



Report on the investigation of
the fatal accident to a crew member on board the
Bermuda registered passenger vessel

Arvia

while on passage from
Southampton, England, to Santa Cruz de Tenerife, Canary
Islands, Spain
on 26 October 2025



VERY SERIOUS MARINE CASUALTY

REPORT NO 20/2026

OCTOBER 2026

Extract from
The Bermuda Merchant Shipping
(Accident Reporting and Investigation)
Regulations 2021 – Regulation 5:

The sole objective of a safety investigation into an accident under these Regulations 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

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For all enquiries:

Marine Accident Investigation Branch
First Floor, Spring Place
105 Commercial Road
Southampton
SO15 1GH
United Kingdom

Email: iso@maib.gov.uk
Telephone: +44 (0)23 8039 5500

Press enquiries during office hours: +44 (0)19 3244 0015
Press enquiries out of hours: +44 (0)30 0777 7878

CONTENTS

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

SYNOPSIS 1

SECTION 1 – FACTUAL INFORMATION 2

1.1	Particulars of <i>Arvia</i> and accident	2
1.2	Background	3
1.3	Narrative	3
1.3.1	Initial inspection and repairs	3
1.3.2	Follow-up repair work and testing	6
1.3.3	Inspection and testing leading up to accident	6
1.4	<i>Arvia</i>	8
1.4.1	General	8
1.4.2	Crew	8
1.4.3	Electro-technical team	9
1.4.4	The deceased	9
1.5	<i>Arvia</i> passenger lifts	9
1.5.1	Lift interlocks	9
1.5.2	Release key	10
1.5.3	Priority mode	10
1.5.4	Inspection mode and emergency stop controls	10
1.5.5	Emergency rescue operation	10
1.5.6	Manual rescue operation	10
1.5.7	Shaft ladder	12
1.6	Procedures	13
1.6.1	Carnival Corporation procedures	13
1.6.2	Carnival UK procedures	13
1.6.3	Permit to work	14
1.6.4	Job safety review	14
1.6.5	Lock-out/tag-out	15
1.6.6	Working at height	15
1.6.7	Manufacturer's safety documentation	15
1.7	Regulations	16
1.7.1	Design approval	16
1.7.2	Safety management	16
1.7.3	Training	16
1.7.4	Maintenance and working at height	16
1.8	Previous/similar accidents	17
1.8.1	<i>British Mallard</i> – crew member fatality	17
1.8.2	<i>MSC Colombia</i> – crew member fatality	17
1.8.3	<i>Carnival Ecstasy</i> – crew member fatality	17

SECTION 2 – ANALYSIS 18

2.1	Aim	18
2.2	Overview	18
2.3	The accident	18
2.4	Communication and planning	18
2.5	Control of lift movement	19
2.6	Safety management	19
2.7	Training	20
2.8	Equipment failure	21

SECTION 3 – CONCLUSIONS	22
3.1 Safety issues directly contributing to the accident that have been addressed or resulted in recommendations	22
3.2 Safety issues not directly contributing to the accident that have been addressed or resulted in recommendations	22
SECTION 4 – ACTION TAKEN	23
4.1 Actions taken by other organisations	23
SECTION 5 – RECOMMENDATIONS	24

FIGURES

- Figure 1:** Passenger lift 14 location
- Figure 2:** Lift car top
- Figure 3:** View looking up lift shaft from lift car
- Figure 4:** Lift movement
- Figure 5:** Door release mechanism
- Figure 6:** Lift shaft ladder viewed from deck 14

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

1ETO	-	first electro-technical officer
3ETO	-	third electro-technical officer
AET	-	assistant electrical technician
Carnival Corporation	-	Carnival Corporation and Carnival plc
ERO	-	emergency rescue operation
ET	-	electrical technician
JSR	-	job safety review
LOTO	-	lock-out/tag-out
MAIB	-	Marine Accident Investigation Branch
MRO	-	manual rescue operation
OEM	-	original equipment manufacturer
OHS	-	occupational health and safety
PL	-	passenger lift
PTW	-	permit to work
REG	-	Red Ensign Group
SETO	-	staff electro-technical officer
SMS	-	safety management system
UTC	-	universal time coordinated

TIMES: all times used in this report are ship's time unless otherwise stated. Ship's time was universal coordinated time (UTC) +1 until 0200 on 26 October 2025, when ship's time was retarded to UTC.

