

***FAST TURNAROUND SHIPS
AND THEIR
IMPACT ON CREWS***

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INTRODUCTION

There have been scores if not hundreds of in-house commercial studies aimed at finding ways of reducing port turnaround times and it would be surprising if at this very moment of reading these words someone, somewhere, is not considering how turnaround in some port or other cannot be shaved by an hour or two. An enormous amount of logistical and technological ingenuity has been deployed by production engineers, naval architects, civil engineers and transport planners to finding ways of ensuring that ships spend the maximum possible amount of time at sea. Unfortunately, the application of all this intelligence and disciplined energy was not matched by studies of the effects of these 'efficiency gains' for the lives of seafarers.

For whatever reasons, this report is the very first publicly available detailed comparative analysis of turnaround times. The report also offers some preliminary exploration of the social cost incurred by seafarers but acknowledges that the effects of social isolation produced as a consequence of fast turnarounds, is a subject needing further investigation.

The data presented here compares turnaround times in two periods - 1970 and 1998 - in a real port which has been given the fictitious name of Sandhaven.¹ 1970 marks the beginning of our inquiry here because, as Alderton's study suggests, in the century prior to the 1970s turnaround times had changed very little. The substantial and across the board reductions that have occurred in the industry are relatively recent. As we shall see in some detail, in 1970 the average turnaround time in the port of Sandhaven for all ship-types was almost six days (138 hours) and even liquid bulk carriers averaged a 40-hour turnaround

¹ The 1998 data is not in the public domain and the Sandhaven Port Authority regarded the information as 'commercially sensitive' and requested that the name of the port remain anonymous. Although 1970 data is in the public domain in the related area City Record Office, in respect to the port's request the name of the City Record Office has also been disguised. However, both 1970 and 1998 data sets are available on request from the author for researchers who are interested in making further analyses or comparative study of turnaround times.

By 1998 the average stay had been reduced to 16 hours and over the whole voyage cycle the average ship regardless of type spent 93 per cent of its time at sea – a nine-fold reduction. over the last 30 years. A discussion of the impact of these changes on seafarers' lives changes is the subject of a more exploratory investigation in the final section of the report where first-person commentaries from seafarers and other professionals concerned with welfare are used to raise important issues concerned with seafarers' mental and physical well-being.

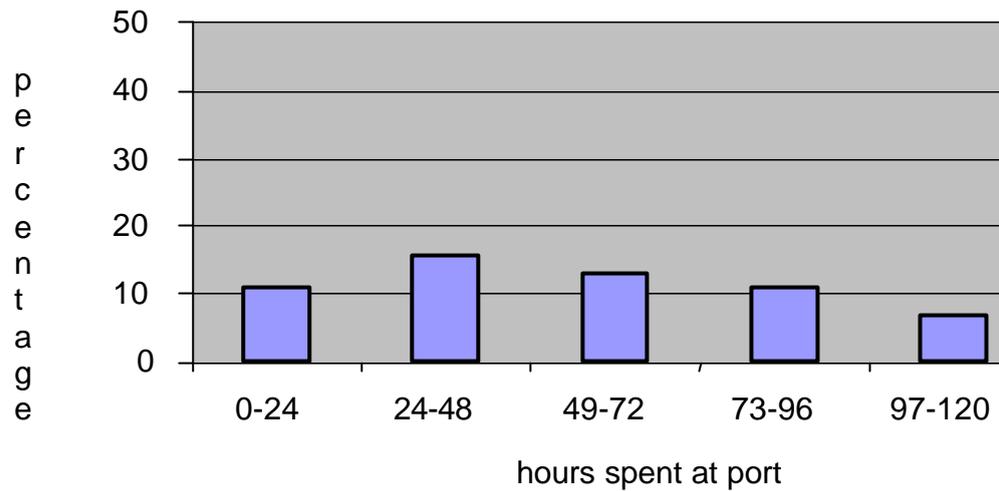
1 TURNAROUND TIMES IN THE PORT OF SANDHAVEN IN 1970

This section of the paper analyses turnaround times of 647 ships calling at Sandhaven over an 8 month period in 1970. The data on the ship turnaround times was gathered from the Sandhaven City Record Office. The data was hand written and kept in volumes. Some of the volumes have gone missing. However, the analyses here is based on complete turnaround times in two successive volumes kept between 12.3.1970 and 31.10.1970. The records provide daily information about exact time of arrival and departure, tonnage and cargo of ships and their previous and next port of calls.

In the 1970s Sandhaven was a regional distribution centre. Particularly for general cargo from all over the world and grain from N America, shipped to Sandhaven for distribution to the smaller local ports. About a dozen ships were involved in the distribution chain. They were between 21 and 67 grt and traveled within a 10 mile distance. These ships were excluded from the analyses.

Figure 1 indicates that a substantial portion (forty-two per cent; n=268) of 647 ships analysed here spent more than five days in Sandhaven either loading or discharging their cargoes. In contrast only eleven per cent (n=73) of these turned around within 24 hours. As we shall see later in 1998, in the same port the percentage of ships that turned around within 24 hours had increased to 72 %.

Figure 1 shows that sixteen per cent (n=106), thirteen per cent (n=83), eleven per cent (n=71) and seven per cent (n=46) of the ships turned around respectively within forty-eight, seventy-two, ninety-six, and one hundred and twenty-four hours. Ship turnaround (port handling) times analysed here are measured by the time elapsed between entrance and departure.

Figure 1: Hours spent in port by all ships in 1970

N=647

Average hours spent = 138.30

Average GRT= 3,444

As we have seen Sandhaven handled ships with various cargoes and Table 1 shows a further analyses of the turnaround times according to cargoes.

Table 1: Number of hours spent in port by various types of ships in 1970

Type of Cargo	Number of Ships	Average GRT	Average Hours Spent (hh/mm)	Minimum Hours Spent (hh/mm)	Maximum Hours Spent (hh/mm)
All Ships	647	3,444	138.30	10.00	598.43
Petroleum Products	127	5,843	35.01	10.00	218.53
Liquid Bulk	33	2,517	58.22	24.52	160.35
Dry Bulk	287	2,306	150.37	11.15	598.43
General Cargo	184	3,653	196.30	27.00	545.50
Cars	5	7,983	207.00	88.50	417.20
Forest Products	11	2,441	263.00	38.50	498.40

Table 1 shows that the 647 ships analysed here spent on average over 168 hours (1 week). The fastest turnaround time is 10 hours and the longest is over 598 hours (25 days).

When the different cargoes are considered it can be seen that the tankers carrying petroleum products (i.e. refined oil) had the fastest turnaround times. Within an 8 month period 127 ships carrying petroleum products visited the port (20 per cent of all ships). The minimum turnaround time for a product tanker was ten hours. This particular ship (525grt; *Esso Ipswich*) called at Barry before arriving at Sandhaven and its next port of call was Middlesborough. The maximum turnaround time for a product tanker was over 218 hours. This 5,884 grt vessel (*British Curlew*) came from Fawley and left for the Isle of Grain in ballast. In 1970 ships calling at Portbury with petroleum products involved short-sea (British, Irish, French and Dutch ports), Mediterranean (Italian, Spanish) and deep-sea (The Middle East, Trinidad) trades.

The liquid bulk carriers (i.e. molasses, acid, and vegetable oil) had the second fastest turnaround times. In the study period 33 liquid bulk carrier (5 per cent of all ships) visited the port and on average they spent 58 hours there. The average tonnage was 2,517grt. The shortest turnaround time for a vessel in this category was almost 25 hours. This 280 grt ship (*Melissa*) came from Liverpool and after discharging her cargo went back to the same port again. The maximum turnaround time was over 160 hours. The 6,203grt tanker (*Calypso*) came from Cuba with molasses and after discharge sailed to Jamaica in ballast. The liquid bulk carriers in this category with molasses were all (n=10) involved in deep-sea trade. The rest of the ships in this category carried sulphurs, ammonia, and acid, and were engaged in the Baltic and short-sea trade.

Two hundred and eighty-seven dry bulk carriers (44 per cent of all ships) visited Sandhaven in the study period. These ships on average turned around in 150 hours. Their average tonnage was 2,300 grt. The dry bulk carrier (253grt,

Jowinda) with the fastest turnaround time came from Bremen with a cargo of potash and she left Sandhaven in over 11 hours for Swansea in ballast. The 6,227grt *Evina* turned around in over 598 hours which was the longest turnaround time. She came to Sandhaven from Port Cartier (Quebec, Canada) and after discharging her entire cargo of grain she sailed back to Churchill (NW Canada) empty.

The number of general cargo ships that visited Sandhaven was 187 (30 per cent of all ships). The average turnaround time for these ships was over 196 hours and the average tonnage, 3,653 grt. The general cargo ship with the shortest turnaround time (*Author*, 4,279grt) came from Dar es Salaam. She discharged her part cargo in 11 hours and sailed for Belfast. The ship with the longest turnaround time in this category was engaged in a similar trade pattern. The *City of Bedford* (4,203 grt) arrived from Mombassa and discharged her part cargo in Sandhaven in 545 hours. Her next port of call was also Belfast. General cargo ships then carried a wide variety of small quantities of loose items – e.g. boxes, bags, packing cases, drums, a few cars, machines etc. Inward/outward Foreign Dues Clearance Sheets kept by the Sandhaven port authorities in the 1970s give some idea of the cargo of general cargo ships. The *Gloucester City* (5,100grt) regularly sailed between North America and the UK and in one voyage she had the following variety of cargo on board: Rover 2000 cars, synthetic rubber, cheese, aluminum, refrigerators, window glass, tape recorder parts, greeting cards, meat, cotton goods, rubber plates, steel chain, chemicals, motorcycle, compass spares, milking machine parts, frost protectors, flower seed, wine container, pickled sprats, molding powder and laminating ink. The 187 general cargo ships examined here were involved in variety of trades: short-sea, Mediterranean, the Baltic and deep-sea (West/East Africa, Middle East, North/South America, Indian Ocean, Far East and, Australasia).

In the early 1970s cars generally were carried in the holds of conventional lift-on/lift-off general cargo vessels alongside other goods. However, five general cargo / dry bulk vessels that visited Sandhaven either loaded or discharged cars as

the sole item of cargo. These ships on average spent 207 hours in port and their average tonnage was 7,983grt. Interestingly, the longest and shortest turnaround times were held by the same ship. On the 6th of July 1970 5,266 grt *Marita* arrived in Sandhaven empty from Toronto to load cars for the Great Lakes and she turned around in 89 hours. More than 40 days later, on the 18th of August she sailed back to Sandhaven from the Great Lakes with grain on board. On the 5th of September after spending 417 hours in port she sailed to Montreal with cars on board. Five car-carrying ships were all involved in deep-sea trade (Canada and Singapore).

The ships carrying forest products had the longest average turnaround times in the study period – 263 hours. Eleven ships (two per cent of all ships) fell into this category and their average tonnage was 2,441grt. The 285grt ship (*Eric Boye*) with a minimum turnaround time in this category came from London and discharged all her cargo of logs in 39 hours before sailing to Antwerp. The ship carrying forest products with the maximum turnaround time (*Tirgu Mures*, 2,086grt) came from Galatz (Romania). She discharged her part cargo of beech wood in 498 hours. She sailed to Manchester to complete discharge of her cargo. The majority of the ships in this category were involved in deep-sea trade (W Africa, Burma).

The analyses of the 1970 turnaround times in the port of Sandhaven suggests that despite the voyage cycle (i.e. return long sea passage for one port; long sea passage and multiple short-sea port visits, and intense short sea passages) the majority of the ships had relatively long turnaround times. The only exceptions were tankers and liquid bulkers. A further statistical analysis shows that the average combined tanker and liquid bulked turnaround time in Sandhaven in 1970 was 40 hours whereas the other ships taken together (i.e. dry bulk, general, forest products and cars) on average turned around in 171 hours. This analyses partly explains why working on a tanker was once reckoned only tolerable for the slightly mad. However, as we shall see, short turnaround times have become the norm in most trades, and in fact have become reduced on other ships to even less than those for tankers.

A Ghanaian third officer who has recently been interviewed by the author of this paper said that for him the idea of seeing the world and seeing it for free was one of the main attractions of taking up a career at sea in the first place. However, he said that life at sea was not what he had thought it would be. He has recently been signed off from an oil tanker after a nine month contract. He described this as a “nightmare”. The tanker ran regularly back and forward between Japan and the Gulf. After a passage of over 20 days, turnaround time was about twenty hours on each end. The only time he had a brief shore leave in 9 months was when the ship had been in Singapore for three days. One of his fellow officers had to be repatriated before his contract was ended because he was “seriously depressed”. The third officer attributed this to the lack of shore leave.

Deprivation of all sorts relating to the lack of shore leave is becoming a part of everyday life at sea although, as the following interview with a retired seafarer emphasizes “it has not been always like this”. The interview with Harry Higgins who retired as a bosun after 50 years at sea highlights the changes in turnaround times and also in crew size, port environment and social life at sea:

In 1943 I started as a deck boy. Their breed is long gone. It was a hard job as a general dog's body. It was a tugboat. The work was from sun up to sun down. ... After the war, in 1946, I went to deep-sea.

