

Report on the investigation of

the contact between

Ursine

and

Pride of Bruges

King George Dock, Hull

13 November 2007

Marine Accident Investigation Branch
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Extract from
The United Kingdom Merchant Shipping
(Accident Reporting and Investigation)
Regulations 2005 – Regulation 5:

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

CEC	-	Certificate of Equivalent Competency
CHA	-	Competent Harbour Authority
dwt	-	Deadweight tonnage
ECDIS	-	Electronic Chart Display and Information System
ETA	-	Estimated time of arrival
EUROSHIP	-	EuroShip Services Limited
GTGP	-	Guide to Good Practice
ISM	-	International Safety Management (Code)
kW	-	Kilowatt
OCIMF	-	Oil Companies International Marine Forum
P&O	-	P&O Ferries Holdings Limited
PEC	-	Pilotage Exemption Certificate
Ro-ro	-	Roll on, roll off
SMS	-	Safety Management System
SOLAS	-	International Convention for the Safety of Life at Sea 1974, as amended
STCW	-	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended
UTC	-	Universal Time Co-ordinated
VTS	-	Vessel Traffic Services

All times used in this report are UTC + 1 hour unless otherwise stated

Image reproduced courtesy of Euroship Services Limited



Ursine

SYNOPSIS



At 1601 on 13 November 2007 the roll on, roll off (ro-ro) ferry *Ursine* made contact with the passenger ferry *Pride of Bruges* while manoeuvring onto a berth in King George Dock, Hull, causing damage to both vessels.

Ursine was on her first voyage into Hull, having recently been chartered by P&O Ferries Holdings Ltd (P&O) to undertake a service between Hull and Rotterdam (Europort).

In accordance with the terms of the charter party agreement, P&O had placed its representative on board to perform the pilotage duties for both ports. He joined *Ursine* the evening before the accident, in Europort, but was not signed on the crew agreement.

In accordance with local regulations the P&O representative, who held a Pilotage Exemption Certificate (PEC) for the river Humber, was on *Ursine's* bridge with the vessel's bridge team when the vessel entered the river. As *Ursine* approached Hull, the PEC holder gave a briefing to the rest of the bridge team on the approach and entry into the lock for King George Dock.

The master, who was not experienced in handling ro-ro vessels, assumed that the PEC holder would be in control. However, the PEC holder, who was not an experienced ship handler, assumed that the master would take charge of the manoeuvre. Eventually, with both men involved in the ship handling, *Ursine* berthed in the lock.

In the lock, the PEC holder and the master, who had not been to Hull before, discussed the required approach for berthing at the P&O terminal. Again, there was no clarification as to who would be in control of the vessel. Once the lock had filled, *Ursine* proceeded stern first towards the berth, with both men handling the controls. From the conning position, on the port bridge wing, neither of them could see the P&O terminal.

In the absence of any formal berth allocation, the PEC holder directed *Ursine* towards the berth which he assumed had been allocated to the vessel. This berth, 5 Quay Middle, was adjacent to the one regularly used by *Pride of Bruges*. However, on this occasion, for operational reasons, *Pride of Bruges* had been berthed on 5 Quay Middle. In the confusing situation, during which key bridge team members found themselves undertaking tasks for which they were inadequately prepared, *Ursine* was manoeuvred stern first towards the berth already occupied by *Pride of Bruges* until contact was made between the two vessels.

A number of actions have been taken as a result of the accident. Additionally, a recommendation has been made to the BPA/UKMPG Marine/Pilotage Group to promulgate to Competent Harbour Authorities the importance of ensuring candidates for PECs are bona fide masters or first mates, and of carefully assessing a candidate's ship handling ability before a PEC is issued or vessels of particular types and sizes are added to existing certificates.

SECTION 1 - FACTUAL INFORMATION

1.1 PARTICULARS OF *URSINE* AND ACCIDENT

Vessel details

Registered owner	:	Cobelfret Ferries NV
Manager(s)	:	EuroShip Services Limited
Port of registry	:	Antwerp
Flag	:	Belgian
Type	:	Ro-ro cargo ship
Built	:	1978, Sweden
Classification society	:	DNV
Construction	:	Steel
Length overall	:	170.26 metres
Gross tonnage	:	16,947
Engine power and/or type	:	2 x 4500kW Wartsila Vasa 12V 32D
Service speed	:	14 knots
Other relevant info	:	2 x Controllable Pitch propellers 2 x Bow thrusters, 635kW and 590kW

Accident details

Time and date	:	1601, 13 November 2007
Location of incident	:	5 Quay Middle, King George Dock, Hull
Persons on board	:	21
Injuries/fatalities	:	None
Damage	:	Material damage to stern door, stern light and bracket.

1.2 NARRATIVE

Ursine, a roll on roll off (ro-ro) ferry, was chartered for a minimum period of 9 months by P&O Ferries Holdings Limited (P&O) to carry freight traffic on an established ferry route between the P&O terminals in Hull and Rotterdam (Europort). She replaced another chartered vessel, which P&O had transferred to a different route for commercial reasons.

P&O had instructed brokers to search for a suitable vessel to time charter for the Hull to Rotterdam route and, in early October 2007, they identified that *Ursine* met P&O's requirements and would be available for charter in November 2007.

In October, the vessel was employed on a short charter in the Mediterranean, trading between Barcelona and the Balearic Islands. A member of P&O's technical staff carried out a technical inspection of the vessel when she was in Barcelona on 19 October. This inspection confirmed that the vessel was technically suitable for P&O to charter.

The master had joined *Ursine* on 16 October and had assumed command of the vessel after an 8-day handover. *Ursine* continued to trade between Barcelona and the Balearic Islands until the end of October when the existing charter ended. During this time, entry and departure to/from port was conducted with the assistance of pilots.

The vessel then proceeded towards Rotterdam with the new charter with P&O commencing on 4 November as she passed Cape Finnisterre. *Ursine* arrived at the P&O terminal in Europort, Rotterdam on 8 November 2007.

