

**Occupational Mortality
Among British Merchant Seafarers:
A Comparison Between British and Foreign Fleets
(1986-1995)**

by

Stephen Roberts

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Summary

The decline of the British fleet in recent years has led to an increasing proportion of British seafarers taking employment in flags of convenience and other foreign-registered vessels. It is then a matter of some importance as to whether the British seafarers who serve in foreign ships are at greater risk of mortality and, when fatalities do occur, whether the deaths are properly investigated and registered.

Using information obtained from files at the Registrar General for Shipping, the Marine Accident Investigation Branch and many Coroners, the evidence indicates that seafarers employed in foreign vessels were, during the study period 1986 to 1995, at greater risk of mortality through work-related accidents. When compared with their counterparts in the British fleet, they also died more frequently through suicides and unexplained disappearances at sea. The latter, however, appeared to be at greater risk of mortality through off-duty accidents and drownings, often involving intoxicated seafarers attempting to gain access to relatively small merchant vessels which were berthed in British ports and rivers.

When fatalities occurred among seafarers in the British fleet the relevant log book extracts were routinely deposited with the appropriate British authorities; for deaths in flags of convenience vessels these documents were rarely forthcoming. Furthermore, the foreign flag state authorities seldom conducted inquiries into the deaths of their British employees. Whilst the deaths of the British seafarers were investigated in the large majority of cases it was the British authorities who usually conducted the inquiries.

Introduction

Merchant seafarers are engaged in a notoriously hazardous occupation. In national merchant fleets such as Denmark (Hansen, 1996), Sweden (Otterland, 1960) and Germany (Vrcelj, 1981) - which are regarded as among the safest in the world - mortality through accidents at work has been identified as ranging from between seven and twenty times more than among shore-based workers. In flags of convenience (FOC) and many other foreign fleets this information is simply not known. In a recent survey of seafaring nations world-wide, adequate responses for lives lost at sea, for the years 1990 to 1994, were not forthcoming from any of the maritime authorities in nine FOC states contacted (Nielsen and Roberts, 1998).¹

It would seem to be no coincidence that many of the OECD member states, which were able to provide information on mortality among its seafarers, tend to have the most advanced state-funded welfare systems, official maritime investigative authorities and registering mechanisms to cater for injury and death at sea. Many FOCs, on the other hand, which were not forthcoming with basic mortality statistics relating to the seafarers crewing their vessels, would appear to be better characterized by a lack or absence of these authorities, systems and associated regulation.

The British fleet, traditionally the largest in the world, has been in decline in recent years; after reaching a peak of some 32.9 million gross tonnage and 3,004 vessels in 1975, by 1995 it amounted to 4.3 million grt and 998 ships.² This decline has been particularly evident in the deep sea trade among tankers, bulk carriers and general cargo vessels which have been largely flagged-out. By contrast the passenger and offshore sectors have been relatively unaffected by the rise of the FOC and now constitute the majority of the British fleet. During the same period the numbers of seafarers employed in the fleet has similarly been reduced; from 108,000 in 1975 (Department of Transport, 1982) to an

¹ It should be noted that out of the nine FOCs contacted, the Vanuatu administration alone was forthcoming with any information on seafaring fatalities in their vessels. They were, however, only able to provide mortality statistics for some of the requested years, and were unable to give details of the size of the population crewing their merchant fleet.

² Information relating to the size of the British national fleet has been obtained from the annual Lloyd's Register of Shipping Statistical Tables. These refer to all registered ships of over 100 gross tonnage. For the purposes of this study, all fishing vessels have been excluded from the figures presented here.

estimated 25,000 in 1995 (Marine Accident Investigation Branch, 1996). It is evident that the opportunities for British seafarers sailing in the British fleet, and especially in the cargo sectors, have diminished considerably in recent years.

What, then, are the implications for British seafarers who, in deciding to remain at sea, have little option other to take employment as crew members in merchant vessels which fly the flags of FOC and other foreign nation states? Are they, for instance, at greater risk of suffering occupational mortality when compared to their counterparts who have remained in employment in the British fleet?

A large proportion of seafarers lose their lives through accidents at work and many disappear at sea.³ It is then a matter of some concern, not least to the families of the deceased, as to the circumstances in which the fatal accident arose or the seafarer was lost at sea. To shed light on such matters requires that the appropriate authorities are able to implement an official inquiry. The absence of the deceased's body usually means that a Coroner's Inquest is not held; in these cases the onus normally falls on the flag state maritime authorities to conduct the inquiry. Whilst the British Department of Transport has a long history at conducting inquiries many FOC and other foreign maritime administrations, including those of developing merchant fleets, might be described as somewhat less visible in this respect. It is then a matter of some interest to see how these foreign authorities compare with their established British counterparts, in terms of the important matter of recording and investigating seafarers' deaths.

The first aim of this report is to provide a comparison of the levels and patterns of mortality suffered by British seafarers employed in the British merchant fleet with those serving in foreign-flagged vessels. The second main aim is to provide a comparison of the manner in which deaths occurring among the two groups of British seafarers are investigated by the official authorities in Britain and by those of the foreign flag states.

³ See, for example, Hansen (1996), Larsson and Lindquist (1989) and Roberts (1997).

Inclusion Criteria

Included in this study were all deaths occurring among British seafarers employed in privately-owned British, or foreign-flagged, merchant vessels of 100 gross tonnes or more. Excluded are crew serving on board non-merchant vessels such as fishing trawlers, government-owned vessels, naval ships and pleasure craft, as well as those working on board small merchant ships (less than 100 grt). Also included are seafarers who died after being landed ashore as a result of an acute illness or an accident, provided that the death occurred within 30 days of being landed ashore and signed off the vessel's articles of agreement.

Other non-crew who died aboard the merchant vessel and were not signed-on articles of agreement are excluded, for example, passengers, stowaways, pilots, roughnecks, dock workers, commercial divers, cargo inspectors, oil-rig workers, etc. Merchant seafarers who died within hours of joining a merchant vessel but had not gone through the formalities of signing-on were included. The study period was the ten years from 1st January 1986 to 31st December 1995, inclusive.

Methods

The Registrar General for Shipping and Seamen (RGSS) is the official British authority which registers the deaths of British subjects which occur at sea. The master of a British-registered merchant ship is obliged to notify the RGSS of any deaths arising at sea among the crew who are signed on the vessel's articles. Notification of the death may also come from authorities such as a Department of Transport Marine Office, a HM Coroner, a Procurator Fiscal or, usually where deaths arise in foreign countries or foreign waters, the British Consulate or Embassy. Moreover, for the purposes of registering seafarers' deaths, the RGSS has maintained a policy of following up all official inquiries involving British cases, whilst individual files at the RGSS contain all compiled documents relating to the death of each seaman. It is anticipated, therefore, that these files cover virtually all of the deaths occurring among seafarers in the British merchant fleet. Similarly, notification of deaths among British seafarers in foreign-registered vessels is often obtained from the flag state administration or from the British sources listed above. It is expected also, that the files in the RGSS would cover the large majority of deaths among British seafarers in foreign fleets.

All files relating to seafarers who died whilst employed in British and foreign merchant vessels between 1986 and 1995 were examined. Death files and the data base of the principal official maritime investigative authority, the Marine Accident Investigation Branch (MAIB) were also inspected. The annual Lloyds Vessels Registers were then consulted to verify that each of the deaths occurred from a merchant vessel of over 100 gross tonnes which was registered from a British port at the time of death. A total of three hundred and twenty deaths satisfying the inclusion criteria were identified.

This study sought to identify the manner and causes of the deaths of each of the British seafarers. The relevant information was collected primarily from documents held in the files at the RGSS and the MAIB. Reports of post mortem examinations and Coroner's Inquests were provided by many HM Coroners throughout England and Wales, whilst additional information on some deaths was obtained from Southampton Marine Office and Health and Safety Executive Offices.

A Comparison of Mortality Patterns

An in-depth analysis of mortality among seafarers in the British merchant fleet over the longer fifteen-year study period, 1981 to 1995, is the subject of a separate forthcoming report by the same author. The following analysis provides, for the purposes of this study, a broad comparison of the patterns of mortality suffered by British seafarers in the UK and foreign fleets.

Between 1986 and 1995, a total of three hundred and twenty British seafarers were identified as having lost their lives during the course of their employment at sea. Of these, 182 were serving in the British merchant fleet, and 138 in vessels sailing under foreign flags. The causes of death for British seafarers who lost their lives in British and foreign vessels respectively between 1986 and 1995 are given separately for British and foreign vessels in Table 1.