Port times, with bulk cargo you would never be in port for less than 2 months, especially with coal and phosphate. In some ports there were no cranes. I remember in one Chinese port people discharged cargo in baskets. They built scaffolding beside the ship and put up planks and runways. We seemed to be there for weeks and weeks. The ship was 10,000 grt, about 55-56 crew members on board. In those days in a European port you wouldn't be there less than a week. The deep-sea ships had to be at least 3 weeks. If it was a general cargo it would be much longer.

In the old days you would have pubs around the docks, girls, night life. Ports have changed, dock areas have died. In the ports you would smell

spices, orange, coffee beans. The most noticeable things about the ports now is that they are silent and clean, nothing's lying about. Steam trains used to go in [Sandhaven], you could hear cranes working. There was character. There are now less dockers. I couldn't get over going to [Sandhaven] and the dockers having disappeared. There were people talking all around. There were laundries. There were ship stores. The utter silence of the docks hit me. That part of my life is gone for forever.

Today one ship carries what five ships would carry in the old days. It is also a different life. You can go to the most exotic places of the world, you wouldn't see what's going on at the shore. That seems like a little world. Your life at sea doesn't change. The only way your life can change is at the port.

Before the 1980s shore leaves were wonderful. You would have 50 people and have your own gang. They would watch out for you. In Australia we went horse riding. You would go sightseeing in America. We were loading timber in Oregon. One Sunday morning we went for a walk in the forest. We saw a bear and panicked. We stopped a passing van and the driver took us to a Rodeo. We used to meet local people. People would ask have you come all the way from England.

In the early 1980s I joined a deep-sea container ship. Antwerp was our homeport. In 21 days we used to shift more than 100,000 tonnes of cargo to various ports. In ports even when we were tying up ropes the crane would start taking the containers off. The ports we would do were Antwerp, Southampton, Halifax, New York, Boston, Baltimore, and Philadelphia, on the way back to Antwerp we would re-visit some of these ports again. The ship was 40,000 grt with 14-16 crewmembers. She was a very boring ship. We still worked very hard but all you did was carry containers. It reduced to no shore leave in that container ship. I worked 3 months on 21 days off. I

was an AB. I would have no shore leave in my 3 months on. You were literally a prisoner on board.

Harry knows that life is different now from how it used to be at sea and it has changed for the worst. However, when he was asked whether if he was 18 today if he would like to take a career at sea he said 'yes, there is nothing more beautiful than being on a ship'. He also said that he still clearly remembers a winter's night with a full moon over the icy lakes in Canada. He listened to the jingling sound of the breaking ice all night through. No such romance attaches to Sandhaven in the 1990s.

2 ANALYSES OF THE TURNAROUND TIMES IN THE PORT OF SANDHAVEN IN 1998

The port of Sandhaven was privatised in the early 1990s. The privatisation saw redundancy of two thirds of its labour force. The port currently employs around 400 people. The port is not fully mechanised and is average in size. The port specialises in short and deep-sea trades including cars, dry bulk and forest products. Sandhaven also handles small tankers with petroleum products (average 4,200grt) and liquid bulk, and small container ships (average 2,810grt). Annually, around 2,000 ships visit the port. In 1996 over 6,000 seafarers visited the Sandhaven Seafarers Centre. The majority of them were Filipinos (32%), followed by Bulgarians (9%), Russians (8%), British (7%), Polish (6%), and Indians (4%).

The ship turnaround times analysed in this section were gathered from a 16 month period between 1997 and 1999 (the last 2 months of 1997, entire 1998, and first two months of 1999). In the text this is referred to as the 1998 data. During the period under investigation over 2200 ships visited the port, but the analysis here is based on 1,580 ships. Four hundred and sixty-five ships were excluded from the analyses because they were involved in a particular local trade (circa 5 miles distance) and on average they spent just 3 hours in port to discharge their cargoes.

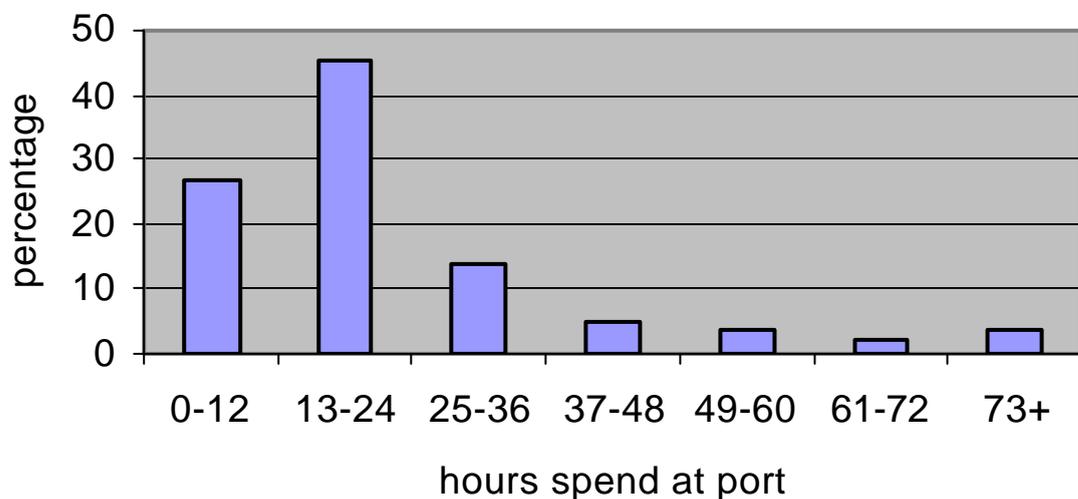
There was no complete data for another 200 ships and these ships were also excluded from the analysis.

The ship turnaround data kept by the Sandhaven Marine Services Department provides information about name, tonnage and cargo of the ships, their arrival and departure times, and the previous port of call and the next port of call. The following part of the paper presents the analysis of this data for 1,580 ships. Due to the recentness of the data none of the ship names have been mentioned in this paper. In order to examine the contemporary effects of working with fast

turnaround ships in some detail this section provides a more detailed analysis on turnaround times than the previous section concerning the 1970 data.

As we shall see in the following parts of this paper, in 1998 27 per cent of ships turned around within twelve hours compared with one per cent in 1970. The other striking change is that the average tonnage of ships visiting Sandhaven increased from 3,444grt in 1970 to 14,812grt in 1998.

Figure 2: Hours spent at port by all ships - 1998



N= 1580 Average hours spent = 15.49 Average grt = 14,892

Figure 1 shows that twenty-seven per cent (n=428) of the ships visiting the port of Sandhaven spent less than 12 hours there. Forty-five per cent (n=707) of the ships spent 12 to 24 hours in port and this makes up the largest category of the turn round times. This data shows that seven out of ten ships turned around within 24 hours. Only four per cent (n=58) of the ship stays were more than three days.

As we have seen Sandhaven handles ships with various cargoes and Table 2 shows a further analysis of the turnaround times according to cargoes. Table 2 shows that the 1,580 ships analysed here spent on average 15 hours 49 minutes in port either loading or unloading their cargoes. Average tonnage for these ships is 14,812grt. The fastest turnaround time is over 2 hours and the longest one is over 260 hours.

When the different cargoes are considered it can be seen that the container ships have the fastest turnaround times. Within a sixteen month period 253 container ships visited the port (16 per cent of all ships) and on average they spent 11 hours 37 minutes in port. The minimum turnaround time for a container ship (1,925grt) is over 2 hours and the longest (1,987grt) is just over 79 hours. Both of the container ships came from Waterford and loaded containers for the same port again.

Table 2: Number of Hours Spent in Port by Various Types of Ships - 1998

Type of Cargo	Number of Ships	Average GRT	Average Hours Spent (hh/mm)	Minimum Hours Spent (hh/mm)	Maximum Hours Spent (hh/mm)
All Ships	1580	14,812	15.49	2.37	260.11
Containers	253	2,814	11.23	2.37	79.08
Cars	525	31,076	13.19	3.43	50.59
Liquid Bulk	63	4,752	17.07	9.40	126.32
Petroleum					

Products	372	4,206	20.48	7.58	123.48
Forest Products	171	16,855	28.38	9.40	260.11
Dry Bulk	196	12,428	48.36	4.40	232.11

The car carriers have the second fastest turnaround times. Within a sixteen month period 525 car carriers visited the port (33 per cent of all ships) and on average they spent 13 hours 19 minutes. The minimum turnaround time for a car carrier was over 3 hours. This particular car carrier (16,883 grt) discharged 358 Honda cars in Sandhaven, its previous port being Baltimore USA. The next port of call was Bremerhaven. The maximum turnaround time for car carriers was almost 51 hours.

Sixty-three Liquid bulk carriers (i.e. molasses and acid) visited the port (4 per cent of all ships). On average these vessels spent 17 hours 7 minutes in port. The shortest turnaround time for a liquid bulk carrier was over 10 hours and this particular 2,349 grt tanker came from Arklow and loaded acid for the same port again. The longest turnaround time was over 126 hours. This 15,380grt ship had discharged molasses and its previous port of call was Karachi.

Three hundred and seventy-two tankers carrying petroleum products (i.e. refined oil and LPG) visited the port (24 per cent of all ships) and their average turnaround time was 20 hours 48 minutes. The fastest handling time of a petroleum tanker was just under 8 hours and the longest was over 123 hours. The tanker with the fastest turnaround time was 1,210 grt and discharged refined oil from Milford. The 11,898grt tanker with the longest turnaround time came from Fawley and her next port of call was Belfast.

The ships carrying forest products (i.e. logs, sawn timber, pulp, wood chips and rolls of paper) have the fifth fastest turnaround times following container carriers, car carriers, liquid bulk carriers, and petroleum tankers in order. One hundred and seventy-one ships carrying forest products visited the port (10 per cent of all ships). The average handling time for this type of vessel was 28 hours and 38

minutes. The fastest turnaround time of a forest product carrier was about 10 hours. This 1,904 grt ship came from Aveiro and left Sandhaven for Cobh. The longest handling time was almost 260 hours. This 15,863grt ship came from Singapore and its next port of call was Antwerp.

Despite having an average of 48 hours 36 minutes turnaround time, dry bulk carriers (i.e. fertiliser chemicals, animal food stuff, coal, gypsum, cement, scrap and grains) have the longest turnaround time amongst the different types of cargo ships. One hundred and ninety-six dry bulk carriers visited the port (12% of all ships) over sixteen months. These ships are on average 12,428grt. The ship with the fastest turnaround was 1,441grt and loaded concentrates. Its previous port of call was Briton Ferry and over 4 hours later she left Sandhaven for Le Havre. The ship with the longest turnaround time came from Carbonares with gypsum on board. This 14,382 grt ship stayed in Sandhaven for almost 232 hours and left for Drammen (Norway). Before turning to an examination of the voyage cycle of ships calling at Sandhaven in 1998, it is worth briefly commenting on their comparative turnaround times between 1970 and 1998.

Comparative Turnaround Times 1970 - 1998

Table 3 shows that from 1970 to 1998 there has been an increase of over four times (430%) in the tonnage of the ships that called at Sandhaven. Despite the 4 times increase in size, turnaround times decreased ninefold.

Table 3: Comparative turnaround times 1970-1998

Type of Cargo/Ship	1970 Average GRT	1998 Average GRT	Increase in % of GRT from 1970-1998	1970 Average Hours Spent (hh/mm)	1998 Average Hours Spent (hh/mm)	Decrease in % of hours from 1970-1998
All Ships	3,444	14,812	430	138.30	15.49	892
Dry Bulk	2,306	12,488	541	150.37	48.36	310
Cars	7,983	31,076	389	207.00	13.19	1569
Liquid Bulk	2,517	4,752	88	58.22	17.07	341
Petroleum Products	5,852	4,206	-28	35.04	20.48	58
Forest Products	2,441	16,885	691	263.00	28.38	944

Note: comparative data is not available for general cargo and container ships.

The Voyage Cycle

As can be seen from Table 4, out of 1,580 ships that visited the port, 996 (63%) of them were involved in one way or another in short-sea trade and 351 ships (22%) were involved in deep-sea trade. Overall the Mediterranean and Black Sea and the Baltic Sea trades make up a relatively small portion of the trade types – 9% (n=142) and 6% (n=91) respectively.

Table 4: The number of ships according to their type of cargo and trade cycle

	Short Sea	Mediterranean& Black Sea	Baltic Sea	Deep Sea	Total
Car Carriers	203	127	-	195	525
Petroleum Products	350	-	22	-	372
Container Carriers	253	-	-	-	253
Dry Bulk Carriers	79	15	36	66	196
Forest Products	62	-	29	80	171
Liquid Bulk Carriers	49	-	4	10	63
Total	996	142	91	351	1580

The table also shows that there are different patterns when the different types of cargo and types of trade are taken into account. All of the container ships and almost all of the tankers with petroleum products (350 out of 372 tankers) calling at Sandhaven are short sea based. These ships have short-sea passages with rapid turnarounds at each end. The short sea trade covers the area of the English Channel crossings, the North Sea, The Irish Sea, the Bay of Biscay, The Atlantic coast of Spain and Portugal. However, The car carriers, dry bulk carriers, forest products carriers, and liquid bulk carriers show more diverse geographical trade patterns.