P&O informed the master that the vessel would be required to commence the service to Hull on 12 November. The master was not advised that a charterer's representative would be placed on board to undertake the pilotage duties as a condition of the charter party agreement.

On 9 November, an on-hire survey was conducted by an independent firm of surveyors. This survey, commissioned jointly by the owners and charterer, established the material condition of the vessel and her equipment at the commencement of the charter.

The charterer's representative, a P&O chief officer who held Pilotage Exemption Certificates (PECs) for Europort and the Humber, and who was to perform the pilotage duties at each port, went on board *Ursine* for a short time on 9 November.

On boarding, he briefly met with the master, who had not been expecting him. He then spent about an hour looking around *Ursine*, during which time he noted the type of radars and ECDIS fitted and left some paperwork in the wheelhouse relating to pilotage on the river Humber, before leaving the vessel to spend the weekend at home.

Loading began during the afternoon of 12 November 2007, the vessel being scheduled to sail for Hull at 2300. At approximately 2030, the charterer's representative/PEC holder boarded *Ursine* and went to the bridge, where he reintroduced himself to the master.

They discussed *Ursine*'s handling characteristics and the manoeuvre required for departure from the berth. The PEC holder showed the master his seaman's book but was not signed on to the vessel's crew agreement. He then left the bridge to place his belongings in his cabin before conducting a quick tour of the vessel.

Loading was completed at 2320 and *Ursine* departed from Europort at 2340. The master, PEC holder and chief officer were on the bridge for departure, together with a helmsman. The vessel manoeuvred off the berth and then proceeded from Rotterdam in accordance with the departure plan.

On 13 November at 0130, when *Ursine* was clear of Rotterdam, the PEC holder held a brief conversation with the master about arrangements for the vessel's arrival at the river Humber, and then left the bridge and went to his cabin, where he fell asleep at about 0300.

Ursine arrived at the outer approaches to the river Humber at 1010 on 13 November when the vessel's details, together with the number of the certificate held by the PEC holder was reported to VTS Humber, in accordance with the harbour authority's requirements.

At about 1210 the master and the PEC holder joined the officer of the watch, the second officer, on the bridge. From 1230 the PEC holder took over the con of the vessel and a helmsman was placed on the wheel.

While the vessel was transiting the river Humber, the master was undertaking administrative tasks in the ship's office, located at the back of the wheelhouse.

At 1450, as *Ursine* approached the lock into King George Dock, the PEC holder gave a short brief to the master and chief officer, who had both just arrived on the bridge, on the manoeuvre required to enter the lock. He informed them that, as the tide was ebbing, the vessel would need to go to the west of the lock entrance to stem the tide before entering the lock stern first (**Figure 1**).

The PEC holder also asked the 2nd officer, who had been tasked to go aft for mooring stations, to pay particular attention to a set of transit beacons which marked the east limits of the dredged approach channel to the lock, and report to the bridge when the vessel's stern was clear of the marks to enable the turn to be made into the lock.

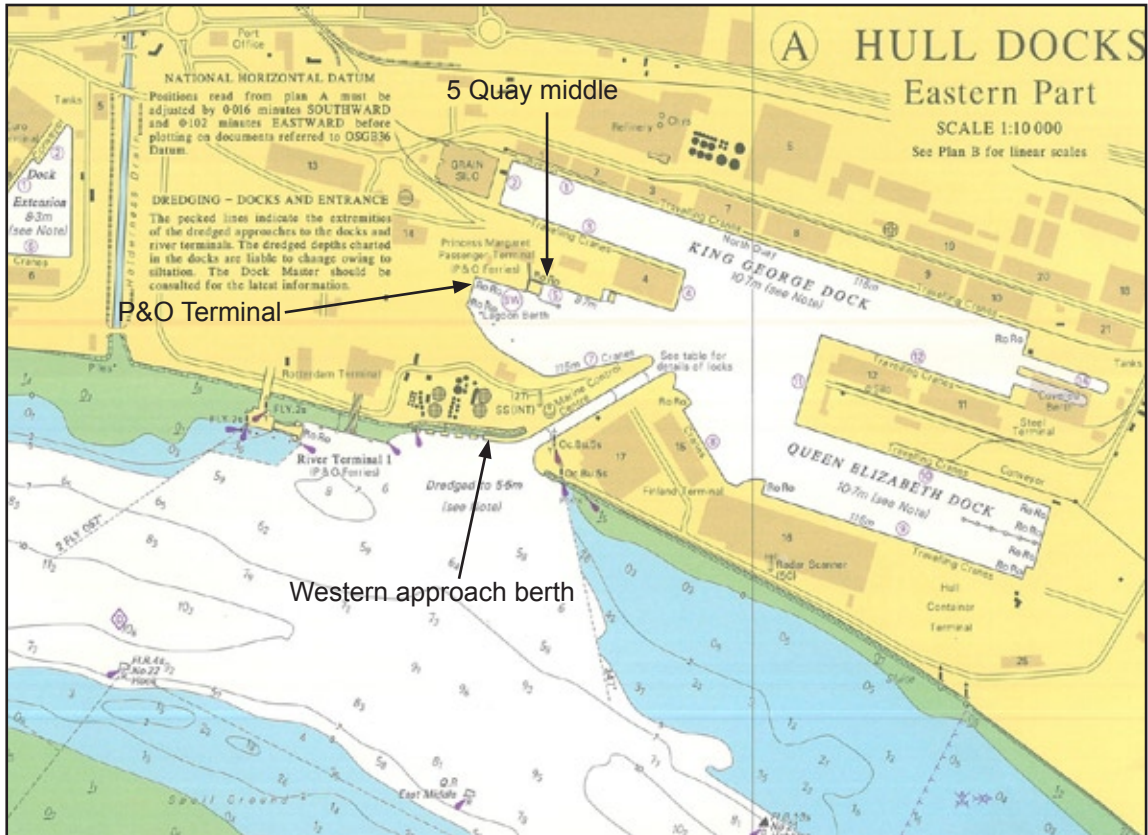
The 2nd officer then went aft and began to report the position of the stern relative to the beacons and distances to the entrance of the lock, as specifically requested by the PEC holder. He transmitted the information by radio to the chief officer, who positioned himself on the port bridge wing and relayed the information to the master and PEC holder, who were positioned on the starboard bridge wing.

