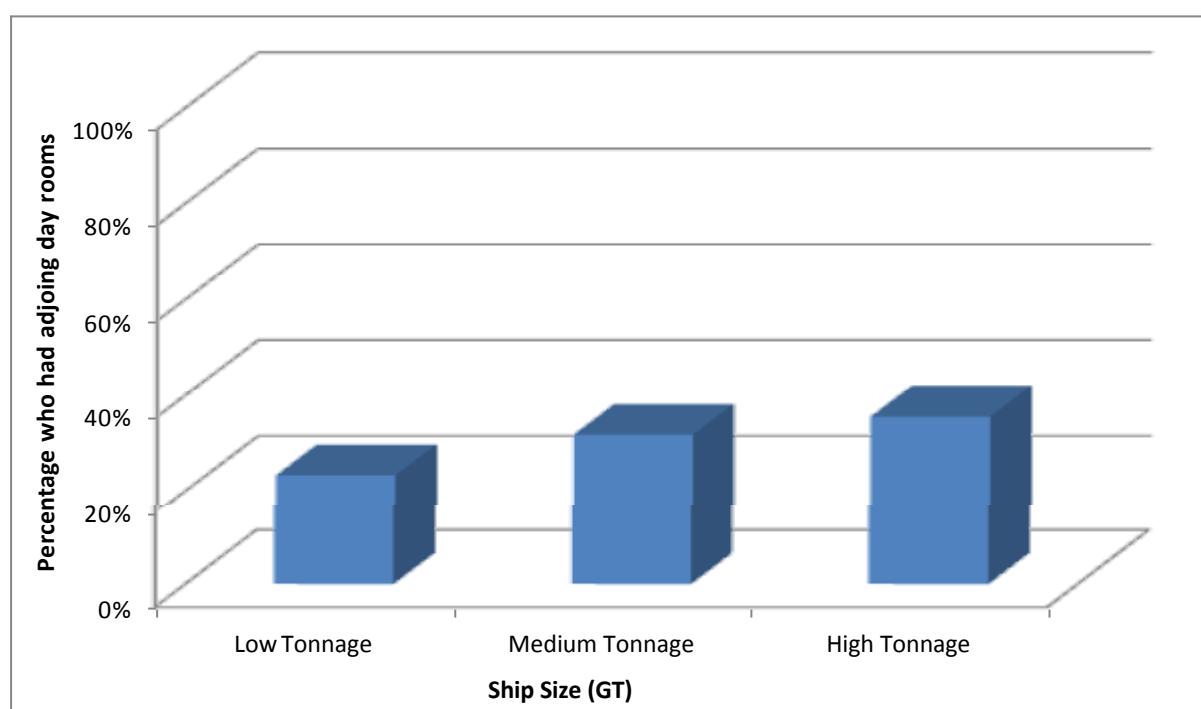
In terms of rank the results were slightly more predictable with senior officers being more likely to state that they had adjoining day rooms than either juniors or ratings (see Figure 28).

Figure 28: The Percentage of Seafarers With Adjoining Day Room by Rank



Seafarers were more likely to have adjoining day rooms on larger ships than on smaller vessels (see Figure 29). Adjoining day rooms were more commonly reported by seafarers working on tankers (30%), bulk carriers (31%) and general cargo vessels (31%) than by those working aboard passenger/general cargo ships (22%) and 'other' vessel types (18%). Ship age and place of build were not found to have a significant impact on the provision of day rooms.

Figure 29: The Percentage of Seafarers Who Had Adjoining Day Rooms by Ship Size



In relation to personal comfort and the ability to sleep at night it is important for individuals to be able to **control the temperature** of their sleeping environment (Okamoto-Mizuno and Mizuno, 2012; Gilbert, *et al.*, 2004; Okamoto-Mizuno, *et al.*, 1999; Muzet, *et al.*, 1984; Haskell, *et al.*, 1981).

However, 41% of the seafarers in our sample were unable to control the temperature in their cabins.

There were significant differences in the responses of different nationalities and ranks here with Filipino seafarers standing out as being more likely to state that they could control temperature in their cabins than other nationalities (see Figure 30). In terms of rank senior officers and ratings were more likely to say they could control cabin temperatures than junior officers (see Figure 31). Whilst these results are difficult to interpret it is possible that they reflect both senior officers' general control over the shipboard environment on the one hand (they can suggest changes of temperature in the accommodation block to the chief engineer) and ratings' habits relating to the use of electrical appliances which may influence temperature – fans and heaters for example. However, from the questionnaire data alone it is impossible to do more than speculate about the explanations for these variations.

Figure 30: The Percentage of Seafarers Who Were Able to Control Temperature in their Cabin by Nationality

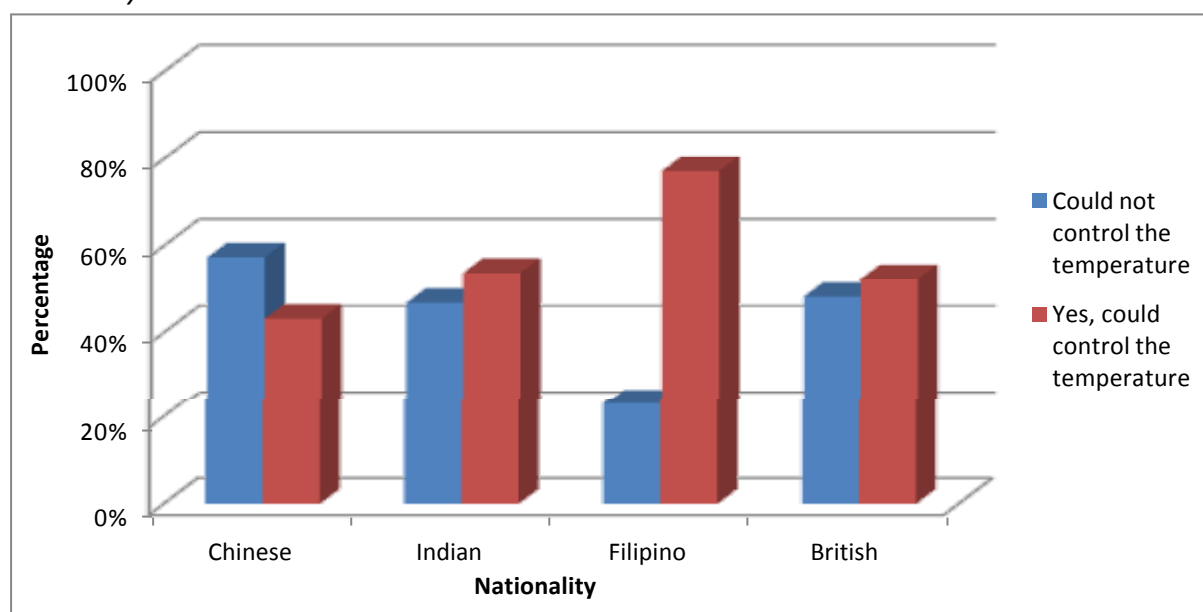
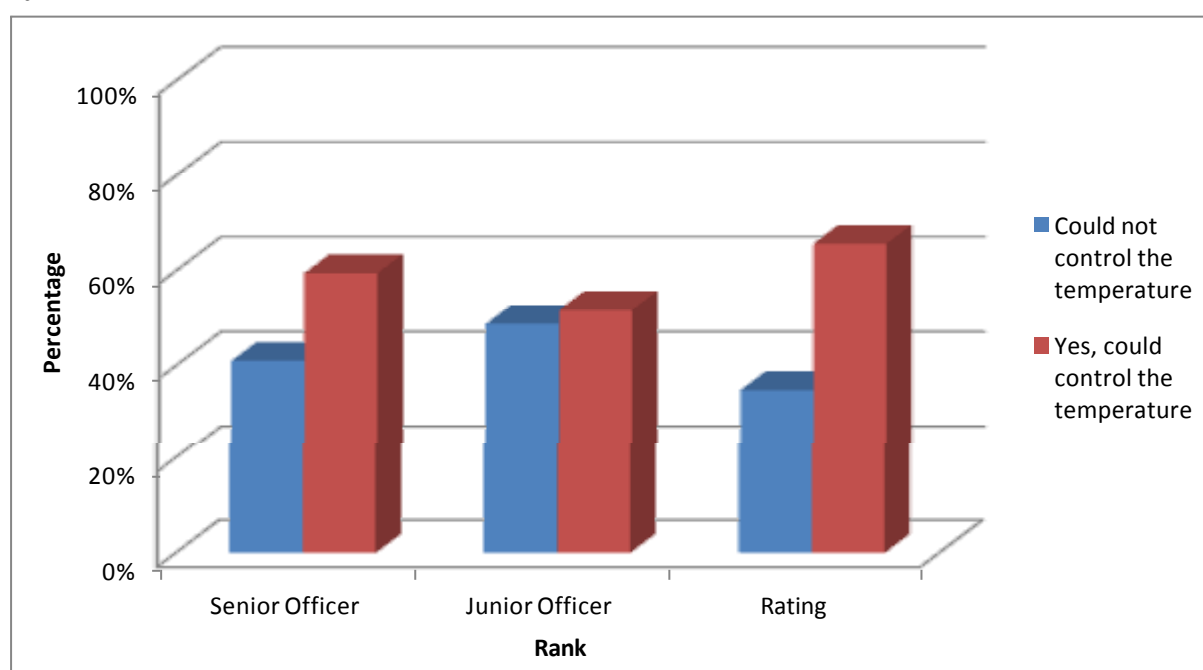


Figure 31: The Percentage of Seafarers Who Were Able to Control Temperature in their Cabin by Rank



The ability to control temperature in cabins was not influenced by vessel size or country of build. However seafarers working on board passenger/general cargo ships (74%) were more likely than others (tankers 64%, other ship types 60%, general cargo 58%, bulk carriers 52%) to report being able to control the temperature in their cabins (see Figure 32). Similarly there were differences identified between older and newer vessels with seafarers aboard newer vessels reporting that they

could control temperature in their cabins more frequently than those respondents working on older ships (see Figure 33).

Figure 32: The Percentage of Seafarers Who Were Able to Control the Temperature in their Cabin by Ship Type

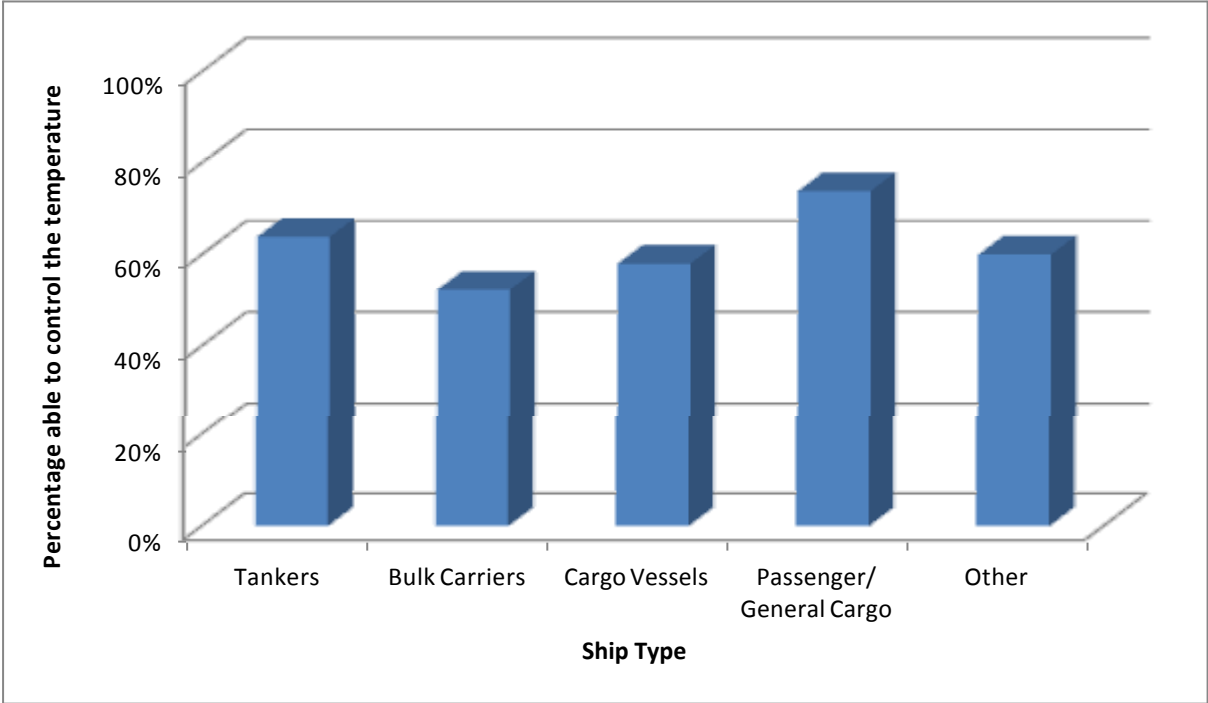
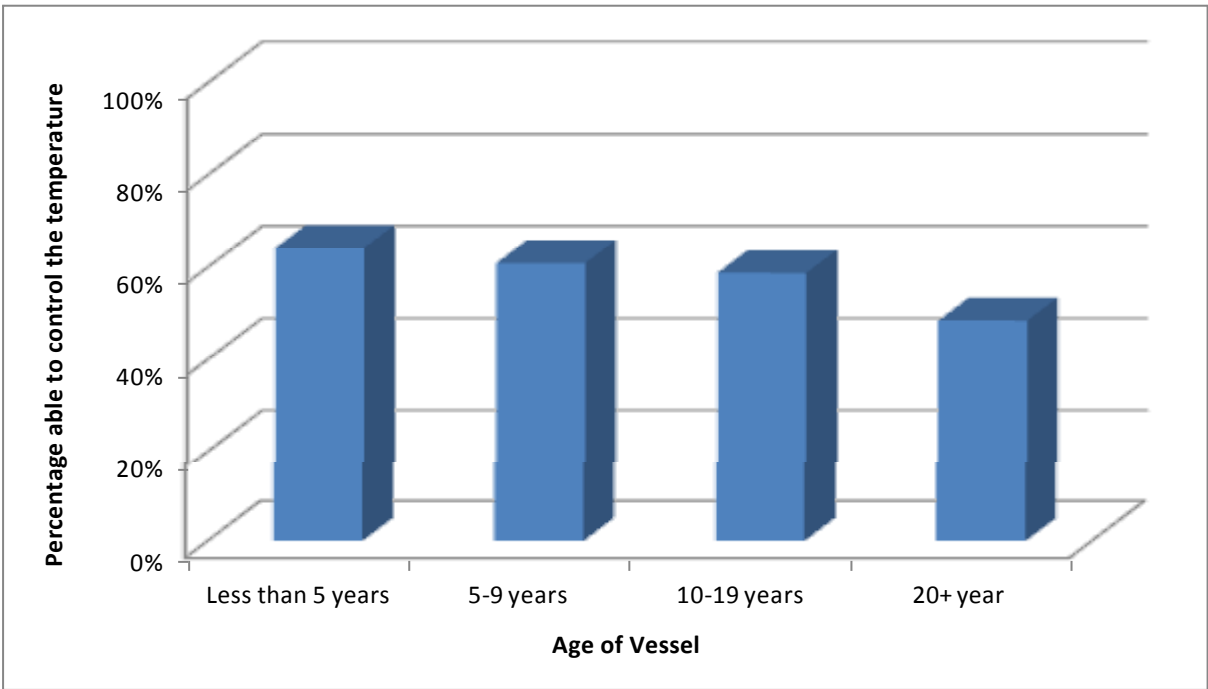


Figure 33: The Percentage of Seafarers Who Were Able to Control the Temperature in their Cabin by Age of Ship

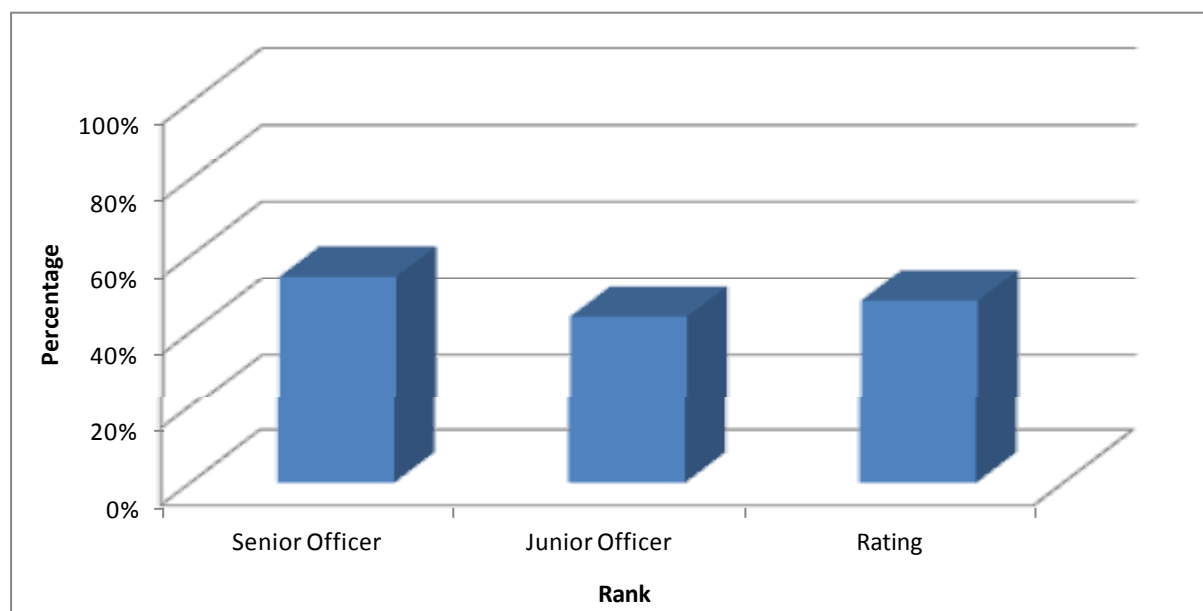


Data collected in a variety of contexts also suggests that the levels of light which individuals find optimal or most comfortable are very different (Küller, *et al.* 2006, Caspari, *et al.*, 2006). Thus one person's preferences are unlikely to match those of another. In this context the ability to control the levels of light in a personal space such as a cabin becomes important. Our data indicate that just over half (52%) of seafarers are unable to adjust the levels of electric lighting in their cabins. Overall, just under ten percent of respondents described light levels in their cabins as too bright with exactly the same number of respondents (n=142) finding the lighting in their cabins too dim. Of those who could not control light levels, 13% described light levels in their cabins as too bright, with slightly more (14%) finding the lighting in their cabins too dim.

There were nationality and rank differences to take account of in relation to responses to questions about the capacity to adjust light levels in cabins. Whilst Chinese, UK and Indian nationals were less likely to say that they could adjust light levels in their cabins, Filipino seafarers were more likely to say that they could do so. Rank also influenced responses with both senior officers and ratings being more likely to state that they could control light levels in their cabins than junior officers (see Figure 34).

The ability to adjust the levels of electric light in cabins was not found to be influenced in any way by vessel type, age, country of build or size.

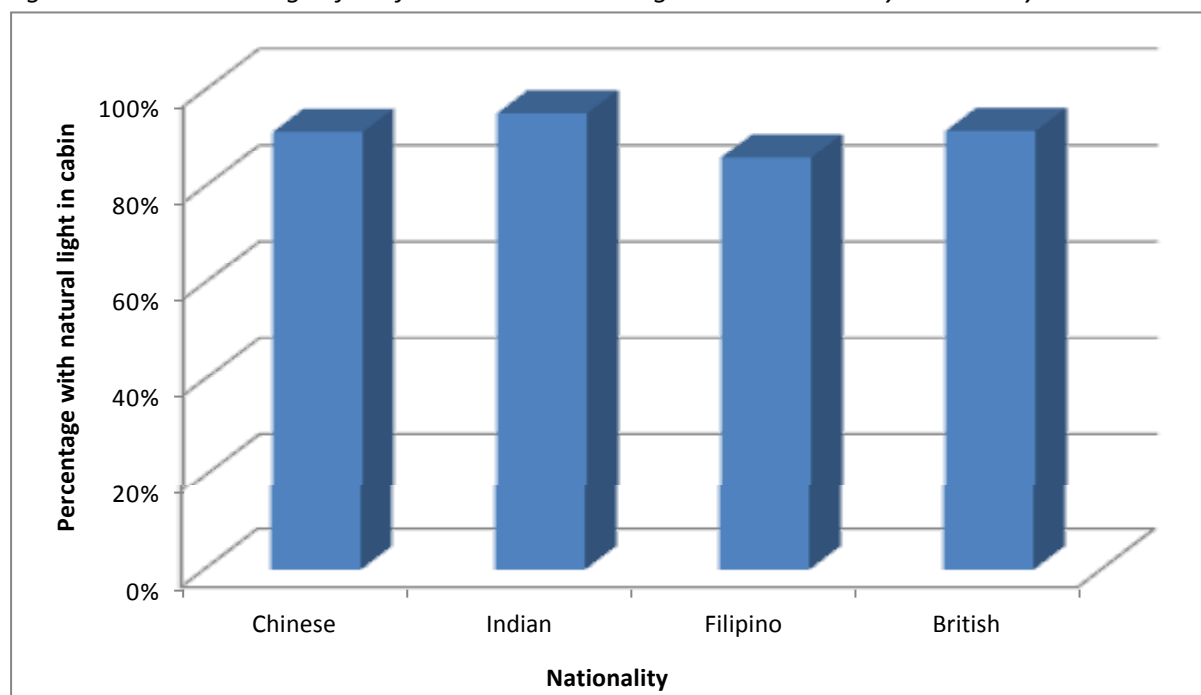
Figure 34: The Percentage of Seafarers Who Could Control Light Levels in Their Cabin by Rank



Access to **natural light** is generally regarded as important in a healthy living environment (Evans, 2003). However this study suggests that ten percent of seafarers are accommodated in cabins which do not have a window/porthole offering natural light. We found nationality and rank differences of

significance here. Filipino seafarers were less likely to have natural light in their cabins than other nationalities (see Figure 35) and ratings were less likely to have natural light in their cabins than officers.

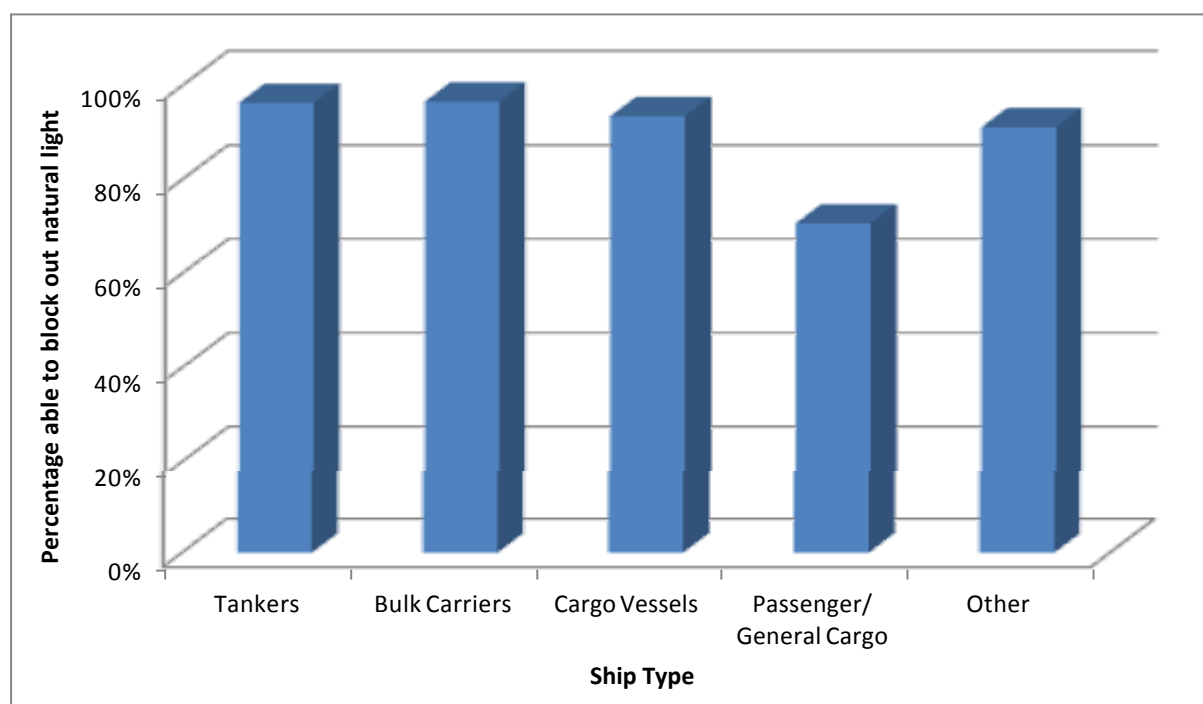
Figure 35: The Percentage of Seafarers With Natural Light in Their Cabin by Nationality



Where natural light is present it is of course also important that seafarers are able to block this out in order to sleep well. Seven percent of seafarers reported that they were unable to **block out the natural light** from their cabin and this could have important consequences for sleep quality (Drake, *et al.*, 2004; Horowitz, *et al.*, 2001; Duffy, *et al.*, 1996; Eastman *et al.*, 1995). There were no significant differences found in the data relating to navigational watch keeping and other positions.