Table 1 Cause of Death Among British Seafarers Who Died in, Respectively, British and Foreign Merchant Vessels (1986-1995)

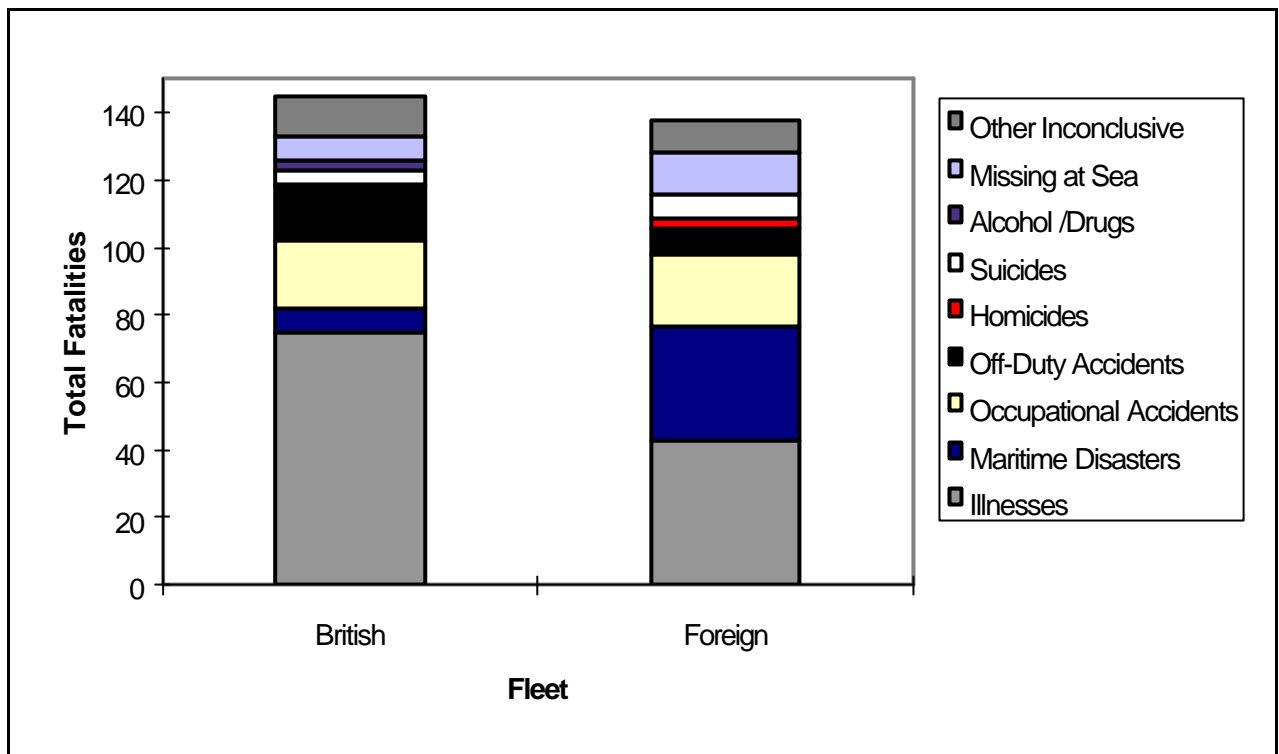
Cause of Death	British Seafarers in:	
	British Vessels	Foreign Vessels
	Number (%)	Number (%)
Natural Causes:		
Cardiovascular Diseases	67 (36.8%)	38 (27.5%)
Infectious Diseases		
Gastro-intestinal Diseases	4 (2.2%)	1 (0.7%)
Cerebrovascular Diseases	2 (1.1%)	3 (2.2%)
Respiratory Diseases	2 (1.1%)	
Other Diseases		1 (0.7%)
Non-Natural Causes:		
Maritime Disasters	44 (24.2%)	34 (24.6%)
Occupational Accidents	20 (11.0%)	21 (15.2%)
Off-duty Accidents	16 (8.8%)	8 (5.8%)
Homicides	1 (0.5%)	3 (2.2%)
Suicides	4 (2.2%)	7 (5.1%)
Drug or Alcohol Abuse	3 (1.6%)	
Inconclusive Causes:		
Missing at Sea	7 (3.8%)	12 (8.7%)
Found Drowned (Dock/River/Sea)	10 (5.5%)	5 (3.6%)

Other	2 (1.1%)	5 (3.6%)
Total	182 (100.0%)	138 (100.0%)

It should be noted that 37 British lives were lost as the result of the *Herald of Free Enterprise* disaster in 1987, and 28 of these crew were stewards or catering staff. Since it would seem clear that any comparative findings, between the British and foreign fleets, would be distorted by this single major disaster which claimed the lives of a disproportionately high number of stewards, this incident has been annexed from the subsequent comparisons of the patterns of mortality in the two types of fleet.

Figure 2 graphically illustrates the causes of deaths among the two groups of British seafarers. It is evident that proportionately more of the deceased British seafarers who were serving in foreign merchant fleets died through accidents which arose at work. Forty per cent of them lost their lives through occupational accidents or as a consequence of maritime disasters involving their foreign-flagged merchant vessels. By comparison, only fifteen per cent of those who died whilst employed in the UK fleet lost their lives through the same causes; including the thirty-seven British seafaring lives lost in the *Herald of Free Enterprise* disaster would increase this figure to 35%.

Figure 2 Causes of Death Among British Seafarers who Died in the British and Foreign Merchant Fleets Respectively (1986-95)



Higher proportions of the total lives lost among British seafarers in foreign vessels were attributable to suicides, homicides and disappearances at sea, when compared to their counterparts in the British fleet. Larger proportions of deaths among the latter, however, were due to illnesses, as a direct result of alcohol or drug abuse, and through off-duty accidents and drownings in a dock or river. The majority of these off-duty accidents and drownings were alcohol-related.

Among the British seafarers who died whilst employed in foreign vessels, Table 2 shows the frequency of deaths which occurred in the different fleets. The foreign flags have been grouped as FOCs,⁴ second registers and other foreign national (both OECD and non-OECD states).

Table 2 Flag State of Foreign Vessels in Which British Seafarers Died (1986-95)

<u>Flag State</u>	<u>No of Deaths</u>	<u>Flag State</u>	<u>No. of Deaths</u>
<u>Flags of Convenience:</u>		<u>Other Foreign Fleets (OECD):</u>	
Bahamas	21	Ireland	8

⁴ Over the years there has been some disagreement as to how exactly a flag of convenience should be defined. For the purposes of the present study, the classification of FOC fleets is taken from the International Transport Federation list of flags of convenience, dated 16th June, 1997.

Bermuda	13	Italy	3
Gibraltar	13	Sweden	2
Panama	9	The Netherlands	1
Liberia	7	New Zealand	1
St. Vincent & Grenadines	4	South Africa	<u>1</u>
Cyprus	3	Total	16
Malta	2		
Barbados	2		
Netherlands Antilles	<u>1</u>		
Total	75	<u>Other Foreign Fleets (non-OECD):</u>	
		Singapore	5
<u>Second Registers:</u>		Iran	3
Isle of Man (UK)	18	Saudi Arabia	2
Hong Kong (UK)	10	Brunei	1
NIS (Norway)	1	Kuwait	1
Turks and Caicos Islands (UK)	<u>1</u>	Libya	1
Total	30	Qatar	1
		Russia	1
		United Arab Emirates	1
		Venezuela	<u>1</u>
		Total	17
<u>Total Deaths = 138</u>			

Seventy-five of the 138 British seafarers (54%) who lost their lives in foreign fleets were sailing in FOC vessels. A further thirty (22%) were employed by companies which were using second-registers. The remaining thirty-three lives were lost in other national fleets; sixteen of these in vessels of OECD countries and 17 in the ships of non-OECD states. It is notable that most of these non-OECD states are oil-producing nations around the Persian Gulf.

A majority of British seafarers who lost their lives whilst employed in foreign ships were employed in oil or chemical tankers (29%) and general cargo vessels (28%) (Table 3). The remaining British seafarers lost their lives in bulk carriers and offshore vessels (ten each), container ships (eight), passenger and liquefied gas carriers (five each) and RoRo cargo vessels (four), whilst the other nineteen deaths occurred in tugs (eight), research vessels (four), refrigerated cargo ships (three), vehicles carriers (two), a pulp/paper carrier and a cable layer (one each).