The master and PEC holder were both involved in handling the vessel's controls as she manoeuvred into the lock. The vessel was initially positioned to lay alongside the Western approach berth (**Figure 1**) before being manoeuvred into the lock where she secured, port side alongside, at 1510.

Once *Ursine* had secured in the lock, the PEC holder and master had a general discussion about the different manoeuvres required for entering the lock in various wind and tidal conditions. The PEC holder then drew a rough sketch to indicate that the vessel would be berthing stern first at the P&O terminal on 5 Quay Middle (**Figure 2**), and briefly discussed with the master the manoeuvre that would be required to achieve this.

Reproduced from Admiralty Chart 3497 by permission of the Controller of HMSO and the UK Hydrographic Office

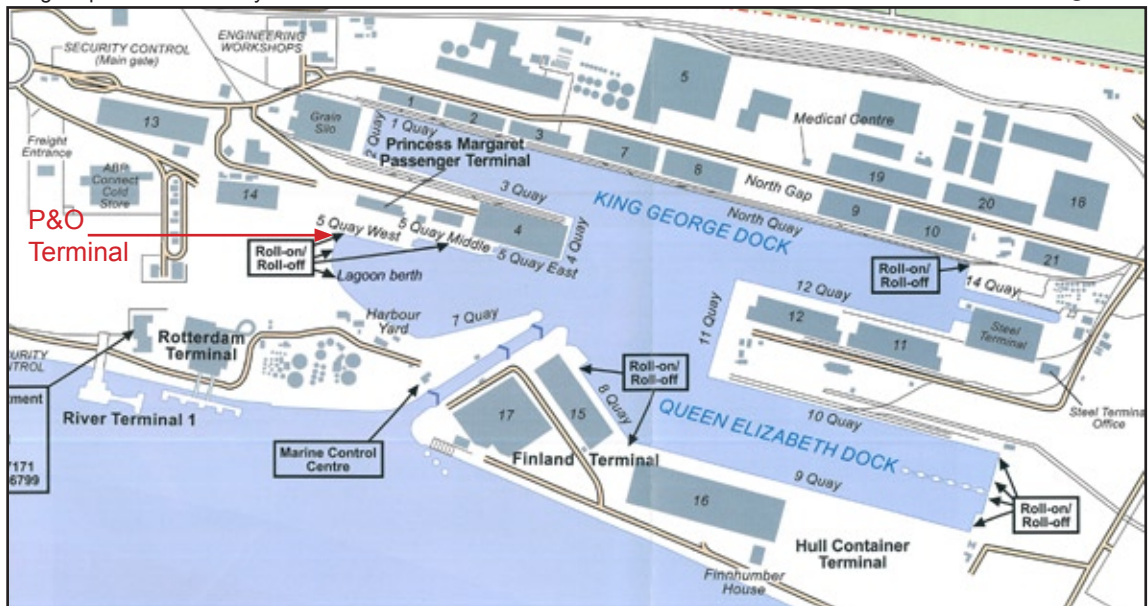
Figure 1



Extract of chart showing western approach berth at entrance to lock and location of P&O terminal

Image reproduced courtesy of ABP

Figure 2



Chartlet showing P&O terminal, King George Dock, Hull

At 1535, the inner lock gates opened and *Ursine* proceeded, stern first, into King George Dock and began to manoeuvre towards 5 Quay Middle.

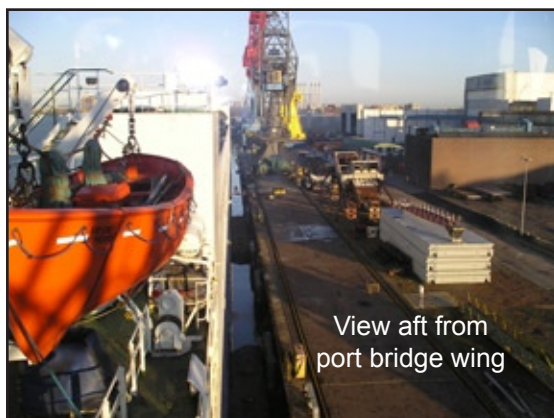
The P&O terminal has three operational berths (**Figure 2**), two of which, 5 Quay Middle and the Lagoon berth, were already occupied when *Ursine* entered the dock.

Having entered the dock, the approach to the P&O terminal required *Ursine* to swing 135 degrees to port in order to approach the berth stern first. During this manoeuvre, the master and PEC holder were at the control console on the port bridge wing (**Figure 3**). The chief officer was standing in the area of the control console on the starboard bridge wing, relaying the information received from the 2nd officer about the position of the vessel's stern in relation to berths and other vessels in the dock.

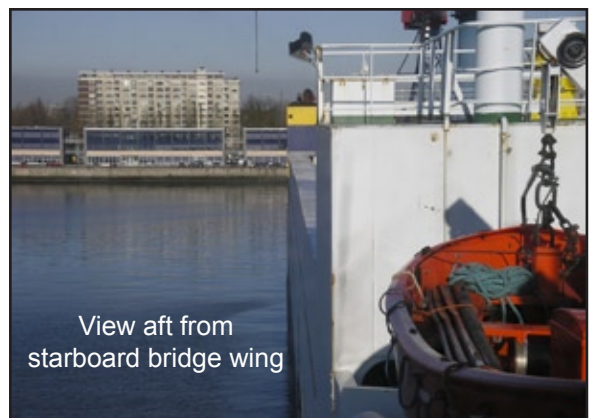
Figure 3



Ursine wheelhouse



View aft from
port bridge wing



View aft from
starboard bridge wing

On completion of the swing, *Ursine* made sternway towards the P&O terminal, with the 2nd officer reporting the distances of the stern initially from 4 Quay and then from *Pride of Bruges*.