The categorisation of the ships according to different voyage cycles is derived from the information about the previous and the next ports of call of the ships that

visited Sandhaven. Therefore some of the ships in the following analysis, categorised as short sea traders might have done a multiple port intense cycle of their trade after a long sea crossing (i.e. Cobh, Dublin, Sandhaven, Cherbourg, Zeebrugge, Antwerp, Rotterdam and back to the South East Asia again). The raw data provided by the Sandhaven Maritime Services Department also makes possible the analyses of the times spent at sea by the visiting ships. The calculation of time at sea is based on the shortest sea route between the ports (e.g. 6,200 nautical miles between Bombay and London via Suez Canal) at 15 knots for petroleum, dry bulk, forest product and liquid bulk carriers, 17 knots for container and car carriers.

As we have seen the analysis of the turnaround times of 1,580 ships suggests that overall the average time spent at Sandhaven is 15 hours 49 minutes. The further analysis show that these ships spend 172 hours on average traveling from their previous port of call and spent another 47 hours 40 minutes traveling to their next port of call. In other words on average these ships spent 7% of their times at Sandhaven in between their previous and next ports of call, and 93% of it at sea.

It is customary for some ships to submit their previous port of call lists with arrival and departure dates to the Panama Canal Commission during their passage. The analysis of these submissions by various cargo ships (circa 50 – in some cases going back 12 months) for the two months period from October to November 1998 suggests that the average time spent at sea and in port by these ships is very similar to the Sandhaven analysis. However, the majority of these ships were involved in deep-sea trade and as we shall see in the following part of the paper the ratio of the combined operation time at sea and in port varies according to ships' voyage cycles (i.e. short-sea, deep-sea). Indeed the author's own voyage in February 1999 on a ro-ro ship combining deep-sea crossing from Europe (Le Havre) to West Africa and intense short-sea based 10 port visits and return to Europe (Rotterdam) took in total 711 hours (including total 50 hours spent at anchor and drifting, and time in spent in the European ports). The times spent at sea and ports were 514 hours (72%) and 197 hours (28%) respectively. However,

the average time spent in each of the twelve ports was about 16 hours.

The following part of this paper provides a further analysis of the Sandhaven turnaround times, an analysis of the percentage of time spent at sea and in port during the ships operation periods and an analysis their voyage cycles. All these will be examined according to different cargo/ship types beginning with car carriers. The following part also provides first person accounts from the seafarers themselves interviewed in Sandhaven².

Turnaround Times amongst Different Types of Ships and Voyage Cycles

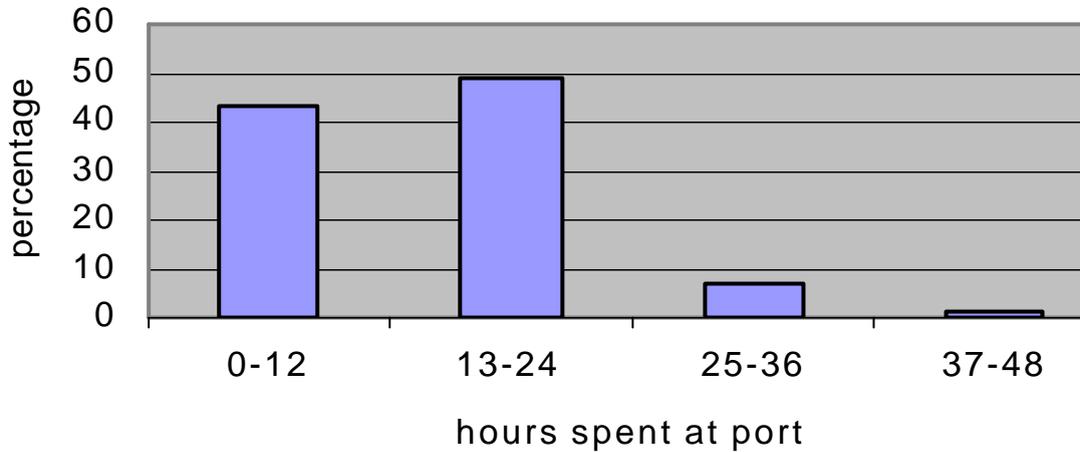
Car Carriers

From a single car carried in the hatch of a passenger ship, via the holds of a conventional lift-on/lift-off general cargo vessel to the decks of the roro freighter, we now find cars in large numbers carried in the designated car decks of the pure car carrier. One particular shipowner, Wallenius, of Sweden, has retained its prominent position in the car transport trade for over 40 years and today operates a substantial fleet. A typical car carrier of the company would be over 50,000grt and carry over 6,200 cars. The Norwegian and Swedish owned United European Car Carriers (UECC) fleet operates between the UK, Scandinavia, continental Europe and Iberia. However, the majority of the world's car carrier fleet is owned in Japan and South Korea. The modern car carriers can operate independently from shore cranes and facilities with high degrees of manoeuvrability and cargo handling. In 1997 it is estimated that about 7.5m cars were shipped deep-sea, around 15% more than in 1996. It is estimated that in July 1998 there were 69 car carriers on order around the world for delivery between 1998 and 2000. Many of the new car carriers being built are relatively large vessels with capacity for 6,000 cars and

² The first person accounts reported here were collected by the author in Sandhaven. In November 1998 over 20 ships were visited and 50 seafarers of all ranks and nationalities were interviewed during their tea or lunch breaks. Due to the limited time in port and heavy workload the interviews had to be kept brief. They were focused on the voyage cycle of the ships and seafarers experiences with fast turnaround and its effects on the everyday life onboard. Some of these interviews are reported in the next part of the paper.

more (*Lloyd's List* 24/7/98)

The port of Sandhaven handles around 400,000 vehicles (i.e. cars, trailers) annually, of which around 70% are imports from the Far East, Italy and Spain. Rover and Vauxhall, on the other hand, are moving increasing numbers of vehicles on feeders to Europe and deep-sea services to Australasia.

Figure 2: Hours spent at port by car carriers in 1998

As can be seen from Figure 2 four out of ten (43%; n=225) car carriers turnaround within 12 hours and five out of ten (49%; n=258) of them between 12 and 24 hours. Altogether, 92 % (n=483) of the car carriers turnaround within 24 hours. Only 8% (n=42) of them stay more than 24 hours in port.

Table 5: Time spent in port and at sea by car carriers in 1998

	N	Average Grt	Average time Spent at port Hh/mm	Average time at sea from previous port	Average time at sea to the next port	Average % time spent at port
All Ships	525	31,076	13.19	326	54	3.42
Short-sea	203	16,819	13.10	41	39	16.37
Mediterranean	127	27,942	13.45	175	53	6.05
Deep-sea	195	42,292	13.14	700	88	1.66

According to Table 5 the average turnaround time for car carriers is 13 hours 19 minutes. The average tonnage of these car carriers is 31,076grt. As can be seen from the table, when the different types of trade are considered the turnaround times do not differ much. A car carrier involved in deep-sea trade or

Mediterranean trade turns around as fast as a car carrier involved in short-sea trade. However, as can be seen from the Table their average tonnage varies accordingly.

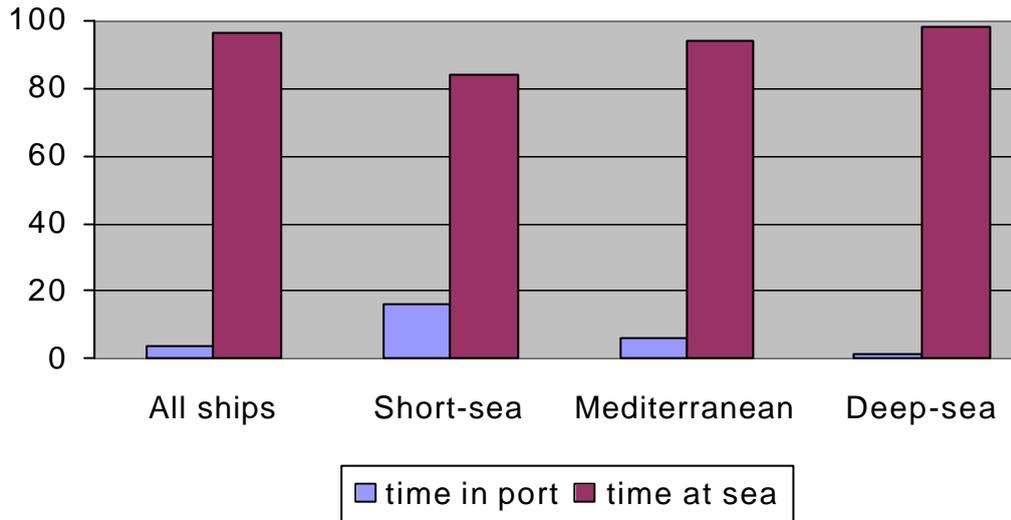
Overall all car carriers analysed here (n=525) spent 326 hours at sea from their previous ports of call to Sandhaven and they spent a further 54 hours at sea to reach their next port of call. Their average time spent at port in Sandhaven corresponds to only 3.42 per cent of their operation times. In other words, 525 car carriers visiting the port spent 96.48 per cent of their operation time at sea. However, when the different types of trades are compared there are differences between the average time spent at sea.

The car carriers involved in short-sea trade (n=203) spend relatively less of their operation time at sea. On average these vessels turnaround in just over 13 hours. On average these ships spent 41 hours at sea from their previous port of call, and 39 to their next port of call which means that these vessels spend 16.46% of their operation time in port and 83.54% of it at sea.

When the car carriers involved in the Mediterranean trade (n=127) are analysed it can be seen that these ships turnaround in on average 13 hours 45 minutes. On average they spent 175 hours at sea from their previous port of call and take 53 hours to get to their next port of call. Average time spent at port by them makes up 5.89% of their operation time and average time spent at sea corresponds to 94.11% of it.

The sharpest contrast between time spent at sea and in port can be seen in the analysis of the ships involved in deep-sea trade (n=195). These ships on average turnaround in 13 hours 14 minutes. Their average time at sea between their previous port of call and Sandhaven is 700 hours and sailing to the next port of call is 88 hours. These car carriers spend only 1.67% of their operation times at port and 98.33% of it at sea. The percentages of car carriers' operation times at sea and at port among the different types of trade can be seen from Figure 3.

Figure 3: Car carriers and the percentage of their operation times at sea and in port in 1998



The following accounts give some information about turnaround times and voyage cycles of car carriers.

A Swedish trainee working on a Swedish flagged car carrier with 12 Swedish crew talks about short sea trade:

We complete our round trip from Pasajes to Pasajes in about 7 days, visiting 6 or 7 ports in one round trip. Flushing, Tees, Sheerness and Sandhaven are our regular port of calls. The ship carries over 1,000 cars. In some ports we both load and unload cars. In Sandhaven we generally load Honda and Jaguar, in Pasajes Corsa, Mercedes and Vito and Vauxhall in Flushing. Pasajes and Sandhaven are our full loading ports.

An Italian owned and Maltese flagged car carrier with 21 crew members (6

Italian, 3 Romanian and 12 Filipino) trades between Italian (i.e. Ravenna, Salerno) and western European ports. A Filipino bosun talks about their trade pattern:

This ship carries 1,900 cars. In this port we are discharging 1,000 cars. We do all the unlashing. When the ship is in port the only break I get is 20 minutes to eat. We start from Italy and the ship stays there about 6 hours to load cars. From Italy we go to Ireland and from Ireland to Sandhaven. The next port of call from here is Antwerp then to Southampton and then to Italy. The only port we stay overnight is Southampton but that is the busiest port because we load and unload.

A Norwegian captain of a deep-sea car carrier with 15 crew on board speaks about his trade pattern:

We loaded Toyota and Honda cars in Japan in Nagoya. Our first port of call was Leixoes and we discharged 326 cars there. We arrived in Sandhaven this morning at 9 o'clock and we're sailing at 4.30 this afternoon. We're discharging 1,321 cars here. The next port of call is Cherbourg and 808 cars will be discharged there, then Rotterdam to discharge another 485 cars, then Bremerhaven to discharge further 1,455 cars. We are in ports just for hours not for days – eight or nine hours here for 1,321 cars you calculate the rest. Our around trip takes about 3 months. For example last time this ship was in Rotterdam on 29 August and we are expected to be there 21 November.

The Norwegian captain's estimate of discharging 1,321 cars in nine hours (i.e. 147 cars per hour) is not an exaggeration. In Sandhaven there have been many similar cases. For example a 25,312grt car carrier came from Italy and in a more complex operation discharged 2,690 cars and loaded 600 cars in 25 hours (132 cars per hour) and sailed for Zeebrugge. Furthermore the captain's account provides evidence for how representative or valid is our estimation of 1.66 per cent average time spent in port by deep-sea car carriers during their voyage cycle. According to the captain's account the ship completes her long passage and port intense round

voyage in 85 days (from 29 August to 21 November). She had on board 4,395 cars and the captains estimated port time is an hour per 147 cars on board. This corresponds to 30 hours port time during her round voyage.

Ships Carrying Petroleum Products

With the construction of oil refineries in market areas, the trade patterns for product tankers is concentrated on short voyages linking refineries in one port to distribution networks in another. In areas such as Northwest Europe, the average round voyage is comparatively short. These voyage patterns do not offer any economic advantage to larger ships and product tankers remain comparatively small, the ship size is dictated by the customer's requirements with regard to volume of cargo and by the type of port used for discharge into the distribution chain. These ships spend a longer aggregate time in port than the larger crude tankers so cargo handling systems have been designed to keep port time to minimum.

