

Extract from The United Kingdom Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 – Regulation 5:

“The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of such an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame.”

NOTE

This report is not written with litigation in mind and, pursuant to Regulation 14(14) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

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Drowning of a Passenger on *Sapphire Princess* East China Sea 7 August 2014

SUMMARY

At approximately 1245 local time¹ on 7 August 2014, a passenger was noticed floating face down in a swimming pool on board the passenger vessel *Sapphire Princess*. Despite rescue and resuscitation attempts by passengers and crew, the victim was pronounced deceased at 1255.

In the absence of a dedicated pool attendant, the initial alert was raised by passengers using the swimming pool. Nearby passengers and crew responded, and the onboard emergency services were summoned by telephone. However, there was a short delay in the emergency team response due to language difficulties between crew members and, until the emergency team arrived, limited attempts to perform CPR² were carried out by passengers.

Risks relating to the use of swimming pools by unsupervised passengers had not been formally assessed.

Princess Cruise Lines Ltd has been recommended to: complete a formal documented risk assessment on the use of ships' swimming pools throughout its fleet and; ensure its hotel staff (including stewards, shop staff, hairdressers and entertainers) receive sufficient training and information to take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board.

FACTUAL INFORMATION

Vessel and environment

Sapphire Princess (**Figure 1**) had transferred from the Caribbean Sea to the Asian market at the beginning of the 2014 summer season. Shanghai, China, was the ship's predominant turnaround port. The majority of the passengers were

¹ Universal Co-ordinated Time (UTC) + 9 hours

² Cardio-Pulmonary Resuscitation



Figure 1: *Sapphire Princess*

Chinese and the crew was multi-national. To facilitate changes in passenger demographics, a number of Chinese-speaking customer service agents (CSAs) and other crew members had been employed. The working language of the vessel was English with passenger information documents and some ship's signage translated into Chinese.

At the time of the incident, *Sapphire Princess* was on a scheduled cruise from Shanghai to Jeju, South Korea, with 2,998 passengers embarked.

Narrative

At approximately 1245, a number of passengers in Neptune Pool began screaming. A passenger at the poolside heard the screaming and immediately noticed Ms Bayinhua, floating face down in the pool, with bubbles coming from her mouth. He removed his son from the pool and jumped back in to assist her.

Another passenger, who was in the adjacent Jacuzzi, went to the beach area of the pool to assist recovery of the victim. Two of the ship's catering staff, who were working in the vicinity, arrived simultaneously to assist with removing the casualty from the water and onto the beach area of the pool.

Attempts were then made to drain water from Ms Bayinhua's lungs. It was noted that the victim's lips were purple and her body blue, her eyes were open and not moving, and she was not breathing.

At 1247, another member of the catering staff dialled '911'³ from a deck telephone to summon the onboard emergency services. The CSA receiving the call could not understand him and passed the telephone to another CSA who, in turn, transferred the call to the duty nurse. The nurse received the call at 1249, at which point the caller reported that a female passenger had been pulled from the pool and that she was unconscious.

More '911' calls were made from the adjacent food outlets and CPR was commenced by passengers in the vicinity of the pool at approximately 1248.

Following receipt of the '911' call, the duty nurse retrieved the 'first response' bag, ran to the medical centre and explained the nature of the emergency to the senior doctor and senior nurse. They all then proceeded to Neptune Pool. On arrival, the medical team noted five or six passengers and four or five crew members in the vicinity of the victim, but that CPR was not being carried out. The doctor and the duty nurse began CPR while the senior nurse fetched the ship's Automated External Defibrillator; the pads were applied to the victim's chest but the device indicated 'no shock advised'. CPR was then resumed and supplementary oxygen administered.

The victim was transferred to a gurney, where resuscitation attempts continued and adrenaline was administered intravenously.

³ 911 was the ship's emergency phone number

At 1255, the doctor noted obvious evidence of irreversible signs of death and Ms Bayinhua was pronounced dead.

Ms Bayinhua had last been noticed sitting in the vicinity of the pool approximately 30 minutes before the alarm was raised. It could not be established how long she had been in the water.