When the distance between the two vessels had reduced to 20 metres, the 2nd officer's reports started to increase in volume and pitch until he reported that the stern was just 8 metres from *Pride of Bruges* at which time he ran from the stern area, before reporting, at 1601 that impact had occurred.

Immediately after the impact the PEC holder went to the starboard control console and, on seeing *Pride of Bruges*, expressed his surprise and dismay that she was occupying 5 Quay Middle.

Ursine was then manoeuvred clear of *Pride of Bruges* and onto 5 Quay West where she berthed at 1618.

1.3 BRIDGE TEAM MANNING

At the time of the accident the bridge team consisted of:

1.3.1 Master

The master, a Ukrainian national, held an STCW II/2 certificate of competency as master. He also held a certificate of equivalent competency (CEC), issued by the Belgian authorities, to enable him to command *Ursine*.

He had been a master for 5 years, having previously commanded large bulk vessels. This was his first command of a ro-ro vessel and was also the first time he had sailed on this type of vessel.

The master had completed a 4-day bridge team training course, specifically developed to meet the requirements of the vessel's managers, EuroShip, at the National Sea Training Centre, Gravesend on 11 October 2007.

At the time of the accident, he was well rested as he had not been required on the bridge once the vessel left the Rotterdam approaches until she arrived at the entrance to the river Humber some 10 hours later.

1.3.2 Chief officer

The chief officer, a Ukrainian national, held an STCW II/2 certificate of competency as chief officer. He held a certificate of equivalent competency (CEC), issued by the Belgian authorities. He had joined *Ursine* as a 2nd officer in January 2007 and had been promoted to chief officer 2 weeks before the accident. This was the second occasion on which he had been a member of the vessel's bridge team for arrival in port.

He had attended a 2-day bridge team and resource management course in April 2006 at the Odessa Maritime Training Centre in Ukraine.

The chief officer did not keep watches at sea, and rested well between the vessel departing Europort and being required on the bridge as the vessel approached the lock into King George Dock.

1.3.3 PEC holder

A Dutch national, the PEC holder held an STCW II/2 certificate of competency as master. He had worked for P&O for 8 years, initially as a 2nd officer, before being promoted to the substantive rank of chief officer on 25 October 2007. He had been the acting chief officer when, in July 2006, he was appointed as the company's representative to another ro-ro vessel on time charter to P&O.

This vessel was operating on the Hull to Rotterdam route between July 2006 and October 2007, when it was replaced by *Ursine*. During his time on board this vessel, working 2 weeks on, 2 weeks off, he performed the pilotage duties as the PEC holder but did not undertake any ship handling, except occasionally under supervision, as the vessel's master routinely performed this function.

He held PECs for the Humber and Rotterdam, but did not hold a Belgian CEC.

His PEC for the Humber, issued in February 2006, entitled him, as the bona fide master or first mate, to pilot a number of vessels; these included the large ro-ro passenger ferries *Pride of Rotterdam* and *Pride of Hull*, although he had no experience of either vessel as master or first mate.

He had obtained his PEC for Rotterdam in August 2006. This enabled him to pilot a number of P&O vessels, although fewer than for the Humber and not including the large ro-ro passenger ferries, in winds up to Force 8. *Ursine* was added to this certificate on 7 November 2007.

The PEC holder had attended a bridge resource management course in October 1999.

At the time of the accident, he was well rested because he had left the bridge at about 0130 when the vessel was clear of the approaches to Rotterdam. Although he did not get to sleep until 0300, he was able to rest for 8 hours before taking lunch and going to the bridge at 1210 for the entry to the river Humber.

1.4 ENVIRONMENTAL CONDITIONS

At the time of the accident the wind was north westerly 15 knots, the visibility was good and the weather was clear.

1.5 CHARTER PARTY AGREEMENT

The agreement used for the time charter of *Ursine* to P&O was dated 22 October 2007 and was based on the BALTIME 1939 proforma charter party, with additional clauses inserted to meet the specific requirements of the charter.

Clause 68 (**Annex A**) gave the charterer an option to place a representative on board to perform pilotage duties and, if local regulations required, for him to be signed on as a bona fide crew member. It specified that the owners should allow him to sign on as "First Mate" in addition to the vessel's permanent chief officer, and that the method of signing on should be a "simple insertion of his name, rank, seaman's book number etc in the vessel's normal crew list". The clause specified that no other procedures whatsoever were required by the owners in relation to the signing on of the charterer's representative.

When time chartering vessels P&O, which regularly took ships on time charter, normally used the GENTIME charter party with additional clauses, including one requiring that masters of chartered vessels should have the “necessary ro-ro experience and be accustomed and skilled in ferry operations such as ship handling, pilotage and frequent berthing/unberthing of the vessel”.

1.6 TECHNICAL INSPECTION

Ursine was the subject of a pre-charter technical inspection (**Annex B**) undertaken by a P&O technical manager on 19 October 2007, when the vessel was in Barcelona. The inspection covered the condition of the vessel’s lifesaving appliances, fire-fighting equipment and ISM paperwork. It also confirmed that *Ursine* held valid statutory certification and recorded the overall condition of the vessel.

1.7 ON-HIRE SURVEY

An on-hire survey was undertaken by A J J Van Den Andel B.V (**Annex C**) on 9 November 2007. The survey consisted of an inspection of the material condition of the vessel’s vehicle decks and drivers’ accommodation as well as an audit of the quantity of bunker oil on board the vessel at the start of the charter.

1.8 PILOTAGE EXEMPTION CERTIFICATE, HUMBER

Ursine was added to the PEC holder’s certificate for the Humber on 30 October 2007.

The addition of *Ursine* to his certificate was requested by P&O, Rotterdam. This application was initially made by telephone on 30 October and was confirmed by an email sent to the Humber Competent Harbour Authority (CHA) the next day.

The CHA’s Pilot Operations Manager for the Humber, who approved the application, knew *Ursine* was similar in size and manoeuvring characteristics to another vessel already listed on the PEC holder’s certificate.