Table 3 Type of Merchant Vessel in which British Seafarers were Serving in at Time of Death (1986-95)

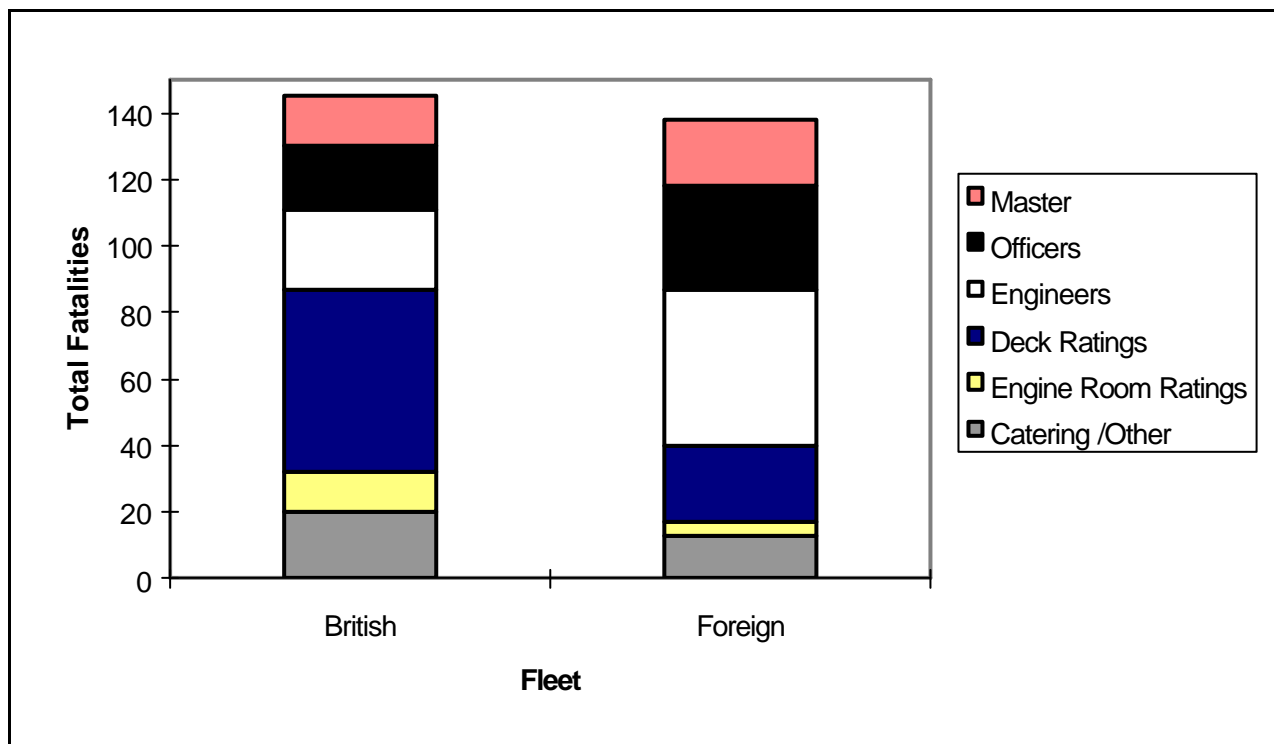
British Seafarers in:	
British Vessels	Foreign Vessels

Type of Vessel	Number (%)	Number (%)
Passenger	27 (17.9%)	5 (3.6%)
Tanker (Oil /Chemical)	10 (6.9%)	39 (28.3%)
Container	12 (8.3%)	8 (5.8%)
Bulk Carrier	4 (2.8%)	10 (7.2%)
RoRo Cargo	6 (4.1%)	4 (2.9%)
General Cargo	24 (16.6%)	38 (27.5%)
Offshore	34 (23.4%)	10 (7.2%)
Liquefied Gas Carrier	2 (1.4%)	5 (3.6%)
Other:		
Dredger	15 (10.3%)	
Nuclear Fuel Carrier	2 (1.4%)	
Reefer	2 (1.4%)	
Research Vessel	2 (1.4%)	4 (2.9%)
Cable Layer	1 (0.7%)	1 (0.7%)
Cement Carrier	1 (0.7%)	
Hopper Barge	1 (0.7%)	
Sludge Tanker	1 (0.7%)	
Tug	1 (0.7%)	8 (5.8%)
Refrigerated Cargo		3 (2.2%)
Pulp /Paper Carrier		1 (0.7%)
Vehicles Carrier		2 (1.4%)
Not known (Provisionally Registered)	1 (0.7%)	
Total	145 (100.0%)	138 (100.0%)

By contrast, among British seafarers who lost their lives in the UK fleet between 1986 and 1995, only ten (7%) were serving in tankers, four (3%) in bulk carriers and twenty-four (17%) in general cargo vessels. Reflecting the composition of the British fleet during the study period, proportionately more lives were lost in the offshore (23%) and passenger (18%) sectors, and also in other small coastal vessels such as dredgers (10%).

Mortality among British seafarers in the UK and foreign fleets also differed greatly according to the rank of the deceased (Figure 3). In foreign vessels, 38% of the deceased were employed as the vessel’s master or as an officer, whilst a further 34% were engineers. In the British fleet, by contrast, only 23% were the master or ship’s officers and 17% Engineers. Similarly, in foreign vessels, only 19% of the deceased were deck or engine-room ratings, whilst in the British fleet, the corresponding figure was much greater at 46%.

Figure 3 Rank of Deceased British Seafarers in the British and Foreign Merchant Fleets (1986-1995)



It would seem clear that the British seafarers who died in foreign vessels were much more likely to be employed among the higher ranks than their counterparts in the British fleet. It is almost certain that this reflects the overall crewing patterns in the two sectors; British seafarers who take employment in foreign vessels usually do so, presumably on account of correspondingly lower wages and inferior working conditions, only among the higher ranks in the ship.

Whilst the deceased British seafarers from the UK and foreign fleets appear to be somewhat distinctive in terms of their rank and the type of merchant vessel in which they were employed, there are also notable differences in the region of Britain in which they were resident at time of death (Table 4). Again reflecting the composition of the British fleet, proportionately more of the deceased were resident in Scotland and Norfolk (offshore sector) and southern counties such as Kent and Hampshire (passenger sector). By contrast, British seafarers who died in foreign vessels were more often resident in traditional seafaring regions; most notably in Tyne and Wear - about one third of the deceased came from the North East - although perhaps surprisingly there were fewer seafarers from Merseyside. It is also evident that several of the seafarers who died whilst serving in foreign fleets were resident in the flag state or other foreign countries.

During the ten year study period, maritime disasters in which British seafarers lost their lives occurred with much greater frequency in the foreign merchant fleets. There were fourteen such disasters involving foreign-registered vessels compared to four (including the *Herald of Free Enterprise*) in the British fleet (Table 5).⁵ Nine of the 14 foreign vessels were flying flags of convenience, one was registered in the Isle of Man, whilst the other four were Singapore (two), Russian and Venezuelan vessels (one each).

⁵ It is worth noting that since British seafarers are often only employed among the higher ranks in foreign-registered vessels, when compared to their counterparts in the British fleet, their employment would be dispersed over a relatively larger number of ships. It may be expected that the former would be more likely to be sailing in a vessel which is involved in a maritime disaster.

Table 4 **Region of Usual Residence at Time of Death: Deceased Seafarers in the British and Foreign Merchant Fleets (1986-1995)**

Usual Residence	Number of Deaths Among British Seafarers (%)			
	British Vessels		Foreign Vessels	
Wales	5	(3.4%)	10	(7.2%)
Scotland	35	(24.1%)	20	(14.5%)
Northern Ireland			4	(2.9%)
Isle of Man	2	(1.4%)	3	(2.1%)
North East England:				
Tyne and Wear	12	(8.3%)	28	(20.2%)
County Durham	2	(1.4%)	4	(2.9%)
Cleveland	2	(1.4%)	2	(1.4%)
Yorkshire	17	(11.7%)	10	(7.2%)
North West England:				
Merseyside	12	(8.3%)	5	(3.6%)
Cheshire	3	(2.1%)	2	(1.4%)
Lancashire	3	(2.1%)	6	(4.4%)
Cumbria			2	(1.4%)
Midlands:				
Warwickshire	2	(1.4%)	1	(1.4%)
Nottinghamshire			1	(0.7%)
Derbyshire			2	(1.4%)
South West England:				
Avon	2	(1.4%)		
Cornwall	1	(0.7%)	1	(0.7%)
Devon	1	(0.7%)		
Somerset			2	(1.4%)
Wiltshire			1	(0.7%)
Dorset			2	(1.4%)
South East England:				
Hampshire	9	(6.2%)	1	(0.7%)
Kent	9	(4.2%)	3	(2.1%)
Norfolk	6	(4.1%)		
Suffolk	5	(3.5%)	4	(2.9%)
Essex	3	(2.1%)	4	(2.9%)
Lincolnshire	2	(1.4%)	2	(1.4%)
Surrey	1	(0.7%)		
Middlesex	1	(0.7%)		
Hertfordshire	1	(0.7%)		
Isle of Wight	1	(0.7%)		
Sussex			2	(1.4%)
Berkshire			1	(0.7%)
Overseas	1	(0.7%)	9	(6.5%)
Not Known /No Fixed Abode	7	(4.8%)	6	(4.3%)
Total	145	(100.0%)	138	(100.0%)

Six lives were lost after two vessels were involved in collisions with other ships. In the first case the *Western Winner*, a Panamanian-registered bulk trawler of 15,953 grt collided with the *British Trent*, a 15,649 Bermudan-registered oil tanker, which had been off-loading a pilot during thick fog in the English channel. Although the official British maritime investigators were prevented by the owners' solicitors from interviewing the master of the *Western Winner*, the subsequent report concluded that he was unfamiliar with the area, appeared not to have prepared a passage plan, that the tanker was considered not to be travelling at a safe speed, not to have kept an effective look-out and not to have made proper use of radar (MAIB, 1995). The subsequent Coroner's Inquest recorded a verdict of unlawful killing for the four British crew who, out of a total of nine in the *British Trent*, lost their lives as a result of the fire which followed the collision. Two British lives were lost in a second collision, involving a small cargo vessel registered in Cyprus, which occurred off Northern Spain.