Seafarers working aboard passenger/general cargo vessels were significantly less likely than their colleagues on other ship types to report being able to block out natural light (see Figure 36). Similarly seafarers working on vessels built in the range of nations represented in the 'other ship build' category were less likely to be able to block out light than those working aboard vessels built in Japan, Korea, or China.

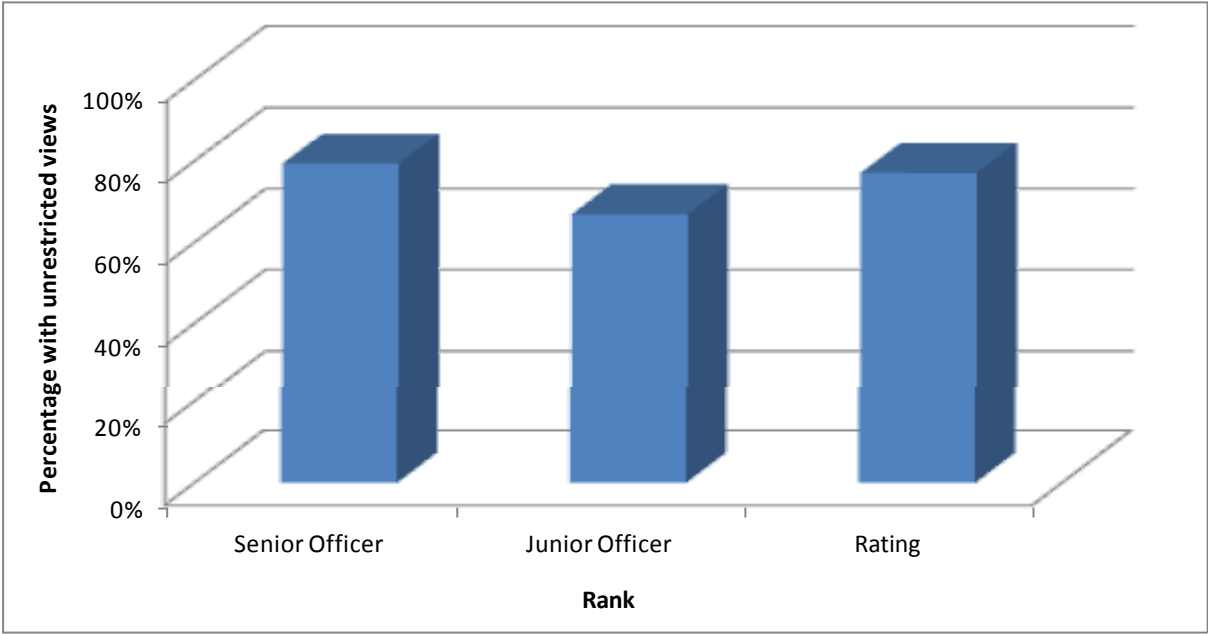
Figure 36: The Percentage of Seafarers Who Were Able to Block Out Natural Light in Their Cabin by Ship Type



As with natural light, research has indicated the considerable value in relation to mental health of a **view of the natural environment** from a window (Van de Glind, *et al.*, 2007, Küller, *et al.*, 2006). The natural environment that seafarers may be able to see is limited at the best of times to expanses of ocean and limited stretches of coastline. However even these limited opportunities are further restricted on board as many seafarers (27% in our study) have a view from their 'window' which is partially blocked or restricted by items such as containers, cranes, and funnels.

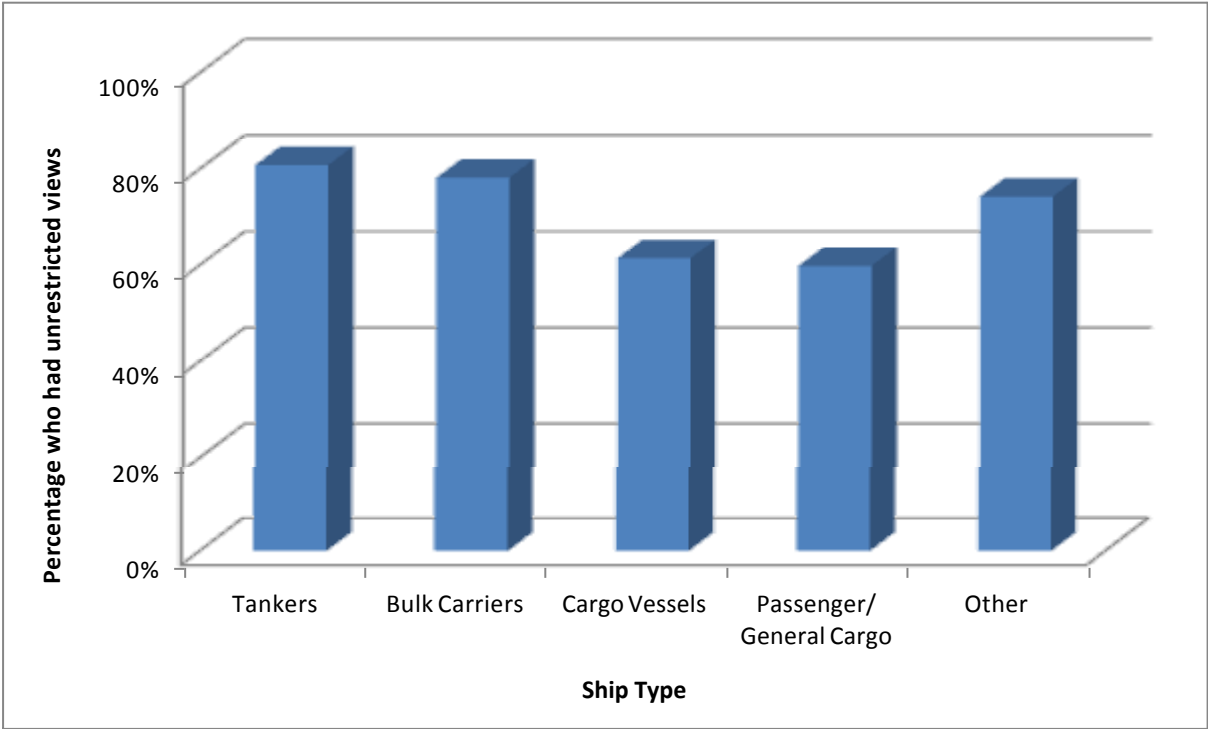
Respondents from the UK and China were more likely to state that their view from their cabin was restricted while those from the Philippines and India were more likely to state that they could see out without restrictions. In terms of rank it was once again senior officers and ratings who were more likely to have positive experiences. Senior officers and ratings were more likely than junior officers to suggest the view from their cabin was unrestricted (see Figure 37).

Figure 37: The Percentage of Seafarers Who Had Unrestricted Views by Rank



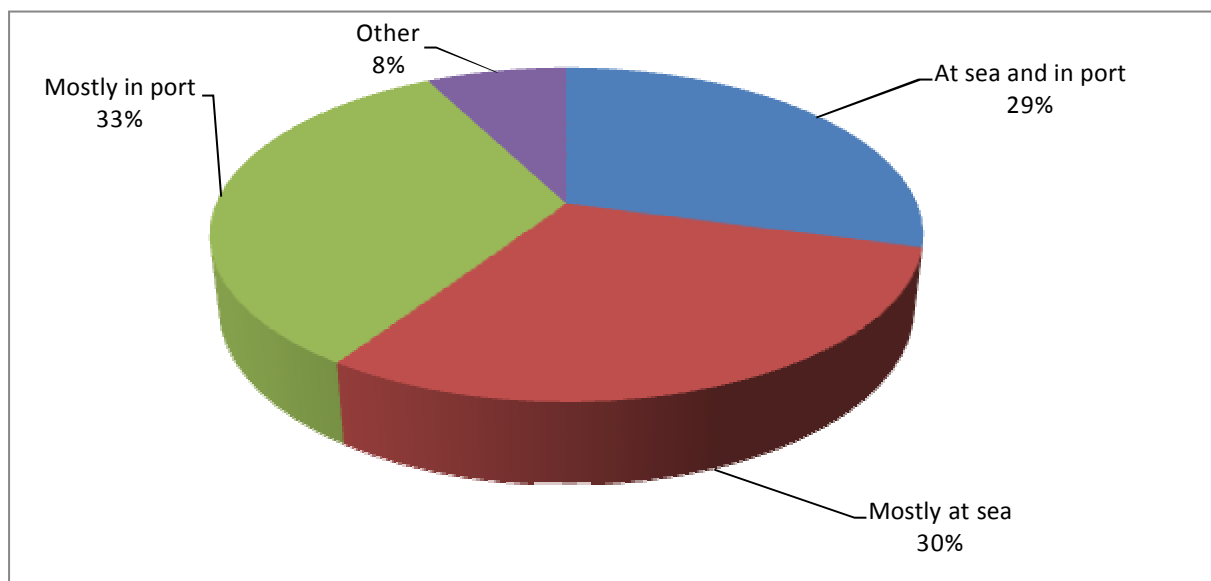
Vessel size, age and country of build did not influence the likelihood that seafarers would enjoy unrestricted views from their cabins. However seafarers working on passenger/cargo and general cargo vessels were much less likely than their peers to report unrestricted cabin views (see Figure 38).

Figure 38: The Percentage of Seafarers Who Had Unrestricted Views by Ship Type



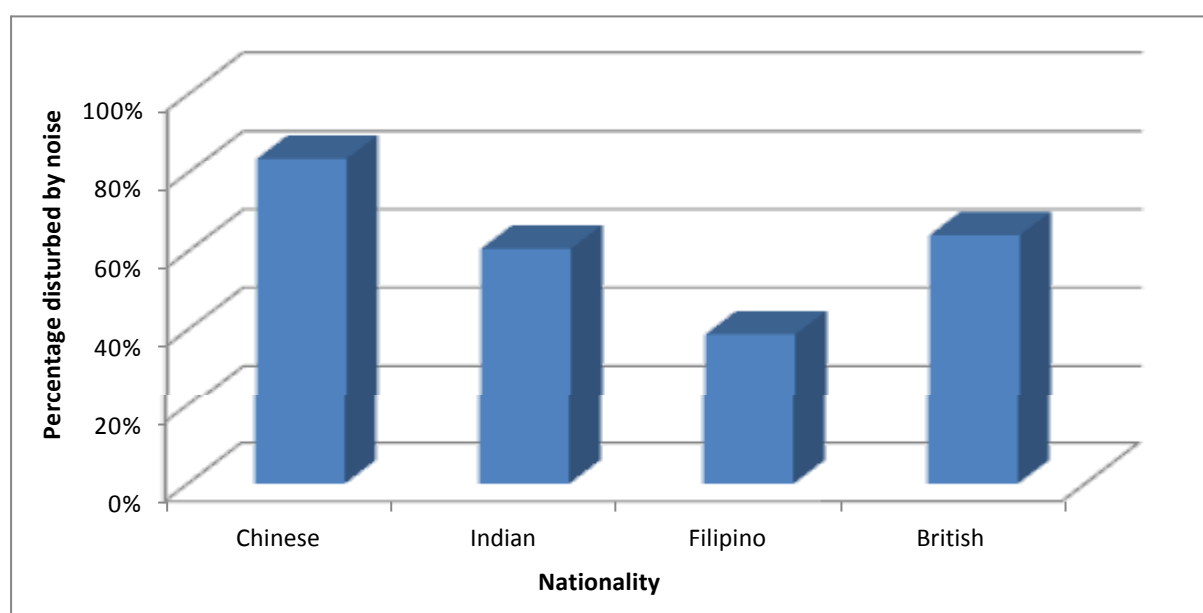
Light and temperature are important factors in relation to sleep quality and duration, however, noise levels also have the capacity to significantly impact on sleep quality (Riediker and Koren, 2004). The majority of respondents (60%) reported that they were **disturbed by noise** in their cabins at least some of the time. Twenty percent of these stated that they were disturbed by noise in their cabins 'all of the time'. Roughly equal proportions of respondents reported being disturbed by noise in their cabins at sea and in port (29%), mostly at sea (30%) and mostly in port (33%) (see Figure 39). Thus when ships are in a stable condition moored to a quay it would seem that many seafarers nevertheless suffer from disturbance by noise and they may suffer resultant sleep deprivation.

Figure 39: The Times When Seafarers Were Disturbed by Noise



There were nationality and rank differences to note in relation to noise disturbance. Chinese respondents were more likely to state that they were disturbed by noise than their colleagues. Filipino seafarers on the other hand were less likely to state that they were disturbed by noise in their cabin than other nationalities (see Figure 40). In relation to rank, officers were more likely to state that noise disturbed them in their cabins than ratings.

Figure 40: The percentage of Seafarers Who Said They Were Disturbed by Noise by Nationality



The size of the ship was not found to impact on whether or not seafarers reported being disturbed by noise. However more seafarers on general cargo vessels (68%) were disturbed by noise and fewer seafarers on bulk carriers (62%), passenger/general cargo ships (53%), and tankers were found to be disturbed by noise (51%) (see Figure 41). Seafarers aboard vessels of twenty years of age and over were slightly more likely than others to report being disturbed by noise and seafarers working on ships built in China (70%) were more likely than seafarers working on ships built in Japan (62%) and Korea (52%) to report being disturbed by noise (see Figure 42).

Figure 41: The Percentage of Seafarers Disturbed by Noise by Ship Type

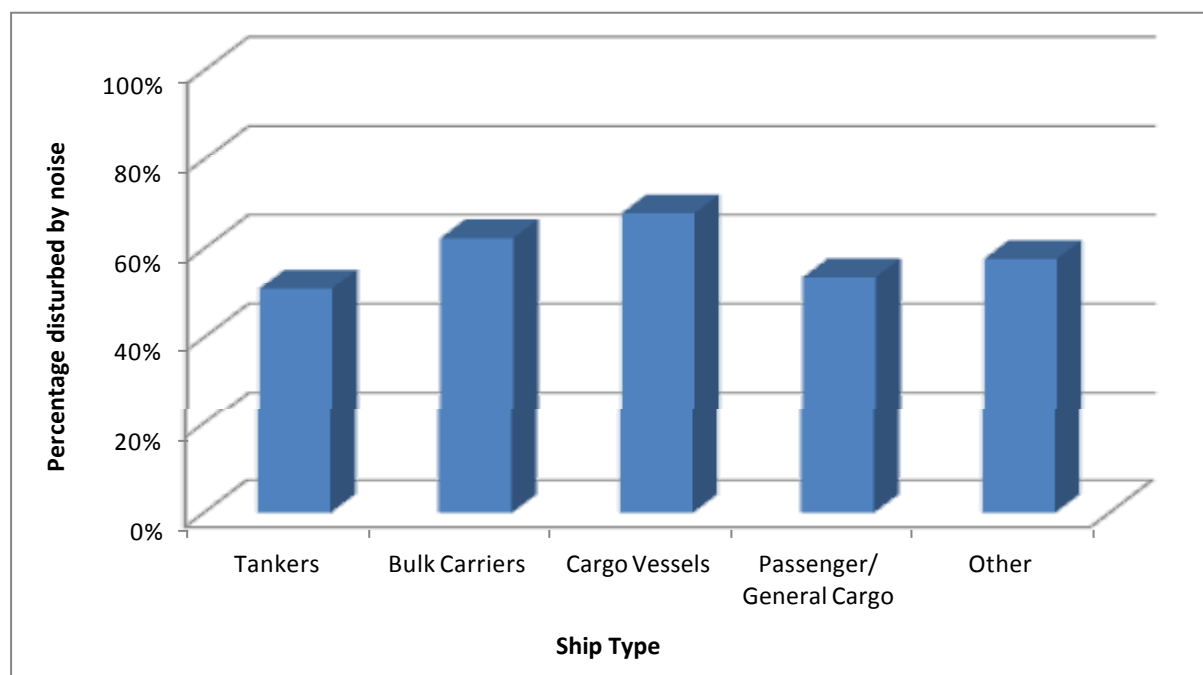
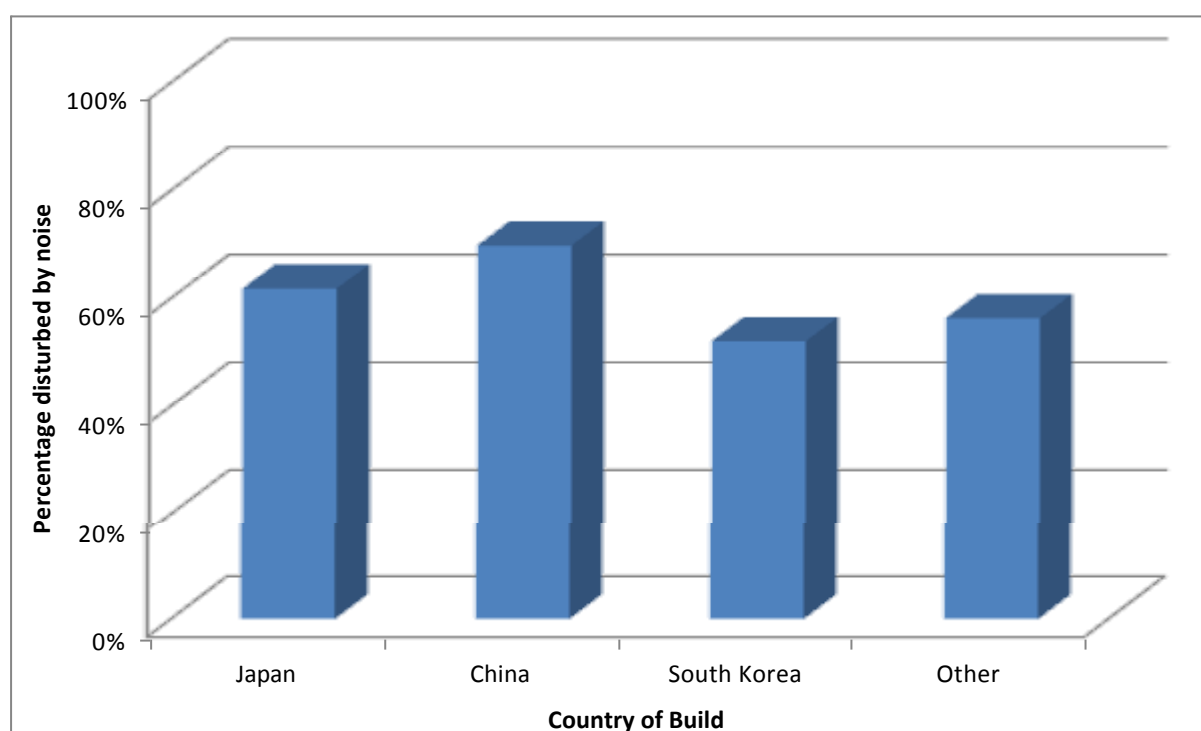


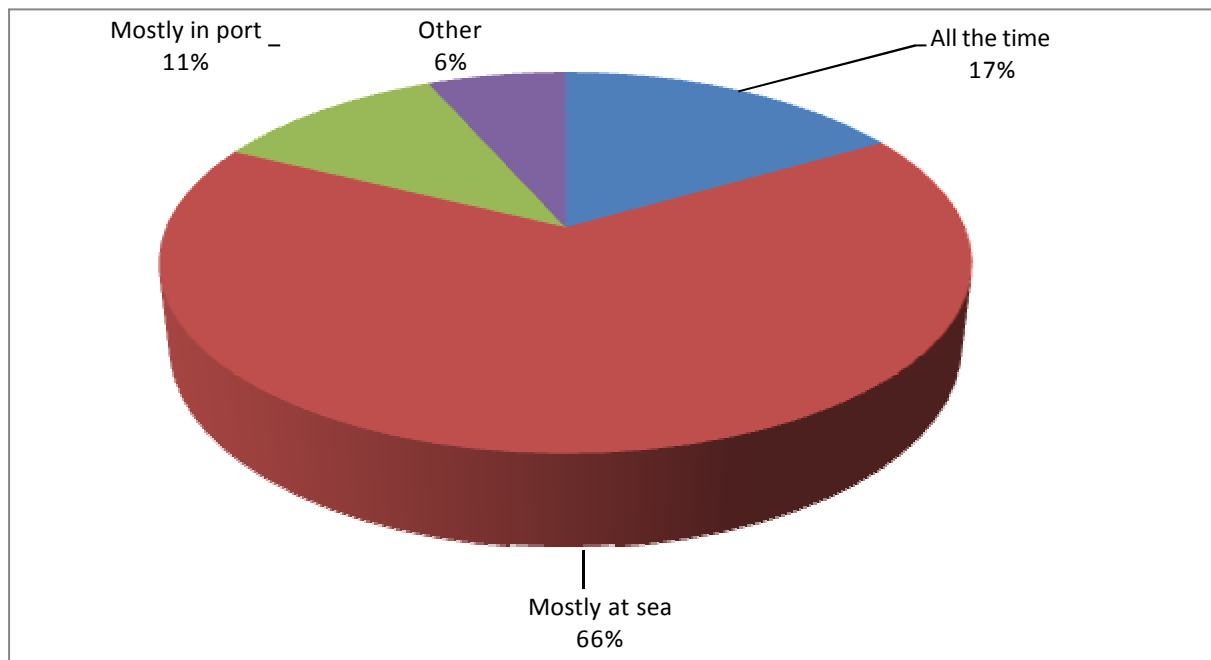
Figure 42: The Percentage of Seafarers Disturbed by Noise by Country of Build



These are critical findings as disturbance by noise has been shown to be detrimental to humans in a variety of ways. Some studies indicate that it causes increased levels of irritability amongst people (Cohen and Spacapan, 1984) whilst others suggest that noise may cause increased psychological distress (Stansfeld, 1993), as well as social difficulties (i.e. the ability to interact with others), and even physical effects, such as increased blood pressure (Reidiker and Koren, 2004)

We also asked seafarers specifically about **vibration**. This can be a problem on older poorly maintained ships for obvious reasons. However, there have been anecdotal reports of problems with vibration on new ships because of the change in build specifications (thinner metal plating and so forth). The majority of seafarers (63%) were disturbed in their cabins by vibration. Some said they were not very often disturbed by vibration (30%) but only a very small percentage (7%) suggested that they were 'never' disturbed by vibration in their cabins. Disturbance by vibration whilst in cabins was reported to occur 'mostly at sea' in the majority of cases (66%). However some seafarers were disturbed by vibration at sea and in port (17%) and some experienced this problem 'mostly in port' (11%) presumably as a consequence of cargo operations (see Figure 43).

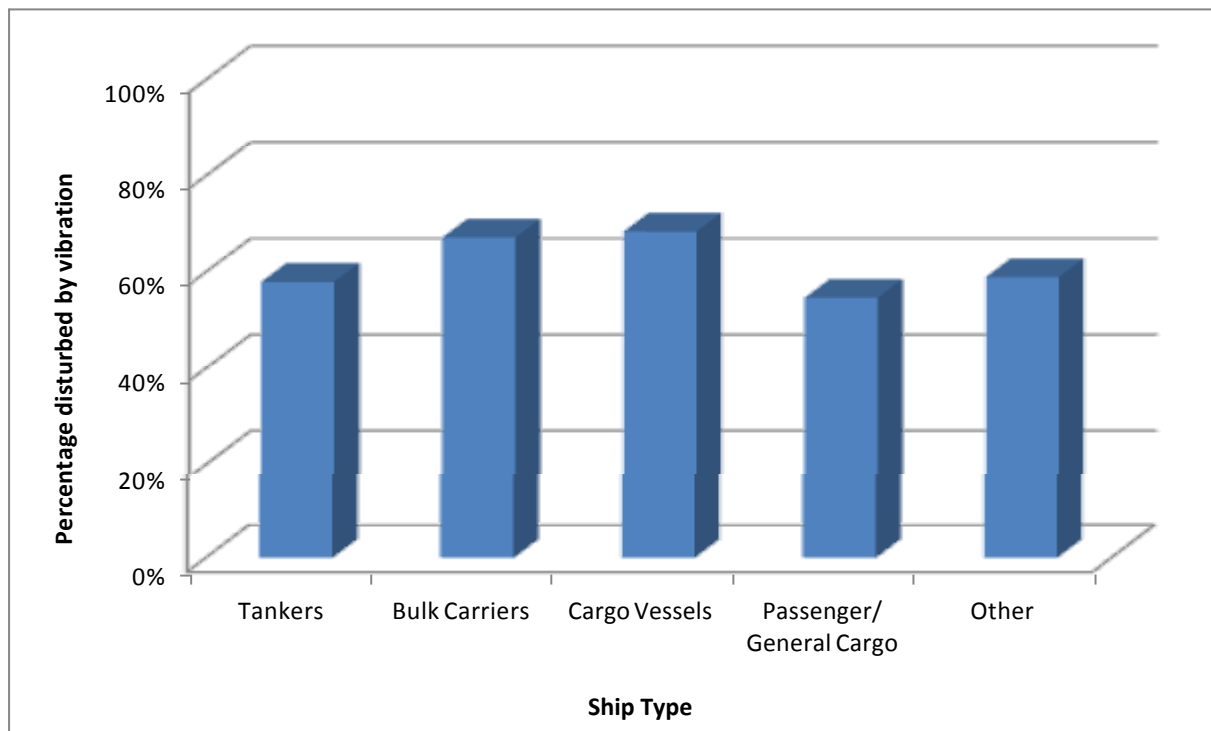
Figure 43: *The Times When Seafarers Were Disturbed by Vibration*



There were variations in the responses of seafarers according to both nationality and rank. Whilst the majority of seafarers were found to be disturbed by vibration Chinese seafarers were more likely than their colleagues to report disturbance by vibration and Filipino seafarers were less likely to do so. In relation to rank we found that both junior and senior officers were more likely to report that they were disturbed by vibration than ratings.