In the light of the above it is not surprising that the tankers visiting Sandhaven with petroleum products on board concentrate on short-sea voyages and they are comparatively small in size. These ships also spend a longer aggregate time in port.

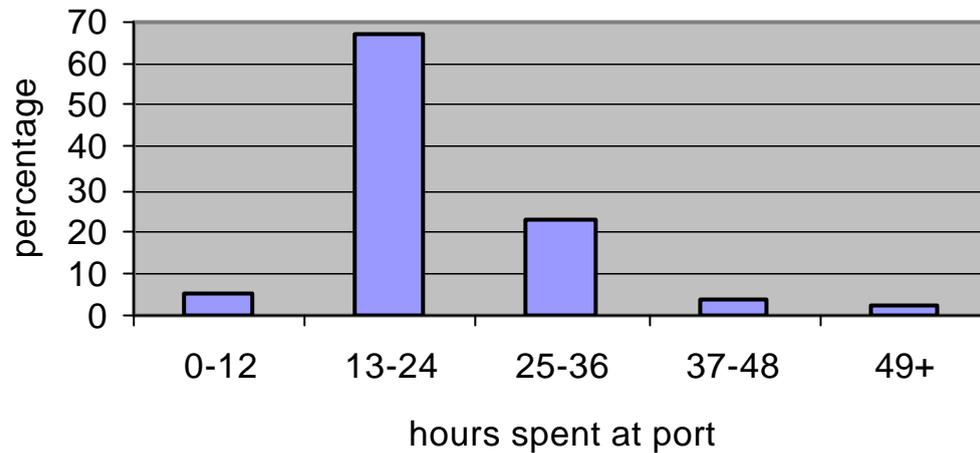
Figure 4: Hours spent in port by Petroleum Products Carriers in 1998

Figure 4 reveals that 5% (n=17) of the petroleum product carriers visiting Sandhaven turnaround within 12 hours. Sixty-seven per cent (n=248) however, turnaround between 13 and 24 hours. The remaining 28% (n=107) of the vessels spent more than 24 hours: 23% (n=86) of them turnaround between 24-36 hours, 4% (n=14) between 37 and 48 hours and only 2% (n=7) in over 49 hours.

Table 6: Time spent in port and at sea by petroleum product carriers in 1998

	N	Average Grt	Average time Spent at port Hh/mm	Average time at sea from previous port	Average time At sea to the Next port	Average % time spent at port
All Ships	372	4,206	20.48	25	28	38.64
Short-sea	350	4,189	20.13	22	23	36.60
Baltic Sea	22	4,507	25.45	69	112	14.06

As can be seen from Table 6 on average petroleum product carriers turnaround in 22 hours 48 minutes. Their average time spent at sea from their previous port of call to Sandhaven and to the next port of call were 25 and 28 hours respectively which makes up 38.64% of their operation time.

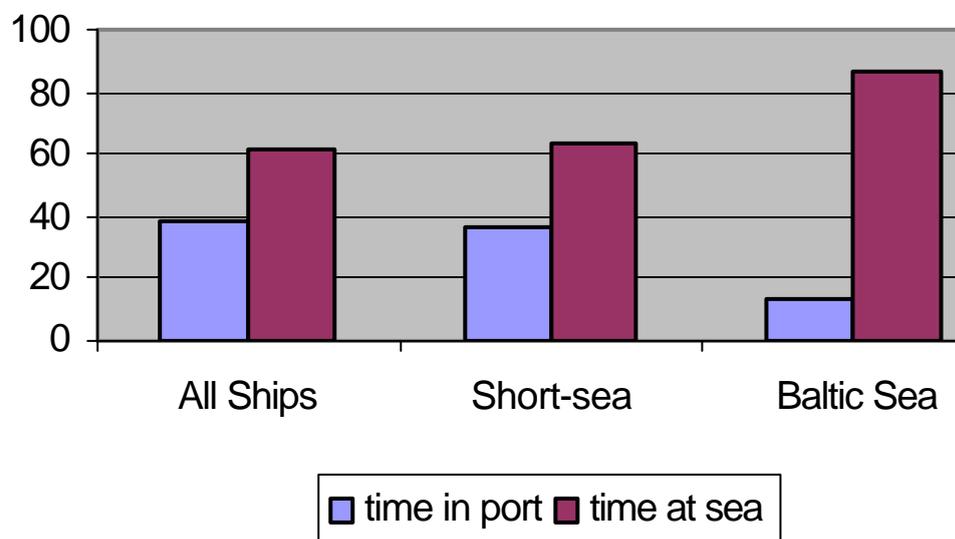
Three hundred and fifty out of 377 (93%) of these ships concentrated on short sea

trade and the remaining 22 (5%) ships involved in the Baltic Sea trade. On average the Baltic Sea petroleum product carriers spent about 5 hours longer in port than short-sea ones. However, when the portion of their operation times at sea and in port is analysed the ships that work in the Baltic trade stay a shorter time in port as a proportion of their whole voyage cycle.

Tankers concentrating on short-sea trade spent on average 22 hours at sea from their previous port of call. In Sandhaven they turned around in over 20 hours and spent on average another 23 hours to reach their next port of call. Their aggregate time spent in port corresponds to about 37% of their operation time.

The tankers involved in the Baltic trade on average spent 69 hours at sea between their previous port of call and Sandhaven. They turnaround in about 26 hours and spent a further 112 hours sailing to their next port of call. Their aggregate time spent in port corresponds to about 1 in 7 (14.06%) of their operation time. The percentages of petroleum product carriers' operation times at sea and in port can be seen in Figure 5.

Figure 5: Petroleum product carriers and the percentage of their operation time at sea and in port in 1998



A Norwegian captain of a petroleum products carrier talks about their trade pattern which is concentrated in the Baltic:

We move very fast between the ports. We started in Pembroke and we went to Riga to discharge oil for the rail track. We spent 20 hours there. After Riga we went to Tallinn in Estonia loading for Stockholm. Discharged in Stockholm. From Stockholm we went to Manysted [sic.] then to Sandhaven. From here we are going to Latvia. We travel around the North Sea and the Baltic Sea. We spend a maximum of twenty hours for loading and discharging. The more time we spend in port the more it costs the ship managing company. The daily operation cost of this tanker is about \$15,000. If we spend more time than we are supposed to in a port the company asks what went wrong.

Container Carriers

Until the mid-1960s most general cargo travelled loose and each item was stowed in the hold of a cargo liner. This labour intensive operation was slow, expensive, difficult to plan and the cargo was exposed to the risk of damage and as a result, cargo liners spent two thirds of their time in port. The shipping industry's response to the problem was to 'unitize' the transport system. This gave rise to container shipping. The first deep sea container service was introduced in 1966 and in the next 20 years containers came to dominate the transport of general cargo, with shipments of over 50 million units per annum (Stopford 1997).

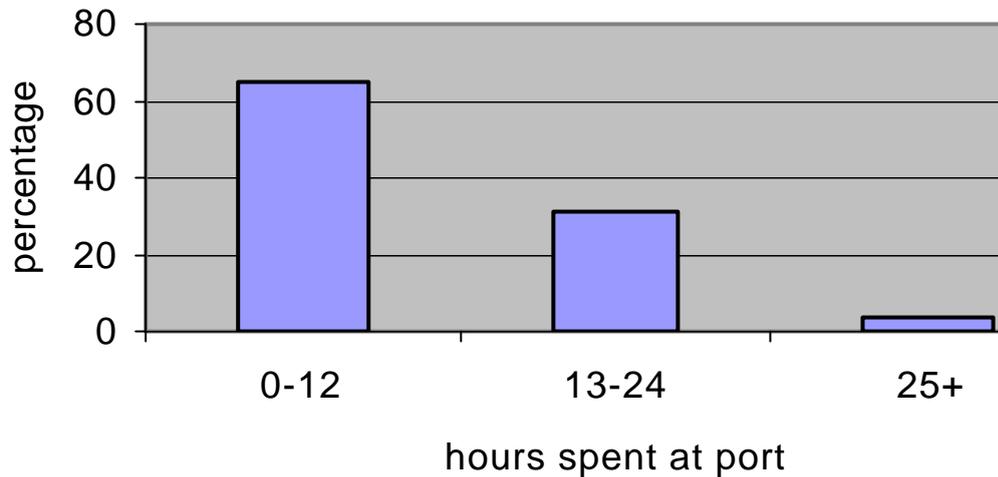
Figure 6: Hours spent at port by container carriers in 1998

Figure 6 shows the turn round times of the 253 container carriers that visited Sandhaven over 16 months. Sixty-five per cent (n=164) of these ships turned around within 12 hours and 31% (n=78) turned around between 13 and 24 hours. Altogether 96% (n=242) of the container carriers turned around within 24 hours. The percentage of the container carriers staying more than 24 hours at port is 4 (n=11).

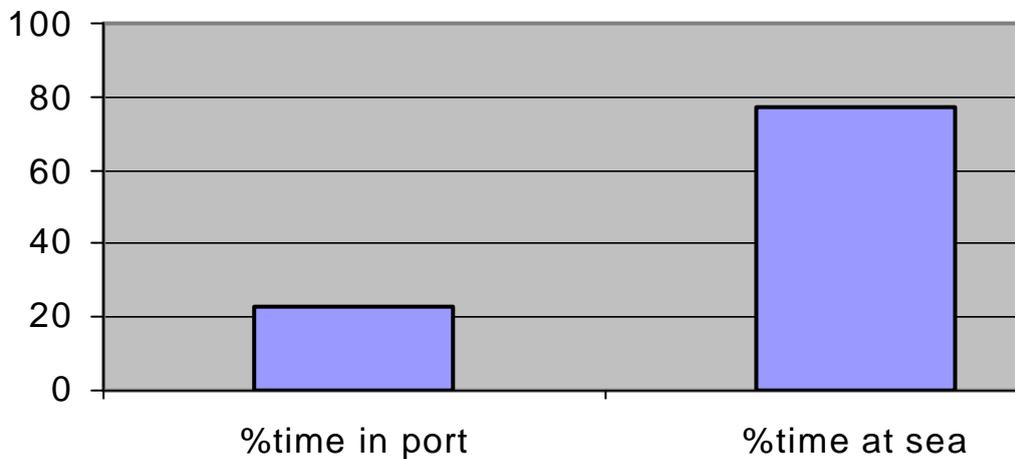
Table 6: Time spent in port and at sea by container carriers in 1998

	N	Average Grt	Average time Spent at port Hh/mm	Average time at sea from previous port	Average time At sea to the Next port	Average % time spent at port
Short-sea	253	2,810	11.23	26	23	23

The container carriers that visited Sandhaven were concentrated in the short-sea trade. These container carriers on average turned around in 11 hours 23 minutes. Again on average they spent 26 hours at sea from their previous port of call to

Sandhaven. They spent a further 23 hours at sea on the way to their next port of call. Overall, on average, these ships spent just over one quarter (23%) of their operation time at port. Figure 8 presents percentages of container ships' operation times at sea and in port.

Figure 8: Container carriers and the percentage of their operation times at sea and in port in 1998



A German captain now working on a dry bulk carrier recollected his days on a container ship in the Mediterranean trade:

Before this ship I was a captain in a container ship. We used to visit 14 ports in 21 days over and over again. We would start with 800 containers on board from Valencia then to Barcelona, Marseilles, Genoa, Naples, Marsaxlokk, Beirut, Mersin, Limassol, Damietta, Alexandria, Benghazi, Tripoli, Marlaxalok again and back to Valencia to start all over again. Mainly the ports were in the desert or outside the cities. You have no time to see anything let alone going outside the ship.

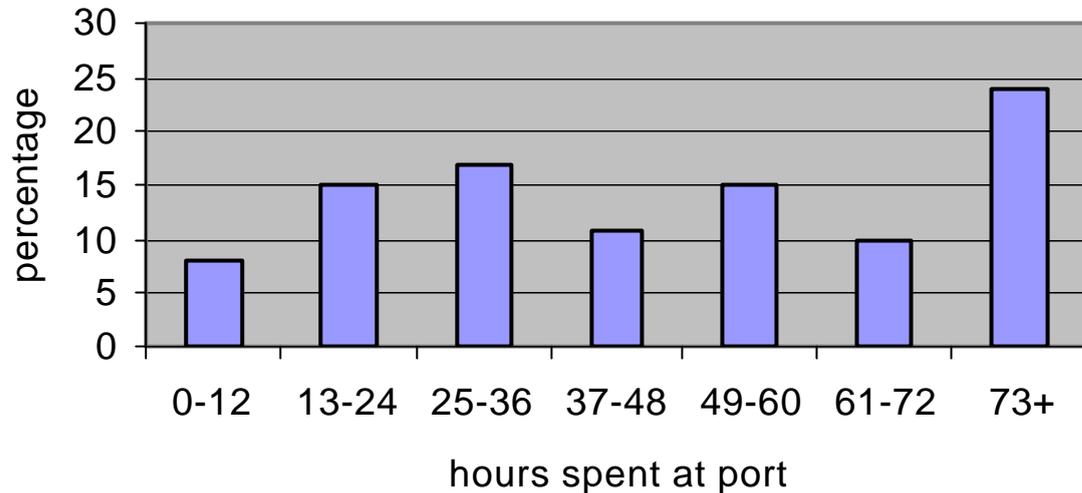
When the container terminal was busy the company didn't like us to wait at port so we would drop anchor outside the port. We would discharge cargo in

about 3 hours. We worked around the clock. When we were behind schedule, we had to make up for the time we lost. In the business people talk about *estimated* time of arrival, in reality it was *exact* time of arrival for us (emphasis added).

