

**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 *Pacific Dawn***

### **Coral Sea, South Pacific Ocean**

**9 November 2015**

### **SUMMARY**

At approximately 1051 local time<sup>1</sup> on 9 November 2015, a male passenger on the cruise ship *Pacific Dawn* was noticed lying motionless at the bottom of the forward swimming pool. Despite being retrieved swiftly from the water, attempts to resuscitate him were unsuccessful and he was declared deceased at 1120 by the ship's senior doctor.

The victim had been under water in the unsupervised pool for approximately 10 minutes before a fellow passenger saw him and recovered him to the surface. The alarm was raised and, following his removal from the water, CPR<sup>2</sup> was commenced by fellow passengers at the pool side prior to the arrival of the ship's medical team shortly afterwards.

P&O Cruises Australia has since completed a formal documented risk assessment for swimming pool usage, and has planned a number of actions aimed at preventing a recurrence. No recommendations have been made as a result of this investigation.

### **FACTUAL INFORMATION**

#### **Narrative**

During the evening of 7 November 2015, *Pacific Dawn* (**Figure 1**) commenced a 10-night cruise from Brisbane, Australia to the islands of Papua New Guinea. The first port of call was Alotau, where the vessel was scheduled to arrive on 10 November.

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<sup>1</sup> Universal co-ordinated time (UTC) + 10 hours

<sup>2</sup> Cardio-Pulmonary Resuscitation



**Figure 1 - Pacific Dawn**

On the morning of 9 November, one of the passengers, Mr Oh, proceeded to the forward swimming pool on deck 12 (**Figure 2**). The ship's CCTV<sup>3</sup> recording showed Mr Oh completing some brief stretching exercises before he entered the pool. At 1037, he slowly climbed down the pool's aft bathing ladder and entered the water. The pool's temperature was 30°C. He gently swam in the vicinity of the ladder and then moved under the port water fountain, allowing the water to flow over his head. He then swam away from the fountain for a longer period towards the centre of the pool before returning to the spot directly under the water fountain and, at one stage, appeared to briefly touch the side of the pool with his hand.

At this time there were at least four other passengers in the pool. At 1042, Mr Oh's head appeared to sink below the water and did not resurface. He then sank to the bottom of the pool unnoticed by the other pool users.

At approximately 1051, one of the passengers in the pool saw Mr Oh lying at the bottom of the pool and, after a few seconds, he dived down and recovered him to the surface.

## **Rescue**

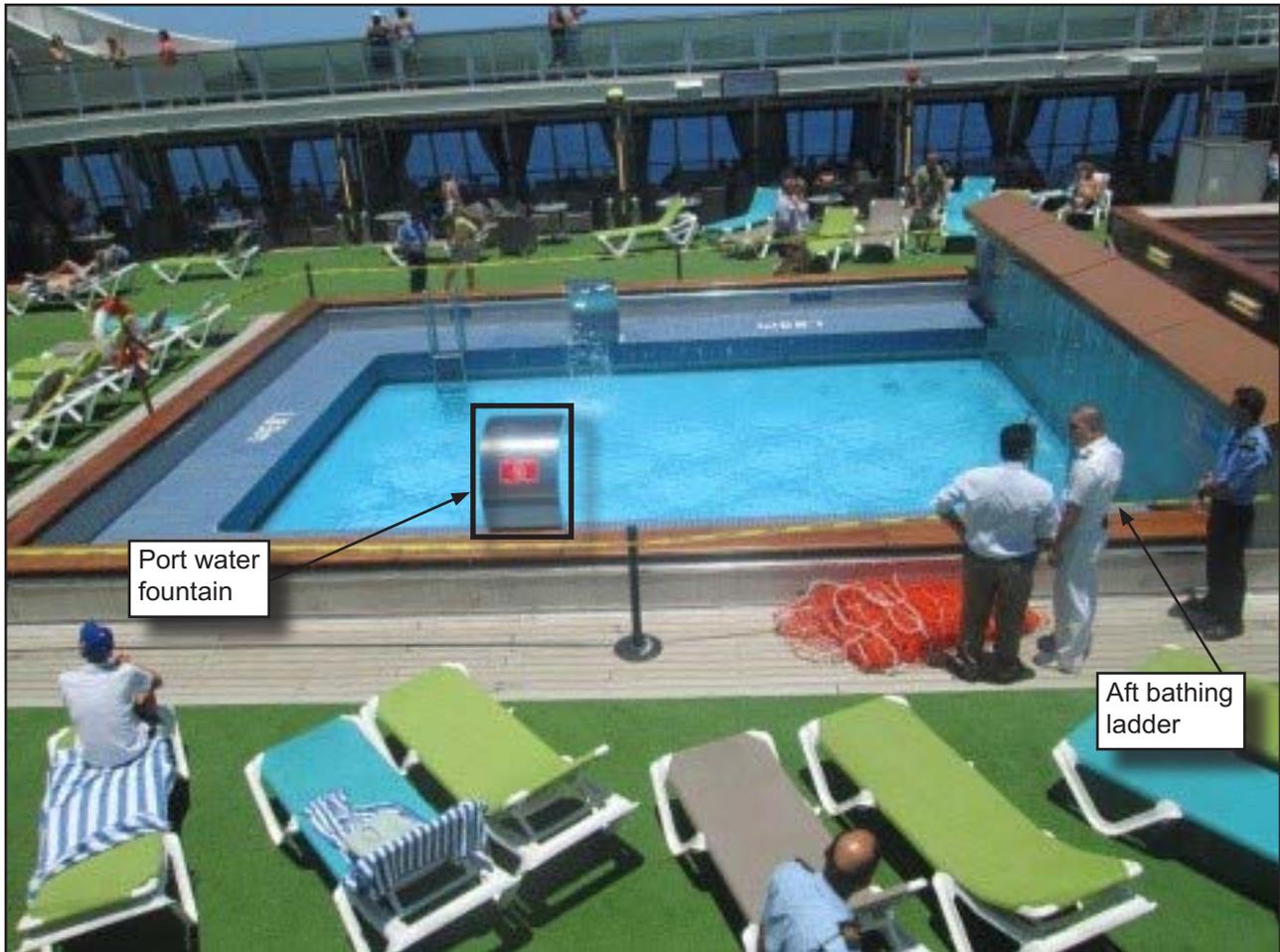
At 1052, the rescuer shouted for help and several passengers came to his aid. A ship's security patrolman on deck 14 had seen the rescuer waving in the pool and ran down to help. Mr Oh was lifted out of the pool and was laid on his back. Another patrolman raised the alarm, calling both the bridge and the emergency response telephone number. At 1055, the bridge team made a tannoy announcement and paged the medical team.