SYNOPSIS

At about 0552 on 26 October 2025, a crew member on board the Bermuda registered passenger vessel *Arvia* was fatally injured while inspecting a passenger lift following overnight repairs. *Arvia* was on passage from Southampton, UK, to Santa Cruz de Tenerife, Canary Islands, Spain. The lift had been returned to normal operation for testing before the inspection and moved in response to a stored call signal while the crew member was inside the lift shaft.

The investigation found that the inspection was not supported by a clearly communicated and mutually understood plan. Positive control of the lift had not been established before the crew member entered the lift shaft, and the work relied on self-resetting door interlocks that did not provide an effective barrier against lift movement.

Following the accident *Arvia*'s managers, Carnival UK Ltd, has taken action to reinforce lift maintenance procedures, communication arrangements and training requirements across its fleet.

A recommendation has been made to Carnival UK Ltd to review the use of self-resetting lift door interlocks as a safety barrier during lift maintenance and inspection.



SECTION 1 – FACTUAL INFORMATION

1.1 PARTICULARS OF ARVIA AND ACCIDENT

VESSEL PARTICULARS	
Vessel's name	<i>Arvia</i>
Flag	Bermuda
Classification society	Lloyd's Register
IMO number	9849693
Type	Passenger ship
Registered owner	Carnival plc ¹
Manager(s)	Carnival plc
Year of build	2022
Construction	Steel
Length overall	344.5m
Registered length	320.1m
Gross tonnage	185,581
Minimum safe manning	49
Authorised cargo	6,600 passengers
VOYAGE PARTICULARS	
Port of departure	Southampton, England
Port of arrival	Santa Cruz de Tenerife, Canary Islands (intended, diverted to A Coruña, Spain)
Type of voyage	Cruise
Cargo information	5,299 passengers
Manning	1,681 crew
MARINE CASUALTY INFORMATION	
Date and time	26 October 2025 at 0552
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	75nm north-west of Cape Finisterre, Spain
Place on board	Passenger lift 14 in the lift shaft between decks 12 and 14
Injuries/fatalities	1 fatality
Damage/environmental impact	Minor damage to passenger lift 14
Ship operation	On passage
Voyage segment	Mid-water
External & internal environment	Northerly winds, force 5; slight to moderate seas with short low swell; dry; good visibility
Persons on board	6,980

¹ Carnival plc changed its name to Carnival UK Ltd on 21 May 2026.

1.2 BACKGROUND

The investigation into the accident was conducted by the Marine Accident Investigation Branch (MAIB) on behalf of the Bermuda Ship Registry. Bermuda is a member of the Red Ensign Group (REG) and the investigation was completed in accordance with the memorandum of understanding between the MAIB and the REG member administrations.

1.3 NARRATIVE

On 21 October 2025, the Bermuda registered passenger vessel *Arvia* departed Cádiz, Spain, on passage to Southampton, England. During the voyage, the vessel encountered rough seas with conditions reaching Beaufort force 12. To reduce the risk of damage, 17 passenger and crew lifts were taken out of service. On the morning of 24 October 2025, *Arvia* arrived in Southampton, where one of the lifts that had remained in service, passenger lift (PL) 14, was found to be inoperative and stuck at deck 11. At 2000, *Arvia* departed Southampton for Santa Cruz de Tenerife, Canary Islands, Spain.

1.3.1 Initial inspection and repairs

As *Arvia* was departing Southampton, the transport team (see section 1.4.2) comprising the electrical technician (ET) and the assistant electrical technician (AET) led by the third electro-technical officer (3ETO) started their shift.

The 3ETO was notified about the issue with PL14 (**Figure 1**) and at 2305 raised a permit to work (PTW) for troubleshooting the lift. The PTW was authorised by the first electro-technical officer (1ETO) at 2310. At about 0055 on 25 October, the transport team attended PL14 and confirmed that the lift was inoperable at deck 11.

The ET and AET tried to access PL14 via the deck 12 landing doors. This was unsuccessful as the door release mechanism did not function and the door release key failed to open the landing doors. The ET then accessed the lift shaft from above the lift on deck 14² and used the shaft ladder to reach the lift car top. Once on the lift car top, the ET pressed the emergency stop button, switched the lift to inspection mode and opened the deck 12 landing doors from inside the lift shaft (**Figure 2**).