The vessel arrived at Shanghai on 9 August 2014 where Ms Bayinhua's body was transferred to the police, who examined it and subsequently issued a death certificate indicating drowning as the cause of death.

At the request of Ms Bayinhua's family, a postmortem examination was not carried out.

Neptune Pool

Neptune Pool (**Figure 2**) was located on deck 14 forward. The pool was approximately 5m⁴ long by 2.5m wide with a depth of 2.21m at its deepest point and 1.65m at its shallowest point. There were two Jacuzzis at the after end of the pool and a large tiled 'beach' area at the forward end. Forward of the beach was a food area, which comprised a pizzeria, a bar and a grill. The pool was enclosed by a low wall (approximately 0.5m high) with seating and sun loungers on the adjacent deck area.

Image courtesy of Princess Cruise Lines Ltd

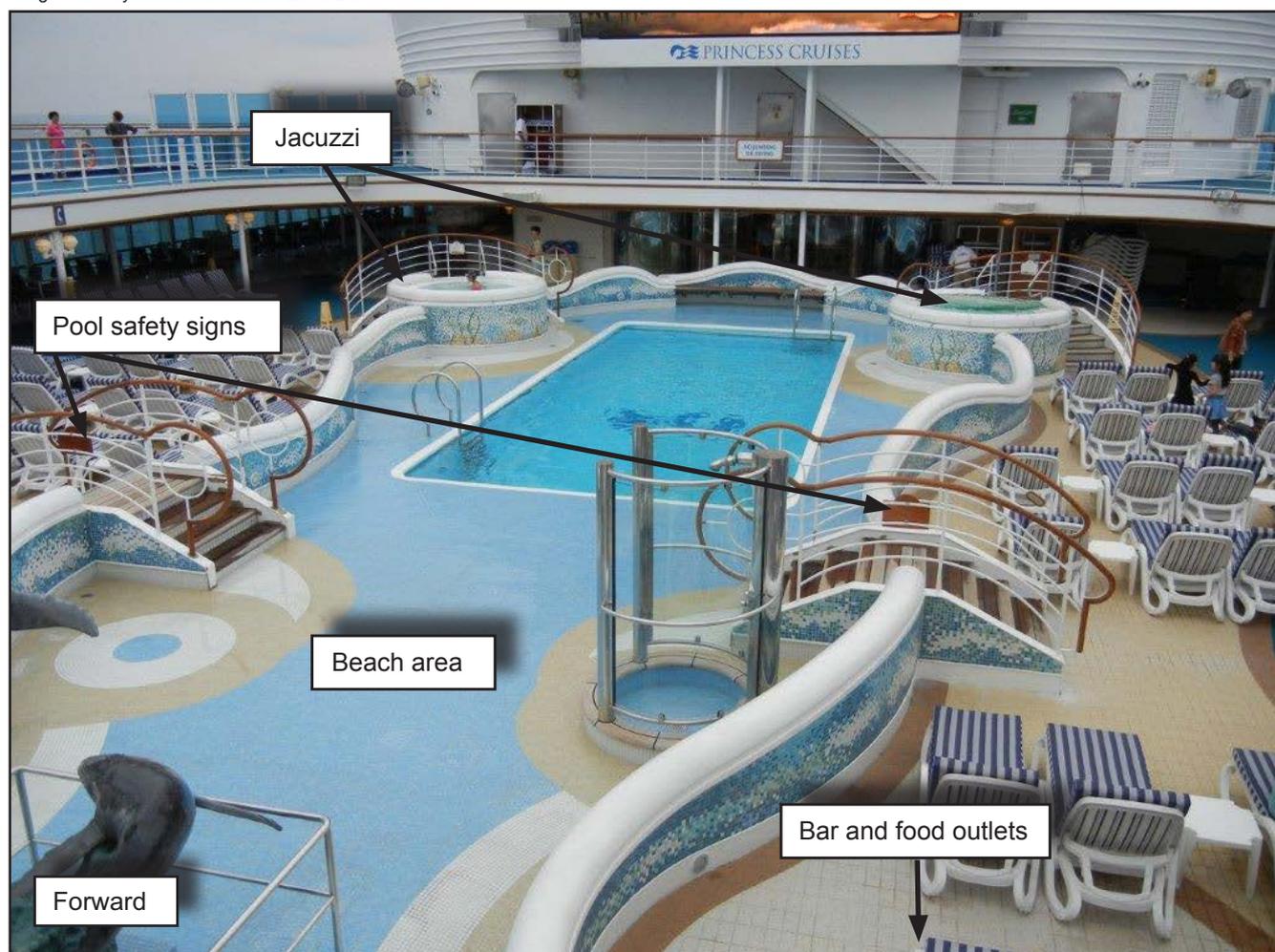


Figure 2: Photograph of Neptune Pool

⁴ metre

Pool operations

No formal documented risk assessment relating to hazards involved in the use of swimming pools had been produced. There were no designated attendants present or CCTV⁵ coverage of the pool areas. A parental advisory notice in the passengers' cabins warned those with children that there were no lifeguards on duty, and this notice had been translated into Chinese for the ship's relocation to the Asian market. Similarly, a health and safety advisory notice (Figure 3) near the pool, which also advised there were no lifeguards on duty, had been overlaid with a Chinese translation (Figure 4).