1.9 DAMAGE

Pride of Bruges, which was not embarking passengers at the time of the contact with *Ursine*, was pushed astern by some two metres, causing three mooring lines to part and resulting in minor damage to the steelwork of her bow and stern ramp. The force of the impact was sufficient for the master to sound the general alarm. After an inspection, the vessel was determined to be safe to remain in service, with repairs being scheduled for her next refit.

Ursine’s stern ramp was damaged as a result of the impact, which required her to be taken out of service to allow the ramp to be repaired to the satisfaction of her classification society. A condition of class was subsequently issued to enable the vessel to undertake a single voyage to a repair port. The vessel’s stern light and associated supporting steelwork were also damaged by the contact (**Figure 4**).

Figure 4



Damage to *Ursine* (top) and *Pride of Bruges* (bottom)

SECTION 2 - ANALYSIS

2.1 AIM

The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future.

2.2 ENVIRONMENTAL CONDITIONS

It is not considered that the environmental conditions contributed to this accident.

2.3 FATIGUE

The members of the bridge team were all well rested. Fatigue is not considered to be a contributory factor in this accident.

2.4 CHARTER PARTY CLAUSE RE PILOTAGE DUTIES

Two differences existed between the charter party agreement normally used by P&O and the one used to charter *Ursine*.

Firstly, the usual charter party agreement placed greater responsibility on the owner to ensure the master was properly trained and experienced for the intended route. Had the relevant clause of that document been included in the terms of *Ursine's* charter party agreement, it is possible that the master's lack of ship handling training and experience on this class of vessel would have been recognised.

Secondly, the wording of Clause 68 of *Ursine's* charter party (**Annex A**), referring to the charterer's option to place a representative on board to perform pilotage duties, was such that a conflict could arise with Section 8 (1) of the Pilotage Act 1987, which requires that a PEC holder must be the bona fide master or first mate of the vessel.

Section 8.4.3 of the Guide to Good Practice on Port Marine Operations¹ (GTGP) (**Annex D**) indicates that where more than one first mate/chief officer is carried on board, the PEC holder must be the first mate/chief officer who will take command in the event of the master being indisposed.

The clause specifying that the charterer's representative should be considered to be the 'first mate' in addition to the permanent chief officer, is difficult to reconcile with the statement that he/she should not be required to sign on the ship's articles.

2.5 BRIDGE TEAM

2.5.1 Master

The master had been in command for 5 years, during which time he had sailed exclusively on large bulk vessels of approximately 100,000dwt. On these vessels, which were usually manoeuvred in port with the assistance of tugs, he had always enjoyed the advice of a pilot when entering and leaving port.

¹ A guide to good practice on port marine operations was originally prepared in conjunction with the Port Marine Safety Code and was published by the Department for Transport in 2002.

When he joined *Ursine*, the vessel was on another charter, operating a ferry service between Barcelona and the Balearic Islands; she remained on this route for a further 8 days before that charter ended. The master had no previous experience on ro-ro ferries or of operating in the ports on this route; pilots were therefore taken at each port, and manoeuvred *Ursine* when approaching or leaving berths.

When *Ursine* arrived in Rotterdam, the master had been in command for just 2 weeks, which included the passage from the Mediterranean. He therefore had no opportunity to gain any ship handling experience on *Ursine* before the P&O charter began.

The master had attended a bridge team training course just a few weeks before the accident. However, this course, which had been developed specifically for the requirements of Euroship by the National Sea Training Centre, Gravesend, did not cover the functions of a bridge team when operating with a pilot embarked or when manoeuvring in port.

2.5.2 Chief officer

The chief officer had joined *Ursine* as 2nd officer in January 2007, working a 2 months on, 2 months off contract. As 2nd officer, his station for harbour operations had been aft and he had not been part of the bridge team during berthing or unberthing until his promotion to chief officer in mid October.

Ursine's entry into Hull on 13 November was only the second time that he had been part of the vessel's bridge team for berthing operations. He had received no briefing about his role within the bridge team. However, he took on the task of liaising by radio with the 2nd officer, who was at the aft mooring station, and relaying information the 2nd officer provided regarding the position of the vessel's stern to the master and PEC holder. This was necessary as it was difficult to assess the relative position of *Ursine's* stern from the wheelhouse.

The chief officer took up a position on the opposite side of the bridge from the master and PEC holder, but tended to move around the wheelhouse from time to time. The reports he made to them were limited to repeating the distances off various objects or other vessels which the 2nd officer was reporting from his position aft.

As *Ursine* approached *Pride of Bruges*, the chief officer relayed, in 5 metre steps, distances from the stern as the range reduced from 50 metres to less than 10 metres, at which point the 2nd officer moved forward just before impact occurred.

When relaying these distances, the chief officer did so in a level voice, which indicates that he was not fully aware of the implication of the information he was receiving.

In the confined area of the P&O terminal, the chief officer did not understand exactly what was intended or where the vessel was expected to berth. He was therefore unable to alert the master or PEC holder to the vessel's precarious position as she closed towards *Pride of Bruges*.

The fact that *Ursine* was manoeuvring into a very restricted area made it very important for everyone involved in the operation to be clear about precisely what was intended and what information they were required to provide.

It is good practice to ensure that junior officers receive appropriate onboard training and guidance in all of a vessel's operations to ensure that, on promotion, they are able to function fully as a senior officer and contribute to the safe operation of the vessel. Furthermore, it is essential that all officers are properly briefed before the start of an operation so as to be able to contribute fully to its successful conclusion.

2.5.3 PEC holder

The PEC holder had 8 years previous ro-ro experience as a deck officer but had received only limited training in ship handling. Between July 2006 and October 2007, working 2 weeks on 2 weeks off, he had sailed as the P&O representative and PEC holder on another chartered vessel on the same route.

When entering Hull on his previous vessel, he had routinely performed the pilotage duties in the river Humber to the point where, as the vessel approached the lock, the master, an experienced ship handler, had taken over the conduct of the vessel and manoeuvred her through the lock and onto the berth.

From his time as 2nd officer on P&O vessels he regarded his role, as the PEC holder, as one of maintaining an overview of the vessel when she was manoeuvred, to enable him to provide relevant advice to the master while the latter took responsibility for the ship handling.