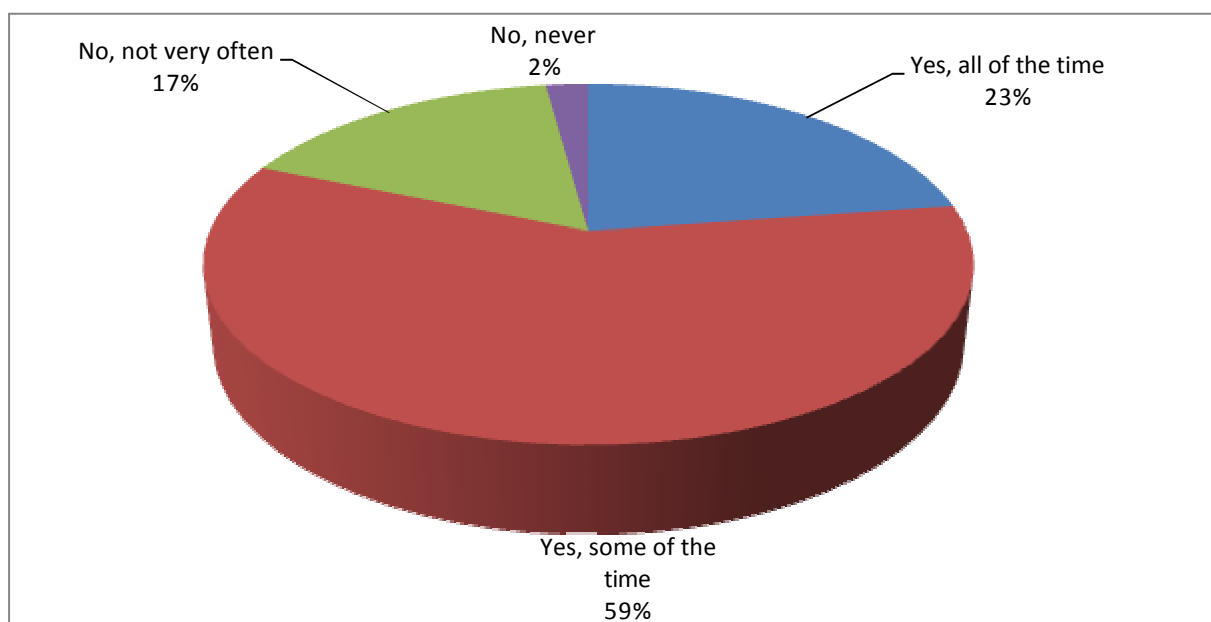
In relation to vessel size and age we did not find significant variations in terms of the extent to which seafarers reported being disturbed by vibration. However the ship type and the place of build did impact on responses. Seafarers working on cargo vessels (68%) and bulk carriers (67%) were more likely to report being disturbed by vibration than seafarers working on 'other' vessel types (59%), tankers (58%) and passenger/cargo ships (54%) (see Figure 44). Seafarers working on ships built in China (70%) were also more likely to report they were disturbed by vibration, with those working on ships built in Korea (52%) being least disturbed by vibration.

Figure 44: The Percentage of Seafarers Disturbed by Vibration by Ship Type



Given our concerns about the potential impact of noise, vibration, and a range of other factors on the quality of seafarers' sleep we specifically asked respondents if they were able to get **adequate rest**. Roughly one in five respondents (23%) reported being able to get adequate rest 'all of the time'. However 59% reported that they only got adequate rest 'some of the time' and a further 19% suggested that they either didn't get adequate rest very often or that they never got adequate rest (see Figure 45).

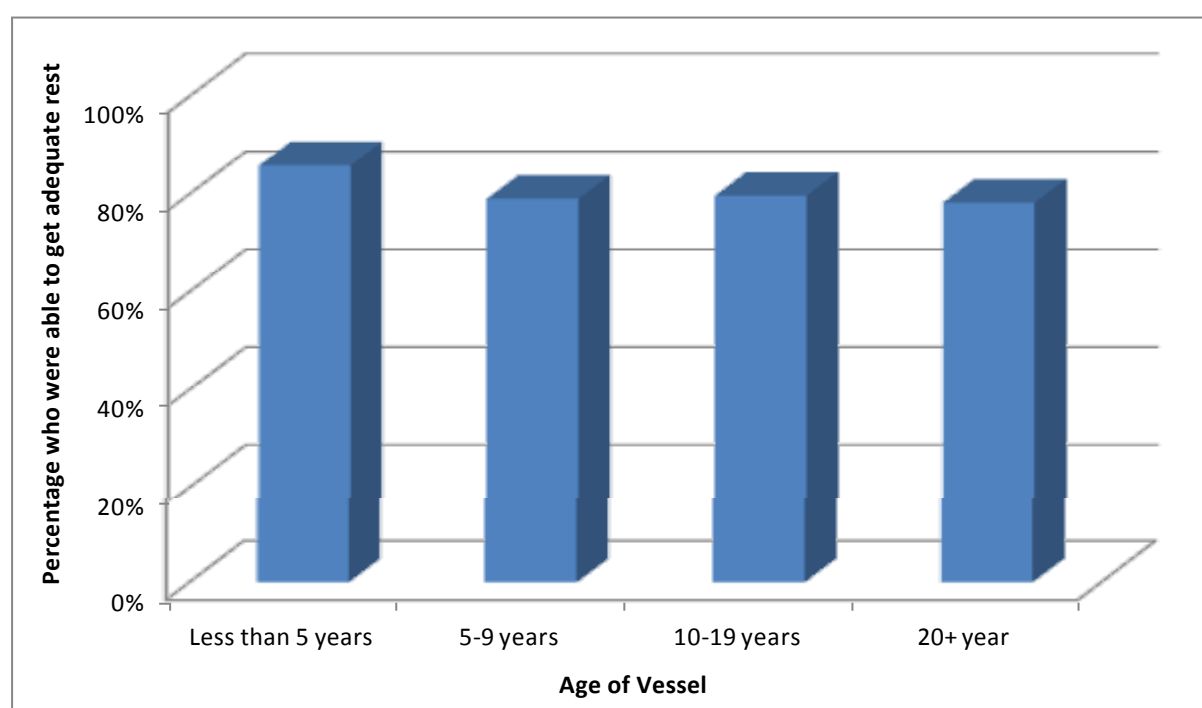
Figure 45: Seafarers Reports of When They Could Get Adequate Rest



Of those who reported that they didn't get adequate rest very often or that they never got adequate rest at all 35% suggested this was both at sea or in port, 21% stated that they only had a problem with lack of sleep at sea and 44% of respondents suggested that lack of sleep was a problem only in port.

The size, type and country of build of a vessel did not impact upon the reported levels of adequate rest. However age of vessel did have a significant impact with seafarers aboard newer vessels (5 years old or less) reporting higher levels of adequate rest than those aboard older vessels (see Figure 46).

Figure 46: The Percentage of Seafarers Reporting They Could Get Adequate Rest by Age of Ship



Turning to the general condition of cabins, we asked seafarers to rate the **standard of furnishings** (e.g. chairs, beds, desks) in their cabins. A little under half of the sample described the standard of furnishings as 'good' (42%) or 'very good' (5%). A significant number (36%) suggested that they were 'neither good nor poor' and nearly a fifth of respondents (18%) reported that their furnishings were 'poor' or 'very poor'. There were nationality and rank differences in responses which were statistically significant. Officers were more likely to find the standard of the furnishings on their vessels to be poor/ very poor whilst ratings were less critical (see Figure 47). Similarly Chinese seafarers were more likely to describe the standard of furnishings on their vessels as 'poor' or 'very poor' than other nationality groups who generally displayed a fairly mixed pattern of response (see Figure 48).

Satisfaction with the standard of furnishings increased with ship size, but decreased with the age of the vessel. Seafarers working on larger and newer vessels reported higher levels of satisfaction (see Figure 49), whereas seafarers working on older vessels reported lower levels of satisfaction (see Figure 50). Seafarers working on ships built in South Korea and ‘other’ countries reported higher levels of satisfaction with furnishings than those working on ships built in China or Japan and seafarers working on tankers or passenger/general cargo ships were much more likely to be satisfied with the standard of furnishing on board than those working on bulk carriers where satisfaction levels were low (just 37% rated furnishings as ‘good’ or ‘very good’ aboard bulk carriers).

Figure 47: Rating of the Standards of Furnishings by Rank



Figure 48: Rating of the Standards of Furnishings by Seafarers Nationality

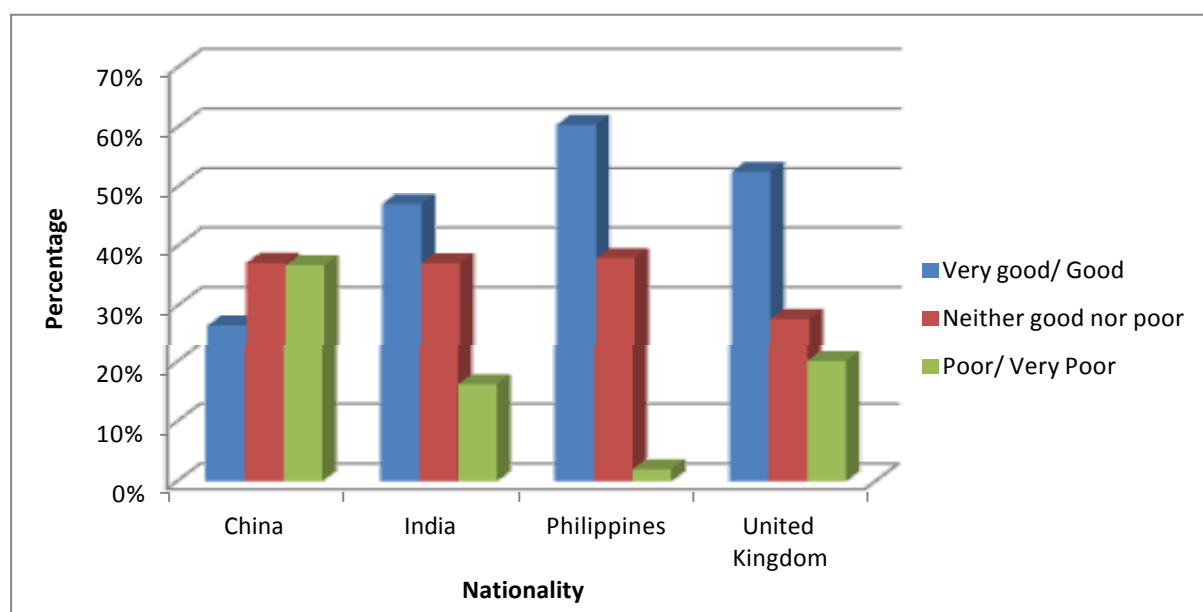


Figure 49: Rating of the Standards of Furnishings by Ship Size

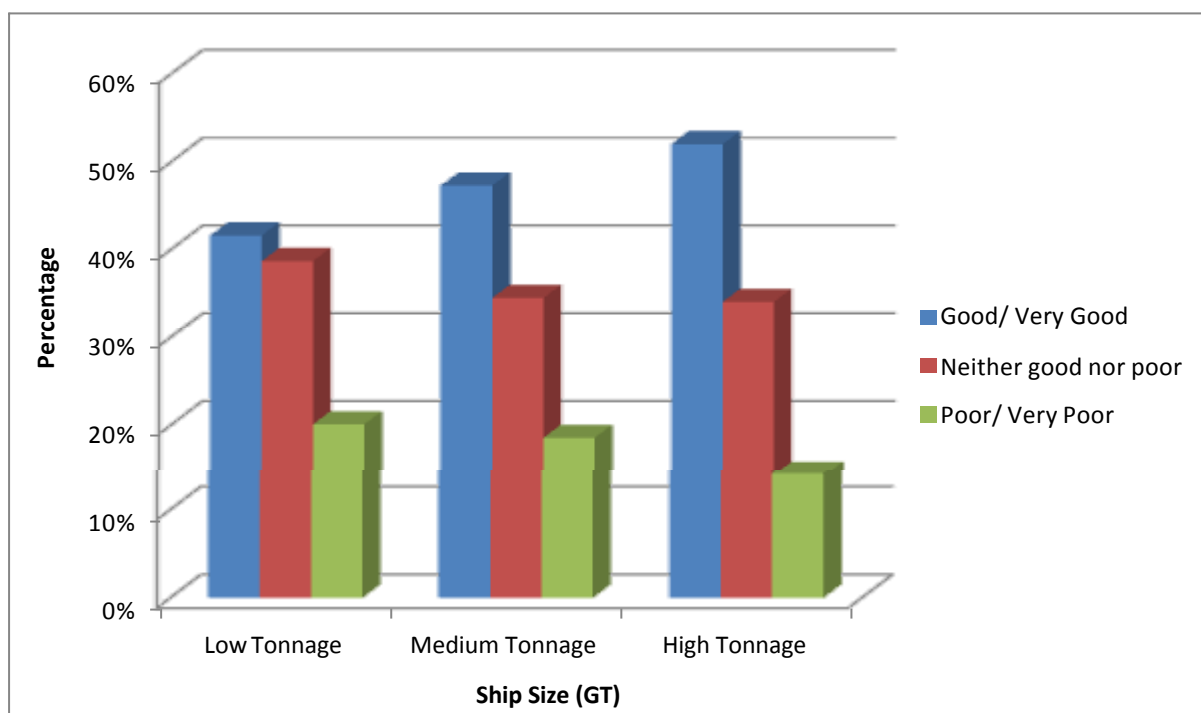
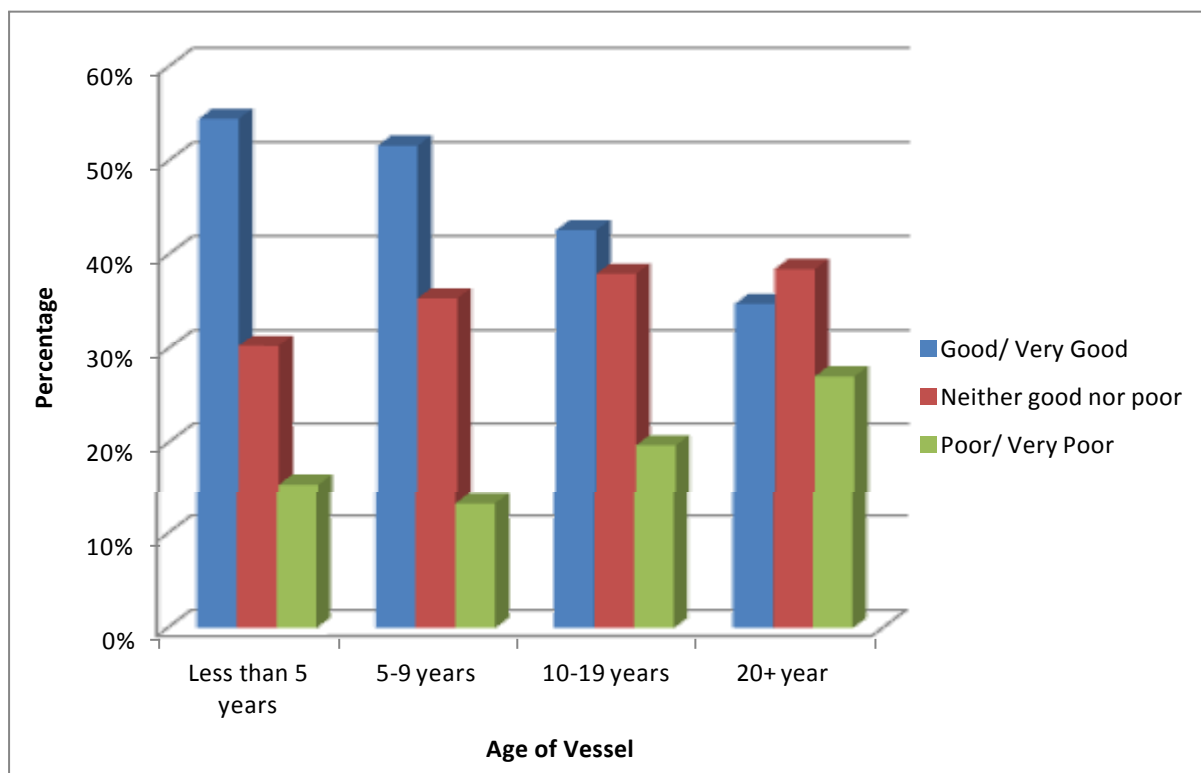


Figure 50: Rating of the Standards of Furnishings by Age of Vessel



The use of colours in the built environment is generally understood to impact upon mental wellbeing in relation to the general population (Küller, *et al.*, 2006; Caspari, *et al.*, 2006; Baglioni and Capalongo, 2002) and so we asked seafarers what they thought of the **colour schemes** in their cabins. Almost half (48%) of respondents described liking the colour scheme either 'a little' (33%) or 'a lot' (15%). A further 38% stated that they were indifferent (neither liking nor disliking it) and fifteen percent of respondents did not like it with 3% suggesting that they did not like it at all.

Chinese seafarers were more likely to indicate that they did not like the colour scheme in their cabins than other nationalities and Filipino seafarers more frequently said they did like the colour scheme. British seafarers were less likely to have an opinion than other nationalities with 62% saying they neither liked nor disliked the colour scheme (see Figure 51). Ratings were more likely to say that they liked the colour scheme in their cabins than officers (both senior and junior) (see Figure 52).

Colour schemes were most frequently liked on tankers (58%) and least frequently liked (by 39%) on 'other' ship types. The minority of seafarers liked the colour schemes in their cabins amongst the remaining vessel types (general cargo 46%, passenger/general cargo 45%, bulk carriers 44%).

Seafarers working aboard newer vessels were more likely to state that they liked the colour schemes used in cabins (see Figure 53) as were seafarers working aboard Korean built vessels (57%). Seafarers working aboard Japanese built vessels stated they liked the colour schemes less often (48%) and those working aboard vessels built in China liked the colour schemes least (39%).

Figure 51: Rating of the Colour Scheme by Seafarers Nationality

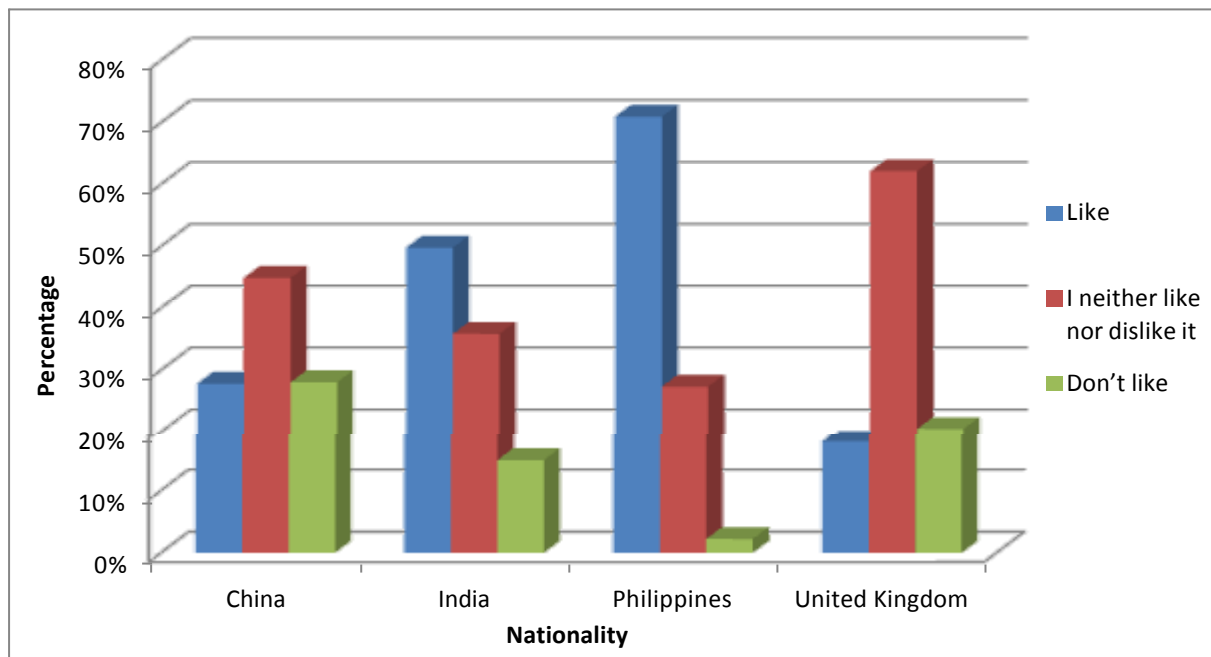
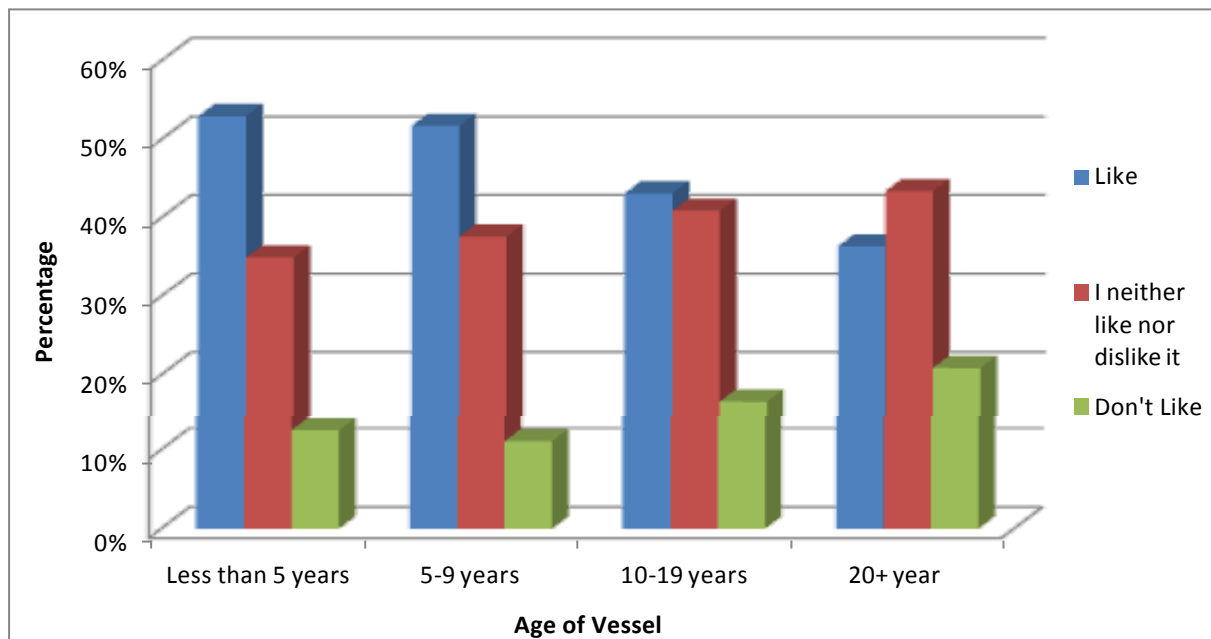


Figure 52: Rating of the Colour Scheme by Rank

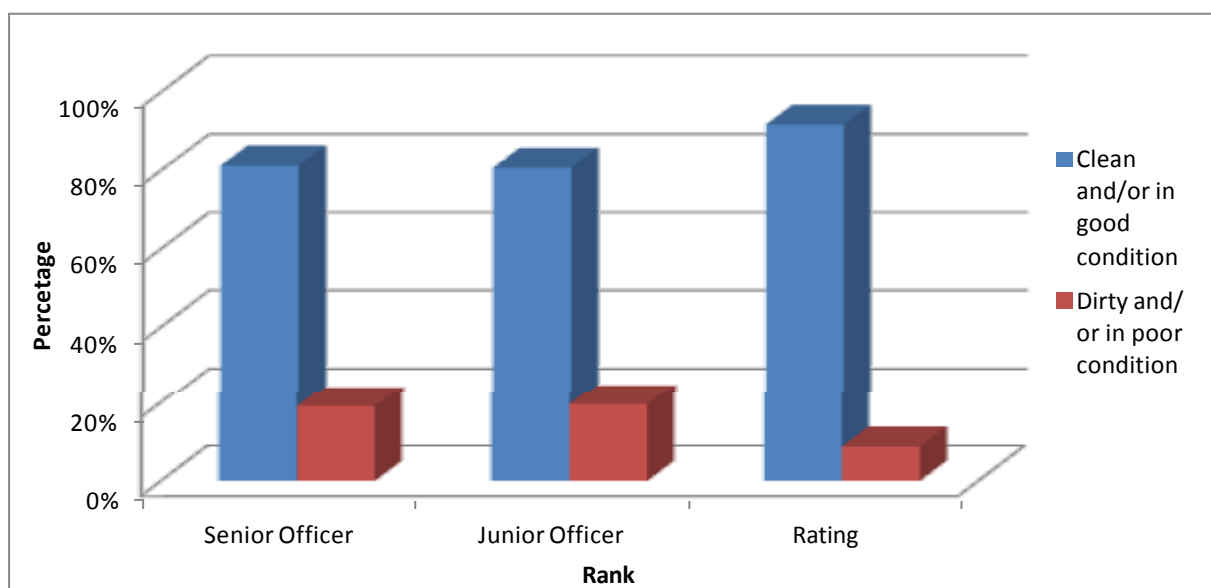


Figure 53: Rating of the Colour Scheme by Age of Vessel



The general condition of the material fabric of the built environment is also thought to impact upon mental wellbeing (Guite, *et al.*, 2006) and we therefore asked seafarers about the **standards of cleanliness and the condition of the facilities and furnishings** in their cabins. The majority of seafarers indicated that their furnishings and facilities were clean and in a reasonable condition (85%). However, this leaves a significant minority of seafarers (16%) who felt that they were living in dirty conditions with poorly maintained furnishings and facilities. Officers and Chinese seafarers were more likely to describe the cleanliness and condition of their cabins as poor/dirty while ratings and other nationality groups generally described them more favourably (see Figure 54).