The ET and AET inspected PL14 and identified damage to the travelling cable supplying the lift car, which they rectified with a temporary repair after consulting with the 3ETO. The team then attempted to move the lift using emergency and manual controls on the lift car top and controls in the lift machinery room on deck 19. This was unsuccessful so the team then tried to move the lift by releasing the brakes using the manual rescue operation (MRO) control. This resulted in the lift raising slightly to a position halfway between decks 11 and 12 before stopping in the shaft. Work then stopped as the team neared the end of their shift.

At about 0630, the staff electro-technical officer (SETO) met the AE and AET on deck 12 to inspect the work completed during the team's shift. The release key again failed to open the deck 12 landing doors when the SETO attempted to open them. The SETO, AE and AET moved to deck 14, where they met the 3ETO; they then opened the landing doors and inspected the lift car top from the landing. During the SETO's inspection it was agreed that further work would resume during the next night shift. At 0645, the 3ETO signed the PTW for troubleshooting PL14 as complete.

² Deck 14 was one deck above deck 12 as there was no deck 13 on board *Arvia*.

Image from OTIS and Meyer Werft

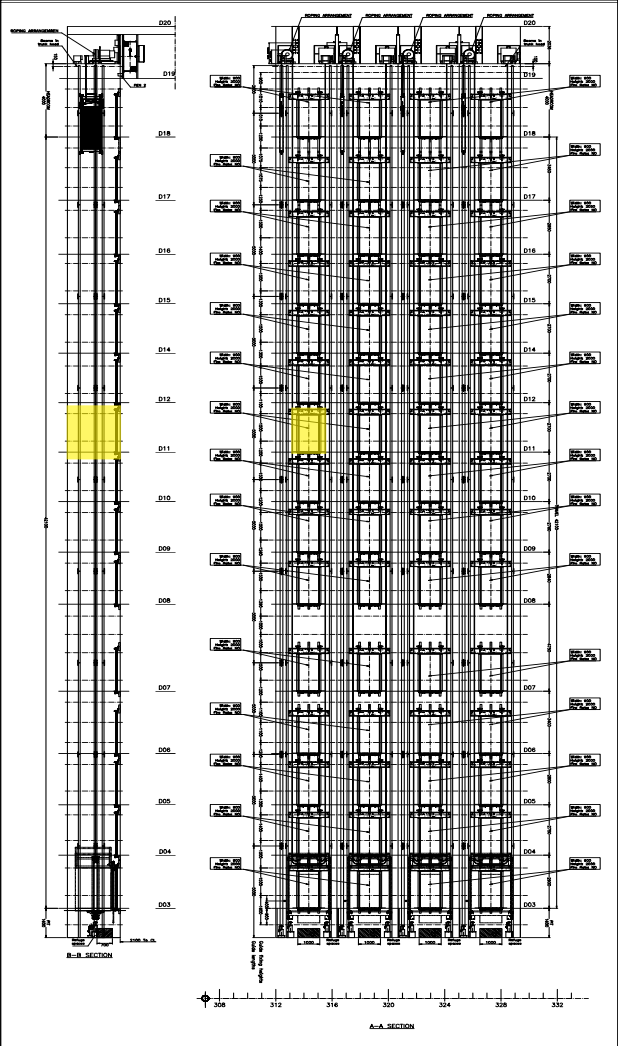


Image from OTIS and Meyer Werft

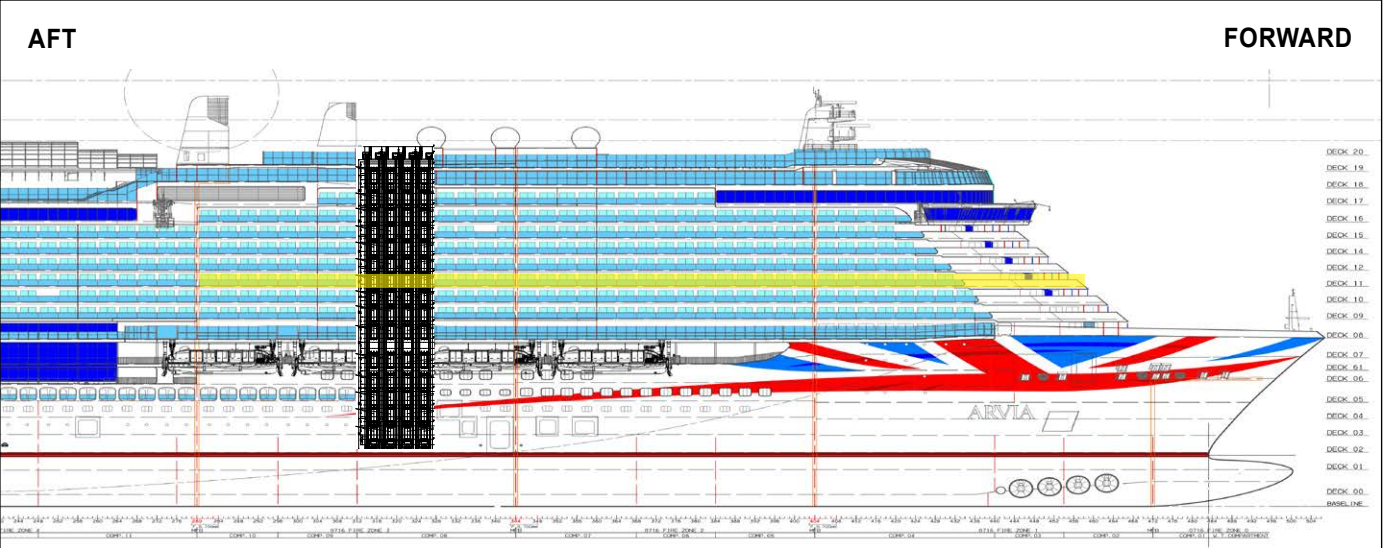


Image from Arvia Technical Operating Manual (March 2023) produced by [Worldwide Marine Technology Limited](#)

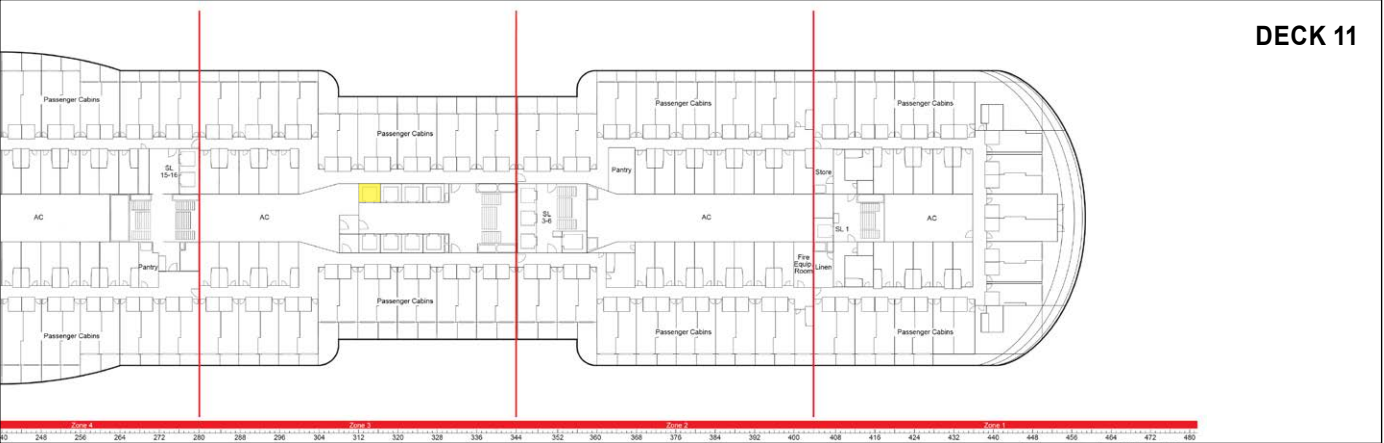


Figure 1: Passenger lift 14 location

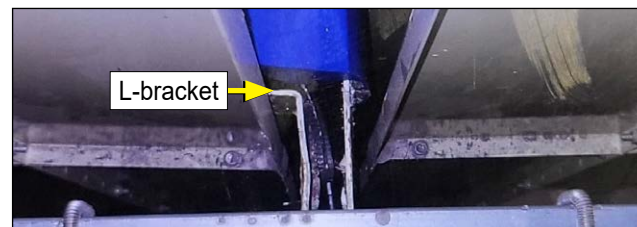
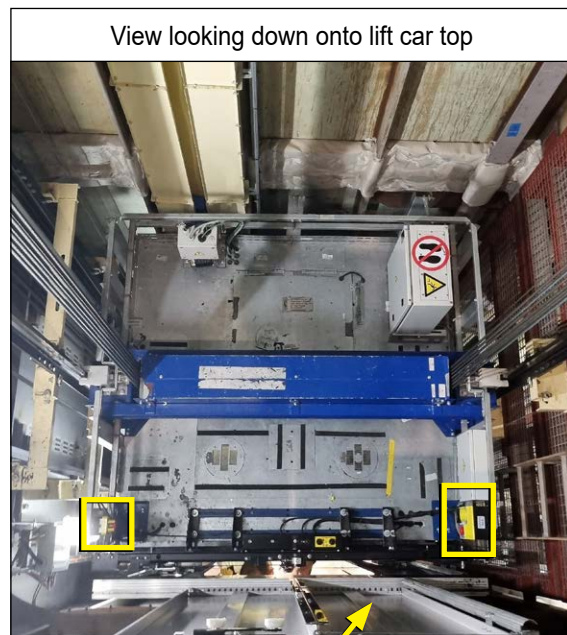