At the side of the pool, one passenger commenced chest compressions, while another provided mouth-to-mouth resuscitation. Mr Oh's airway occasionally became blocked as the chest compressions continued, and it was cleared each time.

At 1057, the medical team, consisting of two doctors and three nurses, arrived on scene and administered medical treatment. Mr Oh was not breathing and showed no other signs of life. An automated external defibrillator was then attached to him and indicated that his heart had ceased

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<sup>3</sup> Closed Circuit Television



**Figure 2 - Forward swimming pool viewed from port side**

beating. At 1120, the senior doctor declared Mr Oh deceased, and his body was then transported to the medical centre. The subsequent autopsy examination determined that the cause of death was drowning with coronary atherosclerosis contributing to the death.

### **The deceased**

Mr Oh was from South Korea and was travelling with his wife, two daughters, son-in-law and grandson. Mr Oh was 78 years old and was fit and well, but did suffer from a known heart condition, which was controlled by medication. While not a strong swimmer, Mr Oh was described as 'comfortable' when swimming.

### **Swimming pool operations**

*Pacific Dawn* had two swimming pools on deck 12. The forward pool was dedicated to adults only. Neither of the pools had designated attendants, and signage next to each pool stated that pool use was at the individual's risk (**Figure 3**). A sign indicating a bather limit of 15 was posted next to the pool. The depth of water in the pool was constant throughout at 1.83m, and this was indicated on the pool's side (**Figure 4**).

P&O Cruises Australia's fleet instructions for recreational water facilities and swimming pools specifically detailed the signage requirements and safety equipment to be provided next to the pools. Instructions for supervision of the pool was limited to the standing orders for youth security staff, who were normally employed when significant numbers of children were on board. One of the roles of the youth security staff was to ensure proper behaviour in the pool and jacuzzi areas.