A further twelve British seafaring lives were lost after fire or explosions broke out in seven different vessels. Five of the seven incidents, and nine of the twelve lives lost, involved foreign-registered ships. Three of these maritime disasters resulted from explosions in the engine room; one involved a British oil tanker which was docked at a British port (two lives lost), a second arose in an Isle of Man-registered oil tanker in the North Sea (two lives) and the third occurred in a Bermudan passenger ship along the straits of Dover (one life). Three of the fatal fires broke out in accommodation areas on board; in a small British cargo vessel in dock in Britain, in a Russian passenger cruise in the Greenland Sea and in a Venezuelan tug off Venezuela (one life lost in each case). A fourth fire led to the foundering of a Liberian oil tanker off Japan and the loss of the entire crew, which included a British master, first mate, chief and second engineer.

A further seven maritime disasters which led to the loss of British seafarers involved the foundering or disappearances of merchant vessels. Weather conditions and sea state are known to be a major factor in the loss of four of the vessels and thirteen British lives. Six of the seven were foreign registered, and six also were less than 2,000 grt. Two of the vessels, a small Bahamian-registered cargo vessel and a British dredger, foundered during adverse conditions in the English Channel. Two small cargo vessels, registered in Panama and the Bahamas respectively, were lost in the Bay of Biscay.

Table 5 Maritime Disasters in Which British Seafarers Lost their Lives (1986-1995)

Flag	Type of Vessel (GRT)	No. of British	
		Lives Lost	Type of Maritime Disaster
British:			
British	Passenger Ferry (7,951)	37	Capsized off Belgium
British	Dredger (1,503)	4	Foundered in heavy seas in English Channel
British	Oil Tanker (11,898)	2	Explosion in engine room at dock in Britain
British	General Cargo (499)	1	Fire in accommodation area at dock in Britain
FOC:			
Bahamas	General Cargo (1,397)	6	Lost during storms in Bay of Biscay
Gibraltar	Oil Tanker (1,230)	6	Foundered after striking a rock off Iceland
Liberia	Oil Tanker (23,038)	4	Foundered after a fire broke out, off Japan
Bermuda	Oil Tanker (15,649)	4	Fire after a collision in the English Channel
Bahamas	General Cargo (1,595)	2	Foundered during storms in English Channel
Cyprus	General Cargo (1,156)	2	Foundered after a collision off Northern Spain
Bahamas	Tug (489)	2	Foundered in Persian Gulf, off Iran
Panama	General Cargo (499)	1	Lost in Bay of Biscay
Bermuda	Passenger (5,917)	1	Explosion in engine room, Straits of Dover
2nd Registers:			
Isle of Man	Oil Tanker (121,164)	2	Explosion in engine room in the North Sea
Other National:			
Russian	Passenger Cruise (24,981)	1	Fire in accommodation area, Greenland Sea
Singapore	General Cargo (12,522)	1	Foundered during a typhoon off Hong Kong
Singapore	Tug (742)	1	Missile attack during Iraqi-Iranian war
Venezuela	Tug (1,041)	1	Fire in accommodation area

The other three vessels which foundered or disappeared involved a Gibraltar-registered oil tanker which foundered after striking a rock off Iceland, a Bahamian tug which sank in the Persian Gulf and a larger Singapore general cargo vessel (12,522 grt) which was lost during a typhoon off Hong Kong. Finally, there were two remaining maritime disasters in which British seafarers lost their lives between 1986 and 1995. The first was the *Herald of Free Enterprise* disaster. The second involved a British chief engineer of a Singapore-registered tug who was killed by an explosion whilst engaged in fire-fighting on the forecastle of an oil tanker off Bahrain; the tanker had been struck by a missile during the Iraqi-Iranian war.

A total of forty-one British seafarers lost their lives as a consequence of occupational accidents; twenty were employed in the British fleet and 21 in foreign-registered vessels. The circumstances in which these fatal occupational accidents arose, however, differed greatly according to the type of fleet (Table 6). One third of the deaths which arose in foreign ships were as a result of asphyxiation in cargo holds

or tanks. By contrast no seafarers in the British fleet died in this manner between 1986 and 1995, although one rating was asphyxiated by petrol fumes in the engine room of a British oil tanker.

The seven asphyxiations in holds, six of which occurred in FOC vessels, were invariably the consequence of unsafe working practice. The worst case involved the chief officer of a small Bahamas-registered cargo vessel who discovered, when finding four of his colleagues dead in the ship's hold on route to Southern Spain from Belfast, that he was the only member of the crew alive; following some bad weather on the voyage the ship's master had taken the engineer and the two ratings with him to inspect the scrap metal cargo, widely known to affect oxygen levels in holds, without any form of breathing apparatus.

The remaining three seamen who died from asphyxiation were chief officers in vessels registered in Bermuda, Gibraltar and the Isle of Man. They had also failed to follow the normal tank /space entry procedures; the third had entered without breathing apparatus in a quick attempt to save the lives of two Bangladeshi crew who were also asphyxiated.

In terms of the rank of the deceased, it would appear that ratings are clearly at most risk through fatal occupational accidents; twenty-two of the forty-one deceased (54%) were employed as deck or engine-room ratings. Moreover, of the sixteen officers who lost their lives through occupational accidents, it is notable that one half of these were serving in small merchant vessels of under 2,000 grt. These types of fatalities, often the consequence of unsafe working practices and hazardous conditions were more evident in the British fleet, and particularly in the offshore sector and in small general cargo vessels.

Several of the fatal occupational accidents were directly attributable to rough seas. These include two seafarers who were washed overboard and three who were struck by large waves sweeping over the forecastle. These seamen had been engaged in hazardous activities on deck, such as securing leaking hatch covers and connecting bleeder hoses, as the ship was sailing amidst typhoons and rough seas. Some of the accidents which occurred on the decks of supply vessels, usually registered in Britain, were similarly linked to working in hazardous weather conditions, and under time constraints to discharge or load cargoes.

Table 6 Fatal Occupational Accidents Involving British Seafarers (1986-1995)