Image from OTIS and Meyer Werft

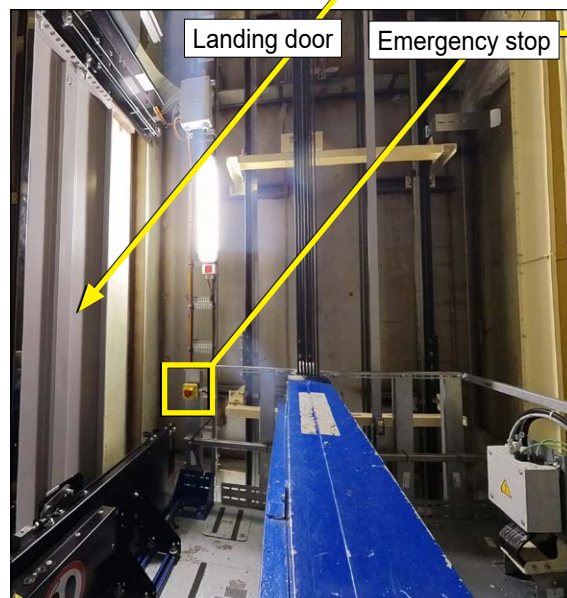
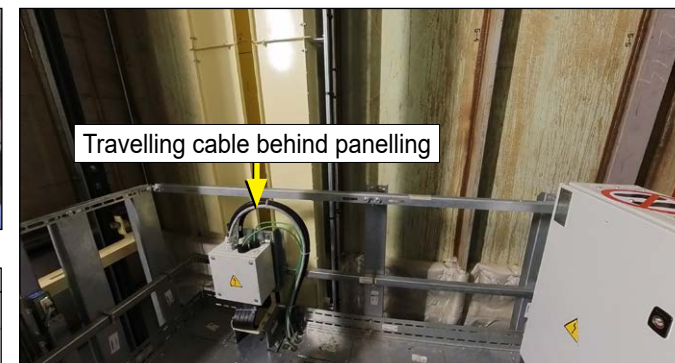
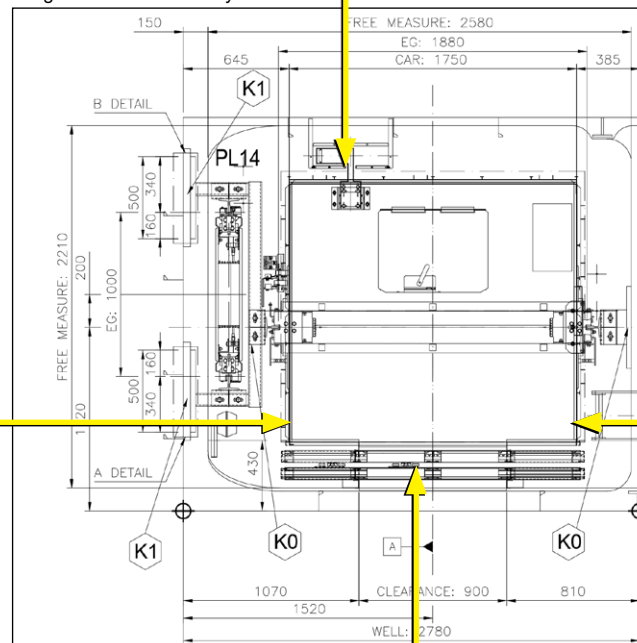


Figure 2: Lift car top

1.3.2 Follow-up repair work and testing

At 1850 on 25 October, the 3ETO raised a new PTW for continued troubleshooting of PL14, which had remained stopped between deck 11 and deck 12. The PTW was authorised by the 1ETO at 1855. The transport team started work on PL14 at about 2220. As with the previous night, the deck 12 landing doors could not be opened and the ET and AET accessed the lift car top from deck 14 via the shaft ladder.