In several companies, including P&O, the practice of someone, usually the chief officer, providing the master with an overview of the vessel's situation during berthing operations, is common, and demonstrates best practice in that it allows the master to concentrate on ship handling, while ensuring that he is kept fully aware of all relevant information without becoming overloaded.

The PEC holder was informed by P&O that *Ursine* was to be added to his PEC. This is not a satisfactory situation as pilotage exemption certificates are issued by a CHA on the basis of an individual's skill, experience and local knowledge. It is not appropriate for the application for an addition to a PEC to be made by proxy.

Although he visited *Ursine* briefly when she first arrived in Europort, no discussion took place with the master at this time regarding the role of the PEC holder on the vessel. Similarly, an opportunity was missed over the next few days, when the vessel was effectively on lay by, to discuss the vessel's operation and handling characteristics with the master. The PEC holder joined *Ursine* a few hours before the vessel sailed from Europort, which did not allow him sufficient time to clarify with the master the roles they would each undertake as key members of the bridge team.

It would have been prudent for him to spend more time on *Ursine* before the vessel entered service. The time which the vessel spent alongside represented a valuable opportunity for him to become familiar with her, and to form a working relationship with the master, which should have revealed the shortcomings in their respective training and experience for the forthcoming operation.

2.6 BONA FIDE STATUS OF PEC HOLDER

Section 8 (1) of the Pilotage Act 1987 requires an applicant for a pilotage exemption certificate in a UK port to be the bona fide master or first mate of the vessel.

In accordance with section 8.4.3 of the GTGP, to be a bona fide master or first mate the applicant must de-facto hold that position on the vessel. This means they must genuinely be the master or first mate and should hold that position on board, based either on qualification and/or appointment by the owner of the vessel, so as to be integrated fully with the vessel's bridge team. In practice, on the majority of vessels, this would require them to be signed on the vessel's crew agreement rather than simply having their name added to the crew list.

In this case, the PEC holder could not have signed on the vessel's crew agreement as first mate, as he did not hold a Belgian certificate of equivalent competency so he was not a bona fide member of the crew.

Additionally, if the applicant is a first mate, section 8.4.3 of the GTGP requires him/her to be assigned to take command in the event of the master being indisposed. This means that if more than one first mate is carried all parties would need to be clear as to their respective responsibilities and that the PEC holder would be the one to take command of the vessel with regard to pilotage and ship handling in such an event.

2.7 PILOTAGE EXEMPTION CERTIFICATE

In accordance with the terms of the charter party agreement, P&O exercised an option to appoint a representative to the vessel to perform pilotage duties on board *Ursine*. The person appointed had been recently promoted to the rank of chief officer and held PECs for Rotterdam (Europort) and the Humber.

Ursine was added to his certificate for the Humber by the CHA on 30 October 2007.

He first obtained his PEC for the Humber when he passed an examination in February 2006. In order to qualify to take this examination he had completed, as chief officer, more than 9 voyages (18 trips) on the vessel for which he was seeking a PEC. A senior Humber pilot assessed him during one of these trips, and confirmed that he satisfied the CHA's requirements for the planning, execution and monitoring of the passage in pilotage waters.

Analysis of the assessment trip indicates that he was not assessed in ship handling. This was because, as chief officer, he was not expected to undertake ship handling in the dock area because this was routinely performed by the vessel's master.

The area for which the PEC holder was assessed and examined focussed on the passage in the river Humber. There were no detailed questions in the PEC examination on manoeuvring within the dock area, as it was generally accepted that the CHA's area of jurisdiction did not include the enclosed docks. However, the CHA's area of jurisdiction does extend to the dock areas. It is essential that these limits are confirmed and promulgated to relevant stakeholders at the earliest opportunity.

Having issued the PEC, the CHA added several other vessels to the PEC holder's certificate, most of a similar size to the one for which he had been examined and assessed. However, two vessels, owned and operated by P&O, which were significantly larger than the one for which he was assessed, were also added at this time.

CHAs should ensure that the syllabus for a PEC is sufficiently robust so as to be certain that a PEC holder has the necessary skill, experience and local knowledge for every vessel listed on his/her certificate so as not to compromise safety of navigation in their harbour area.

The PEC holder had no experience of these larger vessels, and the reason for their addition to his certificate was that the CHA was confident that P&O would ensure its officers received comprehensive training on its owned vessels before being appointed to senior positions.

2.8 TECHNICAL INSPECTION

The pre charter inspection undertaken by a P&O technical manager in Barcelona on 19 October 2007 ensured that the vessel was technically suitable for charter by P&O for the intended route.

This inspection included checks of the vessel's paperwork to ensure that the requisite statutory surveys were all in date. It also provided P&O with information about the general fabric condition of the vessel. However, apart from a brief reference in the inspection report to the good cooperation provided by the vessel's senior staff during the inspection, no consideration was given to the previous training and experience of the master or senior officers to permit an assessment of their suitability for the charter.

This was a missed opportunity because it failed to identify the inexperience of the vessel's bridge team with respect to ro-ro operations. The tanker industry has guidelines for such inspections, which provide a prospective charterer with a comprehensive guide as to the suitability of both the vessel and her crew for an intended charter.

2.9 ON-HIRE SURVEY

The on-hire survey took place once the vessel had been chartered but before she commenced operations for the charterer. The survey was commissioned jointly by the owner and charterer, and was carried out by a mutually accepted firm of independent surveyors in order to agree the material condition of the vessel at the start of the charter.

This survey is a normal part of the charter process. However, its scope in the ro-ro trade contrasts significantly with the scope of similar surveys undertaken when oil tankers are chartered.

The oil tanker industry, in 2003, through its trade body the Oil Companies International Marine Forum (OCIMF), developed a harmonised vessel particulars questionnaire (**Annex E**). This questionnaire covers all aspects of a vessel's operation but also considers the training and experience of the master and officers. It records the training the master has received in ship handling, and the type of vessels on which he has gained that experience.