<u>Flag</u>	<u>Rank</u>	<u>Type of Vessel</u>	<u>Type of Occupational Accident</u>
<u>Asphyxiated:</u>			
British	Engine Rating	Oil Tanker	<u>Overcome by petrol fumes in the engine room</u>
Bahamas	Master	General Cargo	Asphyxiated in a cargo hold containing scrap metal
Bahamas	1 st Engineer	General Cargo	Asphyxiated in a cargo hold containing scrap metal
Bahamas	Deck Rating	General Cargo	Asphyxiated in a cargo hold containing scrap metal
Bahamas	Deck Rating	General Cargo	Asphyxiated in a cargo hold containing scrap metal
Bermuda	1 st Officer	Bulk Carrier	Asphyxiated in a cargo hold
Isle of Man	1 st Officer	General Cargo	Asphyxiated in a tank after attempting to rescue two crew
Gibraltar	1 st Officer	General Cargo	Asphyxiated in a cargo hold
<u>Falls Overboard:</u>			
British	1 st Officer	Supply	Washed overboard during heavy seas, North Sea
British	2 nd Officer	RoRo Cargo	Slipped off an icy shore ramp at dock at dock in Canada
British	Deck Rating	Oil Tanker	<u>Washed overboard during heavy seas, Arabian Sea</u>
Hong Kong	1 st Officer	Bulk Carrier	Fell overboard into a harbour in Spain
Ireland	Deck Rating	Tug	Fell into harbour whilst painting the side of the tug
NL Antilles	Deck Rating	Supply	Fell overboard during berthing operations
<u>Falls on Board:</u>			
British	Deck Rating	Cruise Ship	<u>Fell on to the main deck from a great height</u>
Bermuda	Deck Rating	Cruise Ship	Fell in the galley after the vessel had slipped anchor
Ireland	1 st Officer	General Cargo	Fell off a ladder inside a cargo hold
Italy	4 th Engineer	Oil Tanker	Fell inside an oil tank
<u>Struck by Heavy Seas:</u>			
British	Deck Rating	Container	<u>Struck by heavy seas on the forecastle during a typhoon</u>
Hong Kong	1 st Officer	Bulk Carrier	Struck by heavy seas on the forecastle
Sweden	1 st Officer	RoRo Cargo	Struck by heavy seas on the forecastle
<u>Struck By Mooring Ropes:</u>			
British	1 st Officer	Supply	Struck by a tow rope which parted and thrown overboard
British	2 nd Officer	Supply	<u>Struck by a tow rope which parted and thrown overboard</u>
Isle of Man	Deck Rating	Tanker	Struck by parting mooring rope during berthing operations
Ireland	Deck Rating	Tug	Struck by mooring rope during berthing operations
Malta	Deck Rating	General Cargo	Struck by mooring rope which had parted
<u>Struck by other Moving Objects:</u>			
British	1 st Officer	RoRo Cargo	Crushed underneath a truck on the vehicles deck
British	Electrician	Container	Crushed between lift shaft and door frame of a faulty lift
British	Deck Rating	Supply	Crushed between containers on deck in heavy seas
British	Deck Rating	Supply	Crushed on deck underneath a collapsed gas-rig crane
British	2 nd Officer	General Cargo	Crushed by a trolley in the cage of the gantry crane
British	Deck Rating	Supply	Crushed between a rescue craft and the supply vessel
British	Deck Rating	Supply	Crushed between a rescue craft and the supply vessel
British	1 st Officer	General Cargo	Crushed between hatch covers which had jammed
British	Deck Rating	Supply	<u>Struck by a weight during anchor handling operations</u>
Ireland	Deck Rating	Ferry	Crushed between watertight doors
Bermuda	Deck Rating	Oil Tanker	Struck by a fuel hose and knocked over board on to a barge
Isle of Man	1 st Officer	Supply	Struck by a weight during anchor handling operations
<u>Other Accidents:</u>			
British	1 st Officer	Oil Tanker	Head injuries after diving to inspect anchor warp
British	Deck Rating	Ferry	Drowned after a lifeboat davit broke during a testing drill
British	Deck Rating	Ferry	Drowned after a lifeboat davit broke during a testing drill

The mean ages of the seafarers who suffered fatal occupational accidents in foreign-flagged vessels is, at 42.9 years, slightly, although not significantly, higher than among those in the British fleet (38.0 years).

It is worth commenting briefly on mortality among the seafarers which was attributable to other causes. British seafarers in the British fleet more frequently lost their lives as a result of accidents which arose in off-duty time; there were sixteen such instances compared to only eight among those serving in foreign-flagged vessels. Four of the off-duty accidents among seafarers in the British fleet, and two among those in foreign vessels, were traffic-related accidents which occurred ashore in foreign countries. Of the remaining eighteen off-duty accidents, fourteen involved the seafarer drowning when returning to his berthed vessel from ashore. Eleven of the fourteen were known to have been drinking alcohol ashore, and eleven of these accidents occurred in British ports; the other three were in ports in France, the Netherlands and Western Samoa. It is particularly notable that in twelve of the fourteen cases, the vessels which the deceased were attempting to access, or were returning to, were less than 2,000 grt; the other two were 3,949 and 7,896 grt. The four remaining off-duty accidents were also alcohol-related. One seaman drowned after falling overboard from his vessel and a second drowned after taking a midnight swim in a French river. The remaining two, who had both been suffering from delirium tremens, died from accidents in their cabins whilst under the influence of alcohol.

A further fifteen seafarers were found drowned in a dock or river or, in one instance, in the sea. Many of the seafarers had been drinking ashore and were returning to their, often small, merchant vessels which were also usually berthed in British docks. It is likely that these seafarers also died from accidental falls into the docks and rivers; the lack of a witness to the death, however, usually meant that an open verdict was returned at the subsequent Coroner's Inquest.

It was found that three British seafarers in foreign-flagged vessels, and one in the British fleet, were the victim of homicides. Moreover, British seafarers in foreign-flagged vessels died from suicides, and disappeared at sea, with greater frequency than those employed in the British fleet. Many of these deaths would appear, from the subsequent inquiries carried-out, to be variously linked to factors such as marital and other family problems, symptoms of severe mental illnesses, work-related problems or other

personal problems. There would seem to be some evidence that the work-related suicides or disappearances may have been more common among the British seafarers who were employed in foreign-registered vessels.

A Comparison of Mortality Rates

It would seem clear from the analysis to date that the patterns of mortality suffered by British seafarers in the UK and foreign fleets are, in many respects, distinctive. Nonetheless, a more important public health issue is whether there is also a marked difference in the levels or rates of occupational mortality suffered by the seafarers in the two types of fleet. An extensive comparison of mortality rates ideally requires that the two populations at risk, the numbers of British seafarers employed in both the UK and foreign fleets, are available for each year of the study period. Such information is simply not known by statistical sources in the British Department of Transport; not to mention the maritime administrations of many FOC and foreign fleets. However, in view of the important health issue at hand, it has been possible to use information from other sources to obtain a crude estimate of the ratio of British seafarers employed in the two sectors between 1986 and 1995.

The British Chamber of Shipping, through their annual Fleet Manpower Inquiries (Chamber of Shipping, 1987-95), provide estimates of the numbers of British seafarers manning UK and foreign-registered vessels which are owned by their affiliated (British) companies. Importantly these estimates exclude, on the one hand, foreign companies which employ British seafarers, and on the other, British companies employing UK seafarers which are not affiliated to the Chamber of Shipping. Regarding the “non-federated” British component, in 1992 the Chamber of Shipping estimated that this involved the employment of 10,600 seafarers, of whom some two-thirds (about 7,000) were British nationals; typically employed by companies operating small vessels in coastal and offshore trades. Similarly, in 1997, an estimated 6,142 certificated British and Irish officers were employed by foreign companies at sea (McConville, Glen and Dowden, 1998). Whilst the corresponding number of British ratings working for foreign companies is not known, it is considered by the Chamber of Shipping to be relatively small; this would be consistent with evidence from the current study which indicates that less than twenty per cent off the British seafarers who died whilst serving in foreign-registered merchant vessels were employed as deck or engine room ratings.

From the available evidence, therefore, it would not be unreasonable to assume that the numbers of British seafarers employed by foreign companies in 1997, and by non-federated British companies in 1992, are *roughly* equal. In the absence of corresponding figures for other years of the study period,

and also any substantive evidence of any significant fluctuation over time, for the current purposes one could assume that they remained fairly stable between 1986 and 1995. It is then possible to add on these foreign company and non-federated British employment estimates (of 7,000 each) to the figures for UK seafarers employed in respectively, foreign and British-flagged vessels, which are covered by the annual Chamber of Shipping Fleet Manpower Inquiries. The seafarers who were employed in government naval craft also need to be subtracted.⁶ Hence, in 1995 for example, this would give an estimated total of 17,434 British seafarers employed in the British fleet, and 11,603 in foreign-flagged vessels. Whilst the precision of these estimates is certainly questionable, it would not be unreasonable to conclude that in 1995 there were roughly 1.6 times more British seafarers employed in the British fleet than in foreign vessels. Since British companies were continuing to flag-out in the late 1980s and early 1990s, as one would expect, there were increasing numbers of British seafarers employed in the British fleet the further back one goes during the study period; in 1990, for example, the corresponding ratio is estimated to be 2:1, and in 1987, it is 2.8:1. The mean ratio for employment of British seafarers in British:foreign vessels for the entire ten year study period, which will be used as the basis for the following comparison of mortality levels, is estimated to be 2.1:1.

A total of twenty British seafarers in the British fleet, and 21 in foreign-registered vessels, lost their lives through fatal occupational accidents between 1986 and 1995. Since it is estimated that there were 2.1 times as many seafarers employed in British vessels, during this period, this would indicate that the level of mortality attributable to occupational accidents was 2.2 times greater among British seafarers in foreign-registered ships (Table 7).