Image courtesy of Princess Cruise Lines Ltd



Figure 3: Photograph of advisory note

Image courtesy of Princess Cruise Lines Ltd

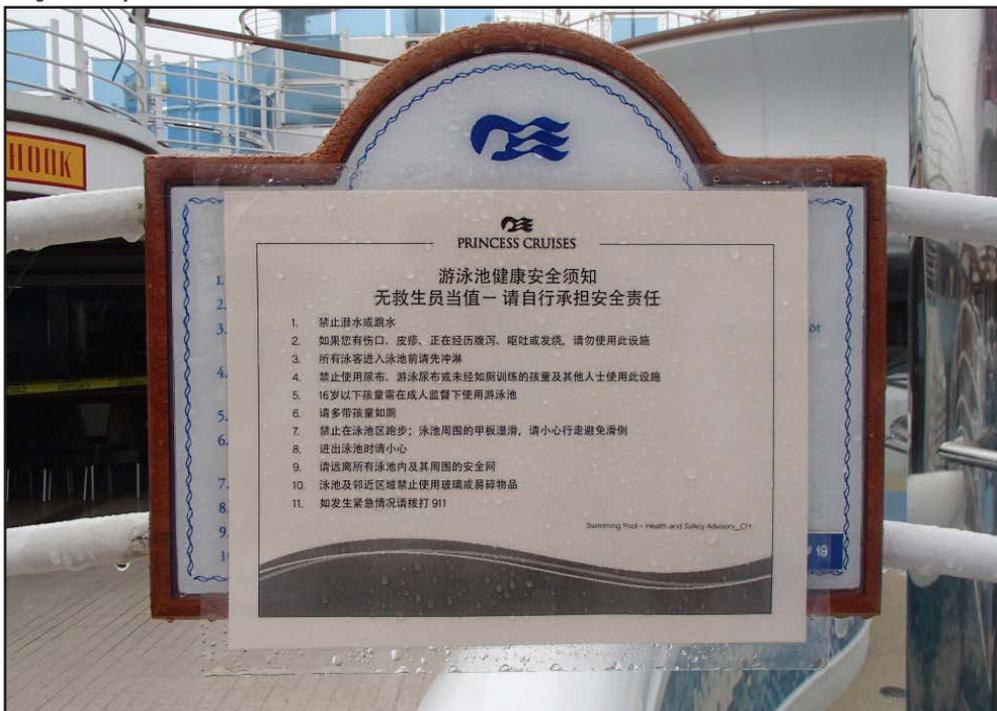


Figure 4: Photograph of advisory note overlaid with a Chinese translation

⁵ Closed Circuit Television

Regulation and guidance

There are no specific regulations pertaining to the operation and use of swimming pools on ships. However, The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 require that risk assessments are carried out:

‘Regulation 7

(1) A suitable and sufficient assessment shall be made of the risks of the health and safety of workers arising in the normal course of their activities or duties, for the purpose of identifying—

- (a) groups of workers at particular risk in the performance of their duties; and*
- (b) the measures to be taken to comply with the employer’s duties under these Regulations, and any significant findings of the assessment and any revision of it shall be brought to the notice of workers.*

(2) This assessment shall extend to the risks to the health and safety of other persons on board ship in so far as they may be affected by the acts and omissions of the employer...’