Figure 54: Percentage Suggesting Cabin Was in Poor Condition/ Dirty by Rank



There were no significant differences between vessels of different sizes in relation to the cleanliness and condition of cabins. However there were differences in relation to age, country of build and ship type. Seafarers working on tankers were most likely to report that their cabins were clean and well maintained (93%) with seafarers working on cargo vessels (81%) and bulk carriers (81%) least likely to do so. The age of the vessel had a negative impact on cabin condition with those working on older vessels were least likely to report that cabins were well maintained (see Figure 55). In relation to country of build South Korean built vessels were most likely to be reported to have clean well maintained cabins and Chinese and Japanese built vessels were least likely to be reported to do so (see Figure 56).

Figure 55: The Percentage of Seafarers Indicating Their Cabin was Clean/ Well Maintained by Age of Ship

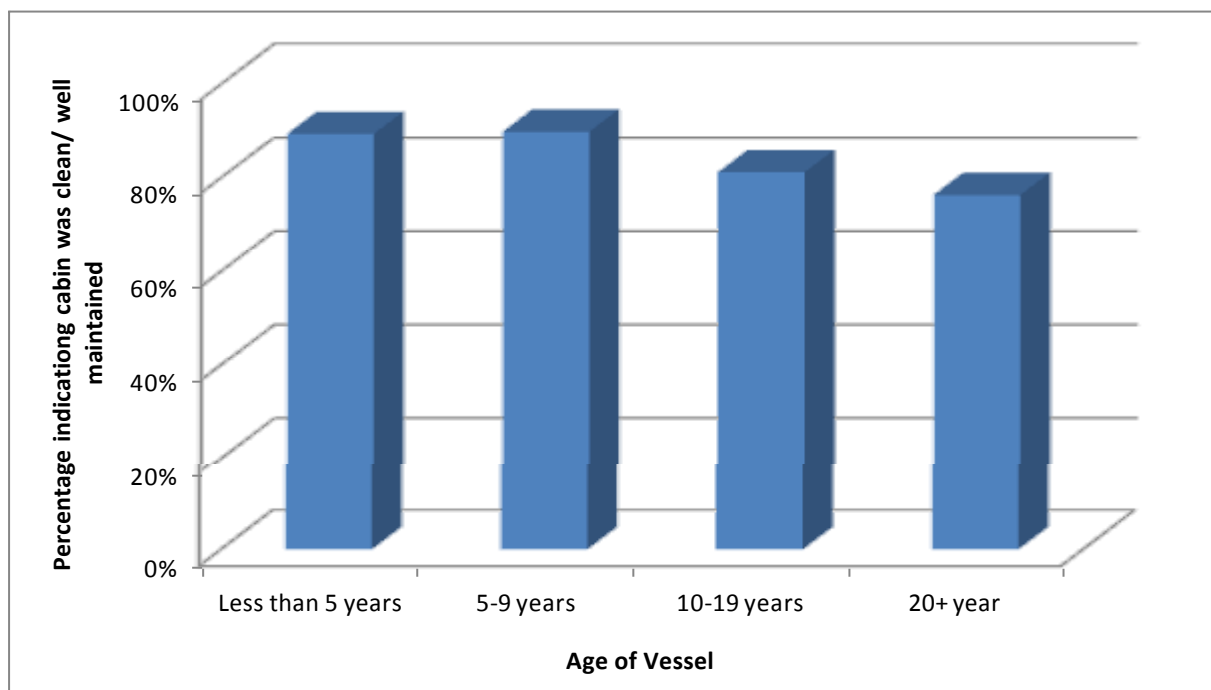
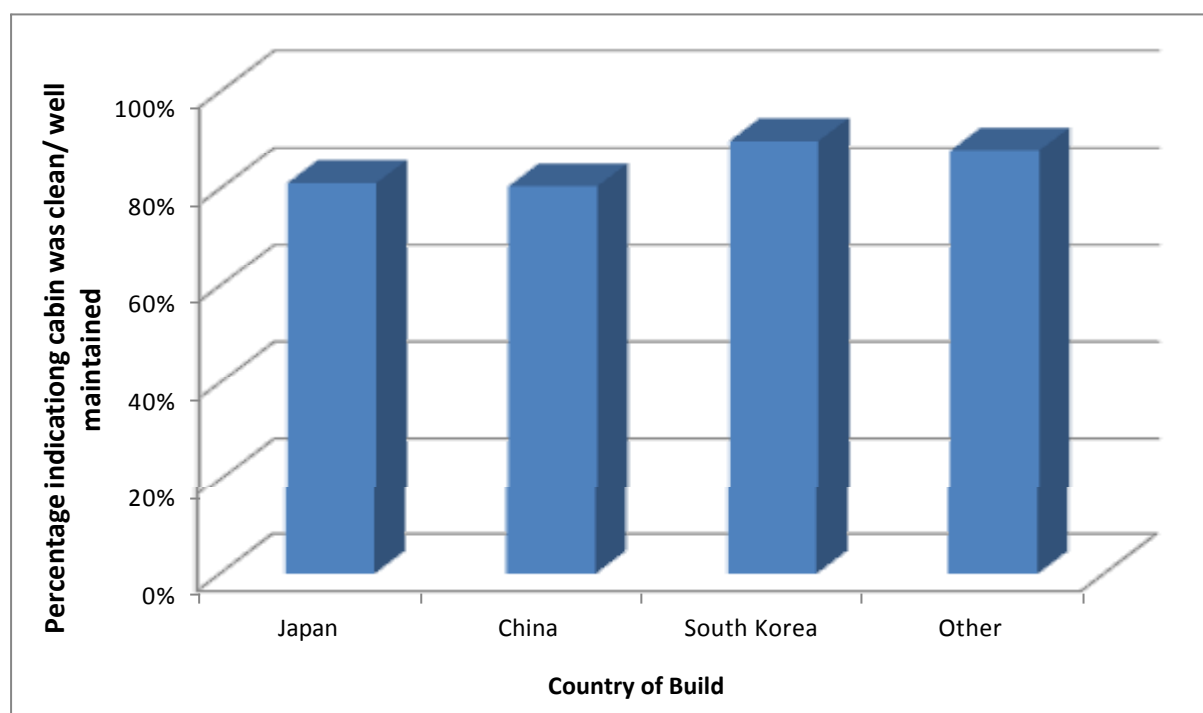
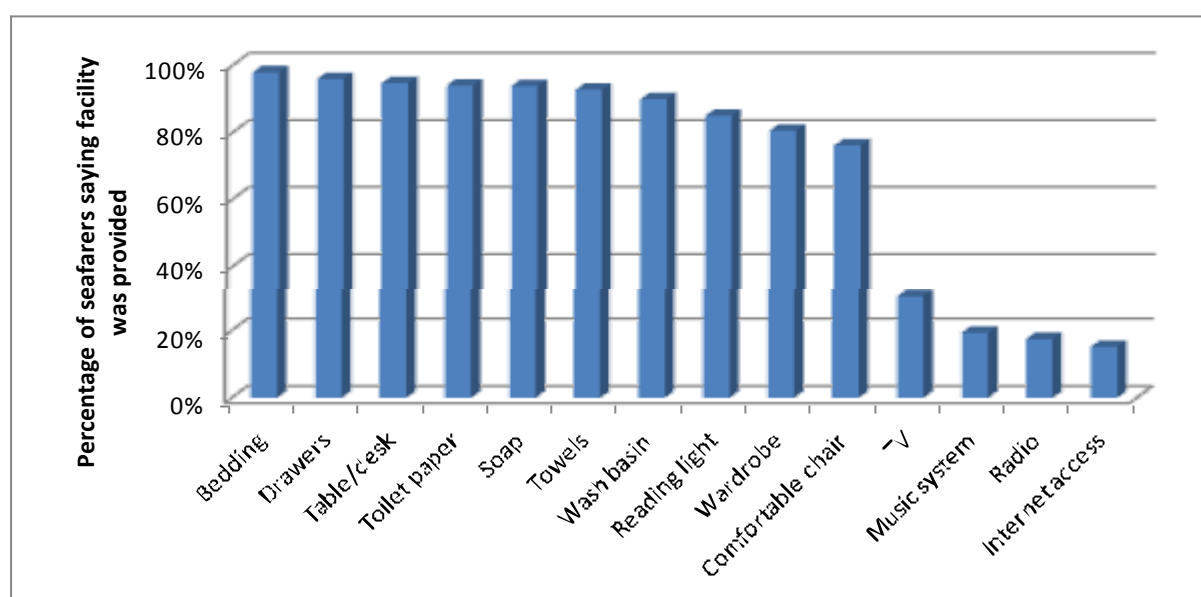


Figure 56: The Percentage of Seafarers Indicating Their Cabin was Clean/ Well Maintained by Country of Build



We also asked seafarers about a range of **fittings/appliances/facilities in their cabins**. Of the list of items we asked about, bedding was the most commonly provided with 98% of seafarers reporting bedding provision (see Figure 57). Drawers were the next most frequently provided item and 96% of seafarers reported having drawers in their cabins. Similar proportions of seafarers (95%) had a table or desk in their cabin but fewer were provided with wardrobes (80%) or a comfortable chair (76%). Towels, soap and toilet paper were not universally provided to seafarers but the majority of respondents reported that there was such provision (93% had towels, 94% had soap, 94% had toilet paper). Similarly the majority of seafarers (85%) had access to a reading light in their cabins. However, other facilities were less commonly available. Radios, televisions, and music systems were generally not provided to seafarers. Only 30% reported a TV in their cabin, whilst 17% reported the provision of a radio and 19% reported provision of a music system. Internet access provided within cabins was reported by 15% of respondents.

Figure 57: The Facilities Provided Within Cabins



Reading lights, tables/desks, wash basins, towels, and comfortable chairs were more likely to be provided on larger vessels than on smaller ones (see Figure 58).

In relation to the country of build vessels built in Korea were more likely to have desks provided in cabins. Vessels built in countries other than the three main shipbuilding nations were much more likely to provide internet access, TVs, radios and music systems in cabins than vessels built in South Korea, Japan or China. However wardrobes were found to be provided more often on Chinese built vessels than vessels built in other nations.

Older ships were more likely to have radio provision in cabins than newer vessels whilst newer ships were more likely to have comfortable chairs, reading lights, internet access, wash basins, toilet paper, and drawers in cabins (see Figure 59).

‘Other’ vessel types and passenger/cargo vessels were much more likely than the remaining ship types to have TVs, radios, music systems, and internet access in cabins and bulk carriers were the least likely of all ship types to have internet access provided in cabins (see Figure 60).

Figure 58: The Facilities Provided in Cabins by Ship Size

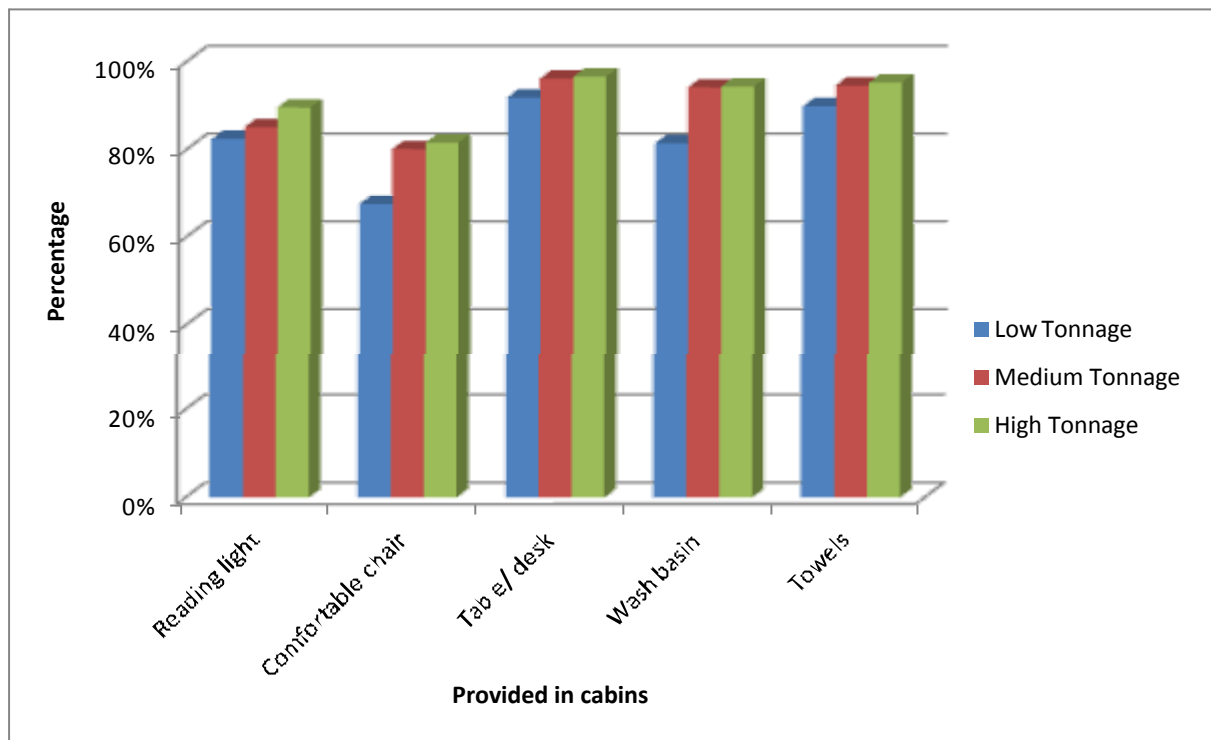


Figure 59: The Facilities Provided in Cabins by Age of Vessel

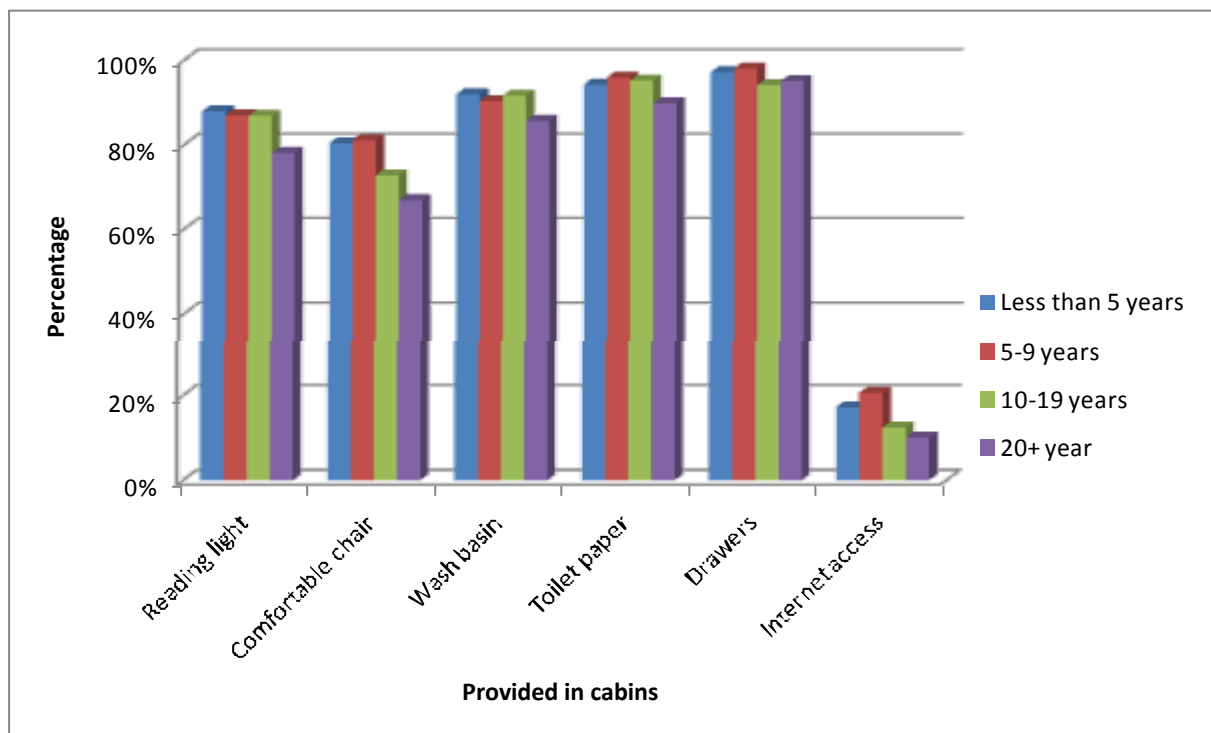
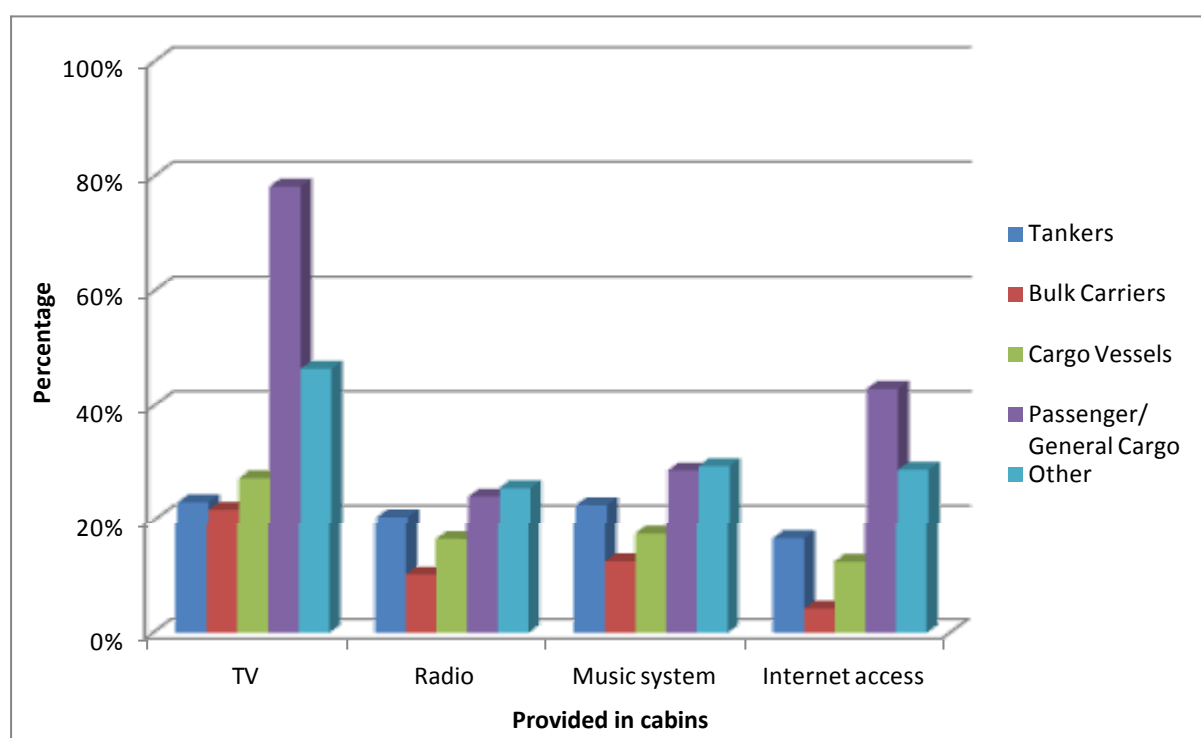
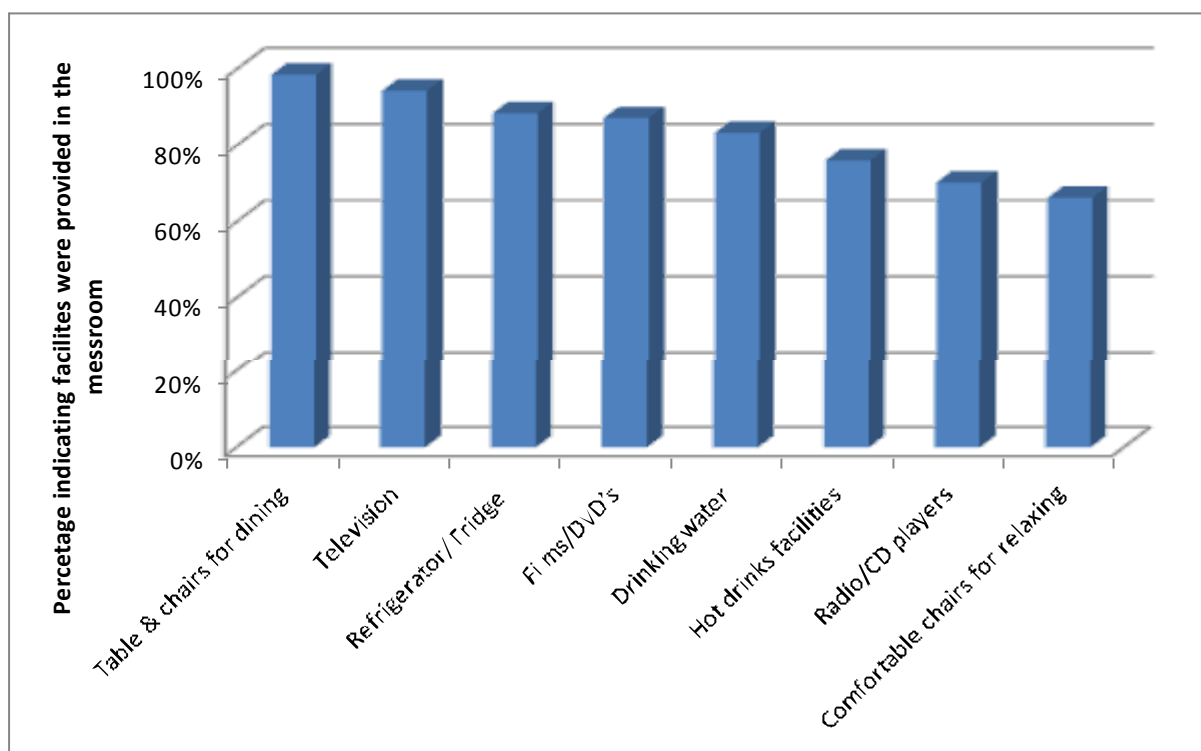


Figure 60: The Facilities Provided in Cabins by Ship Type



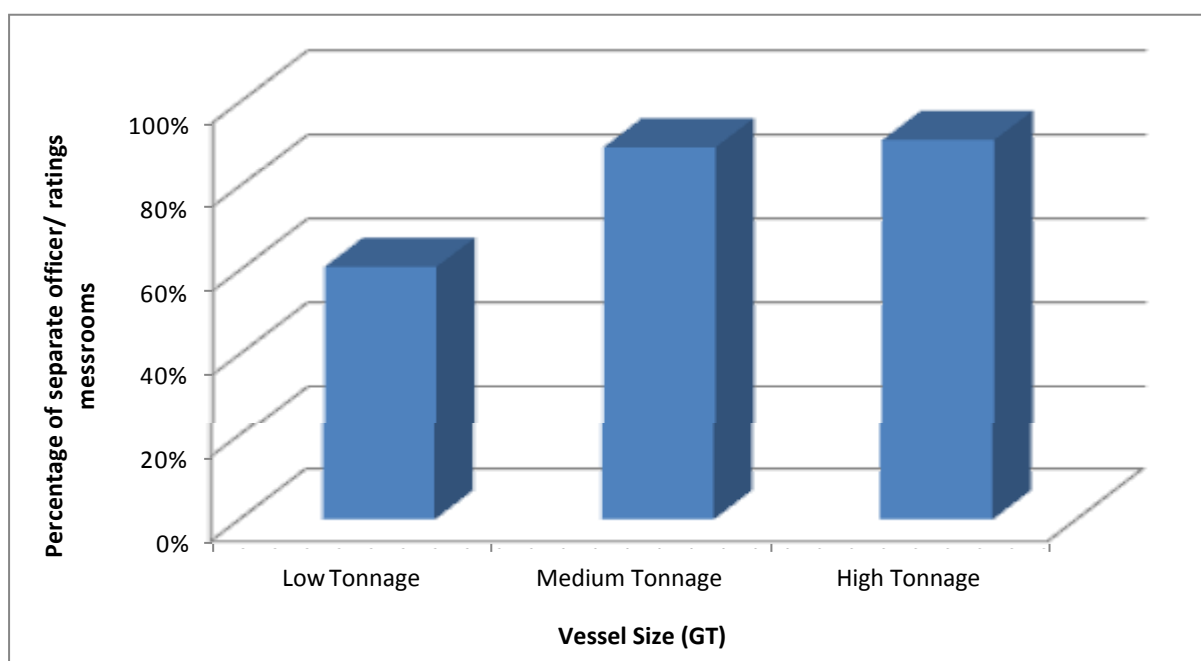
Turning to communal facilities on board, we asked respondents about **messrooms/lounges**. Almost all of those taking part in the research had access to a messroom/lounge (97%) and in the majority of cases (80%) these were dedicated to either officers or ratings. Tables and chairs were overwhelmingly provided in messrooms/lounges (in 98% of cases) and these were usually accompanied by televisions which were found in 94% of cases (see Figure 61). Films/DVDs (87%), Fridges (88%) and drinking water (83%) were also provided in the majority of cases with fewer respondents reporting provision of hot drinks facilities (only provided in 76% of cases), radios or CD players (only provided in 70% of cases) and surprisingly, comfortable chairs which were only provided in 66% of cases leaving just over a third of respondents without comfortable chairs in shared mess/lounge facilities.