Sandhaven is not specialised in container trade and container handling facilities are limited, despite that the container ships calling at Sandhaven have the fastest turnaround time. The turnaround times of container ships have a notorious reputation amongst seafarers. In a recent incident, told by the Mission to Seamen's Dunkirk chaplain, a seafarer in a container feeder ship got permission from his captain to go to the seamen's club at about 500m distance to make a phone call. When he returned back shortly after finishing his call the ship was already going to the harbour mouth. The crew on board realised the situation but the captain could not stop because of other ship movements. The seafarer took a taxi to the port of Calais (60 km away) where a pilot cutter got him back to the ship while she was steaming. It will take him a couple of month's salary to pay all the expenses because he was legally liable.

Dry Bulk Carriers

During the period under consideration here the port of Sandhaven handled 196 dry bulk carriers. These ships on average spent 48 hours 36 minutes in port. Figure 9 shows the turnaround times of these dry bulk carriers. Eight per cent (n=15) of the ships turned around within 12 hours. The ships that turned around between 12 and 24 hours made up 15%(n=20). Altogether 23% (n=35) of the dry bulk carriers stayed no longer than 24 hours at port. Another 17% (n=33) per cent of the ships in this category turned around between 25 and 36 hours. Eleven per cent (n=21) turned around between 37 and 48 hours and 15% (n=30) between 49 and 60 hours. A further 10% (n=19) between 61 and 72 hours. Three quarters of the dry bulk carriers turned around within 72 hours. One in four stayed more than 72 hours (n=48).

Figure 9: Hours spent in port by dry bulk carriers in 1998

As can be seen from Table 7 turnaround times of the dry bulk carriers vary according to different types of trade. The ships involved in short sea trade on average turnaround in 25 hours 29 minutes. Turnaround time for the ships that concentrate on Baltic Sea, Mediterranean and Black Sea, and deep-sea trades are about 27, 52 and 75 hours respectively.

Table 7: Time spent in port and at sea by dry bulk carriers in 1998

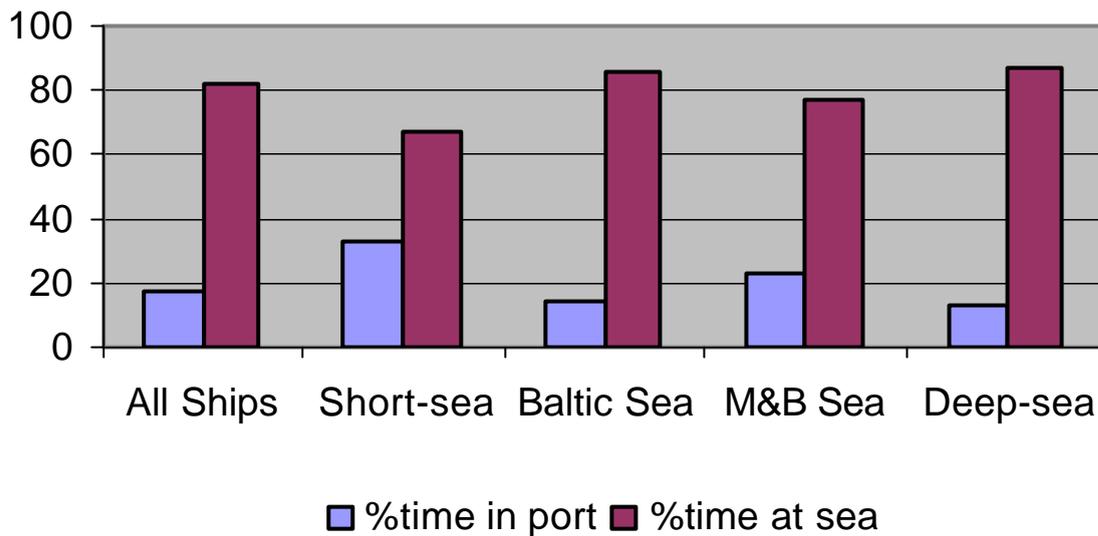
	N	Average Grt	Average time Spent at port Hh/mm	Average time at sea from previous port	Average time at sea to the next port	Average % time spent at port
All Ships	196	12,428	48.36	188	91	17.33
Short-sea	79	1,813	25.29	40	37	32.84
Baltic Sea	15	3,429	26.52	102	80	14.57
Mediterranean/Black Sea	36	13,612	52.14	134	96	22.66
Deep-sea	66	28,106	75.13	416	156	13.13

The table also shows that the further the ships have come, the longer they spend in Sandhaven and the average tonnage of the ships also increases accordingly. On average the ships that concentrate on deep-sea trade spend 50 hours longer in port than the ships that concentrate on short-sea trade. However, dry bulk carriers involved in deep-sea trade (28,106grt on average) are 15 times bigger than the ships involved in short-sea trade (1,813grt on average). The most common deep-sea commodities and destination include coal from Richards Bay and US Gulf, animal feeds from Far East and Latin America and scrap for India.

The one hundred and sixty-nine dry bulk carriers analysed here spent on average 188 hours at sea from their previous port of call to Sandhaven and they spent a further 91 hours to reach their next port of call. Overall these ships spent 17.33% of their operation time at port and 82.67% of it at sea.

Although the dry bulk carriers involved in deep-sea trade spent more time in port, when the total voyage cycle is taken into account the proportion of their time spent at port is much less than their time spent at sea. The percentage of operation times spent at port by dry bulk carriers involved in short-sea; Baltic Sea; Mediterranean and Black Sea; and deep-sea are about 33%, 15%, 23% and 13% respectively. The percentage of dry bulk carriers' operation times in port and at sea can be seen from Figure 6.

Figure 10: Dry bulk carriers and the percentage of their operation times at sea and in port in 1998



Forest Products Carriers

The first transport of forest products was in the form of logs and this was on board traditional tween-decker general cargo vessels. There has developed an increasing use of bulk carriers and lately more specialised purpose-built ro-ro and container vessels.

The first transport of processed timber was in packages on bulk carriers up to about 15,000 grt, but because of the efficiency of bulk carriers, variations have been developed for more product-orientated carriage, including open-hatch bulkers, log carriers and wood-chip carriers.

The main trades are basically from large forestry regions, for example, British Columbia to world-wide destinations (sawn timber); logs from Malaysia and Indonesia, to Japan; woodchips from Australia, New Zealand, North and South

America, to Japan; logs, sawn timber, pulp and paper from Russia and Scandinavia to the rest of Europe on short-sea trades. Scandinavian ship owners such as Star Shipping or the Gearbulk group are heavily involved in the carriage of forest products from West Coast North America to Europe and run fleets of specialist ships designed to optimise the bulk transportation of forest products.

Figure 11: Hours spent at port by forest product carriers in 1998

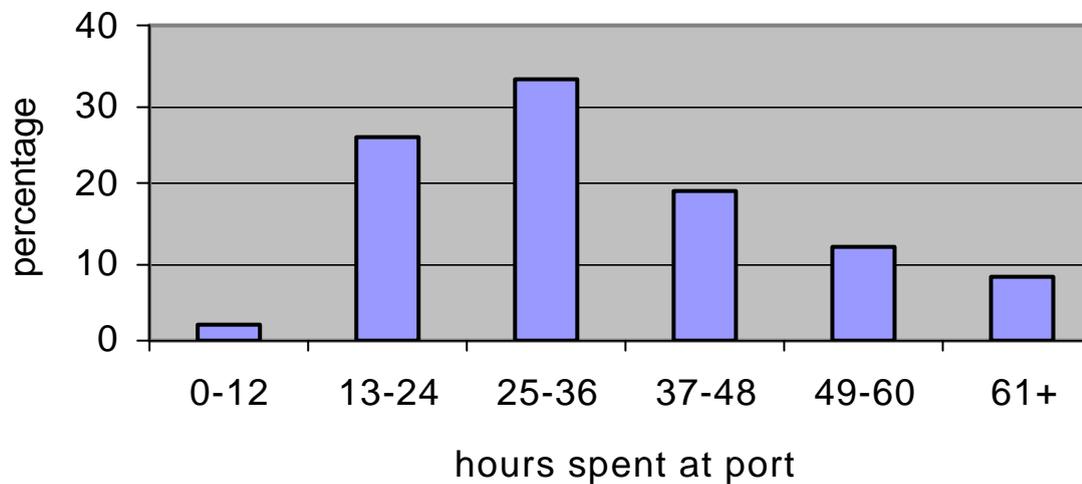


Figure 11 shows that 28% (n=47) of the 171 forest product carriers handled in Sandhaven turned around within 24 hours (only 2% n=3, turned around within 12 Hours). However, 1 in 3 (33%, n=57) ships in this category turned around between 25 and 36 hours. A further 19% (n=33) of them turned around in 37 and 48 hours. Only one in five of them stayed more than 49 hours in port (20%, n=34).

Table 8: Time spent in port and at sea by forest product carriers in 1998

	N	Average Grt	Average time spent at port Hh/mm	Average time at sea from previous port	Average time at sea to the next port	Average % time spent at port
All Ships	171	16,855	28.38	243	57	9.46
Short-sea	62	10,099	24.51	43	40	29.53
Baltic Sea	29	1,984	30.10	107	62	17.81
Deep-sea	80	27,537	36.32	447	69	7.07

As can be seen from Table 8 average turnaround time for the 171 ships carrying forest products was about 28 hours 38 minutes. These ships on average spent 243 hours at sea between their previous ports of call and Sandhaven and further a 57 hours to their next port of call. Overall these ships spent 9.46% of their operation times in port.

Average size for the forest product carriers that called at Sandhaven was 16,855grt. The deep-sea carriers were nearly double the size of the average (27,537grt) and they are about 3 times bigger than short-sea carriers and almost 14 times bigger than Baltic Sea ships. In this category the most common trade route for seep-sea crossings is the British Colombia. For the Baltic trade Riga and Tallinn are the most popular two ports.

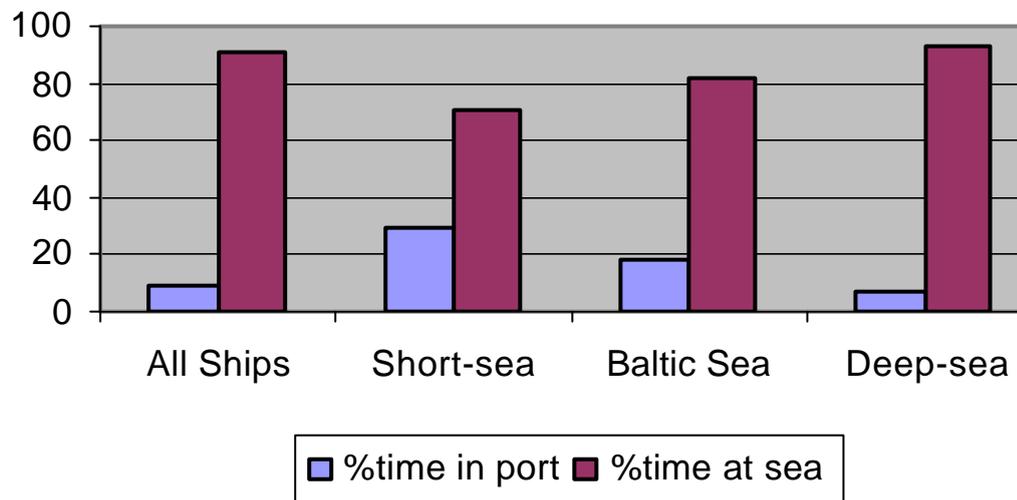
Sixty-two of these forest product carriers were concentrated in short-sea trade and their average turnaround time was about 25 hours. These ships spent 43 hours on average at sea from their previous port of call and a further 40 hours to their next port of call. Their time in port made up about 30% of their operation time.

The number of ships concentrated on the Baltic trade in this category was 29. They on average spent about 30 hours in port. Their average times spent at sea from the previous port and the next port of call were 107 and 62 hours respectively. These forest product carriers on average spent about 18% of their operation time in port.

Eighty ships were concentrated in deep-sea trades and these ships on average

turned around in about 37 hours. However, these deep-sea carriers on average spent 447 hours at sea from their previous ports of call and another 69 hours to their next port of call. On average their time spent in port made up 7% of their operation times. Figure 12 shows the percentage of forest product carriers' operation times in port and at sea.