Similarly, for mortality due to all work-related accidents (maritime disasters plus occupational accidents) the evidence indicates that seafarers in foreign vessels were at almost twice (1.8) the risk; however, if

⁶ It should be noted that the Chamber of Shipping Fleet Manpower Inquiry figures include merchant seafarers who were employed in naval craft, whilst this study addresses the mortality of those who were employed in privately-owned merchant vessels only. Moreover, most of the naval craft in which the British seamen were employed were British-registered; in 1995, for example, 1381 were serving in British vessels and only 27 in foreign ones. For each year, the number of seafarers employed in these naval craft have been subtracted from the estimated populations at risks. The numbers employed in the naval craft were not available in the Chamber of Shipping Reports for the study period prior to 1992; the figures for 1992 have been used for these earlier years. Seventeen British seafarers were identified as having lost their lives whilst employed in British naval craft between 1986-1995. The patterns of mortality among these crew, with a high proportion of deaths attributable to cardiovascular disease, a few off-duty alcohol-related drownings and the odd road traffic accident, suicide, homicide and disappearance at sea, might be viewed as fairly typical of mortality in the safer sectors of the privately-owned British merchant fleet.

one excludes the 37 lives lost as a result of the capsizing of the *Herald of Free Enterprise*, the relative risk for British seafarers in foreign:British ships was 4.3. For suicides the rates of mortality are estimated to have been 3.7 times greater in foreign-flagged vessels. Many of the unexplained disappearances at sea are also most plausibly the consequence of seafarers taking their own lives. Hence, if these disappearances are included with the suicides, the estimated relative risk for foreign:British ships is 3.6.

Table 7 Estimated Relative Risks of Mortality for British Seafarers in Foreign:British Merchant Vessels (1985-1995)

<u>Cause of Death</u>	<u>Relative Risk (Foreign : British Vessels)</u>
Occupational Accidents	2.2
Work-Related Accidents	1.8 (4.3)
All Accidents	1.7 (3.1)
Suicides	3.7
Suicides and Unexplained Disappearances at Sea	3.6
All Non-Natural Causes	1.7 (3.0)
All Non-Natural and Inconclusive Causes	1.9 (2.9)

Notes

- 1 Figures in brackets denote the relative risk if the 37 British lives lost as the result of the *Herald of Free Enterprise* are excluded from the calculation.
- 2 Work-related accidents refer to maritime disasters and occupational accidents
- 3 All accidents refer to maritime disasters, occupational accidents and off-duty accidents
- 4 All non-natural causes refer to all accidents, homicides, suicides and drug or alcohol abuse
- 5 All inconclusive causes refer to unexplained deaths in which the seafarer was missing at sea, found drowned and other found dead.

For deaths due to all non-natural causes (all accidental deaths, suicides, homicides and fatalities as a direct consequence of drug or alcohol abuse) the levels of mortality are also estimated to be higher among the British seafarers serving in foreign-flagged vessels. The same is true also of deaths from all non-natural and inconclusive causes; in other words, for all deaths apart from illnesses.

A Comparison of Investigative Procedures

The previous sections have identified some notable differences between British and foreign-registered vessels in terms of the levels and patterns of occupational mortality suffered by the British seafarers sailing in them. The following section will attempt to identify if there are also great differences between the actions of the British and foreign authorities in investigating deaths which occurred among British seafarers.

Masters of British vessels are obliged to maintain an official log book which, in the event of a fatality, should record the events and circumstances surrounding the death. In the absence of an official inquiry, the appropriate extract from the official log book is usually the most helpful document for establishing the manner of the death. It would seem clear, therefore, that log book extracts should be invaluable to any state maritime authority which takes seriously the important matter of investigating, reporting or registering deaths occurring among its active seafarers.

Between 1986 and 1995 this study identified 182 deaths among British seafarers in the British fleet. In forty-one of these 182 cases, the merchant vessel foundered; it is more than likely, nigh on certain, that the ship's official log-book was also lost. In 128 of the remaining 141 cases (91%), the relevant extract from the log book was deposited with the appropriate British authority, the Registrar General for Shipping and Seamen (Figure 4).⁷ Since the RGSS deals with the important matter of registering the deaths of all British subjects at sea, irrespective of the nationality of the flag aloft a vessel, they endeavour also to obtain relevant documentation, such as extracts from log books, from foreign vessels and foreign maritime authorities. Were these documents forthcoming?

For deaths of British seafarers in FOC vessels an extract from an official log book was obtained by the RGSS in thirteen of the 39 cases (33%) in which the ship did not founder. It is notable that *no* one or two FOCs were responsible for the submission of these thirteen extracts; they were obtained from six different FOCs. These were: Gibraltar (four extracts out of 7 deaths among British seamen), the

⁷ Even though 91% is an impressive percentage of cases in which the log book extract was deposited with the British authorities, there are valid reasons why it was not submitted in the remaining thirteen cases. In these instances the deaths were dealt with by other British authorities; they had mostly occurred ashore rather than at sea. Furthermore

Bahamas (two out of 11), Barbados (two out of 2), Liberia (two out of 3), Panama (one out of 8), and Saint Vincent (two out of 4). The evidence would indicate that none of the major FOC administrations have a reliable history of submitting log book extracts. In several additional cases, where no official log book was kept on board the FOC-flagged vessel, a statement concerning the circumstances in which the death arose was submitted by the ship's master or an officer. The cases where log books were maintained and then handed over were more likely the result of initiative, on behalf of the vessel's (British) master, rather than efficiency and compliance inherent in any FOC maritime administration.

For other foreign national fleets the picture is slightly, but not a great deal, better; the extract was similarly obtained for only sixteen of the 32 deaths (50%). The north African and Persian Gulf states, with only one submission in 11 cases, had a poor record of depositing log book extracts with the British authorities. Nonetheless, the other maritime authorities, mainly those of western European and OECD countries, compared more favourably; extracts were obtained in 15 of the 21 cases (71%) involving vessels registered in Ireland, Italy, the Netherlands, New Zealand, Russia, Singapore, South Africa and Sweden.

The submission rate for deaths occurring in vessels under second registers was thirty out of the 43 cases (70%). Log book extracts were obtained from the Isle of Man in fifteen of 18 cases (83%), from Hong Kong in seven of 10 cases (70%), from Bermuda in seven of 13 cases (54%) and for two deaths involving the British Turks and Caicos Islands and the Norwegian N.I.S.⁸ It is important to note that in all of these 43 cases, with the exception of one death in an N.I.S. vessel, the authority involved was a *British* second register. It may be expected, therefore, that the master of these vessels would, in comparison to those in FOC and other national fleets, be more likely to maintain the practice of the traditional British official log book.

Deaths due to natural causes, such as a myocardial infarction or brain haemorrhage, are not usually subject to official inquiries. In these cases a post mortem or other examination by a forensic pathologist

in some cases, for example, where the death occurred in a foreign hospital several weeks after the seaman had been admitted, the log book may not have contained any relevant details.

⁸ It should be noted that Bermuda is a British second register and is also included in the ITFs list of Flag of Convenience fleets. For the purposes of this comparison of investigations between the different types of fleet, and

or certified medical practitioner are normally sufficient for investigative purposes. Deaths due to non-natural or inconclusive causes, on the other hand, often require a formal inquiry to determine, for example, the causes of accidents involving the ship or individual crew, suicides or disappearances of crew at sea. Hence, the following comparison of the implementation of official inquiries between British and foreign authorities excludes fatal illnesses and concentrates solely on those deaths due to non-natural or inconclusive causes.

It is possible for a formal inquiry to be conducted by a variety of official authorities. During the course of the study period for deaths in the British fleet, for instance, maritime inquiries have variously been conducted by the MAIB, marine offices or port authorities, and normally in the event of fatalities in foreign countries, by the British Consulate or Embassy. Other official inquiries have been conducted by the company or the ship's master, through a Coroner's Inquest in England, Wales or Northern Ireland, a Procurator Fiscal's Fatal Accident Inquiry in Scotland and through a high court trial. In some cases more than one form of inquiry may be implemented for a particular death. In other instances official maritime inquiries may not be conducted; for example, in the event of the matter being placed, soon after the death, into the hands of the local Coroner with his expressed intention of carrying-out an Inquest, the maritime investigative authorities may refrain from pursuing a formal inquiry. Moreover, a Coroner's Inquest taking place is often conditional upon the deceased's body being available and subject to post mortem examination. Hence, since the implementation of particular forms of inquiry are often affected by external factors, and because some of the aforementioned authorities simply do not exist in particular flag states, it would be difficult and misleading to compare the incidences of individual types of inquiry which were conducted for deaths in the different types of fleet. The following comparison, therefore, focuses on *all* types of formal inquiry conducted by the flag state authorities. How do these rates of official investigation compare for British seafarers who died in the British and foreign fleets?

Among seafarers who died in British-registered vessels, official inquiries which had been conducted by British authorities were identified for fifty-eight of the 70 deaths (83%) due to non-natural or

largely since its administration might be viewed as more typical of a second register rather than some of the major FOCs, Bermuda has been included here as a second register.