Figure 61: Facilities Provided Within the Messroom



Common mess facilities were more likely to be found on smaller vessels than on larger ones where it was more likely that there were separate facilities for officers and ratings (see Figure 62). Aboard larger vessels it was more likely that comfortable chairs and radio/CD facilities were provided in messrooms. Conversely larger vessels were less likely to have hot drinks facilities available in messrooms.

Figure 62: The Provision of Separate Officer/ Ratings Messrooms by Size of Vessel



General cargo vessels were less likely than other ship types to have comfortable chairs for relaxing, hot drinks facilities and drinking water provided in messrooms. Tankers were more likely to have films and DVDs, and radio/CD facilities in messrooms than other ship types, whilst 'other' ship types and passenger/general cargo vessels were more likely to have comfortable chairs for relaxing, hot drinks facilities, and drinking water provided in messrooms than the remaining vessel types. Refrigerators were least likely to be found in the messrooms of passenger/general cargo vessels (see Figure 63).

Vessels of between five and nine years old appeared to offer the best provision to seafarers in terms of comfortable chairs, radios/CD players, refrigerators, and drinking water in mess rooms (see Figure 64). Surprisingly vessels of five years and under were reported to provide such facilities less frequently than their five to nine year old counterparts. Ships of over nine years in age were reported to provide these facilities less frequently than ships aged five to nine with a pattern of declining provision with increasing age. Thus the older and youngest vessels had less provision in messrooms than vessels in the five to nine 'age group'.

Vessels built in South Korea were the most likely to provide comfortable chairs and radio/cd players in messrooms. Chinese built vessels were the least likely to provide comfortable chairs, drinking water, or radio/cd players in messrooms. Films and DVDs were most frequently provided in the messrooms of vessels built in Japan whilst hot drinks facilities and drinking water were most commonly found in the messrooms of vessels built in the 'other' group of shipbuilding nations (including Germany, Italy, UK, Norway) (see Figure 65).

Figure 63: Facilities Provided in the Messroom by Ship Type

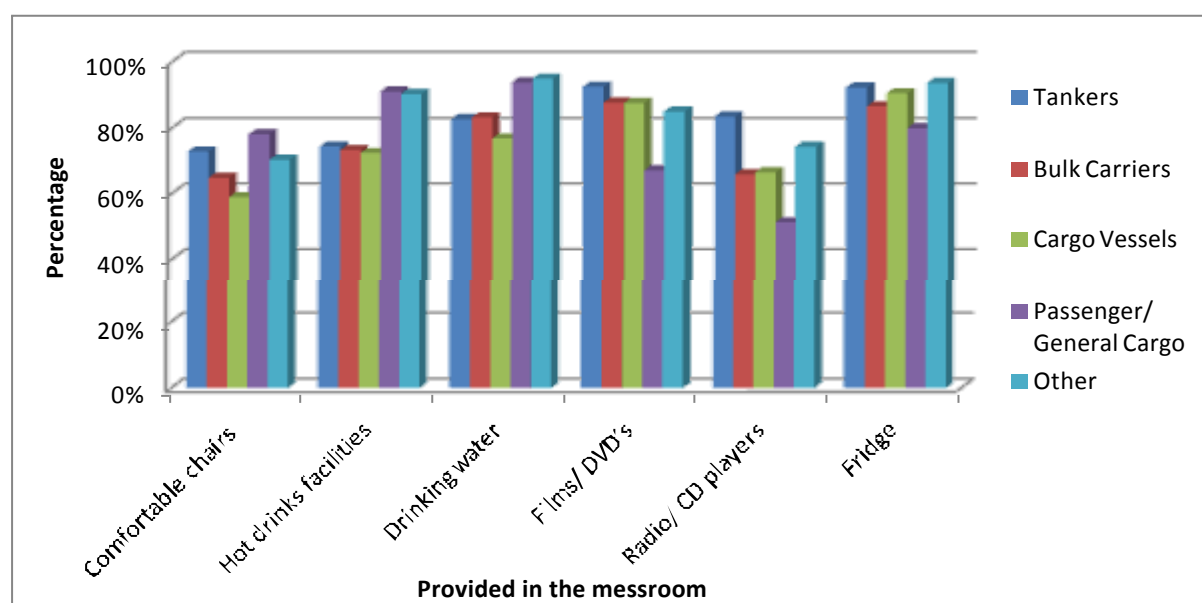


Figure 64: Facilities Provided in the Messroom by Age of Ship

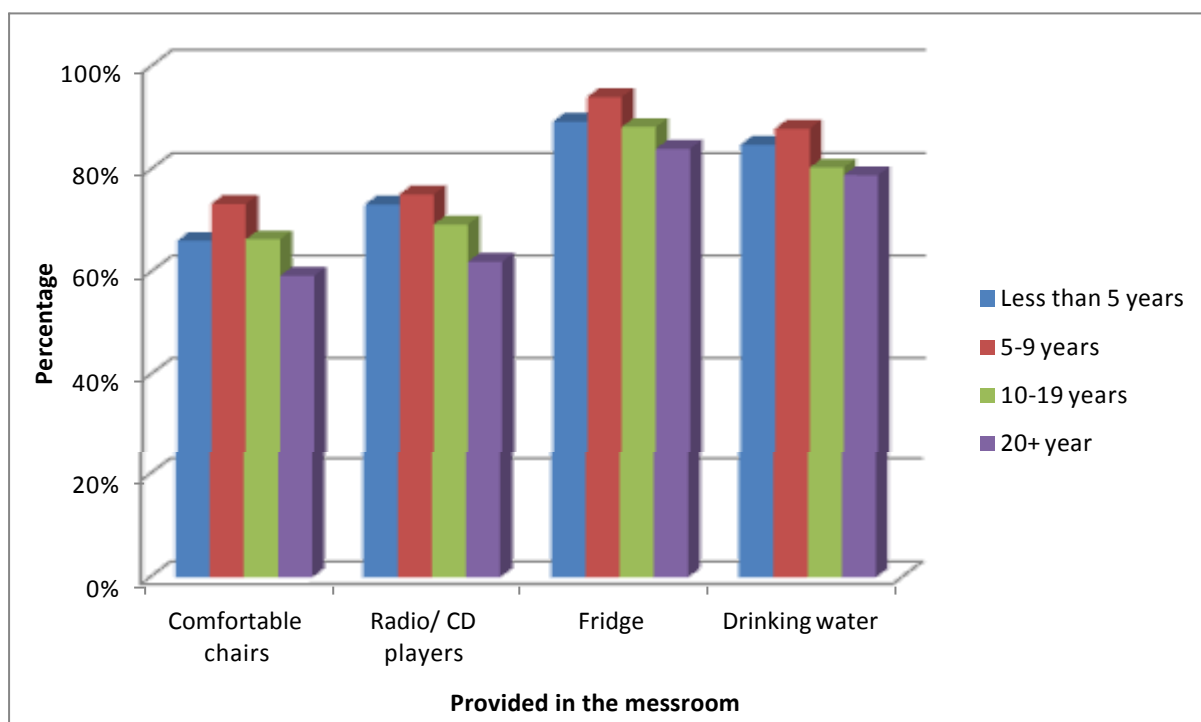
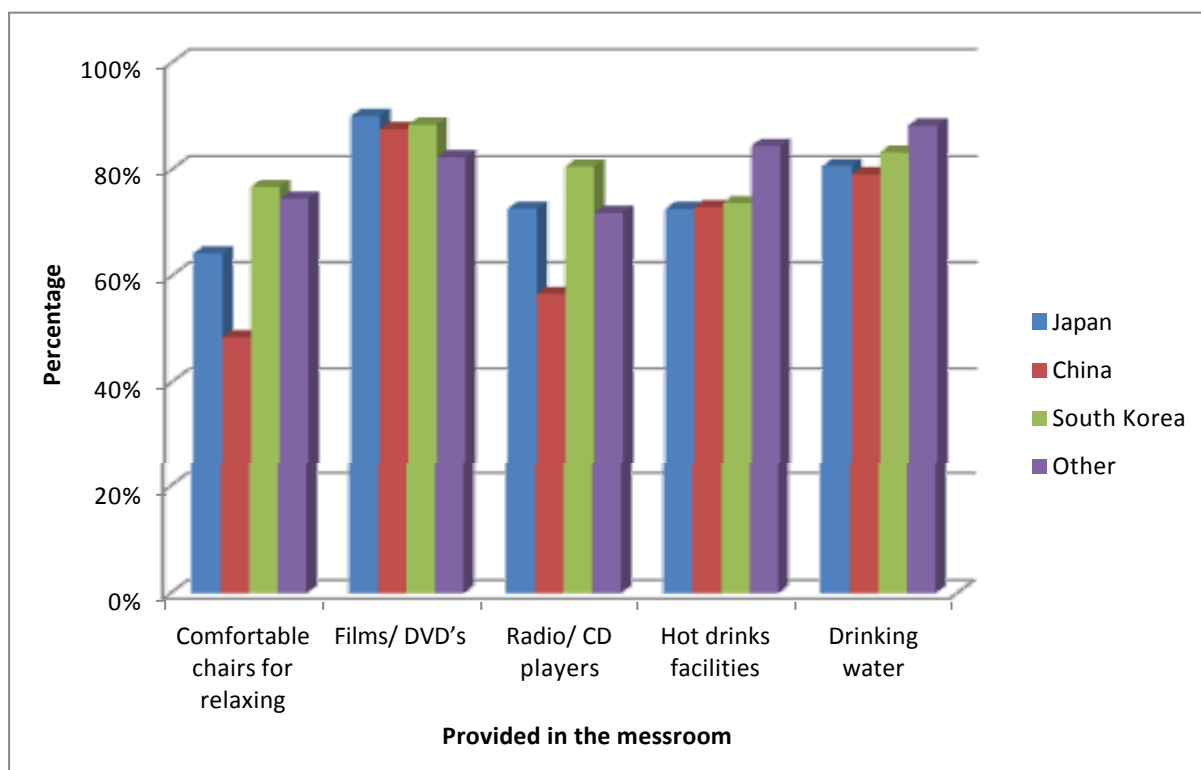
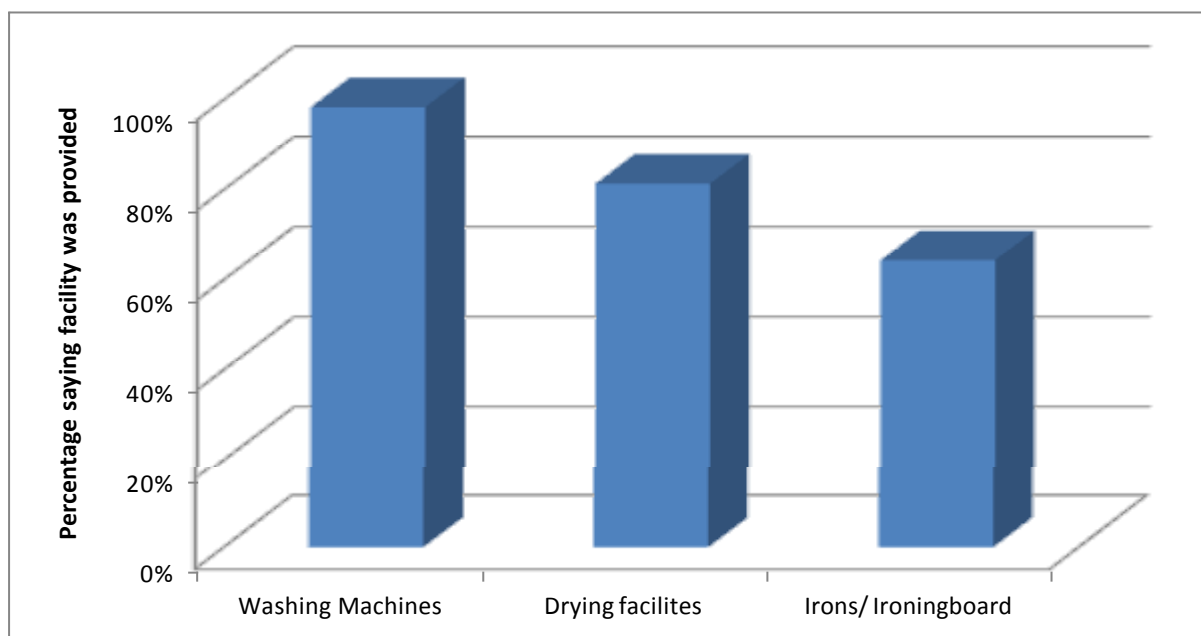


Figure 65: Facilities Provided in the Messroom by Country of Build



Washing machines were commonly provided aboard vessels and were reported to be present by 98% of the sample. Fewer seafarers had access to driers/drying rooms with only 81% reporting that they could dry clothes using such facilities. Irons and Ironing boards were scarcer still with just 64% of seafarers reporting that these were provided on board for their use (see Figure 66).

Figure 66: Washing/ Drying/ Ironing Facilities Provided



Washing machines were a little more likely to be found on larger vessels as compared with smaller ones although provision was fairly widespread. Drying machines and particularly ironing boards were much more likely to be provided aboard larger vessels than smaller ones (see Figure 67).

Washing machines were provided most frequently on bulk carriers and the category of 'other' ship types (see Figure 68). Drying machines/rooms were most frequently reported to be available on tankers (91%) and least frequently on bulk carriers (77%). This pattern was repeated in terms of the provision of irons/ironing boards with provision reported by 81% of respondents working on tankers and only 55% of respondents working on bulk carriers.

Figure 67: The Provision of Drying Machines and Ironing facilities by Ship Size

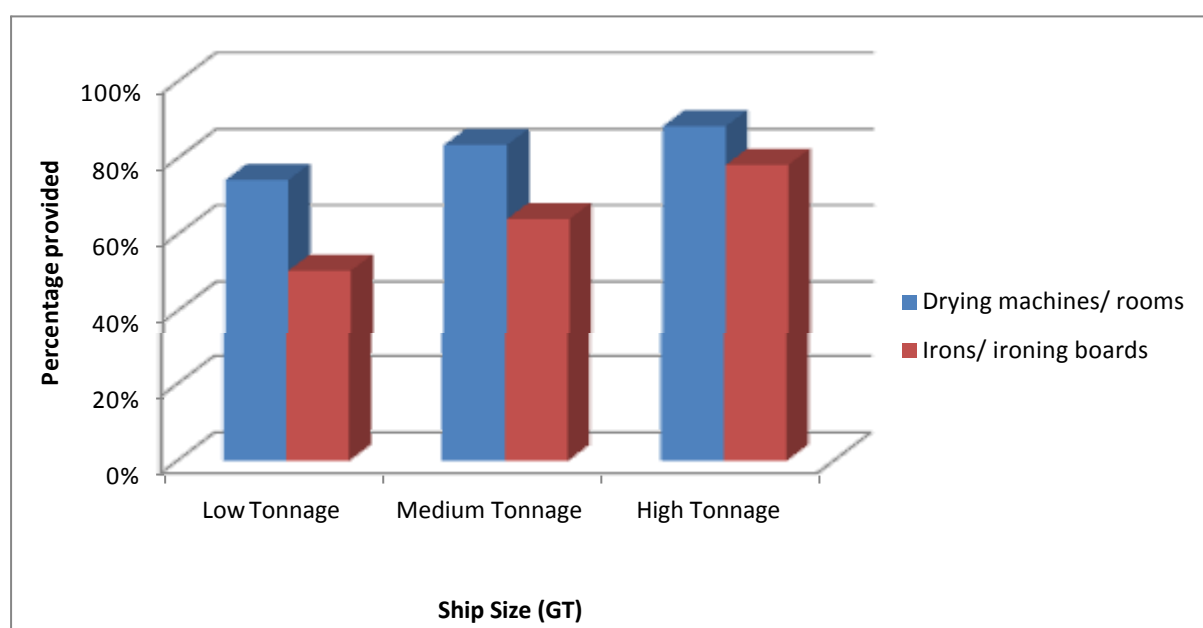
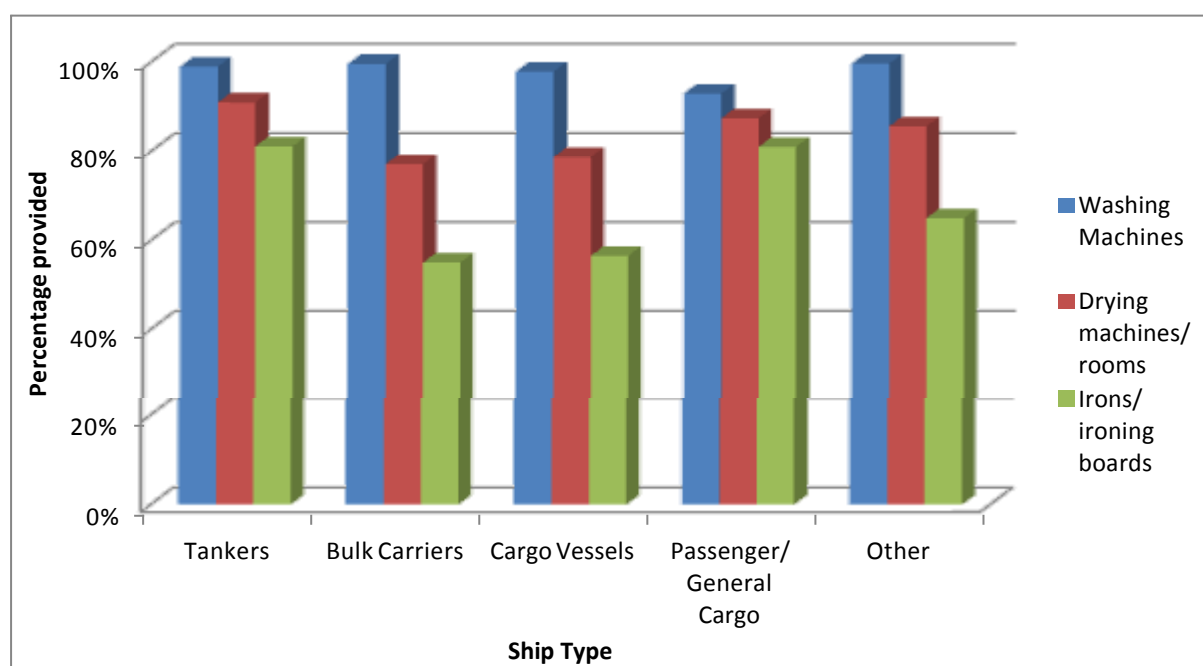


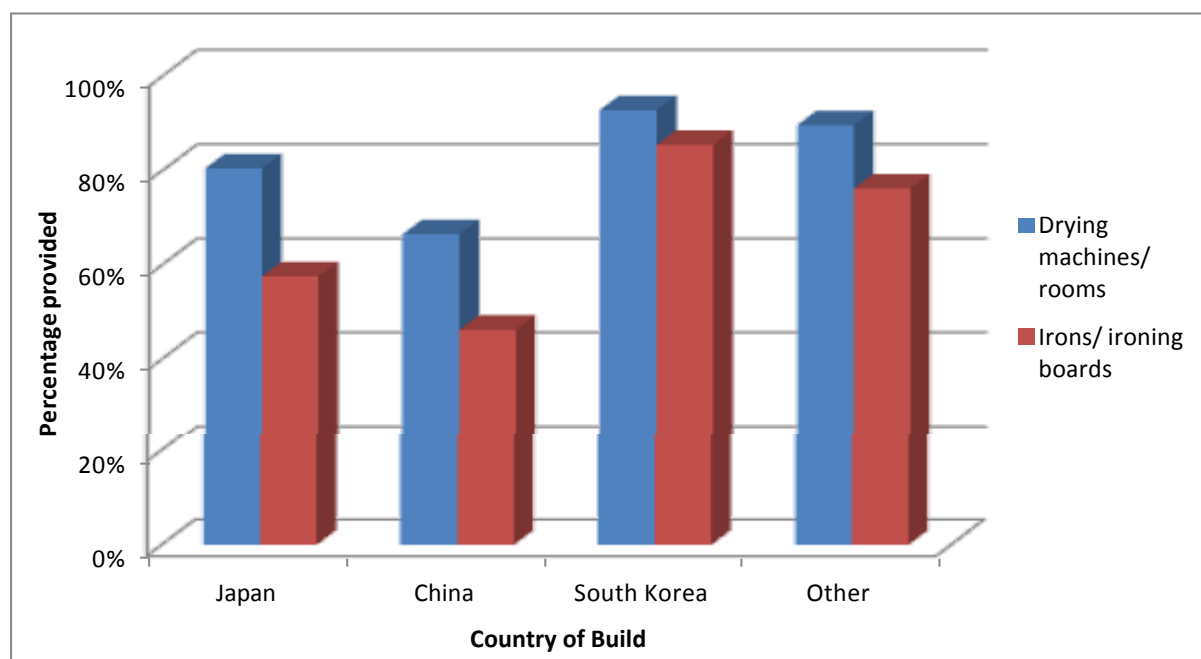
Figure 68: The Provision of Washing Machines, Drying Machines and Ironing Facilities by Ship Type



Vessels in the age range of five to nine years were reported to have the best provision in relation to drying machines/rooms and irons/ironing boards. After the age of nine provision declined with age. The newest vessels were on a par with vessels aged 10-19 in relation to the provision of drying machines/drying rooms. In terms of the provision of irons/ironing boards the newest vessels did slightly better than the 10-19 year old vessels but did not have as much provision as vessels in the five to nine year age group.

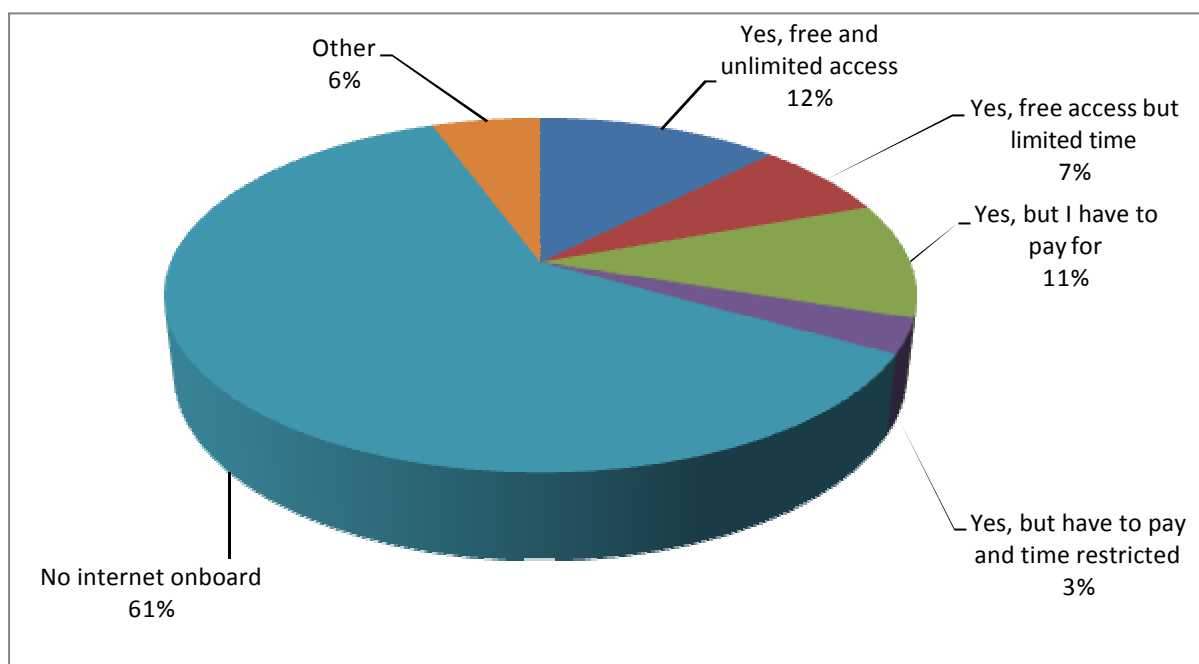
Drying machines/drying rooms and irons/ironing boards were most frequently provided on vessels built in South Korea and were least frequently provided on vessels built in China (see Figure 69). In both cases the range of provision was marked. Ninety three percent of vessels built in South Korea provided drying facilities compared with only 66% of those built in China. Similarly ironing facilities were reported by 85% of seafarers working on vessels built in South Korea compared with only 46% of seafarers working on vessels built in China.

Figure 69: The provision of Drying Machines and Ironing Facilities by Country of Build



In an age when communication has mushroomed ashore seafarers may be relatively unusual in remaining relatively isolated from families and communities on board ship. Nevertheless some forward looking companies have provided not only email facilities but **internet access** to seafarers on board. We sought to explore such provision in a little more detail. We found that 12% of seafarers reported free and unlimited access to the internet on board their vessel (see Figure 70). These seafarers were more likely to be from the Philippines or UK than from China or India. A further one in five (roughly) had access to some internet use but with restrictions. Eleven percent of seafarers had access to the internet on board but only if they paid for it. Some seafarers reported access on a time-limited basis (7%) and 3% of seafarers had to pay for internet access and had restrictions placed on their usage in terms of time. This left 61% of respondents without any kind of internet access on board at all (see Figure 70). Seafarers without any access at all to the internet were more likely to be from China and India than from Philippines or UK.