The demands of the short sea ro-ro trade are intense, and it would be appropriate for the ro-ro sector to consider the adoption of a similar standard.

2.10 ARRIVAL HULL

As *Ursine* was approaching the lock into King George Dock, the master was faced with a situation for which he was unprepared. He was expecting the PEC holder to undertake the manoeuvre into the lock while the PEC holder was expecting the master to be at the controls. The result was that both made control interventions as the vessel was manoeuvred towards the lock, and neither imposed overall control on the operation.

The pre-arrival briefing had referred to the approach to the lock in the prevailing tidal conditions but had not identified who would be undertaking the manoeuvre.

Assumptions were made by both the master and the PEC holder that the other would be taking the conduct and manoeuvring the vessel into the lock and then onto the berth. An effective passage plan discussion could have clarified this situation.

The vessel was in the lock for about 25 minutes while waiting for it to fill to dock level. This should have allowed sufficient time for the PEC holder and the master to leave the area of the port control console, where they were standing, to look across the dock from the starboard side to the P&O terminal. Had they done so, they would have seen that the berth they were expecting to use was already occupied by *Pride of Bruges*.

However, the PEC holder was undoubtedly sensitive to and distracted by, the master's discomfort, and spent most of this time reassuring the master in an attempt to boost his confidence. In doing so he missed an opportunity for providing a comprehensive briefing to the bridge team and the 2nd officer on the manoeuvre required for berthing at the P&O terminal.

Although the PEC holder and master did not look across to the P&O terminal, there were two people, the chief officer and 2nd officer, who, as the vessel was manoeuvred within the dock, would have been in a position to see that 5 Quay Middle berth was already occupied by *Pride of Bruges*. If they had been effectively briefed, or had themselves sought clarification as to which berth *Ursine* was making towards, they would have realised and have been able to alert the PEC holder and master that the vessel was, in fact, heading towards an occupied berth.

2.11 BRIDGE TEAM TRAINING

The master had attended a bridge team training course in October 2007. This was a 4-day course specifically developed to meet the requirements of EuroShip for improved communication between individual members of the bridge team. Although the course covered the fundamentals of passage planning and the execution and monitoring of the passage at sea, it did not incorporate berthing scenarios. Had these been included, the master could have gained a better understanding of the importance of good planning and the procedures required when a ro-ro vessel is berthing, in a dynamic situation, with information flowing rapidly to the bridge from the mooring positions as well as from a pilot or PEC holder.

The inclusion of berthing scenarios in the syllabus of any bridge team training course designed for ro-ro vessel operations is considered to be essential.

In addition to covering the planning of a passage, these courses should also emphasise the importance of the effective management of available resources. This should ensure that all the members of a bridge team, and other persons required to interact with them, are able to challenge, or seek clarification, from any other team member, regardless of rank, if they do not understand the plan or are concerned with its execution.

2.12 P&O TERMINAL BERTH ALLOCATION

Ursine's control consoles were located on the vessel's bridge wings from where the bridge team did not have a clear view of the intended berth as the vessel was manoeuvred, stern first, towards the P&O terminal.

Had the PEC holder been advised of the correct berth, and that the berth he was expecting the vessel to use was already occupied, it would have enabled him to adjust *Ursine's* approach accordingly. A procedure which positively confirms the berth allocation to vessels using the P&O terminal is necessary to prevent a similar accident in the future.

At the time of the accident, the Statutory Harbour Authority for King George Dock already had in place a procedure which, on entry to the lock, confirmed the berth allocation for vessels other than those going to the P&O terminal. An extension of this procedure, to include all vessels using King George Dock, is required.

2.13 PASSAGE PLANNING

The passage plan for Rotterdam to Hull (**Annex F**) was prepared by the 2nd officer and approved by the master a few days before the voyage. The plan was basic, consisting of a list of courses and distances from the approaches to Rotterdam to the lock entrance at Hull.

In this case, the vessel's arrival time would have been known sufficiently in advance to allow detailed planning of the tidal conditions and other information to be included in the passage plan.

SOLAS requirements for the appraisal, planning, execution and monitoring of a vessel's passage are clear and comprehensive. If the passage had been effectively planned from berth to berth the master and his bridge team would have had the opportunity to consider, in advance, the manoeuvres required to safely enter the lock, and could have allowed them time, when in the lock, to look across to the P&O terminal and realise that their intended berth was already occupied.

The vessel's SMS procedures included checklists for arrival in port (**Annex G**). However, the checklist completed for the passage from Rotterdam to Hull was not cross-referenced, or even kept with the passage plan.

Instead of forming an intrinsic part of the plan, the checklist appears to have been completed in isolation, without regard to its importance. Consequently, an opportunity to undertake an appropriate appraisal of the passage from berth to berth, as required by the checklist, was lost.

The use of checklists to assist the passage planning process represents good practice providing that such lists are not viewed as simply another piece of paperwork to be completed and filed without proper thought being given to the contents. Such lists should be used in conjunction with the passage plan, and cross-referenced and incorporated into the plan.

If the berthing manoeuvre had been discussed in the passage plan, the shortcomings in the respective previous ship handling training and experience of both the master and PEC holder should have been identified. The option to take a pilot to strengthen the bridge team for arrival could then have been considered at an early stage.