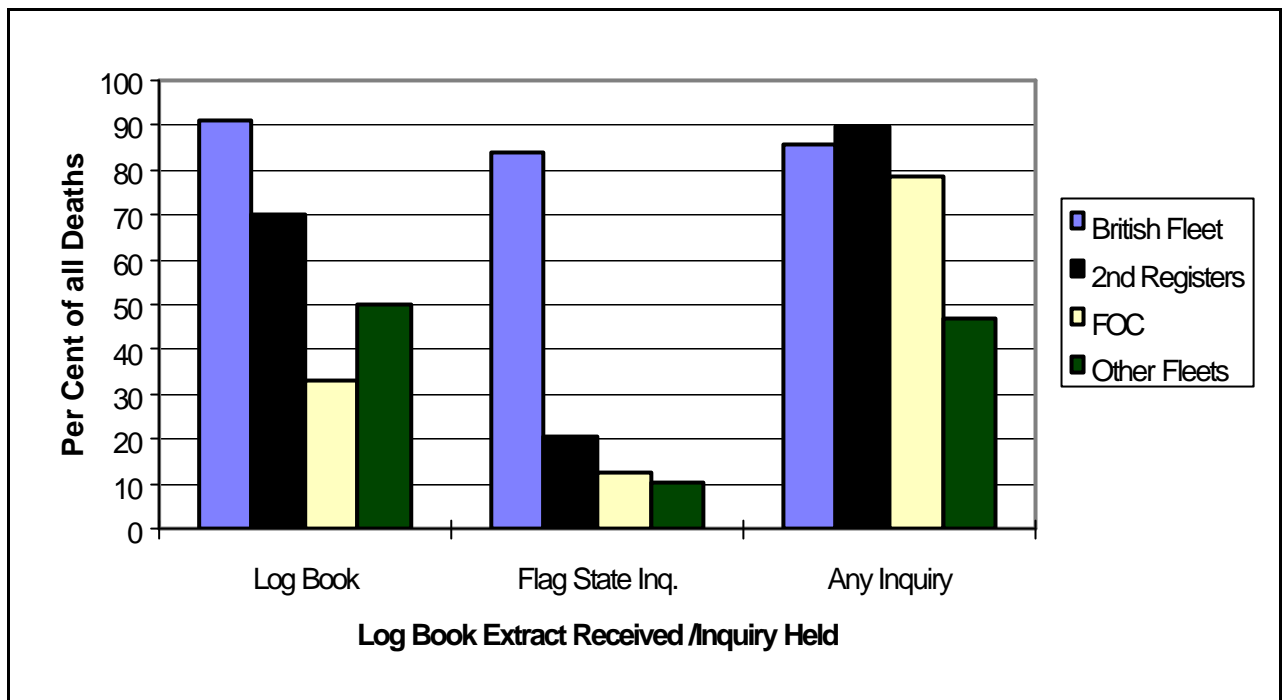
inconclusive causes.⁹ The other types of merchant fleet fared poorly. In vessels in second register fleets, the flag authorities conducted inquiries into only six of the 29 deaths (21%) among British seafarers. These were implemented by officials in the Isle of Man (three out of 10 deaths), Bermuda (one out of 10), Hong Kong (one out of 3) and the Norwegian N.I.S. (one out of one). For the other national fleets, flag state investigation was held for only two of 19 (10%) fatalities; both were conducted by the Singapore Mercantile Marine Office.

The flag state inquiry rate for the FOC administrations, six out of 47 deaths (13%), is similarly unimpressive. Furthermore, since these six deaths were all lost in one maritime disaster, only one inquiry - conducted amidst a great deal of controversy by the Bahamian government - was undertaken by FOC states for their many British employees who lost their lives in sometimes contentious circumstances between 1986 and 1995.

The disaster in question refers to a small cargo vessel which disappeared with all six hands amidst storms in the Bay of Biscay. The three ratings on board, aged sixteen and twenty-one (two), did not have the minimum requirement of six months sea service and should not have been included in the ship's safe manning numbers nor as navigational watch-keeping ratings, whilst the only engineer on board had been recruited directly from a job centre (Lloyds List, 1990). The initial Bahamian report, which concluded that the vessel was lost due to "forces of nature" was widely criticised on the grounds that it had omitted a great deal of relevant evidence.

⁹ It is possible that other official inquiries, which were not brought to the attention of the British maritime authorities, may have been held for a few additional deaths. In particular, for several of the deaths which arose in Scotland, it has not been possible to determine whether a Procurator Fiscal's Fatal Accident Inquiry took place. It should also be recognised that the priority of the Registrar General is to register the deaths of British subjects at sea, and to obtain the relevant details such as a medical cause of death to enable this, rather than to trace official inquiries which may have been held. Nonetheless, almost all of the inquiries referred to in this report were efficiently stored in the files on the deceased; in a few additional cases notification of other investigations were obtained through documents provided by the MAIB and individual Coroners. The thirty-seven lives lost as a result of the *Herald of Free Enterprise* disaster have also been excluded from the comparison of official inquiries conducted, although it is worth noting that a Coroner's Inquest or maritime inquiry covered all of the deceased.

Figure 4 Percentage of Cases in which Log Book Extracts were Received, a Flag State Inquiry or any Formal Inquiry was Identified for the Deaths of British Seafarers According to the Type of Fleet in which they were Serving (1986-95)



It would seem clear that when a British seafarer died through causes other than an illness, his family were likely to receive the outcome of an official flag state inquiry only if the deceased was employed in a British-registered vessel. It would appear that investigations into the deaths of British seafarers were rarely carried-out by the foreign flag state authorities. This begs the question as to whether or not formal inquiries were usually held into these deaths at all. Hence, the next comparison between investigative procedures in the different types of merchant fleet will consider the percentage of cases in which *any* form of official inquiry, regardless of the nationality of the investigation, was held.

For British seafarers who died from non-natural or inconclusive causes whilst serving in the British fleet any form of official inquiry, British or otherwise, was identified for sixty (86%) of the 70 deaths (see Figure 4). Among the British seafarers who lost their lives whilst employed under the predominantly British second registers, inquiries were held for twenty-six of the 29 (90%) deaths. For mortality in the

FOC fleets, the corresponding rate of official inquiry is 79%. In the other foreign national fleets the figure is 47%.

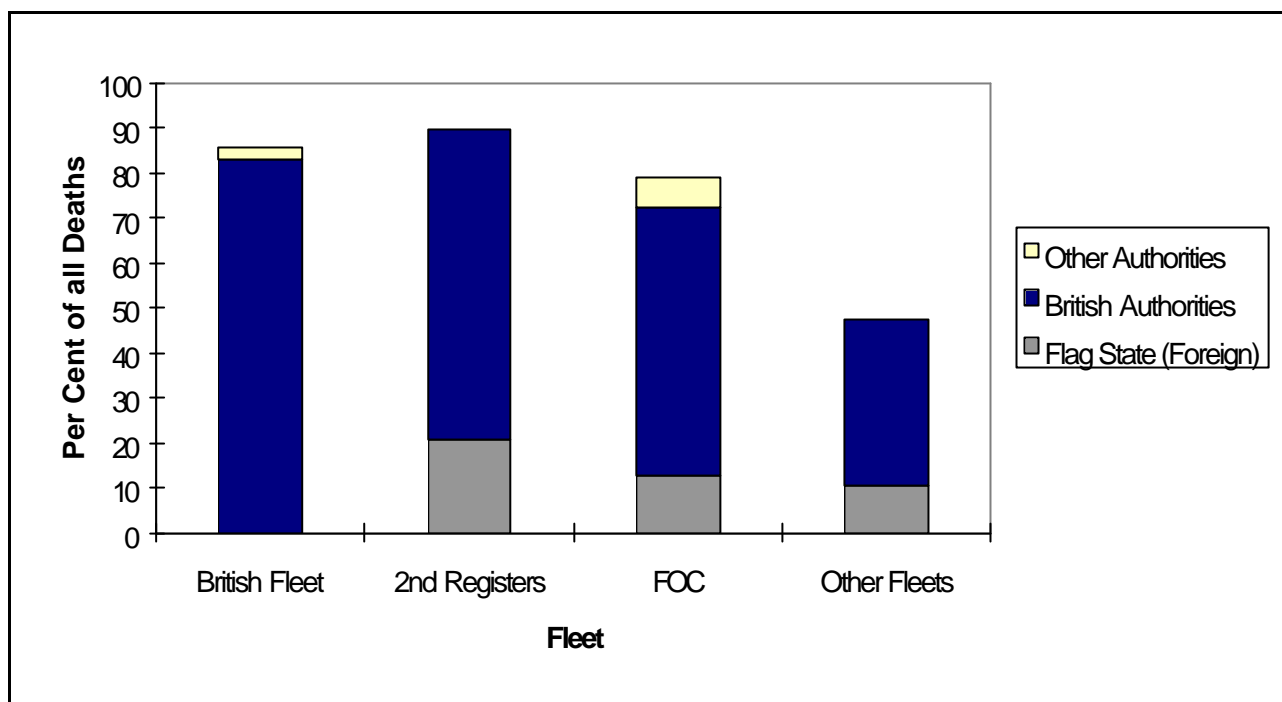
On this evidence, therefore, British seafarers who died in the British fleet were also the more likely, when compared to their counterparts in foreign vessels, to have any form of official inquiry held into their deaths. However, whilst it would be reassuring for the relatives of the deceased that the deaths of British seafarers in foreign vessels are also usually investigated, albeit with slightly less regularity than in the British fleet, one question remains: who conducts these inquiries?