Figure 70: Internet Access

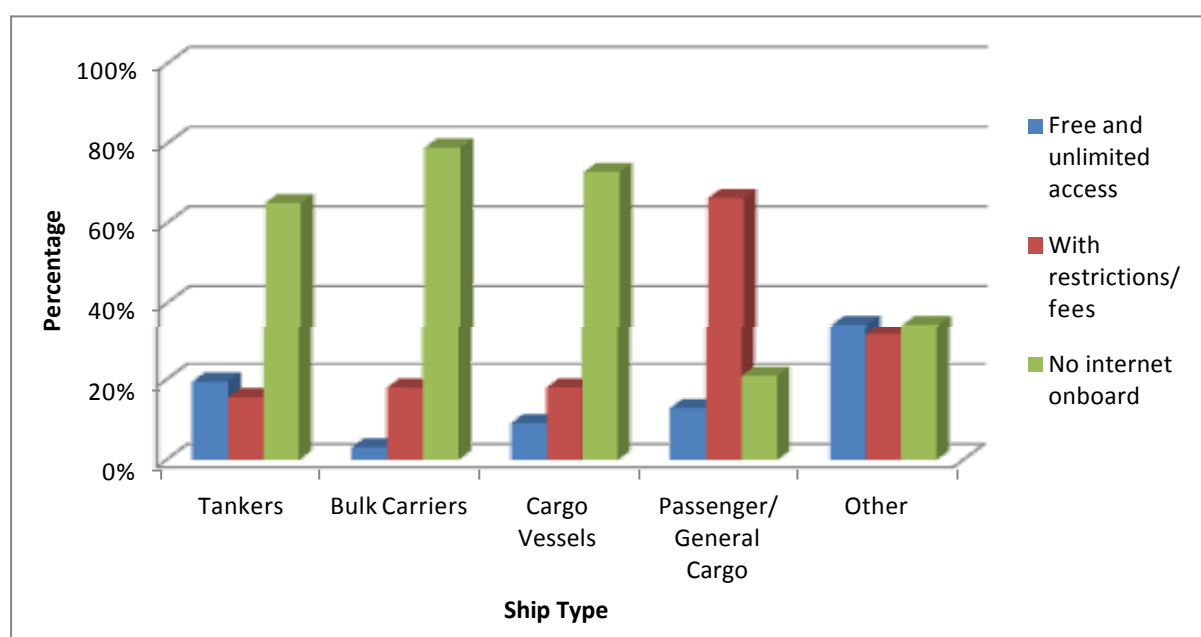


In relation to ship type vessels grouped in the 'other' category were the most likely to provide seafarers with free and unlimited internet access (found in 34% of cases). These were followed by tankers. Twenty percent of seafarers working aboard tankers reported free and unlimited access to the internet as compared with a mere 3% of seafarers working aboard bulk carriers. Seafarers working aboard passenger/general cargo vessels were the least likely to report that there was no internet access of any kind available on their ships and seafarers working on bulk carriers were the most likely to report that this was the case (in 79% of cases) (see Figure 71).

As the age of vessels increased reported access to the internet declined. This suggests that internet access is most likely to be found on modern vessels.

Internet access was also most likely to be found on vessels built by countries other than the three main shipbuilding nations (i.e. other than those built in South Korea, China or Japan). Seafarers working on Japanese built vessels were the least likely to report internet access with 79% reporting no access at all and just 5% reporting free and unlimited access. This contrasted with seafarers working on vessels built in 'other' countries where only 48% reported no access at all and 22% reported free and unlimited access.

Figure 71: The Provision of Internet Access by Ship Type



We were aware that **email access** may be greater for seafarers than internet access, as such, and we therefore asked seafarers about their ability to send or receive email on board. Over a quarter of respondents (27%) reported unlimited email access on board. These seafarers were more likely to be from India, Philippines and the UK and few Chinese seafarers reported free and unlimited access to email. Other respondents without unlimited access to email were sometimes able to send/receive email if they paid for it (9%) and yet others had access on a time-limited basis (12%) with seven percent of seafarers reporting that they could send or receive email but they had to pay to do so and their access was time-limited. This left 41% of seafarers reporting that they were unable to send or receive email on any basis on board (see Figure 72). These were more likely to be Chinese seafarers than seafarers from other nationality groups (see Figure 73). Those seafarers who paid for email access were faced with an average cost of 11.89 US dollars per hour.

Figure 72: Email Access

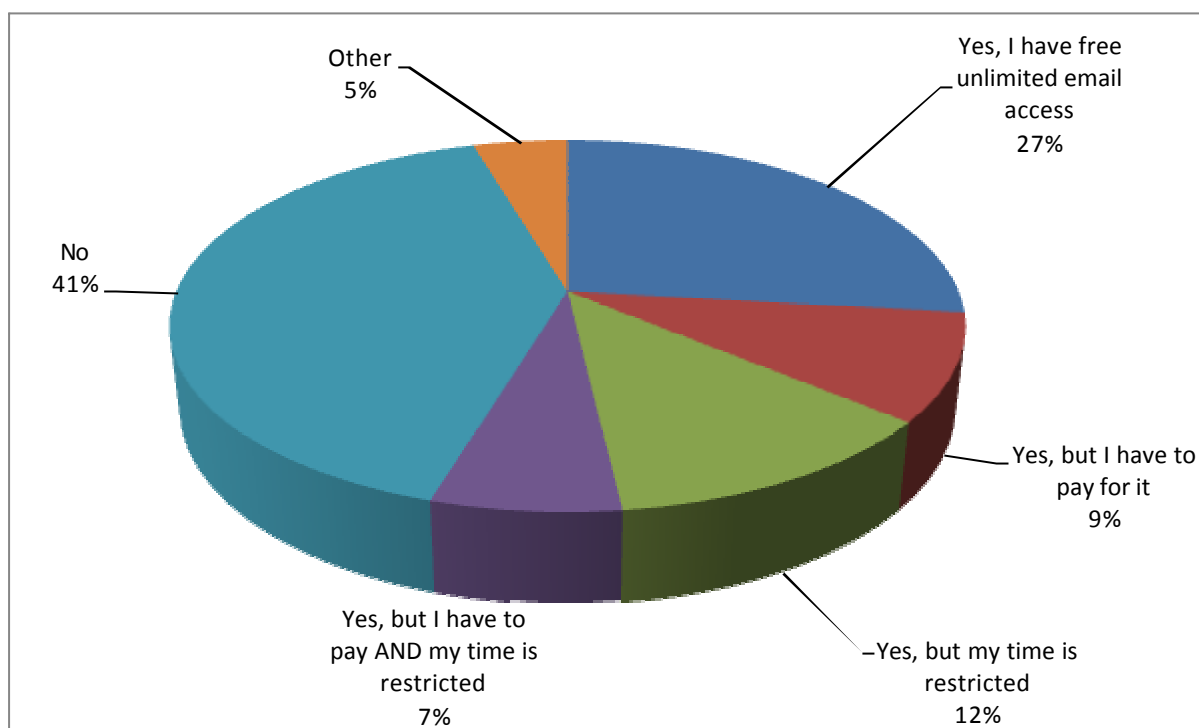
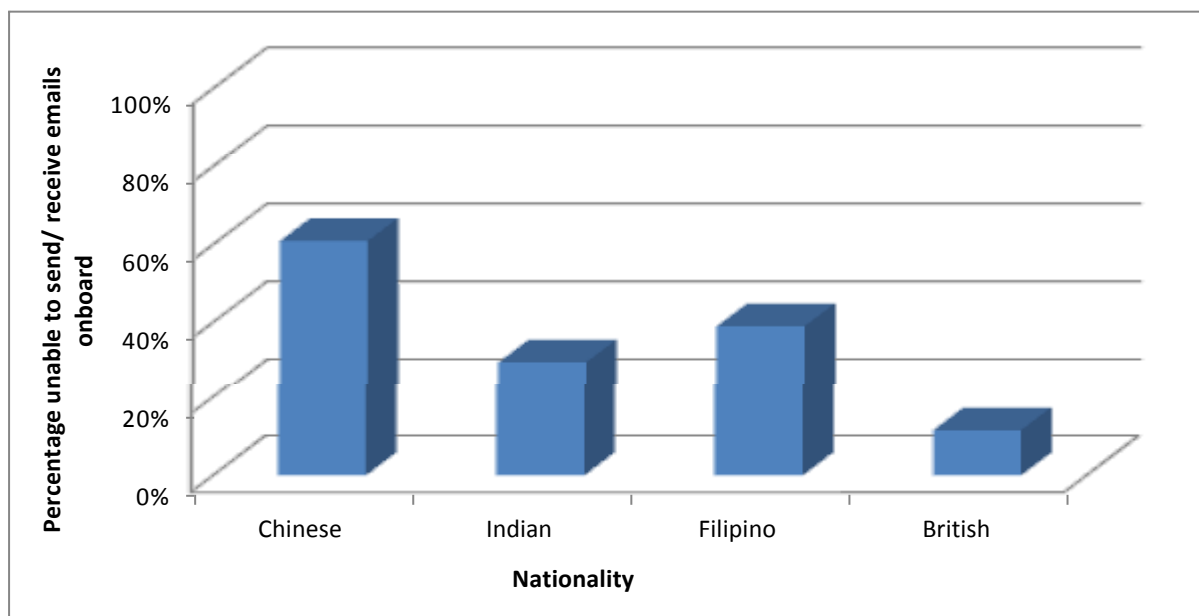


Figure 73: The Percentage of Seafarers Unable to Send Emails by Nationality

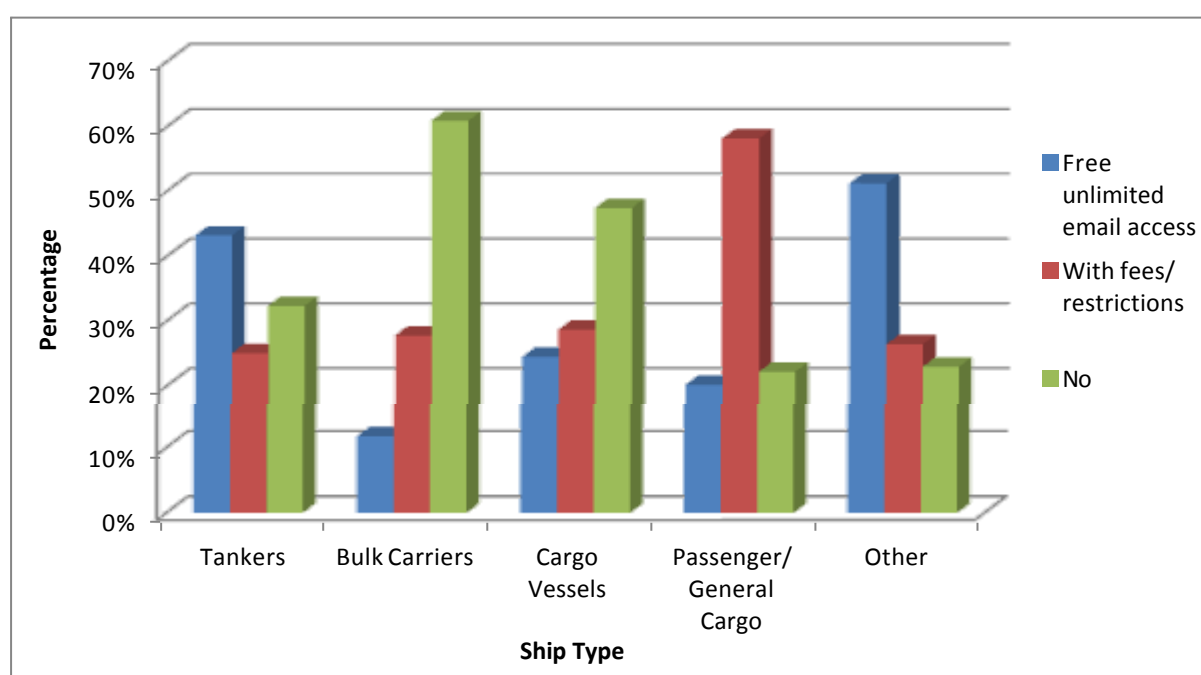


Seafarers working on ship types grouped as 'others' were the most likely to report that they had access to free and unlimited email (51% reported such unlimited access). Seafarers working on tankers were the second largest group to report free and unlimited access to email (in 43% of cases). However seafarers on cargo vessels and passenger/general cargo vessels were less fortunate with

only 24% and 20% respectively reporting such access. Seafarers working aboard bulk carriers had very meagre provision and only 12% of such seafarers reported free and unlimited access to email on board (see Figure 74).

While only 20% of seafarers working aboard passenger/general cargo vessels had free and unlimited access to email a further 58% of them could access email at a charge or with restrictions. About a quarter of the seafarers working on tankers, bulk carriers, general cargo vessels and ‘other’ ships could also access email on board if they paid a fee or were subject to limitations (see Figure 74). However this still left 61% of seafarers working on bulk carriers with no access at all to email, 47% of seafarers working on general cargo vessels without any access to emails and 32% of seafarers working on tankers without email access. Just under a quarter of seafarers working on passenger/general cargo ships and ‘other’ ship types reported no access to onboard email whatsoever (22% and 23% respectively).

Figure 74: Email Access by Ship Type



Email access was more prevalent on larger ships (66%) than on smaller vessels. Those categorised in the sample as low and medium tonnage were reported to offer the same level of access (i.e. email was available in 53% of cases).

Ships in the five to nine years old age range offered the best access to email with 38% of seafarers reporting free and unlimited access and only 32% of seafarers reporting no access to email at all on

these ships. The newest vessels provided less free and unlimited access than was found in the five to nine year old category with only 31% of seafarers on new vessels (under five years old) reporting such access. Similarly there were more seafarers working on the newest vessels who reported no access at all to emails (41%) than there were in the five to nine year old age group. Access to emails diminished with age in the ships older than five to nine years of age.

Seafarers working aboard ships built in South Korea and 'other' nations had better access (72% and 69% respectively to emails than those working on Chinese or Japanese built vessels (where access was reported by 48% and 47% of seafarers respectively).

Another important form of communication between seafarers and their families is the **telephone**. In port most seafarers are able to text or call family members and friends from their own mobile devices and 97% reported taking a mobile phone on board with them. However, when away from coastal areas such access is inevitably denied and the use of the ship's telephone may be of importance to seafarers dealing with emergencies or wishing to mark special occasions. Seafarers reported an average of 15.1 days per month without a mobile signal. However, the majority of seafarers (74%) did have access to a ship's telephone subject to some forms of limitation. Limitations included: requiring the Captain's permission for free access (15%); having to pay (53%); having limited time allowed (6%). Only three percent of seafarers reported free unrestricted access and one in five respondents (20%) did not have access on any basis at all (see Figure 75). These seafarers were more likely to be of Chinese nationality than to be from other nationality groups (see Figure 76). The seafarers who had to pay for telephone access reported an average charge of 43.12 US dollars per hour.

Figure 75: Access to the Ship's Phone

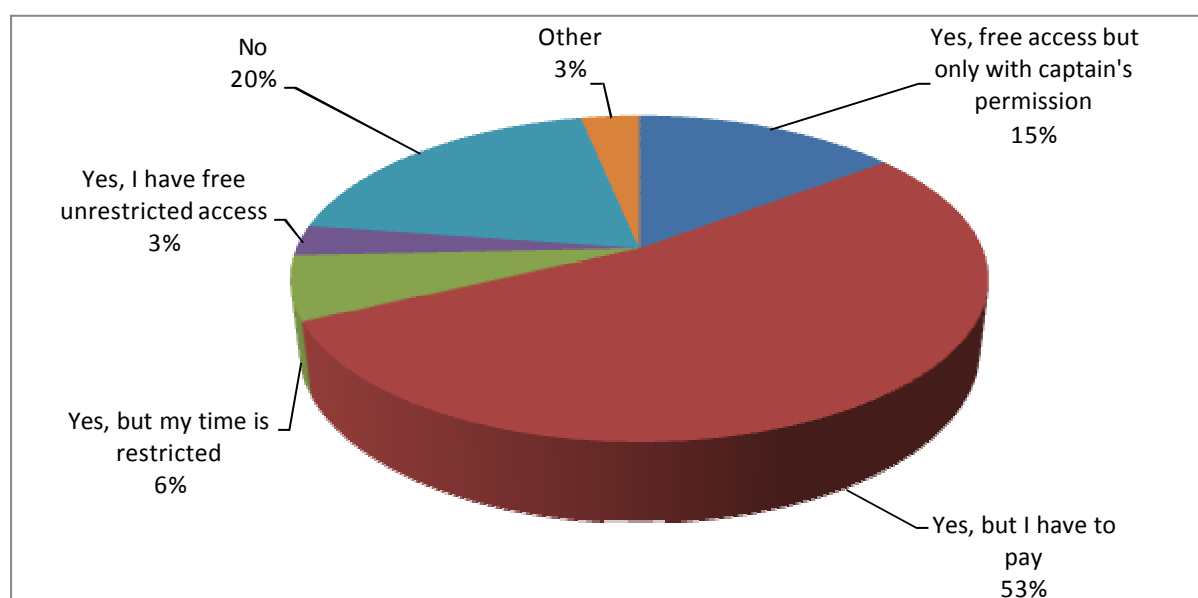
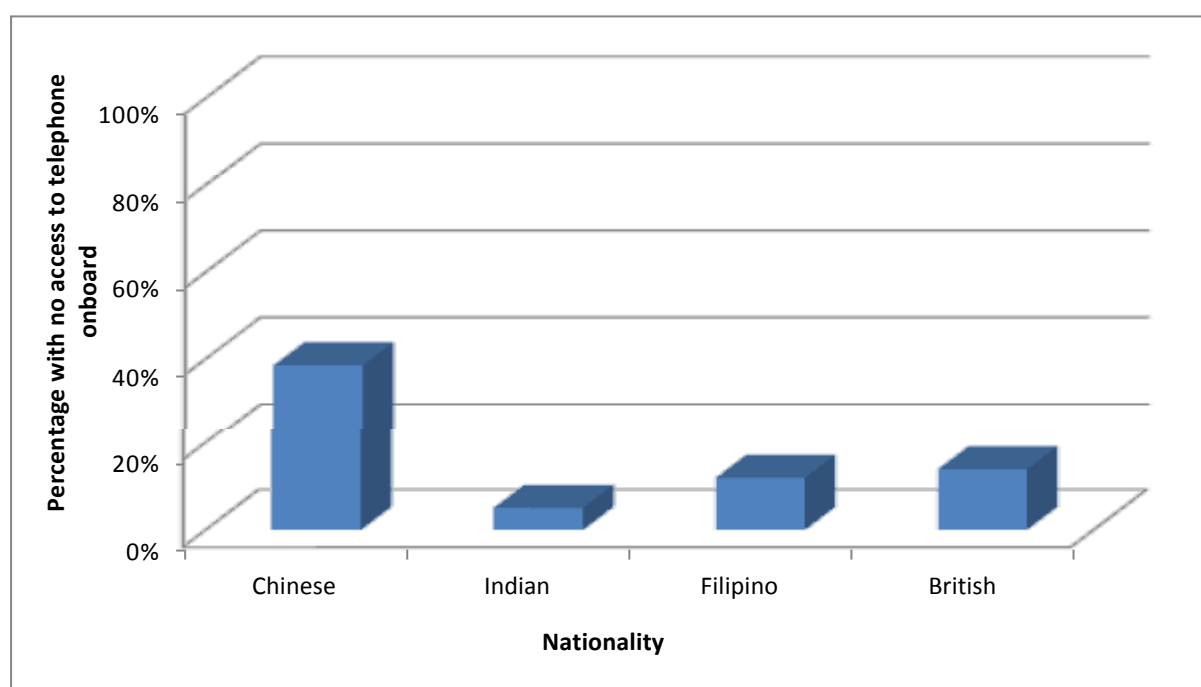


Figure 76: The Percentage of Seafarers with No Access to the Ship's Phone by Nationality



The type of ship that seafarers worked on did influence access to telephones on board. Over a quarter (26%) of seafarers working on cargo vessels reported that they did not have any access to ship telephone at all. Similar proportions of seafarers working on bulk carriers (23%), 'other' ship types (22%) and passenger/general cargo vessels (20%) reported no access at all to a ship telephone. However on tankers just under one in ten seafarers (9%) reported that they could not access a ship telephone at all. Very few seafarers aboard tankers (3%), bulk carriers (2%) and cargo ships (2%) reported free and unlimited access to the ship telephone however they were more likely to report unlimited access aboard 'other' ship types (6%) and passenger/general cargo vessels (10%).

Seafarers working on larger vessels were more likely to have some kind of access to a ship telephone than counterparts on smaller vessels. However seafarers on smaller vessels were more likely to report free and unlimited access to telephones than those on larger vessels (see Figure 77).

Seafarers working on ships in the five to nine years old age bracket were the most likely to report free and unlimited access to a ship telephone (5%) and least likely to report no access at all (14%). Provision of access and availability of a telephone declined thereafter with vessel age. Seafarers working on ships under five years of age reported less free unrestricted access to telephones (3%) than those working on ships aged five to nine but more free and unrestricted access than seafarers working on ships aged ten years or older (2%). Seventeen percent of vessels aged less than five years old were reported not to provide any access to a ship's telephone compared with 22% in the 10-19 age bracket and 29% in the age bracket of 20 plus (see Figure 78).

Seafarers working on vessels built in South Korea were the most likely to report access to a telephone (95%) and also free and unlimited access to the ship telephone (4%) than seafarers working on ships built in Japan (76% access and 1% free access) or China (71% access and 3% free access).