The UK Health and Safety Executive produces guidance on managing health and safety in swimming pools ashore (HSG179 – third edition published 2003 and reprinted with amendments in 2013). The aim of this document is to provide guidance on the risks associated with swimming pool operation. It details when risk assessments should be carried out and factors to consider when deciding whether constant poolside supervision is necessary.

At the time of the accident, Marine Guidance Note (MGN) 96 (M) – Training and Certification Guidance (pursuant to The Merchant Shipping (Training and Certification) Regulations 1997) – Part 6 Emergency, Occupational Safety, Medical Care and Survival Functions, Part 2.1 stated:

‘Before being assigned to shipboard duties, all persons employed or engaged on a seagoing ship other than passengers, including stewards, shop staff, hairdressers and entertainers, are required to undertake approved familiarisation training in personal survival techniques or be given sufficient information and instruction to ensure that they can carry out the tasks listed in section A-VI/1, paragraphs 1.1-1.7 of the STCW Code...’

Section A-VI/1, paragraph 1.6 of the STCW Code requires each such person to be able to:

‘take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board...’

On 9 June 2015, MGN 96 (M) was replaced with Merchant Shipping Notice (MSN) 1865 (M), which refers to The Merchant Shipping (Standards of Training, Certification and Watchkeeping) Regulations 2015 and, in section 2.1, contains a similar requirement to that extracted from MGN 96 (M) above.

Medical first-aid training was not provided on board *Sapphire Princess* and there was no expectation from the vessel’s manager that its hotel staff would have undertaken formal training before appointment to a ship.

ANALYSIS

Drowning

Although no postmortem examination was carried out to confirm the cause of death, the circumstances of the incident, coupled with the findings of the ship's medical team, strongly indicate that the victim died as a result of drowning.

It remains unknown how long Ms Bayinhua had been in the pool before the event that led to her death. The last positive sighting of the deceased was 30 minutes prior to the alarm being raised, at which time she was sitting at the poolside.

The lack of dedicated pool attendants potentially delayed the response to the incident in respect of raising an alarm and administering appropriate medical treatment. The monitoring of CCTV coverage of the area might have prompted an earlier response and would have given post-incident information.

Delay in emergency response

Once the alarm was raised, the response to the incident by the ship's emergency medical team was rapid and professional. It cannot be determined how long Ms Bayinhua had been lying face down in the water before her predicament was noticed. However, the medical team's response was delayed by a few minutes because the initial emergency call was not understood by the CSA who received it. These delays might have compromised the effectiveness of the emergency response.

With no designated attendants at the vessel's pools, it was left to other pool users and bystanders to recognise that Ms Bayinhua was in need of urgent assistance and to raise an alarm. While the Health and Safety Advisory Note (**Figures 3 and 4**) warned that there was no lifeguard on duty and that children under the age of 16 should be supervised, had there been a dedicated pool attendant monitoring the passengers in the pool, the victim's situation could have been identified at the earliest possible opportunity.

The working language of the vessel was English. However, the initial emergency call from a Serbian catering assistant working in the deck 14 food area to an Asian CSA in the purser's office was not understood due to language difficulties. Fortunately another CSA was able to understand the caller, otherwise the medical team's response might have been further delayed.

Delay in administering CPR

There was a delay in administering first-aid medical treatment to Ms Bayinhua. When CPR did commence, it was only briefly carried out by fellow passengers and had ceased by the time the medical team arrived at the pool.

The crew members in the vicinity of Neptune Pool had not received instruction from the company in medical first-aid. The passengers providing first-aid assistance might also have been untrained which, in turn, is likely to have compromised the effectiveness of the resuscitation attempts.