SECTION 3 - CONCLUSIONS

3.1 SAFETY ISSUES DIRECTLY CONTRIBUTING TO THE ACCIDENT WHICH HAVE RESULTED IN RECOMMENDATIONS

1. Humber CHA did not ensure that the PEC holder was the bona fide master or first mate of *Ursine* before adding the vessel to his certificate, contrary to section 8(1) of the Pilotage Act 1987. This made it less likely that the PEC holder was a fully integrated member of the ship's bridge team. [2.4, 2.6]
2. The PEC holder's certificate was originally issued without the CHA confirming that the holder was sufficiently trained and capable of performing ship handling duties on the vessels listed on his certificate. [2.7]

3.2 SAFETY ISSUES IDENTIFIED DURING THE INVESTIGATION WHICH HAVE RESULTED IN ACTION TAKEN

1. The CHA did not ensure that the PEC holder had the necessary skill, experience and local knowledge for every vessel listed on his certificate, resulting in significantly larger vessels than the one for which he had been assessed being added to the list. The PEC holder was a chief officer, and the assessment carried out when the PEC was issued did not assess his ship handling abilities as this was routinely undertaken by the relevant vessel's master. [2.9]
2. It was a general, but mistaken, view taken by port officials that the Humber CHA's jurisdiction did not include the enclosed dock areas. This has resulted in assessments of a candidate's ship handling ability, in some cases, not forming part of the port's PEC examination process. [2.7]
3. A procedure for positively confirming the berth allocation to vessels using the P&O terminal was not in place, contributing to the PEC holder not being aware that the berth he was expecting the vessel to use was already occupied. [2.12]
4. The PEC holder was required to undertake the ship handling but lacked the necessary training and experience for this. [2.5.3]
5. The PEC holder was appointed to *Ursine* without the requirement to sign on as the bona fide master or first mate, in conflict with section 8(1) of the Pilotage Act 1987. [2.6]
6. This case was a good example of a situation when it would have been prudent for a pilot to be employed to strengthen the bridge team, even though there was a PEC holder on board. [2.13]
7. The chief officer was inexperienced in his role, and had not been properly briefed before the start of the operation, resulting in his not contributing fully to its successful completion. [2.5.2]
8. The bridge team training course attended by the master did not cover the functions of a bridge team when operating with a pilot embarked or when manoeuvring in port. This contributed to the incomplete briefing given to the chief and 2nd officers and his inability to properly conduct the berthing manoeuvre. [2.11]

9. The passage plan lacked the details required for the berthing manoeuvres, contributing to the master's and PEC holder's ship handling shortcomings, their respective bridge team roles not being clarified, and the option to take a pilot to strengthen the bridge team not being considered. [2.10, 2.13]
10. The vessel's SMS checklists for arrival in port were not used in conjunction with the passage plan, contributing to an appropriate appraisal of the passage from berth to berth not being undertaken. [2.13]
11. The master lacked ship handling experience, resulting in his inability to manoeuvre *Ursine* effectively without assistance. [2.5.1]
12. Ro-ro sector charter inspections and on-hire surveys give no consideration to the previous experience of the master and senior officers, resulting in missed opportunities to identify any inexperience in ship handling and ro-ro operations.[2.8, 2.9]

SECTION 4 - ACTION TAKEN

4.1 COMPETENT HARBOUR AUTHORITY, HUMBER

Associated British Ports, the Competent Harbour Authority for the Humber has taken the following actions since the accident:

- Reviewed and revised the syllabus for Pilotage Exemption Certificate examinations to ensure a candidate's ship handling ability is properly assessed.
- Confirmed that its area of jurisdiction includes King George Dock, Hull.

4.2 STATUTORY HARBOUR AUTHORITY, KING GEORGE DOCK, HULL

Associated British Ports, the Statutory Harbour Authority for King George Dock, Hull has taken the following action:

- Issued an instruction to ensure that all vessels entering the dock are formally notified of their designated berth.

4.3 P&O FERRIES

The charterer has taken the following actions:

Issued a fleet circular and revised fleet regulations to ensure that:

- When P&O officers are appointed to time chartered vessels as the PEC holder, they have the necessary ro-ro experience and are accustomed and skilled in ferry operation such as ship handling, pilotage and frequent berthing/unberthing of vessels.
- When a PEC holder is appointed to a time chartered vessel, he is signed on as the bona fide first mate and is briefed as to his role on board and relationship with the master in regard to safe pilotage and ship handling.
- Pilots are used as necessary to allow for the familiarisation of a new master or PEC holder with a port or vessel.
- The vessel's passage plan is properly prepared and briefed to officers from berth to berth.
- The bridge team and mooring deck supervisors are fully briefed prior to critical manoeuvres.
- The PEC holder fully integrates with the bridge team and conducts a formal handover with the master when handing over or taking the 'con' so as to ensure full situational awareness.
- Introduced a checklist for use on time chartered vessels to ensure that the above requirements are met.
- Issued instructions that its time charter parties incorporate a clause which requires that masters have the necessary ro-ro experience and be accustomed and skilled in ferry operations such as ship handling, pilotage and frequent berthing/unberthing of the vessel.
- Introduced revised procedures for berth allocations in its North Sea terminals to ensure ship's staff are aware, in advance, which berth the vessel will be using.

4.4 EUROSHIP SERVICES LTD

The ship manager has taken the following actions:

- Introduced a revised syllabus for its bridge team training courses which now includes berthing manoeuvres with and without a pilot embarked. This has extended the training course from 4 to 5 days duration.
- Issued revised procedures to ensure that the pre-arrival checklist is used in conjunction with the vessel's passage plan.
- Ensured that junior officers receive regular familiarisation training and experience as members of the bridge team.
- Issued a fleet circular giving specific instructions on the status and role of a PEC holder when appointed as charterer's representative.
- Instructed its masters that a pilot must be used "if there are any restrictions imposed on a PEC holder".

4.5 SAFETY FLYER, MAIB

A Safety Flyer which summarises the safety issues identified in this investigation has been issued and sent to the following maritime organisations:

- **International Chamber of Shipping**
- **Passenger Shipping Association**
- **Merchant Navy Training Board**

These organisations have been requested to promulgate to their members the issues identified, actions taken and the recommendations made in this report.

SECTION 5 - RECOMMENDATIONS

The BPA/UKMPG Marine/Pilotage Group is recommended to:

2008/134 Promulgate to Competent Harbour Authorities the importance of:

- ensuring, so far as reasonably practicable, that candidates for PECs are bona fide masters or first mates of the vessels concerned (in accordance with the requirement of the Pilotage Act 1987)
- carefully assessing a candidate's ship handling ability before a PEC is issued or vessels of particular types and sizes are added to existing certificates

**Marine Accident Investigation Branch
May 2008**

Safety recommendations shall in no case create a presumption of blame or liability