Figure 77: Telephone Access by Ship Size

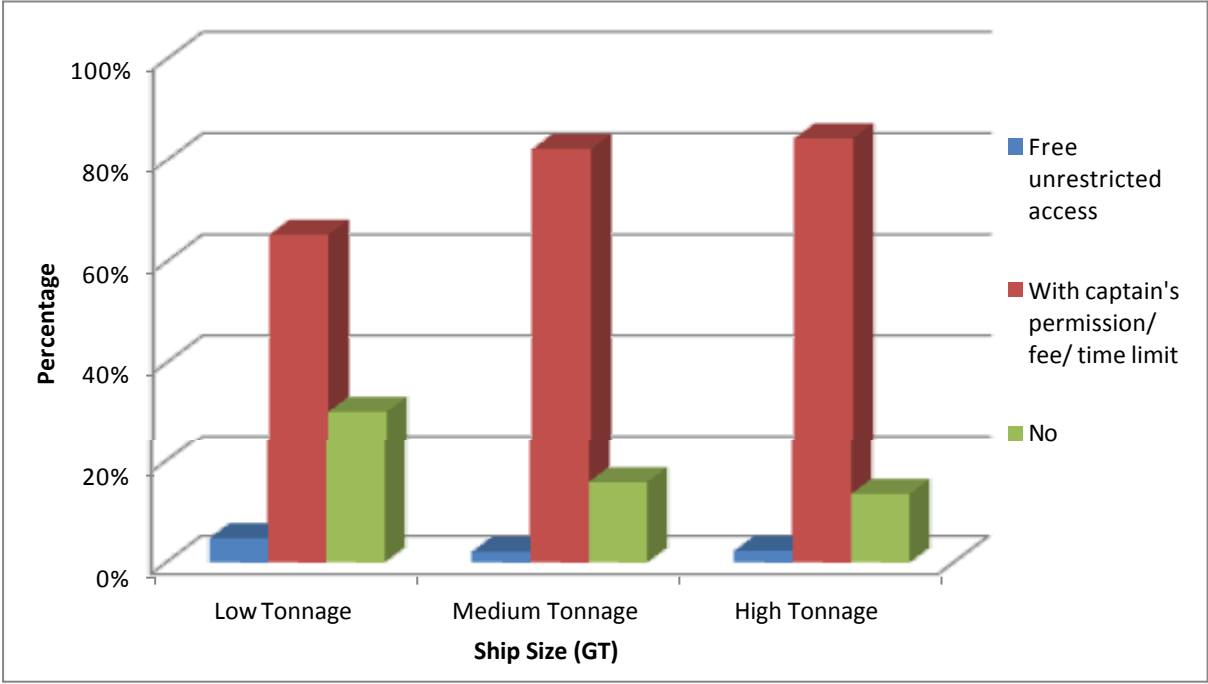
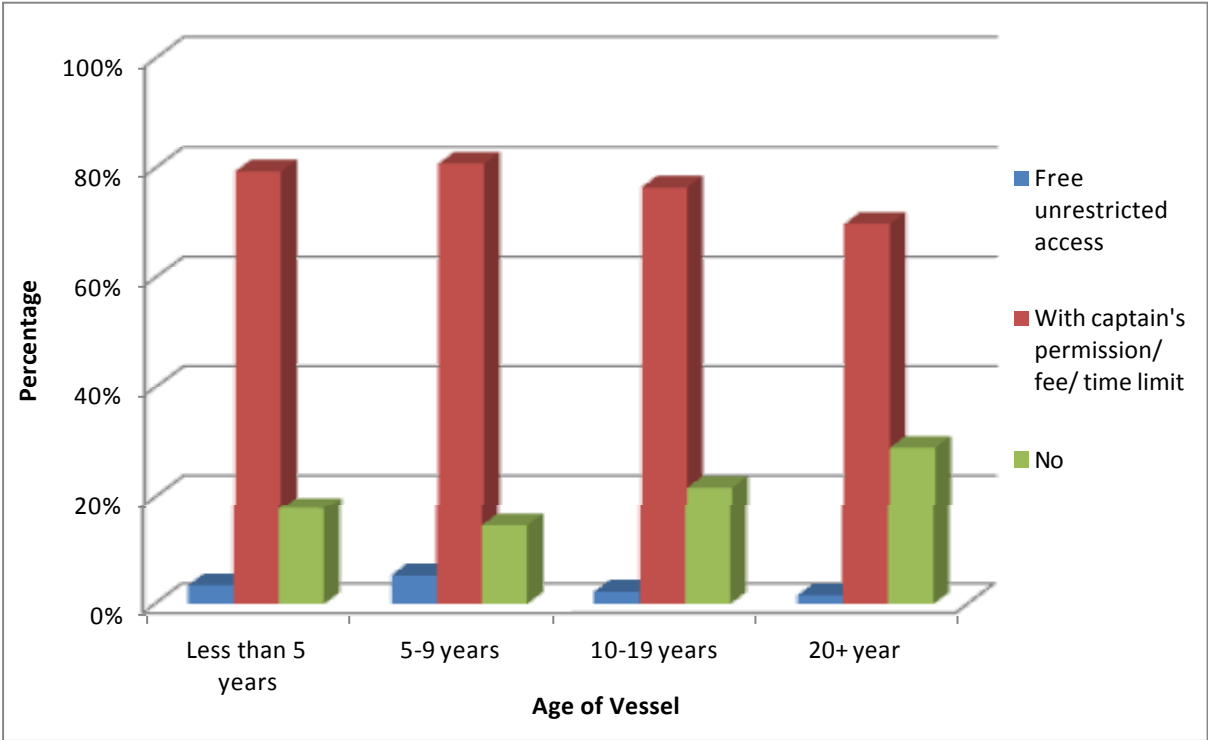
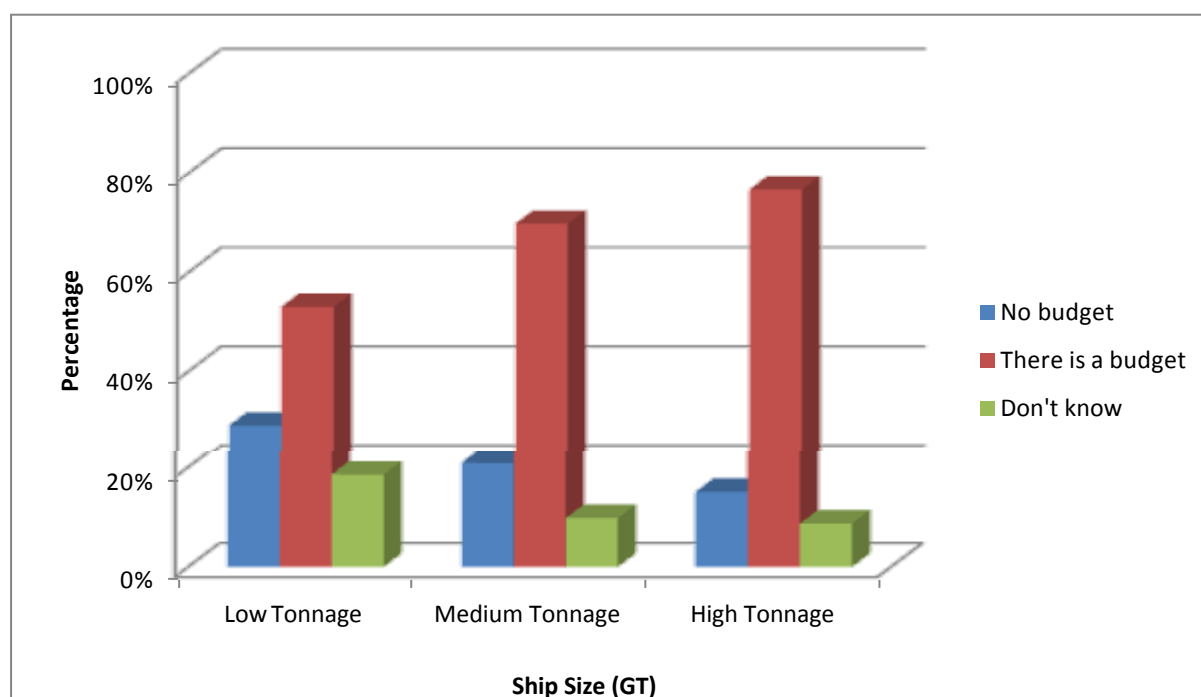


Figure 78: Telephone Access by Age of Ship



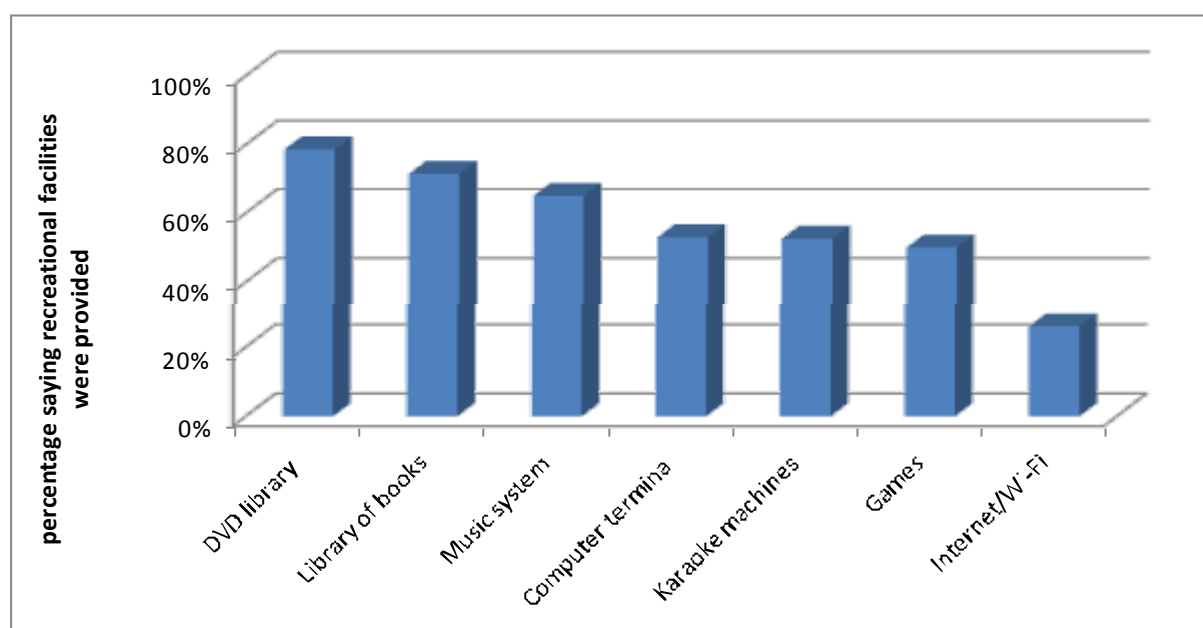
Given the length of many seafarers' contracts, and the difficulties they experience in accessing shore-leave, recreational facilities on board cargo ships take on particular significance. Many ship operators contribute to an onboard **welfare budget** for seafarers to make use of on board. In practice the budget is controlled by the Captain and priorities for expenditure are influenced by the senior officers on board. Almost two-thirds of respondents (65%) were aware of a welfare budget on board their current or most recent vessel. These were more likely to be Indian and Filipino respondents than Chinese or British respondents. Nearly a quarter (22%) stated that such a budget was not provided on board however and just over one in ten respondents (13%) did not know whether there was such a budget or not. Seafarers working on tankers were much more likely to state that there was a welfare budget on board (81% did so) than seafarers working on other types of ships (bulk carriers 62%, passenger/general cargo 62%, general cargo 61% and 'others' 50%). Similarly seafarers working on larger vessels were more likely to state that there was a welfare budget on board than those working on smaller vessels (see Figure 79). Provision of a welfare budget declined as vessel age increased. The exception to this came in relation to the very newest ships in the sample. Seafarers aboard the newest vessels were less likely than those working on ships aged five to nine years old and also those aged 10-19 years old to report a welfare budget on board. Ships built in South Korea were most likely to have a welfare budget provided on board and ships built in China were least likely to be reported to do so.

Figure 79: The Provision of a Recreational Budget by Size of Ship



Seafarers aboard some vessels had access to a range of facilities and they were most commonly provided with a library of DVDs (in 78% of cases) and of books (in 71% of cases). Around two thirds of respondents (65%) were provided with some kind of music system on board and just over a half of respondents (52%) had access to a karaoke machine. Games were provided least frequently with just under a half (49.6%) of respondents reporting access to games on board (see Figure 80).

Figure 80: Recreational Facilities Provided Onboard



Seafarers working on tankers reported access to music systems, DVD libraries, and karaoke machines most frequently and these were reported least frequently by seafarers working on passenger/general cargo vessels (see Figure 81).

Seafarers working on passenger/general cargo vessels were most likely to report access to internet/wi fi and games on board and in both cases these were least likely to be reported to be found on board by seafarers working on bulk carriers (see Figure 81).

Larger vessels were more likely to carry provision for seafarers of music systems, karaoke machines, games, DVD libraries and book libraries, than smaller vessels.

With the exception of the newest vessels in the sample (aged less than five years) provision of music systems, karaoke machines, and DVD libraries diminished with vessel age. However running counter to this trend we found that the newest vessels in the sample were not reported to have the best provision in terms of these facilities. The vessels with the best provision of these facilities for seafarers fell into the five to nine year old category.

Music systems, karaoke machines, games, DVD libraries and book libraries were most frequently found on vessels built in South Korea and least frequently found on vessels built in China (see Figure 82).

Figure 81: Recreational Facilities Provided Onboard by Ship Type

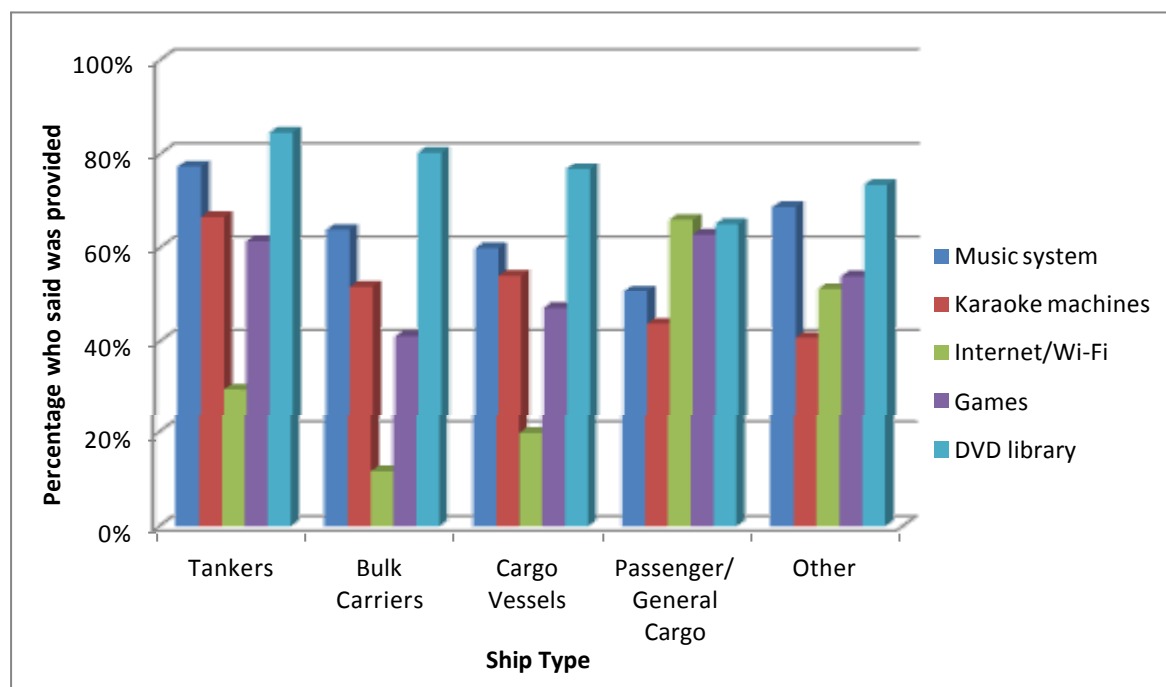
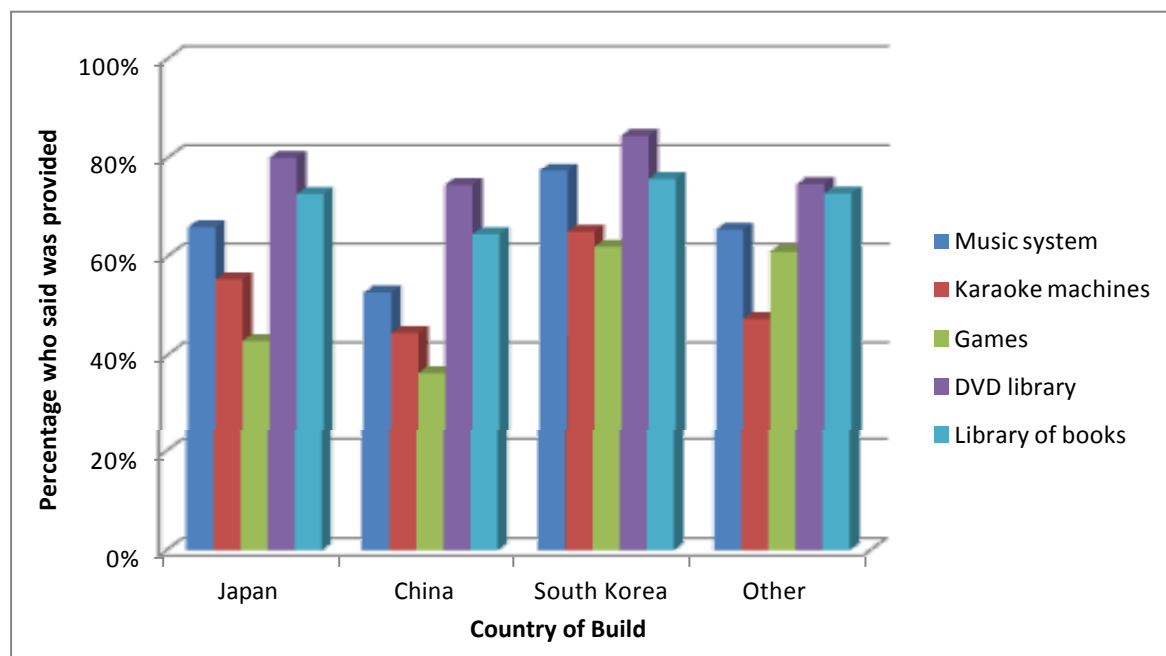


Figure 82: Recreational Facilities Provided Onboard by Country of Build



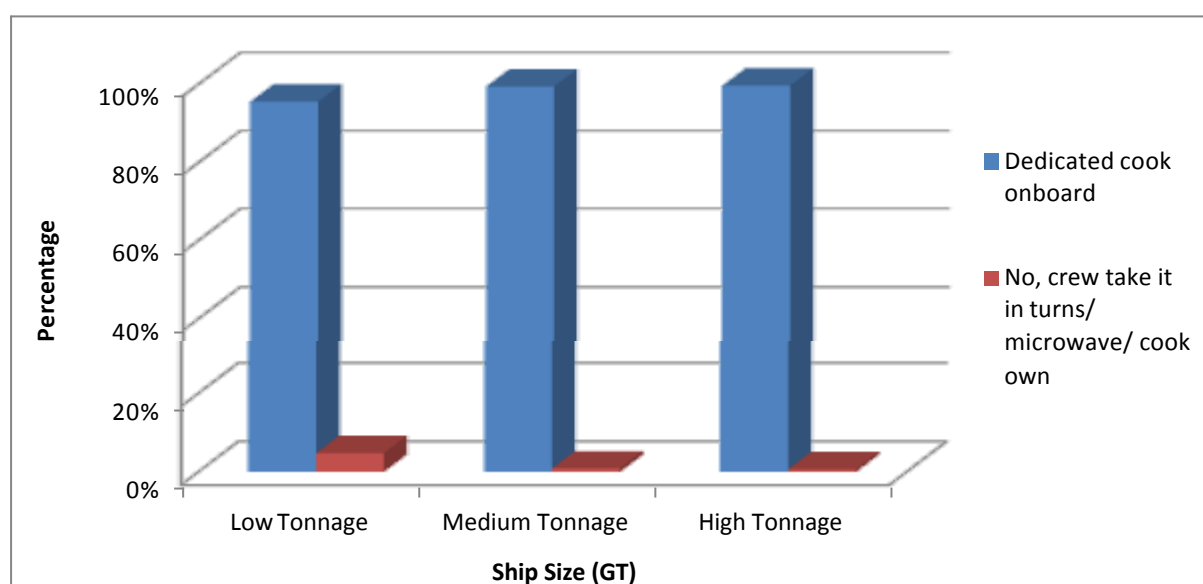
We asked seafarers if there were facilities which they would like to have access to on board but didn't. Five hundred and forty-eight respondents replied to this question with most (66%) identifying the internet/Wi-Fi as something they would like to have provided on board but didn't. Seventeen percent identified a gym as something they would like to have access to on board but didn't and the third most popular choices were telephone access (7%) and access to games of either a physical or an electronic nature (7%). Access to satellite TV would have been appreciated by 5% of respondents and a computer terminal (3%) and swimming pool (2%) were the next most popular choices amongst respondents.

Catering and the provision of food and drinks

When visitors are invited to a vessel, crew members may often introduce the chief cook to them as the 'most important' person on board. Whilst this is generally said as a joke and with a smile there is more than a grain of truth in it as food plays a very important role in the monotonous institutionalised lives of seafarers working on board cargo ships. Some smaller ships may not carry a chief cook but operators may expect seafarers to take turns in cooking for all the crew or may alternatively provide microwaveable 'ready meals'. The vast majority of the respondents canvassed here, worked aboard ships with a **dedicated chief cook** (98%). In two percent of cases respondents reported that on their current or last ship crew members took it in turns to cook for everyone and just four people said that microwaveable ready meals were provided or that they cooked their own individual meals.

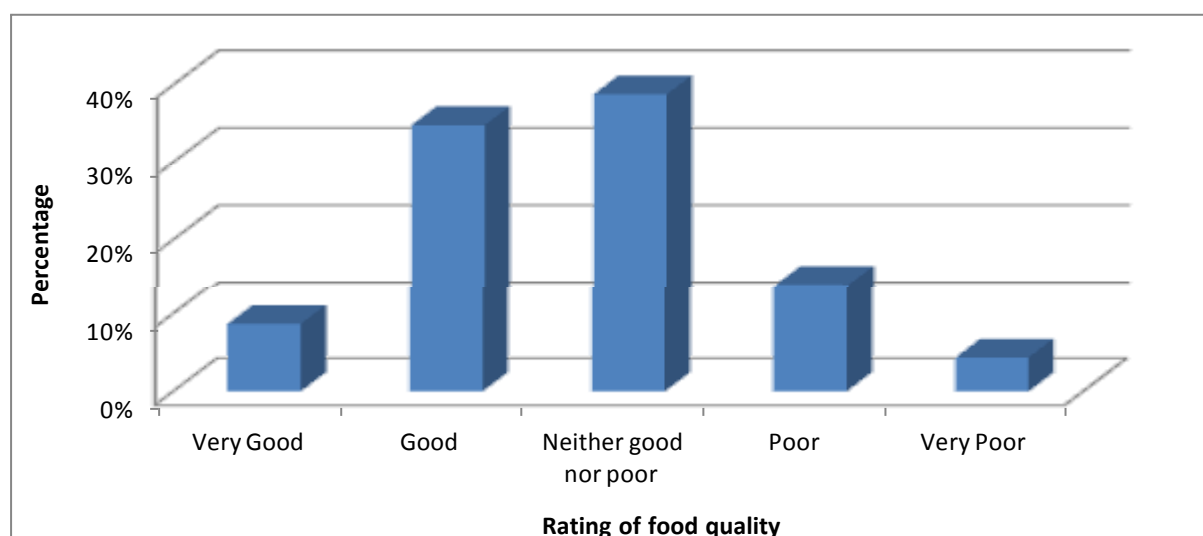
Larger ships were more likely to carry a dedicated chief cook on board than smaller vessels (see Figure 83). Tankers, bulk carriers and general cargo vessels were almost always reported to carry a dedicated cook (between 99 and almost 100% of respondents working on these ship types reported that there was a dedicated cook). Slightly fewer seafarers working on passenger/general cargo ships (94%) and 'other' ship types (92%) reported the presence of a dedicated cook. Overall the number of vessels without a dedicated cook was small however South Korean ships **all** carried dedicated cooks while ships built in other countries were least likely to do so (96% carried a dedicated cook).

Figure 83: The Percentage of Ships with Dedicated Cooks by Size of Ship



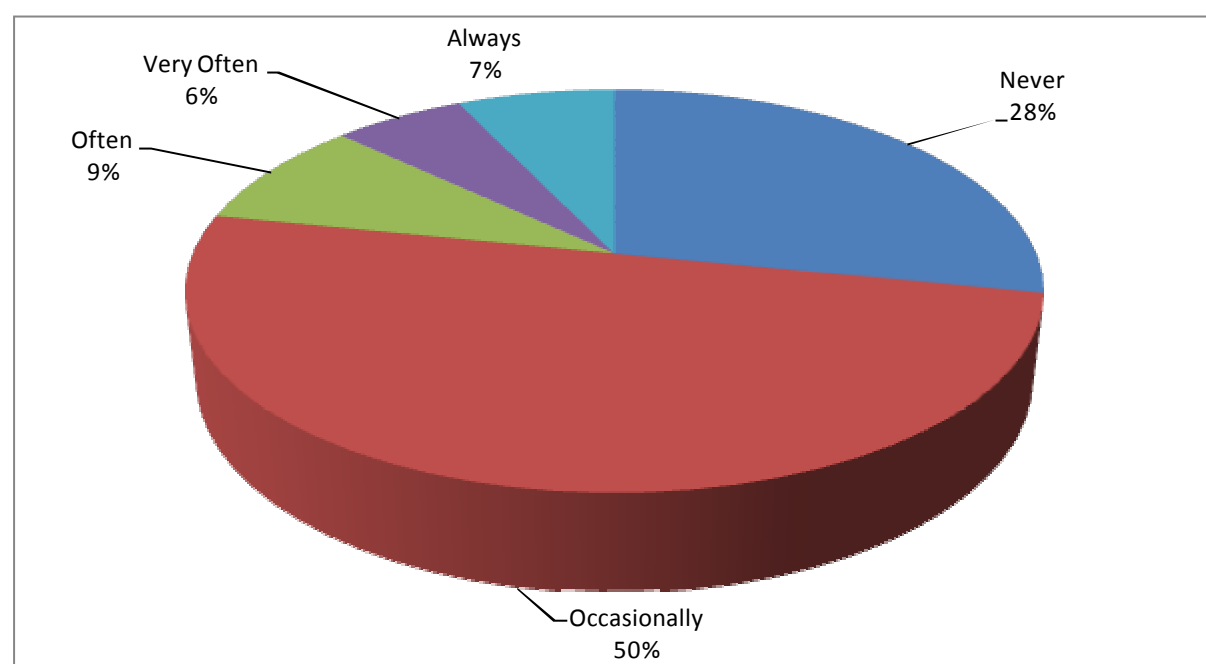
Less positively just over twenty percent of respondents reported that there was not enough food provided on board their last, or current, vessel and they were not overwhelmingly enthusiastic about the quality of the food which was provided. Thirty nine percent of seafarers described the food provided as ‘neither good nor poor’ and eighteen percent suggested it was either poor (14%) or ‘very poor’ (4%). This left just over a third of seafarers (35%) suggesting the quality of the food provided was ‘good’ and nine percent suggesting it was ‘very good’ (see Figure 84). There were also concerns about the ‘healthiness’ of the food served on board and just under a third of respondents (31%) thought that it was not ‘healthy’. Disturbingly, 48% of seafarers reported that special dietary needs were not taken care of on board with only 30% suggesting that they were (the remaining 22% said it was not applicable).

Figure 84: Ratings of Food Quality



Seafarers are often required to work in very hot conditions, either in the engine room, on the decks in hot weather, or in cargo and ballast spaces where ventilation is limited. In such circumstances it might be considered reasonable for free soft drinks to be made routinely available to seafarers. However, this was not the case and more than a quarter (28%) of respondents reported that they ‘never’ had access to free soft drinks on board. Half of respondents (50%) stated that they were ‘occasionally’ provided with a free soft drink and nearly a quarter (21.8%) were more frequently provided with free soft drinks (see Figure 85).