The staffing of pool areas with personnel who are suitably trained in medical first-aid would allow a more appropriate response to medical emergencies.

Swimming pool risk awareness

Use of a ship's swimming pools is a significant part of a holiday experience, and a passenger's awareness of any attendant risk is likely to be lower than would otherwise be the case in a less controlled environment. When the availability of food and alcohol is added, the risks in and around the pool are exacerbated.

The HSE guidance on managing health and safety in swimming pools ashore strongly indicates that constant poolside supervision provides the best assurance of pool users' safety. However, it also recognises that a risk assessment may determine circumstances where the balance of cost and risk makes it possible to provide a safe swimming environment without constant poolside supervision. Many factors need to be considered. The guidance specifically recommends constant poolside supervision if the water is deeper than 1.5m and if food and drink are available to pool users, both of which applied to Neptune Pool.

A formal documented assessment of pool usage on board might not have prevented this accident from occurring. However, it would have identified drowning as a potential hazard following which appropriate control and mitigation measures should also have been considered. Given the exacerbating factors of water depth and the availability of food and alcohol, controls and mitigating measures would almost certainly have included prompt identification of the emergency, followed by rapid medical assistance, both of which were lacking in this accident.

CONCLUSIONS

- The death of Ms Bayinhua was probably as a result of drowning.
- The circumstances leading to the incident cannot be confirmed as there was no eyewitness evidence detailing events immediately prior to the alarm being raised.
- With no formal documented risk assessment in place for the use of the ship's swimming pools, associated hazards had not been formally identified. Consequently, no action had been taken to reduce either their likelihood of occurrence or severity of harm.
- It is possible that the absence of suitably trained personnel in the vicinity of the pool, which delayed the commencement of CPR on Ms Bayinhua, contributed to her not being resuscitated.

FURTHER SWIMMING POOL ACCIDENTS

Since the accident on board *Sapphire Princess* on 7 August 2014, the MAIB has been notified of two further swimming pool accidents involving passengers on board vessels operated by Princess Cruise Lines Ltd. The first occurred on board *Diamond Princess* on 23 June 2015, and the second on board *Sapphire Princess* on 5 August 2015.

ACTION TAKEN

Princess Cruise Lines Ltd has issued guidance to all passengers stating that lifeguards are not on duty around the pools and all persons using the pools do so at their own risk.

RECOMMENDATIONS

- 2015/147 **Princess Cruise Lines Ltd** is recommended to improve safety in the use of ships' swimming pools throughout its fleet by:
1. Carrying out a suitable and sufficient risk assessment relating to the use of ships' swimming pools in compliance with The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997, and then formally documenting it.
 2. Ensuring that the requirements of The Merchant Shipping (Standards of Training, Certification and Watchkeeping) Regulations 2015 are met through approved familiarisation training or sufficient onboard information and instruction for its hotel staff (including stewards, shop staff, hairdressers and entertainers) to carry out the tasks listed in section 2.1 of MSN 1865 (M). Particular attention should be given to compliance with the requirement for ships' staff to be able to take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board.

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

SHIP PARTICULARS

Vessel's name	<i>Sapphire Princess</i>
Flag	United Kingdom
Classification society	Lloyds Register of Shipping (UK)
IMO number/fishing numbers	9228186
Type	Passenger Vessel
Registered owner	Carnival Corporation & plc
Manager(s)	Princess Cruise Lines Ltd
Year of build	2004
Construction	Steel
Length overall	290m
Registered length	290m
Gross tonnage	11,5875
Minimum safe manning	45
Authorised cargo	Passengers

VOYAGE PARTICULARS

Port of departure	Shanghai - China
Port of arrival	Jeju – South Korea
Type of voyage	Commercial
Cargo information	2,998 passengers
Manning	1,097 crew

MARINE CASUALTY INFORMATION

Date and time	07 August 2014 1245 (UTC+9)
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Open Sea
Place on board	Deck 14 – Neptune Pool
Injuries/fatalities	1 fatality
Damage/environmental impact	None
Ship operation	In passage
Voyage segment	Mid-water
External & internal environment	Daylight, sea state 2, wind force 3
Persons on board	4.095