Following checks in the machinery space on deck 19 the 3ETO identified and replaced a blown fuse, restoring power to the lift. With power restored the transport team were able to move the lift using the emergency rescue operation (ERO) controls and tested it in inspection and normal modes across several decks.

At 0200 on 26 October, the ship's clocks were retarded one hour³. This coincided with the transports team's scheduled 2-hour break and they resumed testing PL14 at 0300.

During testing, the team identified a rubbing noise within the shaft and attributed it to contact between the travelling cable and its supporting L-bracket. The team made manual adjustments to the bracket using hand tools and carried out further testing in both inspection and normal modes with team members riding on the lift car top.

At about 0530, the lift was switched to inspection mode with the emergency stop on the car pressed. Shortly afterwards, the 3ETO exchanged messages with the SETO via internal ship's phone advising that the work on PL14 was complete and the lift had been tested. The SETO was awake early following the ship's clocks change and replied, instructing the 3ETO and the team to meet the SETO on deck 3.

At 0544, the SETO arrived at the deck 3 forward passenger lift landing, where the ET was waiting. Following a brief discussion, the ET went to deck 4, opened the PL14 landing doors and reactivated the lift by switching it to normal mode and releasing the emergency stop. The ET then returned to deck 3 and joined the SETO in the lift car.

The SETO conducted a running test by using a fob to switch the lift to priority mode and selecting several decks. During the test, the ET showed the SETO photographs of the travelling cable L-bracket taken during the night. Meanwhile, the 3ETO and AET arrived at deck 3 and noticed the lift had moved. They called the ET, who advised he would meet them on deck 3.

1.3.3 Inspection and testing leading up to accident

At about 0548, PL14 returned to deck 3. The SETO spoke briefly with the 3ETO and AET and advised them that further testing would be carried out. The SETO then dismissed the 3ETO and AET and they returned to their workshop.

The SETO and ET continued testing PL14. With the lift in priority mode, the SETO selected decks 11 and 17 on the lift control panel. Inside the lift car the SETO and ET continued to discuss the repairs on the L-bracket. On arrival at deck 11 the SETO decided a visual inspection of the repairs was necessary. The SETO remained in the lift car, holding the lift doors open, while the ET proceeded to deck 12 via the stairs to gain access to the lift shaft from the deck above.

³ Clock change from British Summer Time (UTC+1) to UTC.

At about 0551, the ET attempted to open the deck 12 landing doors using his release key but was unable to do so. The ET jogged up the stairs to deck 14 and used his release key to open those landing doors. The ET leaned into the lift shaft (**Figure 3**) and the SETO, who had remained at deck 11, heard him shout “OK boss”.

Shortly afterwards, the SETO moved away from the deck 11 lift doors and started to proceed to deck 14 via the stairs. At about the same time, the ET entered the lift shaft from deck 14 and the counterweighted landing doors closed behind him.

At 0552, the lift doors at deck 11 closed and the lift began to move up (**Figure 4**).

The SETO heard a scream, returned to deck 11 and tried without success to open the landing doors. The SETO called the 3ETO, who had a door release key. The SETO and 3ETO met on deck 3 and accessed the lift shaft, where they identified blood. The SETO and 3ETO then returned to deck 14.

At 0601, the SETO, 3ETO, AET and a member of the ship’s medical team opened the deck 14 landing doors and observed that the ET was crushed between the side of the shaft and the lift car.

At 0602, a medical emergency was declared. At 0607, the ET was pronounced deceased by the ship’s doctor. *Arvia* was diverted to A Coruña, Spain, where the ET’s body was recovered from the lift shaft and taken ashore by local emergency services.