Figure 85: The Provision of Free Soft Drinks

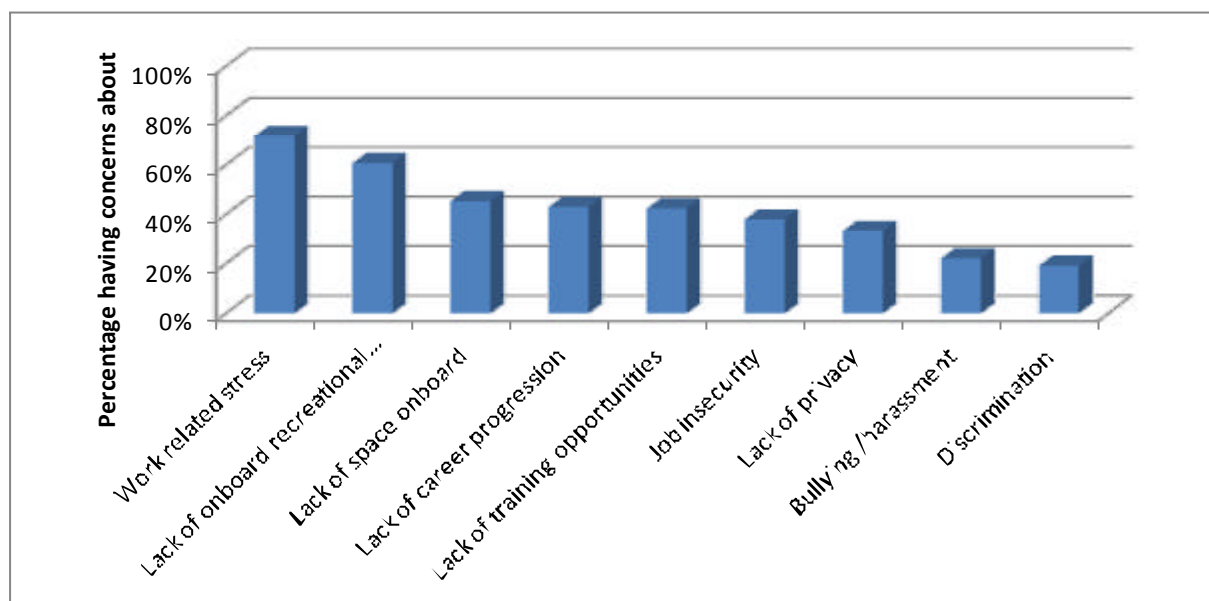


Quality of life on board

We asked seafarers whether they had experienced a range of negative things whilst working on board. These included: lack of privacy; lack of space; bullying/harassment; discrimination as a result of gender, race, or sexuality; job insecurity; work-related stress; lack of recreational facilities; lack of training opportunities; lack of career progression. An option for seafarers to add any issue of concern to them was included as an ‘other...please specify’ option. Of these options the issue of ‘work-related stress’ stood out (see Figure 86). Seventy-two percent of respondents said they had experienced work-related stress on board. These were more likely to be seafarers in the age groups between 25 and 39 (inclusively) than younger seafarers aged less than 25 or older seafarers aged over 40. They were also more likely to be Chinese or Indian respondents and from the officer ranks (see Figure 87). In descending order the next most commonly identified negative experiences were:

lack of recreational facilities (61%)⁵; lack of space (45%)⁶; lack of career progression (43%)⁷; lack of training opportunities (42%)⁸; and job insecurity (38%)⁹. Lack of privacy was identified as a problem by one third of respondents (33%) and approximately one in five had experienced bullying/harassment (22%)¹⁰, and discrimination (19%)¹¹. Eight percent of respondents took the trouble to identify other issues which they had experienced on board. Most commonly problems interacting with others on board were identified (by seven respondents) along with difficulties relating to communication with families (3 respondents), lack of rest time (2 respondents) and fear of piracy (2 respondents). Other issues which were identified tended to echo those previously listed (employment prospects, poor facilities, and internet access).

Figure 86: What Seafarers Had Concerns About



⁵ These were more likely to be of concern to Chinese and Indian respondents as well as to senior officers.

⁶ This was more likely to be of concern to Chinese seafarers and to officers.

⁷ These were more likely to be described as a concern by seafarers aged between 25 and 39 and by Chinese respondents.

⁸ These were more likely to be described as a concern by seafarers aged between 25 and 39 and by Chinese respondents. They were also more likely to be of concern to officers as opposed to ratings.

⁹ This was more likely to be a concern amongst Chinese and Indian respondents.

¹⁰ This was particularly identified as a problem by Indian respondents.

¹¹ This was more likely to be described as a concern by Filipino and to a lesser extent UK seafarers, as well as ratings.

Figure 87: The Percentage of Seafarers Concerned About Work Related Stress by Rank

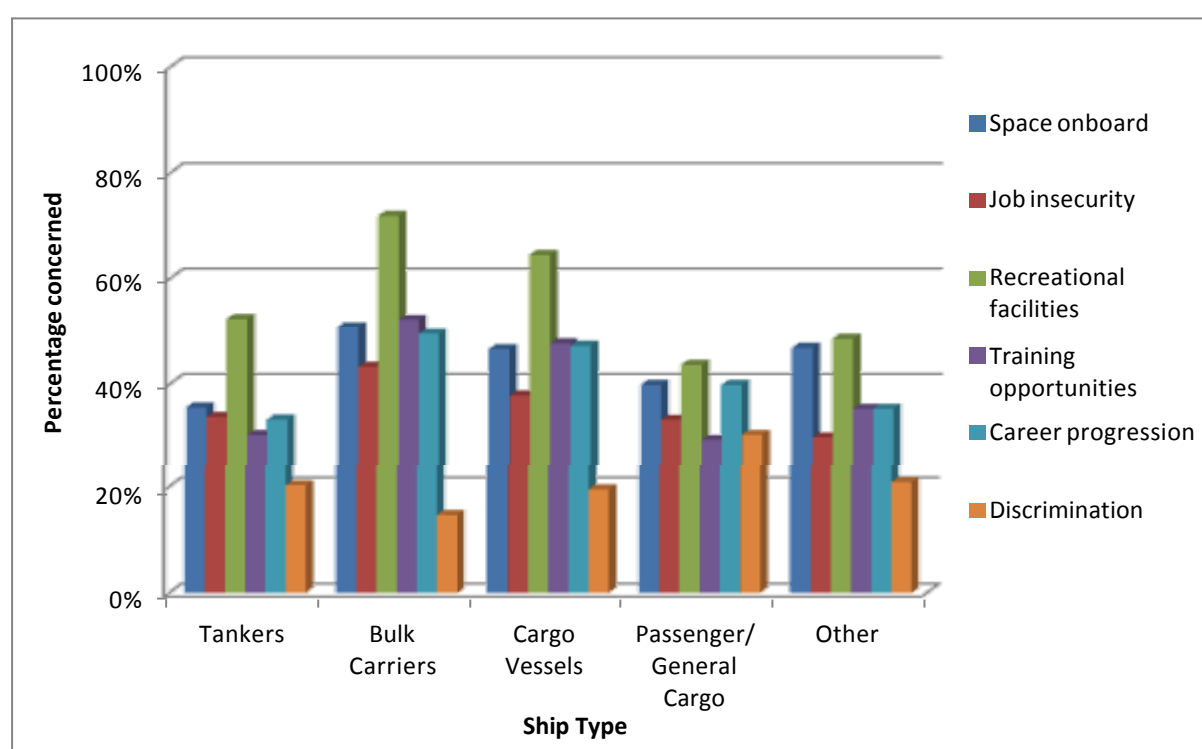


Seafarers were more likely to be concerned about lack of privacy, lack of space and lack of recreational facilities aboard smaller vessels. Lack of space was also of concern to seafarers working on older vessels and vessels built in China and Japan. This pattern was repeated in relation to concerns about a lack of recreational space on board. These concerns were most frequently reported by seafarers working on ships built in China and Japan and were least frequently reported by seafarers working on ships built in South Korea and 'other' countries.

Seafarers working on bulk carriers were the most likely of all respondents to be concerned about a broad range of issues namely: lack of space; job insecurity; lack of on board recreational facilities; lack of training opportunities; and lack of career progression. Conversely seafarers working on bulk carriers were the group least likely to report concerns about discrimination. Concerns about discrimination were most frequently reported by seafarers working on passenger/general cargo ships. Career progression and training opportunities were least frequently the concerns of those working on tankers (see Figure 88).

Seafarers working on ships built in China were the most likely group to be concerned about lack of training opportunities and lack of career progression. However, concerns about discrimination were most frequently reported by seafarers working on vessels built in South Korea.

Figure 88: Seafarers Concerns by Ship Type



Seafarers were also offered a list of potentially positive features of life as a seafarer and were asked to rate these as 'very poor, poor, average, good, and very good'. The option which was categorised as good or very good by the greatest percentage of respondents (35%) was 'camaraderie/social life' (see Figure 89). This was more likely to be identified as a positive feature of on board life by Chinese and British respondents. This was followed by positive views on access to on board facilities (such as they are, 34%), job opportunities (32%), work satisfaction¹² and training opportunities (both 31%)¹³. The options which were rated most negatively as 'very poor or poor' included: opportunity to visit interesting places (34%)¹⁴; access to shore facilities (31%)¹⁵ and flexibility to change jobs (30%)¹⁶.

¹² This was much less likely to be identified as a positive feature of shipboard life by Chinese seafarers than other nationality groups.

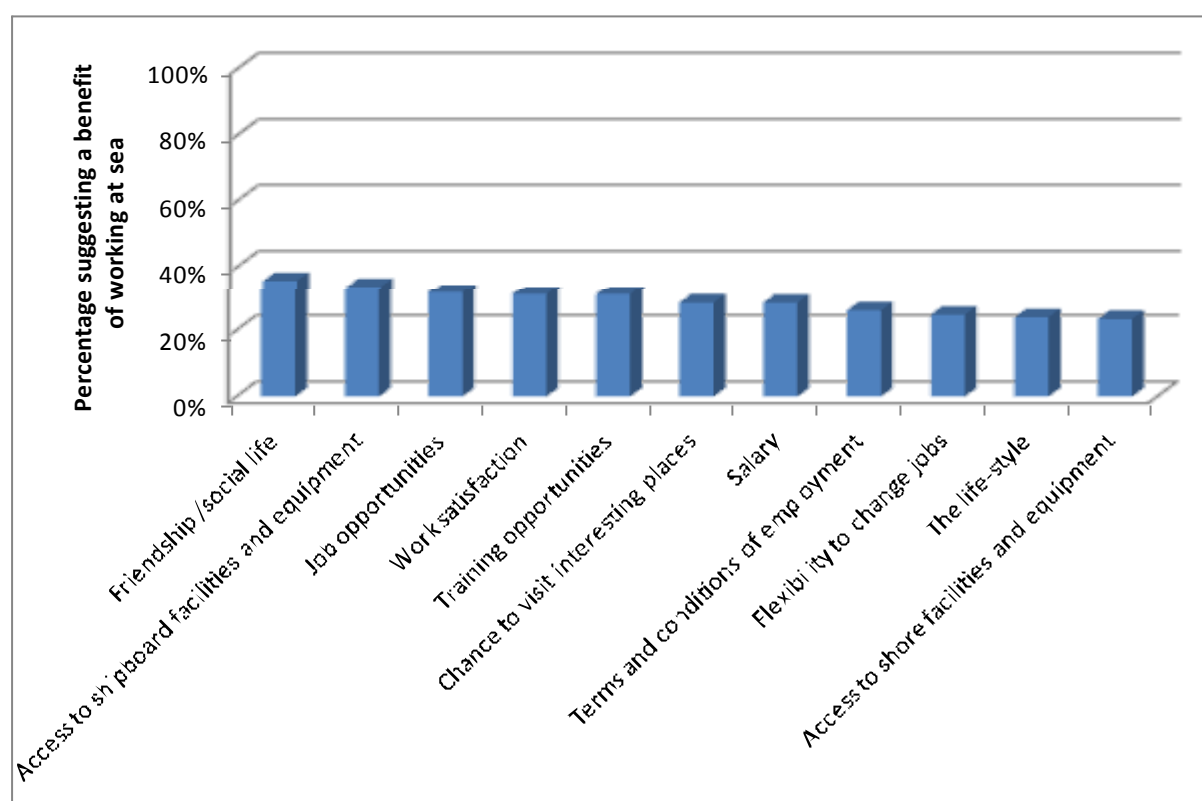
¹³ Training opportunities were least likely to be regarded as a positive feature of on board life by Chinese seafarers and they were most likely to be seen as a positive feature of working on board by ratings.

¹⁴ The chances to visit interesting places were described as poor by Chinese respondents in particular. Officers also regarded such opportunities as poor but ratings regarded such opportunities more positively.

¹⁵ This was identified as poor by officers in particular.

¹⁶ Fewer Chinese and Indian seafarers regarded the flexibility to change jobs as a positive feature of life as a seafarer than other nationality groups.

Figure 89: The Benefits of Working at Sea



Conclusions

The findings confirm the importance of vessel accommodation to seafarers. The majority of respondents worked on board for periods of at least six months at a time and spent most of their time at sea rather than in port. Almost three quarters of them reported that they experienced work-related stress and many had experienced stressful conditions at sea associated with discrimination, bullying/harassment, lack of privacy and lack of space. In this context the value of good quality living accommodation can be readily appreciated in terms of employee performance, health, and wellbeing, and in terms of company retention rates.

Despite the prevalence of single occupancy, and in many cases en suite, cabin accommodation, cabin facilities can be described as poor in a number of respects. Many seafarers experienced cabins as too small and lacking storage space. In many cases they also offered seafarers too little control over their living/sleeping environment with regard to vital issues such as heat, light, noise and vibration. Despite the fact that respondents' expectations of living and working at sea are unlikely to be particularly high (due to their industry experience, their occupational culture, and their gender-related norms), nevertheless substantial minorities of seafarers identified their cabins as poorly furnished, dirty, and in poor condition. These factors are likely to have a deleterious effect on seafarers' sense of wellbeing and their ability to restore a sense of equilibrium at the end of a stressful shift.

The amenities offered in cabins were inadequate in a substantial numbers of cases. Specifically the provision of reading lights, wardrobes and comfortable chairs in cabins was patchy and of concern in a residential workplace setting.

A minority of seafarers had access to televisions, radios, music systems and the internet in their cabins and most were provided with essentials such as bedding, drawers, tables, towels, soap and toilet paper.

Messrooms are generally provided on board vessels and most were established with a range of facilities including TVs, chairs and tables, fridges, drinks making facilities and so on. Disappointingly however many seafarers reported that they lacked access to comfortable chairs in these common areas.

It was also disappointing that whilst the vast majority of seafarers had access to washing machines on board their vessels, many lacked provision in terms of drying machines or drying rooms and fewer still were provided with access to ironing facilities.

Communication is of supreme importance to seafarers and to their mental health. However, very poor provision was identified in relation to on board internet access, email access, and telephone access for seafarers. The majority of seafarers lack access of any kind to the internet whilst they are on board and a very significant minority (over forty percent) lack any kind of access to email. It was surprising that one in five seafarers was even unable to use the ship's satellite telephone at sea effectively cutting many off from their families whilst out of range of any mobile communications signals.

Despite the institutionalised, remote, and physically challenging setting associated with most merchant vessels, welfare provision at sea is relatively poor. Many companies provide vessels with welfare budgets in order for seafarers to decide amongst themselves what to allocate scarce resource to in terms of investing in welfare on board. Notwithstanding this well-established practice over one in five seafarers worked aboard vessels without such provision. Similar numbers lacked provision of communal libraries of DVDs and books and many did not have access to music systems, karaoke machines and games. Seafarers supported better provision of facilities in the form of internet access, gyms, telephones, games, satellite TV and swimming pools.

In terms of catering and the provision of food, although most ships had dedicated cooks providing meals to seafarers, many seafarers were unhappy with both the amount and the quality of the food provided. Few seafarers were regularly provided with free soft drinks despite the dehydrating conditions which many work in on a regular basis. Similarly special dietary needs were very poorly provided for.

Overall Filipino seafarers expressed the most positive views about their experiences on board and Chinese seafarers reported the poorest provision and highest levels of dissatisfaction. Patterns in age variations were not clear when it came to experiences at sea although it was interesting to note that seafarers in the middle age group (over 25 and under 40) reported experiencing the most work-related stress and younger seafarers were more likely than older ones to be sharing cabins. Despite officers generally having access to better accommodation and amenities on board, as a consequence of privileges associated with rank, ratings were marginally more likely to be positive about provision

on board than officers. This may be a reflection of the fact that very many ratings were Filipinos and for reasons we are unable to establish in this report, Filipinos were generally more positive about their experiences than other nationalities.

The findings confirm that there is significant variation in the quality and range of accommodation, and related facilities and amenities, provided on contemporary ocean-going cargo ships. Broadly speaking the findings indicate that provision on board ships built in Korea is superior across a spectrum of considerations to that found on ships built in Japan and in China. More predictably the findings suggest that bigger vessels offer better accommodation to seafarers than smaller ones and that tankers may provide better accommodation (on the whole) than other types of ship.

Disturbingly, a clear pattern emerged in relation to vessel age. This indicated that in general newer vessels provided better accommodation and amenities than older ones. However an exception to this trend was apparent when it came to the newest vessels (built in the last five years) and here we found that these generally provided poorer facilities/amenities/accommodation spaces than ships aged five to nine years old. This may be an early indication of some deterioration in vessel standards in recent years.

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Appendix 1

Coding of Ranks into Three Groups

Rank (Senior, Junior, Rating)	Original Rank	Frequency	% of total sample	% of total sample (excluding other and missing data)
Senior Officer	Captain/ Master	48	3.1%	3.2%
	Chief Engineer	43	2.8%	2.9%
	Chief Officer	154	10.0%	10.3%
	2nd Engineer	104	6.8%	7.0%
	<i>Total</i>	349	22.8%	23.5%
Junior Officer	2nd Officer	236	15.4%	15.9%
	3rd Officer	67	4.4%	4.5%
	3rd Engineer	138	9.0%	9.3%
	4th Engineer	37	2.4%	2.5%
	Electrical Officer	17	1.1%	1.1%
	Cadet	133	8.7%	8.9%
	<i>Total</i>	628	41.0%	42.2%
Rating	Wiper	14	0.9%	0.9%
	Oiler	62	4.0%	4.2%
	Pumpman	3	0.2%	0.2%
	Fitter	18	1.2%	1.2%
	Boson	42	2.7%	2.8%
	AB	217	14.2%	14.6%
	OS	88	5.7%	5.9%
	Chief Cook	27	1.8%	1.8%
	Steward/ Messman	35	2.3%	2.4%
	Cook	3	0.2%	0.2%
	Carpenter	2	0.1%	0.1%
	<i>Total</i>	511	33.3%	34.3%
Other	Other	13	0.8%	
	Hospitality workers	16	1.0%	
	<i>Total</i>	29	1.9%	
Missing Data	Missing Data	16	1.0%	

Appendix 2

Coding of Vessels into Five Ship Types

		Frequency	Percent	Cumulative Percent
Missing Data	Missing Data	23	100.0	
Tankers	LNG/ LPG Tanker	64	16.4	16.4
	Chemical Tanker	82	21.0	37.4
	Oil Products Tanker	189	48.5	85.9
	Other Tanker	30	7.7	93.6
	Multiple Ship Types (Tankers)	25	6.4	100.0
	Total	390	100.0	
Bulk Carriers	Bulk Dry	382	86.0	86.0
	Bulk Dry/ Oil	10	2.3	88.3
	Other Bulk	52	11.7	100.0
	Total	444	100.0	
Cargo Vessels	General Cargo	111	33.7	33.7
	Refrigerated Cargo	13	4.0	37.7
	Ro-Ro Cargo	22	6.7	44.4
	Car Carrier	23	7.0	51.4
	Other Dry Cargo	10	3.0	54.4
	Container	150	45.6	100.0
	Total	329	100.0	
Passenger/ General Cargo	Passenger/ General Cargo	10	9.2	9.2
	Passenger/ Ro-Ro Cargo	20	18.3	27.5
	Passenger Ship/ Ferry	17	15.6	43.1
	High Speed Ferry	5	4.6	47.7
	Passenger Cruise Ship	57	52.3	100.0
	Total	109	100.0	
Other	Offshore Supply Ship	54	35.8	35.8
	Other Offshore	30	19.9	55.6
	Research Vessel	6	4.0	59.6
	Pilot Boat	3	2.0	61.6
	Tug/ Pull Vessel	22	14.6	76.2
	Dredging	13	8.6	84.8
	Other	18	11.9	96.7
	Multiple Ship Types (Offshore)	5	3.3	100.0
	Total	151	100.0	
Multiple Ship Types	Multiple Ship Types	76	100.0	100.0
Fishing	Fishing	2	100.0	100.0
Yachts	Yachts	9	100.0	100.0

Appendix 3

Comparison of Vessel Types in the SIRC Sample to Those in *Lloyd's Register World Fleet Statistics 2010*

SIRC Grouped Ship Type	SIRC Sample			World Fleet		
	Ship Type	Frequency	Percentage	Ship Type	Frequency	Percentage
Tanker	LNG/ LPG Tanker	64		LNG Tanker	363	0.5%
				LPG Tanker	1,202	1.5%
	Chemical Tanker	82		Chemical Tanker	4,725	5.9%
	Oil Products Tanker	189		Oil Products Tanker	5,210	6.5%
				Crude Oil Tanker	2,224	2.8%
	Other Tanker	30		Other Tanker	153	0.2%
	Multiple Ship Types (Tankers)	25				0.0%
	<i>Total</i>	390	27.4%	<i>Total</i>	13,877	17.2%
Bulk Dry	Bulk Dry	382		Bulk Dry	7,504	9.3%
				Self-discharging Bulk Dry	172	0.2%
	Bulk Dry/ Oil	10		Bulk Dry/ Oil	81	0.1%
	Other Bulk	52		Other Bulk	1,181	1.5%
	<i>Total</i>	444	31.2%	<i>Total</i>	8,938	11.1%
Cargo Vessel	General Cargo	111		General Cargo	16,483	20.5%
	Refrigerated Cargo	13		Refrigerated Cargo	1,144	1.4%
	Ro-Ro Cargo	22		Ro-Ro Cargo	2,504	3.1%
	Car Carrier	23				0.0%
	Other Dry Cargo	10		Other Dry Cargo	245	0.3%
	Container	150		Container	4,896	6.1%
	<i>Total</i>	329	23.1%	<i>Total</i>	25,272	31.4%
Passenger/ General Cargo	Passenger/ General Cargo	10		Passenger/ General Cargo	305	0.4%
	Passenger/ Ro-Ro Cargo	20		Passenger/ Ro-Ro Cargo	2,855	3.5%
	Passenger Ship/ Ferry	17		Passenger Ship/ Ferry	3,126	3.9%
	High Speed Ferry	5				0.0%
	Passenger Cruise Ship	57		Passenger Cruise Ship	524	0.7%
	<i>Total</i>	109	7.7%	<i>Total</i>	6,810	8.5%
Other	Offshore Supply Ship	54		Offshore Supply Ship	5,438	6.8%
	Other Offshore	30		Other Offshore	933	1.2%
	Research Vessel	6		Research Vessel	931	1.2%
	Pilot Boat	3				0.0%
	Tug/ Pull Vessel	22		Tug/ Pull Vessel	13,804	17.1%
	Dredging	13		Dredging	1,124	1.4%
	Other	18		Other	3,434	4.3%
	Multiple Ship Types (Offshore)	5				0.0%
	<i>Total</i>	151	10.6%	<i>Total</i>	25,664	31.9%
	<i>Overall total</i>	1,423	100.0%	<i>Overall total</i>	80,561	100.0%
Excluded	Multiple Ship Types	76				
	Fishing	2		Fish catching	21,589	
				Other fishing	1,242	
	Yachts	9				
	Missing Data	23				
	<i>Total</i>	110		<i>Total</i>	22,831	

Appendix 4

Comparison of SIRC Sample to *Lloyd's Register World Fleet Statistics 2010* – Average Age by Vessel Types

	SIRC Sample		Lloyds Register WFS 2010	Age differences
	Frequency	Mean	Mean	
LNG/ LPG Tanker	61	9.1	12.5	-3.4
Chemical Tanker	80	6.0	11	-5.0
Oil Products Tanker	177	8.4	22	-13.6
Other Tanker	30	9.6	33	-23.4
Bulk Dry	360	10.7	13	-2.3
Bulk Dry/ Oil	10	16.1	23	-6.9
Other Bulk	50	11.0	22	-11.0
General Cargo	105	14.4	24	-9.6
Passenger/ General Cargo	9	10.9	34	-23.1
Refrigerated Cargo	12	16.1	24	-7.9
Ro-Ro Cargo	22	12.6	16	-3.4
Passenger/ Ro-Ro Cargo	19	14.1	24	-9.9
Car Carrier	22	8.6		
Other Dry Cargo	9	21.0	25	-4.0
Container	143	8.9	10	-1.1
Passenger Ship/ Ferry	15	10.3		
High Speed Ferry	5	12.4		
Passenger Cruise Ship	53	12.2	22	-9.8
Offshore Supply Ship	53	10.8	17	-6.2
Other Offshore	29	9.1	22	-12.9
Research Vessel	5	27.0	27	0.0
Pilot Boat	3	17.0		
Tug/ Pull Vessel	20	8.5	22	-13.5
Dredging	13	19.4	27	-7.6
Other	16	15.2	25	-9.8
Multiple Ship Types	63	10.3		
Multiple Ship Types (Tankers)	23	7.5		
Multiple Ship Types (Offshore)	5	8.4		
Yachts	9	10.8		

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