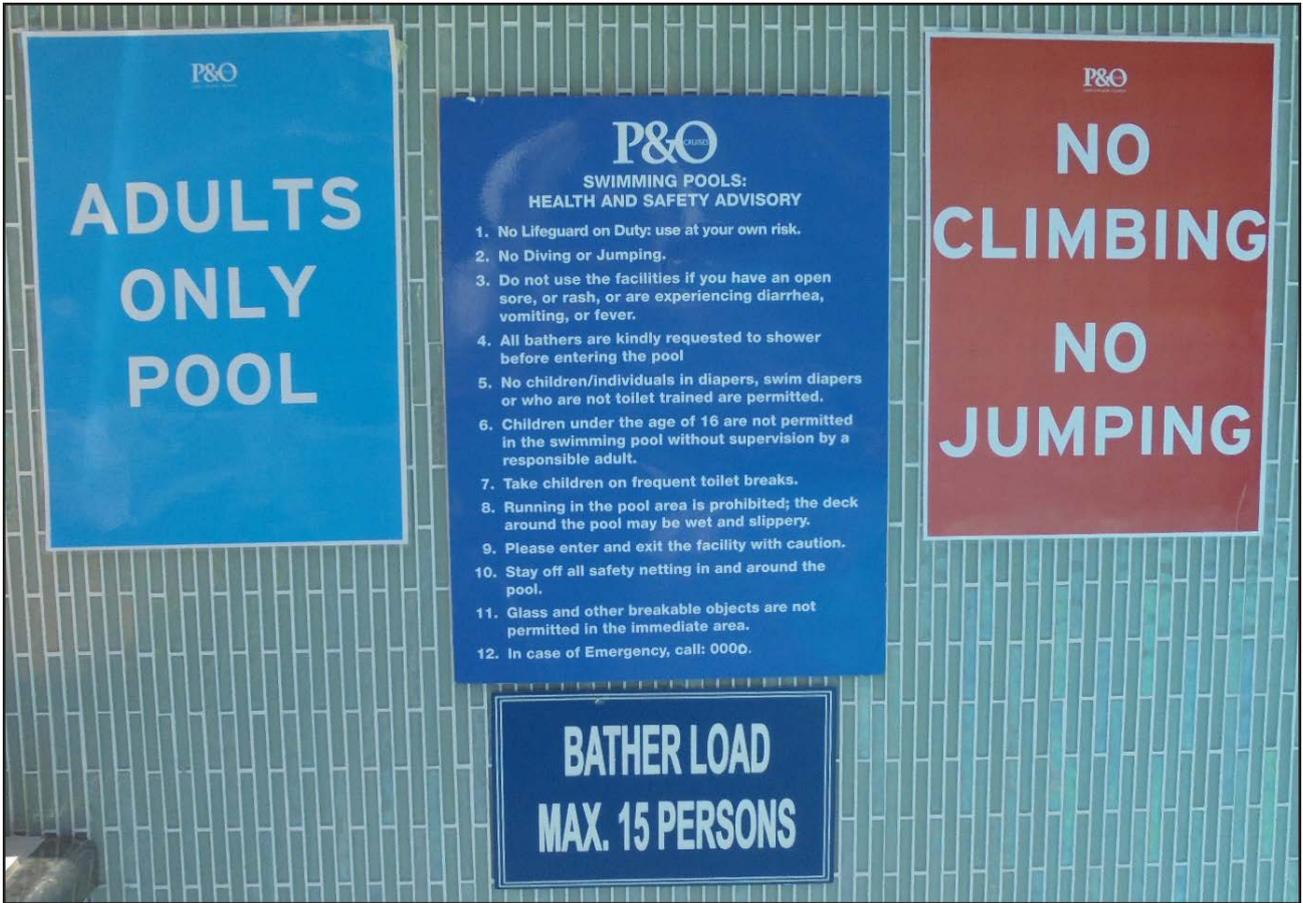


Figure 3 - Signage adjacent to forward swimming pool



Figure 4 - Poolside indication of water depth

## Regulations and guidance

Swimming pools in ships are not covered by any specific regulations. However, the United Kingdom (UK) Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 require that risk assessments be completed for activities and operations on board UK registered ships. At the time of the accident, no formal documented risk assessment for swimming pool usage had been completed by P&O Cruises Australia.

Ashore, the UK Health and Safety Executive (HSE) has produced guidance on managing health and safety in swimming pools (HSG179 -3rd edition published in 2003 and reprinted with amendments in 2013). The document includes guidance on the risks associated with swimming pool operations, detailing when risk assessments should be carried out and factors to consider when deciding whether constant poolside supervision is necessary. It states:

### ***'Factors to consider when deciding whether constant poolside supervision is necessary***

- 186** *Constant poolside supervision by lifeguards provides the best assurance of pool users' safety. The 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. Before deciding this, pool operators should carefully consider relevant circumstances such as:*
- *the nature of the pool;*
  - *the pool users;*
  - *activities in the pool at any particular time.*
- 187** *A risk assessment must be undertaken to decide whether constant poolside supervision is required. If the pool meets one or more criteria from the following list, it is strongly recommended that constant poolside supervision is provided:*
- *the pool has water deeper than 1.5 m;*
  - *the pool water area is greater than 170 m<sup>2</sup>;*
  - *diving from the poolside is allowed;*
  - *there is poolside equipment or a feature posing additional risk;*
  - *there are abrupt changes in depth;*
  - *it is not practicable to enforce house rules for safe behaviour;*
  - *access is not restricted, eg to hotel residents, members, hospital staff and patients.*
- 188** *Whether constant poolside supervision is required also depends on how a pool is used at any given time. For example, a pool which would not normally require poolside supervision may need to make arrangements for supervision on occasions when:*
- *the pool will be used by unaccompanied children aged under 15 years;*
  - *crowded conditions are expected;*
  - *food or alcohol will be available to pool users; or*
  - *activities take place or equipment is used which can lead to additional risks through the high excitement generated.'*

## ANALYSIS

### Delay in emergency response

Mr Oh was lying on the bottom of the pool for 10 minutes before he was spotted, rescued, and attempts to revive him commenced. It is unknown whether or not Mr Oh's life could have been saved had an emergency response been initiated sooner, but as the primary cause of death was drowning it must be considered possible. Once the alarm had been raised, the medical team's response was swift. If a dedicated pool attendant had been monitoring passengers in the pool, Mr Oh's situation could have been identified and an emergency response initiated at the earliest possible opportunity.