Figure 12: Forest product carriers and the percentage of their operation times at sea and in port in 1998



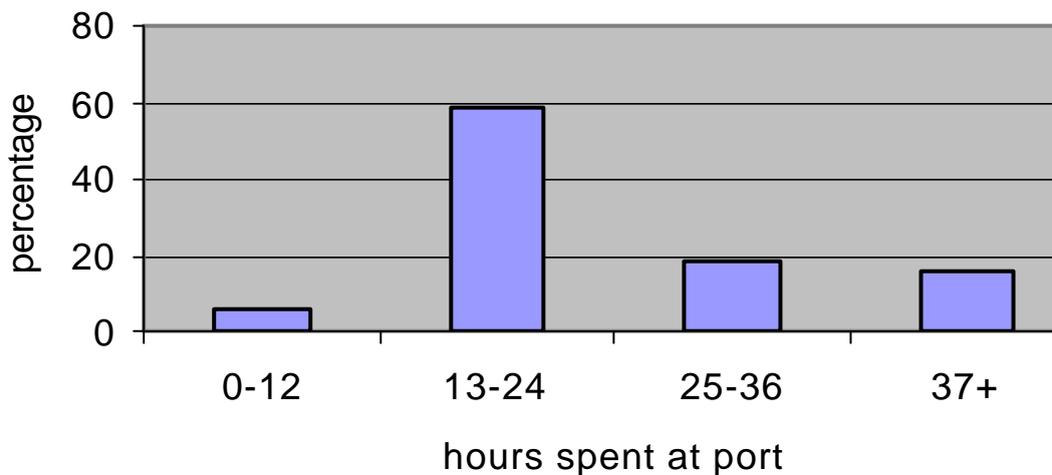
A Greek flagged forest products carrier with tissue paper called at Sandhaven. The ship had 5 Greek officers and 17 ratings: 3 Russians, an Egyptian, 2 Cape Verdeans and 11 Burmese. The Greek chief steward said of their trade pattern:

We have come from South Africa and it took us 22 days to reach here. The ship normally does 13 knots but in bad weather that could be down to 6 knots. We arrived here at 7 p.m. yesterday and are leaving at 8 p.m. this evening. Our next port of call is in Belgium and from there we're going to Brazil. From Belgium to Brazil takes 16 days.

Liquid Bulk Carriers

Tankers carrying sulphuric acid or molasses are categorised here as liquid bulk carriers. Molasses is a product of cane sugar or sugar beet. At normal temperatures molasses is very viscous and to facilitate discharge it needs to be heated to around 40 °C. It is also more difficult to pump than the oil. *Clarkson's Tanker Register 1990* identifies about 125 ships between 5,000 and 30,000 dwt as molasses/chemical tankers or molasses/oil tankers (cited in Alderton and Cross 1992).

Figure 13: Hours spent at port by liquid bulk carriers in 1998



Sixty-three liquid bulk carriers visited the port during the period under study here. Figure 11 shows the turnaround times of these ships in different time groups. About six out ten (64%, n=41) of the liquid bulk carriers turned around within 24 hours. Nineteen per cent (n=12) of them turned around in between 25 and 36 hours and only 16% (n=10) of the liquid bulk carriers stayed in port longer than 37 hours.

Table 9: Time spent in port and at sea by liquid bulk carriers in 1998

	N	Average Grt	Average time spent at port Hh/mm	Average time at sea from previous port	Average time at sea to the next port	Average % time spent at port
All Ships	63	4,752	17.07	93	54	11.66
Short-sea	49	2,696	16.11	37	40	20.92
Mediterranean	4	3,005	20.00	116	54	11.76
Deep-sea	10	19,443	51.10	382	131	9.96

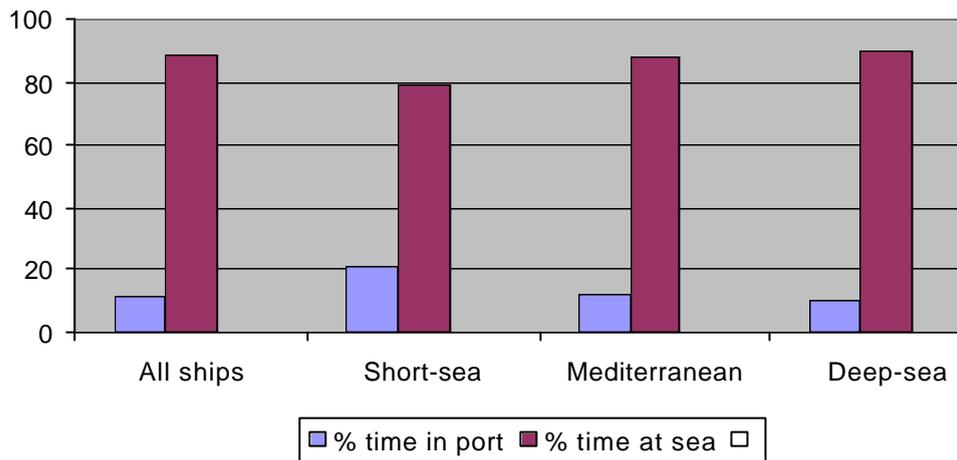
As can be seen from Table 9 the liquid bulk carriers analysed here turned around in about 17 hours. Their average time at sea from their previous port of call to Sandhaven was 93 hours and they spent another 54 hours at sea to reach their next port of call. Given this the liquid bulk carriers spent about 12 % of their operation time in port and 88% of it at sea.

The average turnaround time for ships that concentrate on short-sea trade is over 16 hours. These short-sea going liquid bulk carriers on average spent 37 hours at sea from their previous port of call to Sandhaven and they spent a further 40 hours to reach their next port of call. These vessels' time in port corresponds to one fifth (20.92%) of their operation time.

There were only 4 liquid bulk carriers involved in Mediterranean trade. These ships turned around in 20 hours. Their time spent in port and at sea corresponded to 12 and 88 per cents respectively.

Deep-sea liquid bulk carriers on average turnaround in 51 hours. However, from their previous port of call to Sandhaven they spent 382 hours at sea and further 131 hours to their next port of call. Overall, these vessels spent 10% of their operation time in port and 90% of it at sea. The graphic representation of the percentage of liquid bulk carriers' operation time in port and at sea can be seen from Figure 12.

Figure 14: Liquid bulk carriers and the percentage of their operation times at sea and in port



A captain of a Georgian flagged 17,824 grt ship with molasses on board speaks about their trade pattern:

The molasses on board was loaded in Guatemala. This ship usually trades between Argentina, Malaysia, Bombay, China and European ports. It takes about 40 days from Argentina to China. The cargo is sometimes molasses, sometimes gas oil. Molasses is usually for European ports.

A Greek flagged 28,001 grt tanker with molasses called at Sandhaven. The tanker had 10 Greek and 14 Filipino on board. A Filipino AB talks about their voyage circle:

We have been to Taiwan, South Korea and Australia. From Australia to Sandhaven we spend 45 days at sea. On the way we stopped in South Africa just for bunkering. There was no shore leave.

As the analysis of turnaround times so far suggests, from the 1970s to the 1990s

turnaround times have been drastically reduced. It is beyond dispute that the possibility of having shore leave was much higher in 1970 when all sector average turnaround time was 138 hours than 1998 when it was about 16 hours. Recollecting Alderton's study here, in 1970 liner ships involved in deep-sea trade with multi-port operations took on average four to six weeks to complete all the port turnarounds made during one round trip. In 1998 however, a typical deep-sea going car carrier making multi port visits would take on average only 30 hours in total to complete the turnarounds made during a 3 months round trip.

The following section of this paper examines the meaning of fast turnaround for seafarers themselves and draws upon first person accounts from seafarers and people who are concerned for the welfare of seafarers.

3 LIFE IN THE FAST TURNAROUND SHIPS³

Contemporary crews are recruited by commission agents and flown to distant ships as ensembles according to the instructions of a shipowner's crew manager. The length and value of employment contracts varies with nationality. Northern European officer salaries are approximately double those of their Filipino and Polish counterparts; their tours of duty are three - five months compared with tours of six - ten months for their South East Asian and Eastern European counterparts. The modern seafarer commonly sails in ships with multicultural crews whose cultural/nationality mix may vary from year to year even from one voyage to the next. The ships are places where displaced people come together and form occupational communities which themselves are isolated from wider society. The isolation factor has been exacerbated with the ongoing immense reduction in turnaround times since the 1970s. In theory no matter how reduced the turnaround time is there is still some possibility for the seafarers to have shore leave and wider contact with life beyond the shipboard. However, in practical terms it is extremely difficult. As one seafarer particularly emphasised, the difference between being in port and being at sea is negligible. 'We are not going to leave the ship in either place' he said.

Apart from the major setback of reduction in turnaround times there are further factors that make it difficult for seafarers to have shore leave when the ship is in port. These factors can be identified as:

- 1) The intensity of seafarers workload when the ship is in port;
- 2) The decline in the manning levels;

³ The first person accounts used in this section derive from the authors' own interviews conducted over the last two years on various occasions. Some of the interview materials come from the Sandhaven interviews with 50 seafarers in November 1998. Other interviews are with the International Transport Workers Federation (ITF) ship inspectors, trade unionists, shipowners, and professionals concerned with seafarers welfare conducted during 3 different international gatherings (ITF Ship Inspectors Seminar, February 1998, London; The Missions to Seamen's world conference, 1998, Swanick and ICSW Afro-Mediterranean Seminar on Seafarers' Welfare, October 1998, Casablanca).

3) Port locations/environments.

The following parts of the paper briefly comments on the each factor.

The Intensity of Seafarers' Workload when the Ship is in Port

When the author joined a ship for a round West African voyage in February 1999 in La Havre, the captain of the ship said that he was looking forward to the long sea passage to Conakry so that he could catch up with his paper work and would then be able to have a normal life. He said that he had not slept in the last 36 hours because of intense port visits and additional work in ports. The analyses of the ship's payroll for January 1999 showed those 20 Filipino ratings on board worked in total 3,389 hours additional overtime on top of their 1,700 hours fixed over time. These correspond to an average 6 hours overtime a day per seafarer (including weekends). It has been observed that substantial overtime was generated when the ship was in port.

On top of the normal everyday routine work on board for deck, engine officers, ratings and galley staff (i.e. overseeing, watchkeeping, general paper work, cooking, cleaning, painting, chipping, general maintenance and engine work and following the check list⁴) there is also an additional workload for seafarers when the ship is in port. This would include handling the mooring ropes, dealing with the visitors (i.e. Immigration, Customs, Port State Control Inspection), lashing and unlash cargo, dealing with cargo plans, painting the hull, bunkering, re-crewing, and many additional engine and maintenance works are carried out in ports because this is where the main engines stop. The following first person accounts also echo similar sentiments:

A chaplain of the Missions to the Seamen:

⁴ For example, the deck check list of the ro-ro ship that the author was on board contained 174 items for March 1999 only. Many of these items required daily or weekly checking, inspection, operation, lubrication, cleaning and painting of various places and machinery.

When the ship is alongside the workload increases. Sometimes you're loading and unloading, re-equipping, servicing, replenishing, re-crewing - lots of things happen when a ship is at port. Also the old idea that you don't work in port at night is not the case any more. 24 hours working. Oil terminals always worked 24 hours but now the other cargoes are joining in which means that demand is high and pressure only begins to ease when the ship is at sea.

An Australian ITF inspector:

As soon as the gangway is down the immigration, customs, Department of Agriculture, Department of Health, Port State Control Inspection and other agencies come to visit the ship. The seafarers in one way or another are involved in discharging or loading cargo, they do maintenance work, or they work in the engine room.

The Decline In Manning Levels

The last twenty odd years has simultaneously seen a continual reduction in crew size. In the early 1970s a typical 10,000 grt bulk cargo carrier would have had over 30 crew members. Today a much bigger (i.e. 30,000 grt) bulk carrier would have 15 to 20 crew members on board. The decline of the number of crews on board also makes it difficult to have shore leave in port. Small crews create labour intensification, seafarers work longer hours and perform flexible tasks. It has become a common practice, particularly in coasters, to sign seafarers on as AB/Cook or GP (General Purpose). Here are some personal accounts.

A German captain:

I work on a small [1,546 grt] ship with four Polish crew, a chief mate, a

cook, an AB and an OS. Until a couple of years ago we used to have nine people on board. There was an engineer but now I am an engineer as well as a captain. The cook also works as an AB - he fastens the ropes, does chipping, painting etc.

A Lithuanian bosun:

There aren't anymore crew members like captains boy, mess boy, second cook, oiler, wiper. This ship's captain does the chief officer's job as well. We have 2 ABs but it's not enough for this ship. This ship used to have 16 crew but there are only six now. We do more work. We have no time to go ashore.

A member of the Danish Seamen's Union:

We've got vessels that have got 9 member crews that have gone down from 22, so they've more than halved. Before, although there was a very similar work pattern, there were two on a watch, so there were two crew members, and then there were excess people, the day workers who would be up at night, and they would be sitting there watching TV, or having a drink or reading, so there was always someone around that you could sit down and have a chat to, and now they're like ghost ships. They actually call them ghost ships because they just don't see each other.

An Apostleship of the Sea worker and a former seafarer:

My seafaring career lasted twenty years and I've experienced big changes, working on fast turnaround ships, ro-ro and container, where we had full crew complements of 26, 27 men, 3 watch system with good time off, so even on a fast turnaround ship when we didn't have much time off duty, you had adequate rest periods, and you had time off ashore because you had

enough man power and you benefited from very good leave periods, nearly one for one leave periods. Towards the end of my seafaring career though, the man power was reduced, so there was less to perform more. You were doing instead of a 3 watch system, a 2 watch system, so you were constantly either working or sleeping. To go ashore you really had to be super human.