Images from OTIS and Meyer Werft



Figure 3: View looking up lift shaft from lift car

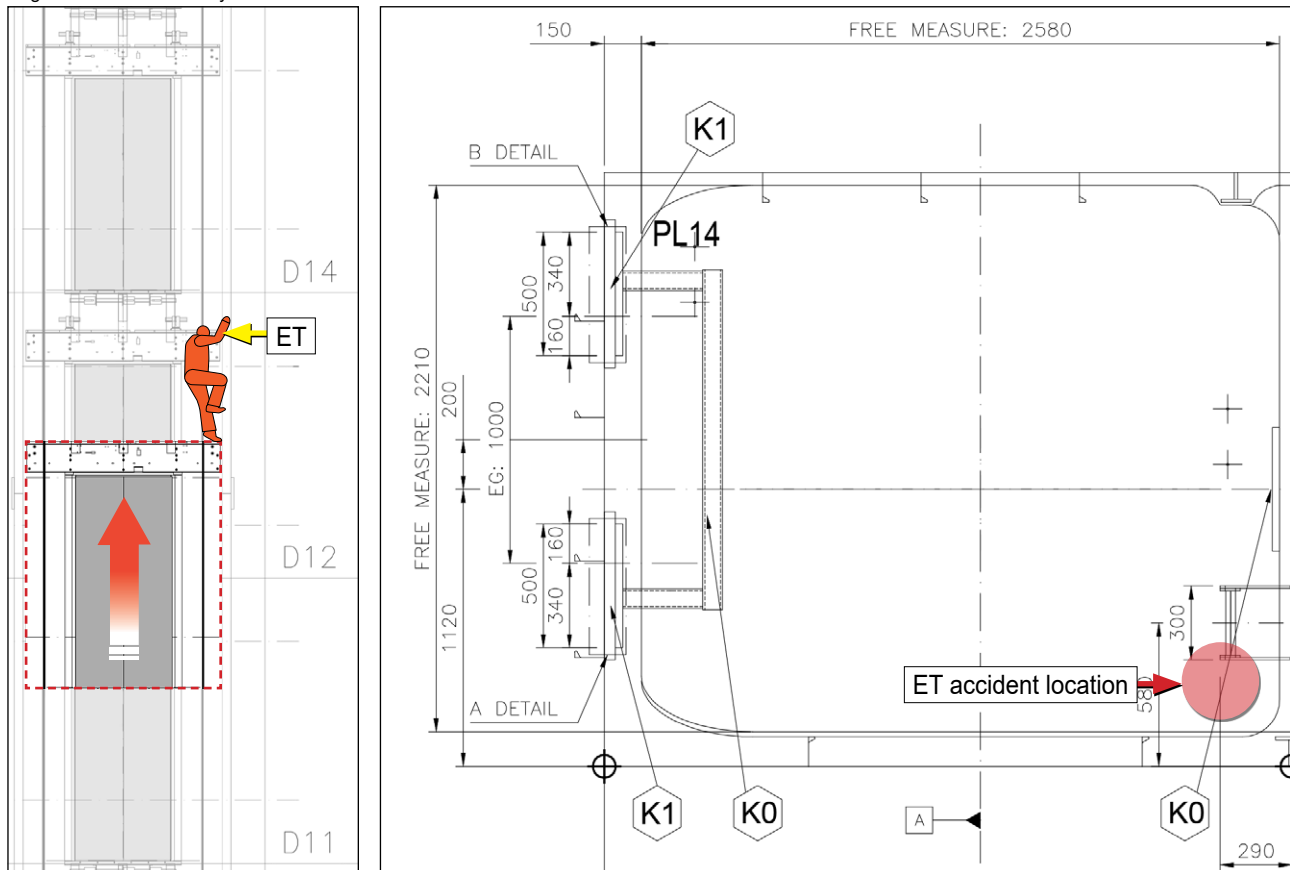


Figure 4: Lift movement

1.4 ARVIA

1.4.1 General

Carnival Corporation and Carnival plc⁴ (Carnival Corporation) owned multiple cruise brands worldwide. Carnival plc, trading as Carnival UK, owned and operated 11 passenger ships including *Arvia*, which was built in 2022 at the Meyer Werft shipyard, Germany. *Arvia* was registered in Bermuda and classed by Lloyd's Register.

1.4.2 Crew

Arvia had 1,681 crew, led by the captain. The organisational structure comprised deck, technical and hotel departments. The technical department was responsible for propulsion, electrical generation and engineering systems.

The SETO led the electro-technical department and was responsible for the ship's electrical and electronic systems, including power distribution, automation, propulsion controls, lifts, communications systems and hotel services.

The 3ETO led the transport team, which provided technical support during night-time operations. The 3ETO acted as the first point of contact for technical and electrical defects arising outside normal working hours and was responsible for all electro-technical work undertaken at night and for supporting night workers in the technical department. The transport team worked from 2000 to 0800 with a scheduled break between 0200 and 0300.

⁴ In May 2026, Carnival Corporation and Carnival plc unified from a dual-listed company structure into Carnival Corporation Ltd.