Among the seventy fatalities attributed to non-natural or inconclusive causes in the British fleet, it became evident that British authorities had conducted investigations in fifty-eight (83%) cases (Figure 5). These were variously implemented by marine offices or port authorities, the MAIB, the British Consulate or British Embassy (thirty-seven cases), HM Coroners (thirty-four), a Procurator Fiscal (two), the shipping company (one) and a high court trial (one).¹⁰ There were two further deaths which were investigated by foreign authorities. The first, which involved a British seaman who was swept overboard in the Arabian sea, was investigated by the Singapore Mercantile Marine Office. The second, the subject of a Coroner's Inquest in Western Samoa, concerned a seaman who had drowned in port at Apia.

It has already been established that the foreign flag state authorities are less than prominent when it comes to investigating the deaths of British seafarers. Regarding those who lost their lives in FOC fleets, the flag state implemented only one official inquiry for six out of 47 deaths (13%). British authorities conducted inquiries into a further twenty-eight (60%) of the 47 fatalities (see Figure 5); these were variously held by the British Consulate, Embassy or foreign office, the ship's master /Ministry of Transport, HM Coroners and a Procurator Fiscal. A further three deaths were investigated by other foreign authorities; these were conducted by Interpol, a Coroner in South Africa and, for a fatal occupational accident which arose in the Netherlands, by the Emden Maritime Court.

¹⁰ It should be remembered, from note 9, that additional inquiries which were not forwarded to the relevant British authorities may have been conducted. It should also be noted that for some deaths more than one form of inquiry was conducted.

Figure 5 Percentage of Deaths Among British Seafarers which were Investigated by British, Foreign Flag State and Other Foreign Authorities According to the Type of Fleet (1986-95)



Among the twenty-nine fatalities which arose in second register fleets, the flag authorities implemented inquiries in six cases (21%). For a further twenty of the 29 deaths (69%), it was the British authorities who implemented the official inquiry (Figure 5). No other foreign authority investigated any of these deaths. Similarly, only two of the nineteen deaths in other foreign fleets were found to have been investigated by the flag authorities. A further seven of the deaths were the subject of official inquiry; in each case by British authorities (Figure 5).

It would seem clear from the available evidence that when British seafarers lost their lives whilst employed in foreign merchant vessels, the flag state authorities seldom took responsibility for investigating the death. In a few isolated incidents other foreign authorities, usually based in the country or national waters in which the death occurred, held an inquiry. In the large majority of cases in which an investigation was held, nonetheless, it was the British authorities who conducted the official inquiry.

Conclusions

It is expected that almost all of the deaths which occurred among British merchant seafarers, and which satisfy the inclusion criteria (page 6), have been identified through the course of this study; It must be noted, nevertheless, that the potential for non-reporting of deaths among British seafarers to the British authorities would be greatest in the lesser administrated and regulated fleets of the FOC and non-OECD states. The findings which have emerged from this study might then be slightly flattering to these foreign fleets.

This study has identified marked differences in both the levels and patterns of mortality suffered by British seafarers whilst serving in British and foreign-flagged vessels between 1986 and 1995. It would seem evident that the British seafarers who take employment in foreign vessels are at greater risk of mortality through work-related accidents. A greater number of seafarers in these foreign fleets also took their own lives, disappeared at sea and were the victims of homicides. Seafarers in the British merchant fleet, on the other hand, lost their lives more frequently through off-duty accidents and through being discovered drowned in docks and rivers.

It would seem clear that the incidence of particular causes of mortality vary considerably according to such factors as the rank and age of the deceased, and the type of vessel and trade engaged in. Whilst mortality through occupational accidents has been identified as being higher among those serving in foreign vessels it is also evident that ratings, and officers in certain types of small vessels, appear to be at an elevated risk. Since British ratings are less commonly employed in foreign-flagged ships than in the British fleet, this would place the mortality due to occupational accidents in the foreign fleets in a relatively favourable light.

The incidence of fatal occupational accidents appeared to be particularly high among the crew of, the mainly British-registered, supply and safety vessels of the North Sea offshore sector; often working in hazardous sea state conditions and under time constraints. It is notable also that the officers who died from occupational accidents were often employed in this sector or in (often flagged-out) general cargo and other small vessels. The evidence compiled for this study indicates that unsafe working practices may well be particularly widespread in this “small-time” end of the merchant shipping spectrum.

A majority of off-duty accidents and drownings were found to be alcohol-related and often involved seamen attempting to board their vessels after drinking ashore.¹¹ It is notable that most of these deaths occurred in British docks and rivers and also usually concerned the crew of small vessels of less than 2,000 grt. Access to the vessels, on account of icy gangways and tidal fluctuations, was sometimes hazardous and attempts by fellow crew members to rescue some of the deceased were often hampered by poor lighting in the dock area and by the intoxicated nature of the fellow crew. Safety of access to relatively small merchant vessels would represent an important area for the prevention of mortality through off-duty accidents.

Maritime disasters in which British seafarers lost their lives were found to be a more common occurrence among foreign-flagged vessels. Out of a total of eighteen disasters, at least four vessels foundered as a result of the weather and sea state conditions. Since three of these four, and indeed three other vessels which foundered, were less than 2,000 grt, it would appear evident that seafarers serving in small, and perhaps badly maintained, cargo vessels of this type are at most risk in adverse conditions. Nonetheless, this type of mortality is still relatively low when compared to the numbers of commercial fishermen who lose their lives through their much smaller trawlers foundering, and indeed often in hazardous weather conditions.¹²

The British seafarers who lost their lives in the two types of fleet differed greatly in terms of their rank, and also in terms of the vessels in which they were employed. Those in foreign fleets were more frequently serving in tankers, general cargo vessels and bulk carriers, and less often in the passenger and offshore sectors. They were also usually employed among the higher ranks, as the master, officers or engineering officers, when compared to their counterparts in the British fleet. The greatest differences between the British and foreign fleets that have been identified through this study, however, concern the actions of the flag state authorities after the British seafarers lost their lives.

¹¹ Similar findings are evident elsewhere; for example, Hansen (1996) and Roberts (1998a).

¹² Several studies of mortality among fishermen in different national fleets have identified high levels attributable to disasters involving fishing trawlers. These include Driscoll *et al.* (1994), Jensen (1996), Norrish and Cryer (1990), Reilly (1987), Roberts (1998b) and Schilling (1966).

An official inquiry conducted by flag state authorities into the death of a British seafarer from causes other than an illness (which do not normally require investigation) usually took place only if the deceased had been serving in a British-registered vessel. The deaths of those who were employed in foreign-flagged vessels were rarely conducted by the authorities in the FOC, second register and other foreign states; in most cases it was left to the British authorities to conduct the inquiry. Although the large majority of these deaths were subsequently investigated, this was usually due to the British maritime authorities, the British Consulate or Embassy, Coroners and Procurator Fiscals.

The findings for the submission of log books to the appropriate British authorities are similarly clear. These extracts, covering the circumstances in which the fatality arose, were only handed over as a matter of routine when the deceased British seafarer was employed in the British fleet. Log book extracts were also submitted in a majority of cases involving the mainly British second register fleets but were not normally obtained when deaths arose in foreign national, and especially the FOC, fleets.

British companies choose to flag-out their vessels on the grounds that they will gain certain benefits, from their new flag hosts, such as the ability to lower crewing costs by, for example, not funding their employees' national insurance contributions.¹³ When tragedies involving their British employees arise in foreign vessels and require investigation, the FOC and other foreign administrations are seldom forthcoming. It is left for the British authorities to pick up the pieces of evidence.

¹³ For recent empirical evidence concerning the decision-making behind flagging-out see Bergantino and Marlow (1997).

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