Port Locations/Environments

Stopford writes about how ports and their surroundings used to be:

In the old days of cargo liners and tramps the activity was obvious. Ports were crowded with ships and bustling with dockers loading and unloading cargo. Artists loved to paint these busy scenes and the waterfronts were famous for the entertainment they provided to sailors during their long port calls. (Stopford 1997: 32).

Many traditional ports of the world used to be near the city centre, these ports now regarded as historic ports/docks (i.e. Bristol, Liverpool, Rotterdam). The modern port developments in these and many other cities are generally far away from residential and shopping areas. The modern ports are automated and deserted. They are vast machineries that are geared up for speed. The activity is less obvious but very intense.

Many people interviewed have particularly commented on the port locations and environments as a factor hindering them from against taking shore leave.

The ITF Northern California inspector:

With containerisation also, you need a lot of room, and you need room where it's cheapest to purchase to build a container terminal, so this is out in the hinterland and very difficult and very expensive to go anywhere. As the

industry has changed the terminal facilities have changed, and that's all changed with containerisation. In San Francisco we have The Embarcadero which is the street that runs along the waterfront which used to be full of ships and now that's all gone and the ships are all 15 - 20 miles away. They're not just far away from San Francisco, they're far away from anything - no municipal transport because there's no people nearby other than people involved in the terminals on shore who drive where they're going and drive home. There's no reason for the municipalities to put in a bus service. So these guys lead very isolated lives.

A German Captain:

Recently, the environment around ports has changed a lot. In the old days when there were European - German, English, Swedish crews we used to spend money. There were girls and many pubs around ports. For example the Swedish ports were very busy with girls and drinks. I can remember the port of Porto was the same. Now these ports are hardly recognisable. The cheap labour crews don't spend money. They get less money. When the foreign [non-European] crew come to port they can only buy one can of beer. They have no money to go out with girls. I worked with many different foreign nationalities. They receive very little money. They send their money to their homes.

An ITF inspector in Germany:

When the ship is at port maintenance work keeps people on board busy. Some of them if they're off watch they can go but they have to be back, they'll have two hours, three hours, because of port locations it's going to take them an hour to get where they're going, an hour to come back, it's going to be expensive and they're not going in one of the Seamen's Missions' vans, there's no bus transportation, they have to take a taxi, and we're talking about people that make very little money.

As we have seen when a ship is in port seafarers' time to go ashore is very limited. However, despite fast turnaround, smaller crew size, labour intensification, isolated port terminals some seafarers manage to get out of the port. A Stella Maris volunteer explains how:

A car carrier loaded cars in South Korea and then called at Japan to top up its cargo. With over 4,000 cars on board the carrier crossed the Pacific through the Panama Canal to Mobile Alabama in the USA to discharge some of its cargo. The crew members spent there about 5 hours without any shore leave. The next port of call was Sandhaven they spent six hours here. I have taken some of the Filipino crew to the nearest motorway service station. They spent less than half an hour in the service station to make phone calls to their homes and bought some papers and confectioneries. Before Sandhaven they were on board for 43 days without any shore leave.

For the above seafarers the only means of escape was the mission bus. However, in order to offer a possibility of limited escape these buses need to be in the right place, at the right time. The above first person account also demonstrates the importance of the ship visits by the port chaplains.

Fast turnaround, intense port work, reduced manning levels and changing port environments are global factors that limit the seafarers to have shore leave. However, there are also some local issues for example, seafarers often mentioned that they cannot go ashore in some of the ports for security reasons. They said that they usually get warnings from pilots and their agents when they are for example, in S Africa, W Africa or in Algeria.

In recent months the *Lloyd's List* and *The Sea* have given big publicity to the Japanese port authorities arbitrary shore leave ban on seafarers on board of ships that have been involved in stowaway cases on their previous visits to Japan.

The UK's ships' officers union, NUMAST has raised concern over reports of an 'alarming' number of incidents in which foreign crews are being denied shore leave in the United States. The *Telegraph* reports that the New-York based Center for Seafarers' Rights is blaming the problem on a massive increase in the fees charged for processing visas to enable crew members to go ashore while their ships are in the US ports. The US State Department raised the fee from \$1 to \$45 per person with effect from 1 February 1998 and port chaplains throughout the US have subsequently reported cases of seafarers being denied shore leave as a result. Douglas Stevenson, director of the Center for Seafarers' Rights, comments:

Many ship owners have apparently found the fees too expensive and have not obtained visas for their crews. I am concerned that this action will have a serious negative impact on seafarers' well-being and maritime safety in the US waters. A seafarers' mental and physical health and well-being should not be compromised in this manner (cited in *Telegraph*, May 1998 – today (October 1999) the increased cost is still applicable).

The impact of the lack of shore leave on the seafarers mental and physical well being is the subject of the following section.

The Lack Of Shore Leave And Its Impact On Seafarers' Mental And Physical Well-Being

As we have seen the fast turnaround times have limited the possibility of social contact beyond the ship board community. The reduction in manning levels has increased the workload and reduced the quality of social contact on board.

The cargo ships are not built primarily to accommodate seafarers on board. However, they are places where many everyday life activities (i.e. working, sleeping, socialising) take place in a limited environment where there is vibration, sea motion, noise etc. The lack of shore leave means that for many seafarers, they

are trapped in this environment, typically with a set of people of different nationalities and cultures that they have never met in their life before. The following first person accounts highlight the effects of the lack of shore leave on seafarers mental and physical well being.

An Australian ex seafarer:

It's a major problem, there's no social life when you go to sea, it's total isolation. You might say that the cabin crew of an aeroplane do something similar, but a seafarer might go from - for example I've done runs from say Singapore to Philippines to New Zealand and back to western Australia, so for maybe fifteen weeks you get no mail, you do not go ashore, and by the end of it there's a certain madness that attacks some crew. Very small things become very big things. Things like insomnia - many of the crew will be pacing the alleyways at 3 o'clock in the morning, alcoholism can rise a great deal if alcohol's available. Many seafarers are on different types of medication, valium and that kind of thing and anti depressants - much higher than the regular population.

A Missions to Seamen Chaplain:

Experience on the feeder container vessels, some calling at 3 ports in 24 hours (i.e. Tilbury - Zeebrugge - Tilbury) would mean that after 3 weeks on board people's behaviour became automatic. Occasionally I used to go to from Tilbury to Zeebrugge or Rotterdam. One of the vessels didn't have a regular ship's agent and I would turn up at all times of day or night with parcels ordered from the previous trip plus the mission bus to take the seafarers to the mission. I once visited a vessel at 7.30 am in Zeebrugge, but when they asked me to take them to the mission by bus I refused which surprised them. Apparently, because I had turned up, the crew assumed that the ship had to be in Tilbury. When I said look out of the porthole they were amazed that they were not in Tilbury, but in Zeebrugge.

Throughout the 28 years as a chaplain I've seen smaller crews, less time in port, more abuse and welfare and justice cases, and growth of FOC flag vessels. There has also been an increase in workload on seafarers. This also increases stress. It is a killer. That is something I have seen over the years. Of course working for some companies is better than for others, but stress is so obvious I can comment on that - it is getting worse.

A union worker of the International Longshore and Warehouse Union:

Seafarers' lives even in the best situation, I feel are very grim, very lifeless and very devoid of any joy or any *joie de vivre* - its just work. They work tremendous hours and they have nowhere to go, either at sea or in port. One of the big innovations since I was going to sea is video tapes, but after the fourth time that you've seen *Terminator 3*, I'm sure that it gets to them.

The ITF FOC co-ordinator for New Zealand:

Because crew sizes have more than halved in the last 5-10 years and because of the short time in port that ships spend the seafarers are working even harder. In New Zealand we are in the early stages of researching the fatigue and the stress factor on members of small crews with a quick turn around. One thing I have done is talk to the families and you're getting complete character changes arising due to the amazing fatigue and stress - they're working longer hours, and with the quick turn around, they don't have the ability, technology aside, to make contact with their families and if anything does go wrong, they don't have the ability to do anything about it, because they're not ashore long enough to put things in place, like for instance to transfer money.

There's a monster being created on the ships because of fatigue. I've been talking to crew members who never see another person for that month or

two months that they're away. They pass on the alleyway as they're changing watches, but they just don't see each other, they do 6 hour watches and they just change over in the alleyway, and so there's an isolation factor as well. But there is a real monster and I think it won't be very long before we really see some drastic effects of the new environment.

A Bulgarian chief officer:

Being in this ship all the time gets to you. The ship is damp, it's sometimes cold, temperature changes. The food is not fresh, less vitamins. Noise, vibration, when the ship goes it vibrates. We are always on board. I'm working here, eating here, sleeping here. Sometimes it creates psychological problems. You're away from your home. No news from the country.

The first person accounts so far single out isolation, fatigue, depression and stress as consequences of lack of shore leave that is itself affected by fast turnarounds. However as the following first person accounts demonstrate that there are more immediate consequences of fast turnarounds on the physical well beings of seafarers: increased risk of suffering from industrial injuries.

The ITF Northern California inspector:

If you have someone with any kind of injury or illness at all there is a tendency on the part of the company to keep them on board the ship and not send them for medical attention. Because if it's an injury or illness of any extent whatsoever, they're not going to be considered fit for duty by the doctor, and there isn't enough time for them to heal or to be treated, and the ship is not going to wait for them. So rather than repatriate them and rather than deal with it, they'll try to avoid medical attention, because if they get medical attention they're going to say the guy can't sail on the ship. This is unfortunately common, there's more reluctance. Years ago, a bulk carrier, the ships going to be there for a few days, you send a guy to the doctor,

maybe for a day or two he'll have to take it easy, but now it's practically impossible with any kind of injury whatsoever.

The author of this paper is involved in an ongoing exploratory research into the causes of industrial injuries onboard. The research is not conclusive yet, however there are some emerging patterns that the majority of the injuries documented so far happened when the ships were in port and fast turnarounds have much to answer for. An ex Filipino OS recalls his injury on board of a container ship in the Port of Rotterdam:

The date was 7th of August 1998. That morning I had my 4 to 8 morning duty but also continued to work 8 to 12 as well. I worked over time because we were busy at port. We were bunkering – when provisions come there is so much work to do. I've always taken overtime when the ship is in port. Our normal schedule of work in that ship was 8am to 8pm, but if we are in port the schedule changes. Because we keep watch. I am an OS.

That day the provisions came at around 11am. Because I signed for another job when I started at 4 am that morning I was not dealing with the provisions. When I finished my work alongside 3 other colleagues, we reported to the bosun that we had finished our duty. The bosun said that we should go and help the other people to take the provisions to the stores.

The provisions were coming by a boat which was near the bow. When we finished taking the galley provisions the boat went back to bring deck provisions, then she came back and approached to the mid ship to transfer the deck provisions. They were mainly paints and lashing wires. The lashing wires were too long and in order to winch them to the ship they folded the wires. There were 6 wires in each bunch, each about 2 inches thick. They tied the ends with a thin metal band.

We were in a hurry because the captain wanted us to finish the work

quickly. The bosun also was pushing us because of the captain's pressure on him. The bosun wanted to show him that he could finish the job. ...But what happened when the cargo was moving in the air was that the metal band that was holding the folded lashes cut the rope and the cargo fell on the deck from a height. When the lashes hit the deck they came off the metal band and they first hit me on my head, then on my chest, and then ended up on my left foot. I fell down. I wanted to stand up immediately but I couldn't. I was in pain. It is very hard to explain the pain now. My friend grabbed me, I was conscious but in pain - especially my foot. I looked at it. It was hanging loose but still attached to my leg. ... Looking back I can now say that fast working was the main reason for my injuries. When you work quickly you don't think properly. There was always a pressure to work faster.

He is 26 now and not fit to work at sea because of his injury. However, the pressure on seafarers to turn the ships around faster and faster sometimes can have even more adverse effects. When The Missions to Seaman chaplain was asked what sort of physical and psychological effects he thought that fast turnaround would have on the crews, he replied:

You never get a proper dose of sleep, your sleep is always in short bursts. There has been a fatal injury here. When the seafarer died, the captain had had two hours sleep in the previous 24 and no man works efficiently when you are suffering a sleep shortage like that. Mistakes were made; short cuts were taken, because there is a high pressure on the seafarers. The fatality case was an accident waiting to be happening. The man who watched the seafarer die – the other AB who was working with him on the deck, I had to counsel him when the ship came back into the port because naturally the man hadn't slept at all in the whole week since the accident. And he was saying that the pressure is always on, that the deceased was taking risks with the consent of both of them because once they'd finished lashing the containers - and it was the penultimate container loading that killed him and there was only one to go after that - they had to get the ship ready to go to

sea. That's where the pressure is on, if they loaded the containers according to the rules and regulations, standing clear, not approaching the container until it stopped moving, the slings removed and the crane gone away they would be that much longer, they couldn't go round lashing the containers until they were all on. Because it's a small ship you can't start lashing the containers at one end of the ship while they are loading the containers at the other. Because it doesn't take that many containers, a small ship like that. If you follow the instructions correctly you cannot do your lashing until all the containers are loaded, but as soon as all the containers are loaded under that schedule that ship has to leave. So therefore they're doing the lashing while the containers are being loading. They are taking risks with their lives, every time they are in port. As soon as that's done they have to go and get the ship ready for sea, because there's no one else to do it.