Although a security patrolman was on deck 14 looking down onto the pool area, he remained unaware that Mr Oh required assistance until another pool user raised the alarm approximately 10 minutes after Mr Oh had sunk below the water surface. While security patrolmen periodically provided a degree of swimming pool supervision, this accident demonstrates that the monitoring of passengers in a pool ideally needs to be provided on a constant basis to effectively identify and respond to a passenger in immediate risk of drowning.

### 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 supervision if the water is deeper than 1.5m and if food and drink are available to pool users, both of which applied to the forward swimming pool on board *Pacific Dawn*.

A formal documented risk assessment for swimming pool usage might not have prevented this accident. However, it would have identified hazards in relation to the particular ship, pool and clientele which, if not appropriately controlled or mitigated, could result in a passenger drowning. Measures aimed at preventing a passenger from requiring assistance while in the pool could include controlling access to the pool by weaker swimmers or those with particular health issues. Mitigating measures in response to a passenger in immediate risk of drowning could include full or part-time supervision in the form of dedicated pool attendants.

### Other swimming pool accidents

On 7 August 2014, a passenger drowned in a swimming pool on board *Sapphire Princess*. The MAIB investigation<sup>4</sup> concluded that a lack of dedicated pool attendants potentially delayed the emergency response, and that risks relating to the use of the swimming pools by unsupervised passengers had not been formally assessed and documented. Princess Cruise Lines Ltd was recommended by the MAIB to carry out a suitable and sufficient risk assessment relating to the use of ships' swimming pools.

Previous swimming pool incidents involving unsupervised passengers that have not resulted in serious injury or death, or have otherwise not generated an emergency response by ship's staff might not have been identified and recorded. Therefore, the frequency of near drownings in unsupervised swimming

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<sup>4</sup> Report No 19/2015

pools is uncertain. As the number of people choosing a cruise ship holiday is increasing, it is important that this uncertainty is taken into account when conducting risk assessments so that an appropriate level of swimming pool supervision is maintained in all circumstances.

## **CONCLUSIONS**

- Mr Oh died as a result of drowning in the forward swimming pool.
- It is unknown whether or not Mr Oh's life could have been saved had an emergency response been initiated sooner, but as the primary cause of death was drowning it must be considered possible.
- Once the alarm had been raised, the ship's medical team's response was swift.
- As there was no dedicated pool attendant, Mr Oh's situation was not identified and an emergency response initiated at the earliest opportunity.
- With no formal documented risk assessment for swimming pool usage in place, the associated risks and potential control measures had not been fully considered.
- It is important that the uncertain frequency of near drownings in unsupervised swimming pools is taken into account when conducting risk assessments so that an appropriate level of pool supervision is maintained in all circumstances.

## **ACTIONS TAKEN**

P&O Cruises Australia has since completed a formal documented risk assessment for swimming pool usage, and has planned a number of actions aimed at preventing a recurrence, including:

- updating its guest safety video to include pool safety information;
- providing flotation devices as an option for weaker swimmers;
- developing enhanced standard pool safety signs; and
- developing a pool safety guide for guests.

## **RECOMMENDATIONS**

Given the action already taken and planned by P&O Cruises Australia, no recommendations have been made as a result of this investigation.

## SHIP PARTICULARS

Vessel's name	<i>Pacific Dawn</i>
Flag	United Kingdom
Classification Society	Lloyd's Register
IMO number	8521232
Type	Passenger vessel
Registered owner	Carnival plc
Manager	P&O Cruises Australia
Year of build	1991
Construction	Steel
Length overall	245m
Registered length	206m
Gross tonnage	70,285
Minimum safe manning	51
Authorised cargo	Passengers

## VOYAGE PARTICULARS

Port of departure	Brisbane, Australia
Port of arrival	Alotau, Papua New Guinea
Type of voyage	Commercial
Cargo information	1861 passengers
Manning	718 crew

## MARINE CASUALTY INFORMATION

Date and time	9 November 2015 1051 (UTC +10)
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Open sea
Place on board	Deck 12 - forward swimming pool
Injuries/fatalities	1 fatality
Damage/environmental impact	None
Ship operation	In passage
Voyage segment	Mid-water
External & internal environment	Daylight, sea state 1, wind force 1-2
Persons on board	2579