When the chaplain was asked why he thought that the seafarers were taking risk with their lives his response was brief:

In order to keep up with the schedule, because other wise they are getting penalised ⁵

⁵ The full interview with the chaplain can be seen in the Appendix. The interview also comments on all the issues have been discussed throughout on this paper.

4 CONCLUSION

The view is widely held that notwithstanding the easy availability of foreign travel, one of the continuing attractions of a seafaring career is the opportunity to see the world on both sides of the track. And no doubt this view does still have some persuasive effect among would-be seafarers. But, and as this report amply demonstrates, shoregoing in either strange or mainstream places can no longer be seen as a defining characteristic of the seafaring life. To be sure, opportunities to sample other lives and other geographies have not entirely disappeared - they have just become highly improbable for most seafarers for most of the time. We might also observe, though this study has not investigated these matters, that significant reductions in manning levels have intensified workloads during port stays. We might also notice and as if to make bad worse, the relocation, redevelopment and quasi-fortification of de-peopled terminals makes it harder than ever to reach those parts of towns and cities where people gather. We should also remember that in calling at many of the world's ports, crew members will simply not be earning enough to spend at local prices. It is of course for these sorts of reasons that it is hard to exaggerate the importance of the seafarers' centres run by religious and secular welfare organisations.

This report in all its statistical detail does tell a very human story of the shrivelling quality of seafarers lives. In 1963 the UK's Seafarers Education Service (now absorbed into the Marine Society) produced *The Shoregoers Guide to World Ports*. This excellent book helped and encouraged seafarers to extend their experiences of 'ashore' beyond the first necessities of cafes, restaurants and bars. But if much of the book is as relevant and accurate as it was nearly thirty years ago, the book itself is long out of print and the Marine Society's library long ago sold off most of its lending copies. Which may be read, perhaps, as recognising that going ashore has been made redundant.

There can be no argument that the curtailment of shoregoing has seriously diminished the quality of life for seafarers but this might not be the limit of its effects. It is at least plausible to suggest that confinement to the ship is a likely contributor to fatigue, stress and other physical and mental health conditions. It is also entirely possible that fast turnarounds increase the probability of industrial injuries. So what keeps seafarers at sea under these circumstances? The answer probably lies in economic necessity rather than in long-term career professionalism. This motivation may be enough to recruit a labour force but is it enough to promote a highly motivated and skilful workforce?

There is an obvious need for research into the quality of life at sea as a prelude to the development of appropriate policies. A dusting down of the research done under the UK's *Sealife Programme* in the early 1970s and similar work done in Norway in the 1950s and 1960s might be a good place to start. Meanwhile there is a need to review existing practices to ensure that all operational regulations and welfare support systems are designed to mitigate the social and psychological effects of fast turnarounds. The consideration of the following points in the relevant ILO conventions could go some way to making a career at sea more desirable:

- The ILO working hours regulations need fine tuning to embrace port work and there is also a need to set port lay times for crew recreation;
- Maritime administrations should check that mandatory manning levels make allowance for port work;
- The welfare organisations should consider alternative means of delivering services e.g. 'sailing chaplains', development of on-line and telephone advice networks, statutory right of access to ships in port by accredited NGO officers.

Perhaps such moves will enable the industry to attract and retain well-trained and educated, career-minded professionals in all ranks. They might also usefully serve to alleviate current concerns over fatigue and the mental and physical well being of seafarers

APPENDIX

An interview with a Chaplain

Could you please tell me about your experiences with fast turnaround in your port?

Yes, fast turnaround ships increase the stress on the crews because if you think about it a ship under safety regulations - the safety regulations are for safety at sea and that is the key to the whole thing. The ship crew regulations and the ships equipment particularly the automated equipment are designed for sailing the ship at sea which means that once the ship is at sea all the automated equipment available can be switched on, and it means the crew can relax that much that all you need is a watchman on the bridge. The automatic systems, the automatic engine control systems mean that not everybody has to be on stand by as in the old days which results in minimum crew sizes. The small coaster we have in mind here, the minimum crew size is 5 people for safety at sea.

When the ship comes in dock the automated systems are not much use because you are dealing with people, all the people who visit the ship - the immigration, the customs, the owners representative, the agent, the insurer, provisions, fuelling, water and the cargo stevedores, supervisors and superintendents. And the crew at least stand watch while the cargo is loading because it is still their ship. A further stress in this port compared to lets say Dunkirk is that in Dunkirk the French dockers trade unions insist on doing all the cargo work – the unlashings in order to off load the containers and the

lashing after the containers are loaded, the crew do not touch the containers. In this port the unions are less aggressive in seeking work for their members and it is the crews responsibility to lash the containers after they are loaded which means the crew have to do the work the Dockers don't, which is a manually intensive operation, fixing up these lashing bolts on every single container on deck. And the crews manning schedule does not take that into account. The manning size of the crew is for safety at sea as I said earlier not for manual work lashing containers along side in the dock. This is why the busiest time for the crew is when the ship is in dock and why many of them find getting ashore impossible. The only time they get any sort of relaxation and when the stress is less when the ship is on the high sea. And with your coastal traders, your feeder ships and the container trade they are just not at sea for long enough, even to get 6 hours, 8 hours sleep. It is only six hours sailing from here to another major port, then a short stay in port and back again. And like an aircraft the danger time is docking and undocking, like an aircraft landing and taking off. You've got the most delicate operation, ships are made to go forwards and backwards not sideways even with lateral propellers. And all the crew, all the small crew are required to man handle the mooring ropes, again your automated systems are not going to take care of the mooring ropes and you are back to the old manual operation. This I think must be constantly born in mind when considering stress on crews. On the deep sea ships such as the container liners to the US, to the Far East, to South East Asia, you've got the first port of call 3 or 4 days away from the last port of call which gives every body a chance to get a proper sleep in their bunk.

But it is true that there is a different sort of stress in deep-sea trade – isolation. On the small coastal vessels when they are in dock, they are all very busy. They have all got their own jobs to do and again there is not much time for social intercourse between the crew. You might have crews in pairs lashing and unlashng the containers as I said in here where as in Dunkirk they wouldn't be doing that, some of them might get a break.

You've got the captain seeing a constant stream of visitors while the ship is in dock for one hour or two – still you get the agent, sometimes immigration and engineering representatives beyond seeing the engineer, she still needs to take on water, fuel, provisions in some port or another.

For feeders in coastal trade the average time in this port is between two and three hours. The shortest time being one hour the longest time being 4 to 5 hours, for the deep-sea ships we are talking about 10 or 12 hours up to 30 hours but no longer, no. 24 hours is already a good long time and crews appreciate it that they are bigger ships therefore the crews are bigger even though they are minimum size and some of them get a chance to get ashore.

But if the ship comes in at an antisocial time there is no where open for them to go, no where. That's the trouble, they know that the seafarers centre is shut. Here you have crews calling regularly – that is different again for the container business your ships on the regular run.

Going back to the isolation factor on the deep-sea ships we have here a particular example of one company – an American line with all American crew under American marine regulations. The crews come in, and the ship is in for 24 hours. They come in at weekends and the crewman is finished his duty. He's on his own. He goes to his cabin. He showers. He changes. Comes to the free phones on the dock, rings the seaman's club and we go and pick him up. We drive back to the seamen's club with him and it's a 10 minute drive from the ship and the next man is on the phone to the seaman's club we go and pick him up from the ship. So you can turnaround and go back again, you pick up the one man. You ask is there anybody else? He says I don't know, I haven't seen anybody. You bring him back to the seamen's club as you get back the phone rings again for another man. They don't know when they are going to finish, who is going to finish, who is going to get ashore. The crew of the ship meet each other in the seamen's club. I have been on board on their meal times to watch them eat. If there is

3 of them eating in the mess room at the same time that's a lot.

There are 24-25 crew members, they're big ships. We are talking about 3,000 – 4,000 container unit ships. But they don't see each other not even in dock. They attempt to get their work finished; engineers will tend to get the engineering maintenance works done so they can come ashore.

A lot of maintenance work has to be done when the engines are stopped, for obvious reasons which means in port, because if a ship stops at sea to maintain the engines then they are losing time and I think you will find the regulations require that if a ship stops at sea for longer than say half an hour and it has to go down in the log and the reason why it stopped. And that's a black mark against the captain and the crew because the ship is losing time. That applies I think in all trades – particularly to the containers with their very tight schedules. So this is it, the main engines are switched off in port and the auxiliary engines are running, or the, whatever the engine they use for generating the electricity just to keep the ship's systems running. So that's the only time they can look at the main engine.

What sort of physical and psychological effects do you think that fast turnaround would have on the crews?

You never get a proper dose of sleep, your sleep is always in short bursts. There has been a fatal injury here. When the seafarer died, the captain had had two hours sleep in the previous 24 and no man works efficiently when you are suffering a sleep shortage like that. Mistakes were made; short cuts were taken, because there is a high pressure on the seafarers. The fatality case was an accident waiting to be happening. The man who watched the seafarer die – the other AB who was working with him on the deck, I had to counsel him when the ship came back into the port because naturally the man hadn't slept at all in the whole week since the accident. And he was saying that the pressure is always on, that the deceased was taking risks with

the consent of both of them because once they'd finished lashing the containers - and it was the penultimate container loading that killed him and there was only one to go after that - they had to get the ship ready to go to sea. That's where the pressure is on, if they loaded the containers according to the rules and regulations, standing clear not going, approaching the container until it stopped moving and the slings being removed and the crane gone away they would be that much longer, they couldn't go round lashing the containers until they were all on. Because it's a small ship you can't start lashing the containers at one end of the ship while they are loading the containers at the other. Because it doesn't take that many containers, a small ship like that. If you follow the instructions correctly you cannot do your lashing until all the containers are loaded, but as soon as all the containers are loaded under that schedule that ship has to leave. So therefore they're doing the lashing while the containers are being loading. They are taking risks with their lives, every time they are in port. As soon as that's done they have to go and get the ship ready for sea, because there's no one else to do it.

So why do they take risks with their lives then?

In order to keep up with the schedule, because other wise they are getting penalised. The charter would penalise the owner, who would probably take it out of their wages. The pressure is always on. The captain has to keep up his reputation with the owners for running the ship to time and the pressure just comes through.

There is no one to speak up for the seafarers here. When the seafarer died the P&I lawyer was there from London as soon as he heard the news. The death was just before lunch and the lawyer was here just after lunch. The port pulled their workers off – the loading gang of three – who were concerned, they were pulled off, and they were taken into the office. The port had their – I don't know this but I imagine they had their solicitors

down, getting their side of it straight, to make sure that they weren't liable. The health and safety executive came on later in the afternoon, they had to come up from Chelmsford, not the Marine Accident Board. ... The late seafarer's family had no lawyers to represent him. That's why I've been round to all the churches in the area raising funds for his family – there's a big fundraising do this coming weekend - because it happened here, and I'm pleased with the response. But this is from the church going public.

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Mega-ships are the product of high fuel costs and low interest rates to achieve maximum economies of scales. But is bigger always better? Ports need more cranes, more highly skilled staff to operate them fast, more space in the yard, and the ability to handle more trucks, railcars and barges to move the containers inland. Parties involved in terminal operations will have to work more closely together to avoid long turnaround times, congestions and high demurrage & detention bills. Is bigger always better? Shipping lines struggle to accomplish a reasonable utilization rate, ports are under heavy pressure, and the savings generated through mega-ships are getting less and less. First published in 1999. Subjects. Employees, Shipping. Edit. Fast turnaround ships and their impact on crews. This edition published in 1999 by Seafarers International Research Centre in Cardiff. Edition Notes. Maritime Zone describes the Largest Ships in the World today and technologies that make them truly amazing, economical and environmentally friendly. Largest Cruise Ship in the World Now. The present champion, Royal Caribbean's Symphony of the Seas, is now docked at company's private Bahama island. The Symphony measures 361 meters (1,184 ft) in length, 66 meters (217 ft) in beam, 72,5 meters in height (238 ft) and her DWT is 18 095 tonnes. There are 18 decks accommodating 6 680 passengers and 2200 crew members. The vessel uses up-to-date technologies like an Air Lubrication System (technology that creates a layer of bubbles between the hull and water reducing friction; a 10-15% reduction in CO2 emissions are achieved along with significant With cargo ships free to travel as fast as the weather and local traffic allow, ordering some widget from the other side of the world might take considerably less time, all without the guilt of the environmental impact that shipping has today. The problem i see is typical crew on big container ships is under 20 people. Navies have large crew and in case of emergency they have profesional hands to deal with it, the smallest nuclear subs project 705 Lira or NATO code Alfa has 31 people crew, typical ballistic missile subs like Ohio 151 crew, Vanguard class 135 crew, attack subs Barracuda class 60 people, Astute 98, Los Angeles 129, Project 885 Yasen 85, 885M YasenM 64 fastest turnaround times. In the study period 33 liquid bulk carrier (5 per cent of. all ships) visited the port and on average they spent 58 hours there. The average. tonnage was 2,517grt. cargo / dry bulk vessels that visited Sandhaven either loaded or discharged cars as. Fast Turnaround Ships and their Impact on Crews 13. the sole item of cargo. These ships on average spent 207 hours in port and their. average tonnage was 7,983grt. Interestingly, the longest and shortest turnaround.