1.4.3 Electro-technical team

The AET joined *Arvia* on 13 April 2025 for his first seagoing contract. He moved to the transport team on 19 October 2025, after 6 months working in hotel services. The AET had completed lift safety training delivered by Elevated Marine Services on 3 August 2025.

The 3ETO had previously worked for 8 years on cargo ships and was serving their second contract on *Arvia*. The 3ETO had not completed any lift safety training during their time with Carnival UK.

The 1ETO had worked for Carnival UK for 10 years and had completed lift safety training on several occasions.

The SETO had worked for Carnival UK as an electro-technical officer for 15 years and had served on board *Arvia* for the previous 3 years. The SETO had completed the OTIS Marine 16-hour training course 'Elemental Safety Procedures, Technical Maintenance Processes Training for Lifts' on 22 October 2023.

1.4.4 The deceased

The ET, Lixter Dave Visaya Mahinay, was a 35-year-old Filipino national who was serving his second contract with Carnival UK. He had joined *Arvia* as an AET on 14 September 2025 and had worked in the transport team since 15 September 2025. He was promoted to ET on 19 October 2025. The ET had completed the Allied Lifts 'Elevator Safety Training' course on board *Arvia* on 12 April 2025.

The postmortem examination was carried out in Spain. Its report identified the underlying cause of death as injuries resulting from being crushed.

1.5 ARVIA PASSENGER LIFTS

There were 24 passenger lifts, 17 crew lifts and 2 loading lifts on board *Arvia*, all manufactured and installed by OTIS Marine, the original equipment manufacturer (OEM). The passenger lifts were arranged in three groups located forward, midships and aft. PL14 was one of the forward passenger lifts, which served passenger decks 3 to 18. The distance between the landing levels on decks 11, 12 and 14 was approximately 2.7m. The machinery room serving the forward lift group was located on deck 19.

The lift car was suspended by steel hoisting ropes and balanced by a counterweight. Electrical power, control signals and communications were supplied to the lift car via a travelling cable.

1.5.1 Lift interlocks

The passenger lifts incorporated a number of electrical and mechanical safety systems. Each landing door was fitted with a mechanical interlock that prevented the doors from being opened unless the lift car was at the landing, or a release key was used. The landing door interlocks formed part of the lift safety circuit and lifts could not operate unless all landing doors were closed and their interlocks confirmed as secure.

1.5.2 Release key

The release key was inserted into a keyhole above the landing doors. The mechanism functioned by rotating a pin that moved a lever when the key was turned. This broke the circuit and allowed the lift doors to be opened.

The mechanism on the deck 12 landing doors for PL14 was tested after the accident. The pin jumped past the lever as it was rotated with the door release key, preventing the movement that would allow the safety circuit to be broken and the doors to be opened, and the doors remained shut (**Figure 5**).

1.5.3 Priority mode

The lift control system incorporated a fob-activated priority mode that altered the lift's normal operating logic by prioritising designated calls over routine calls from other decks.

1.5.4 Inspection mode and emergency stop controls

Passenger lift 14 was fitted with inspection controls located on the lift car top (see **Figure 2**). The controls included an inspection mode selector switch and an emergency stop button. When the lift was placed into inspection mode, normal passenger operation was disabled and lift movement could only be controlled using the inspection controls on the lift car top. The lift travelled at reduced speed in inspection mode to allow maintenance activities to be conducted safely.

Emergency stop switches were installed on the lift car top and in the machinery space. When operated, the emergency stop interrupted the lift control circuit and prevented movement until the switch was reset. The emergency stop was intended to provide those working on the lift car top or within the shaft with a means of immediately preventing lift movement.

1.5.5 Emergency rescue operation

Passenger lift 14 was fitted with an emergency rescue operation (ERO) system. The ERO system's controls were located in the lift machinery space and enabled authorised personnel to electrically drive the lift to the nearest landing in the event of a malfunction. The system used the lift's electrical power and control circuits to move the lift car under controlled conditions. The ERO system was primarily intended for the recovery of trapped passengers when normal lift operation was unavailable.

1.5.6 Manual rescue operation

A manual rescue operation (MRO) system was also provided. The MRO system was intended for use when the ERO system could not be used or had proved unsuccessful. During MRO, the lift brakes were released from the machinery space, allowing the lift car to move under the influence of the imbalance between the lift car and the counterweight. The rate and direction of movement depended on the relative weights of the lift car and counterweight and required careful control by personnel conducting the operation.

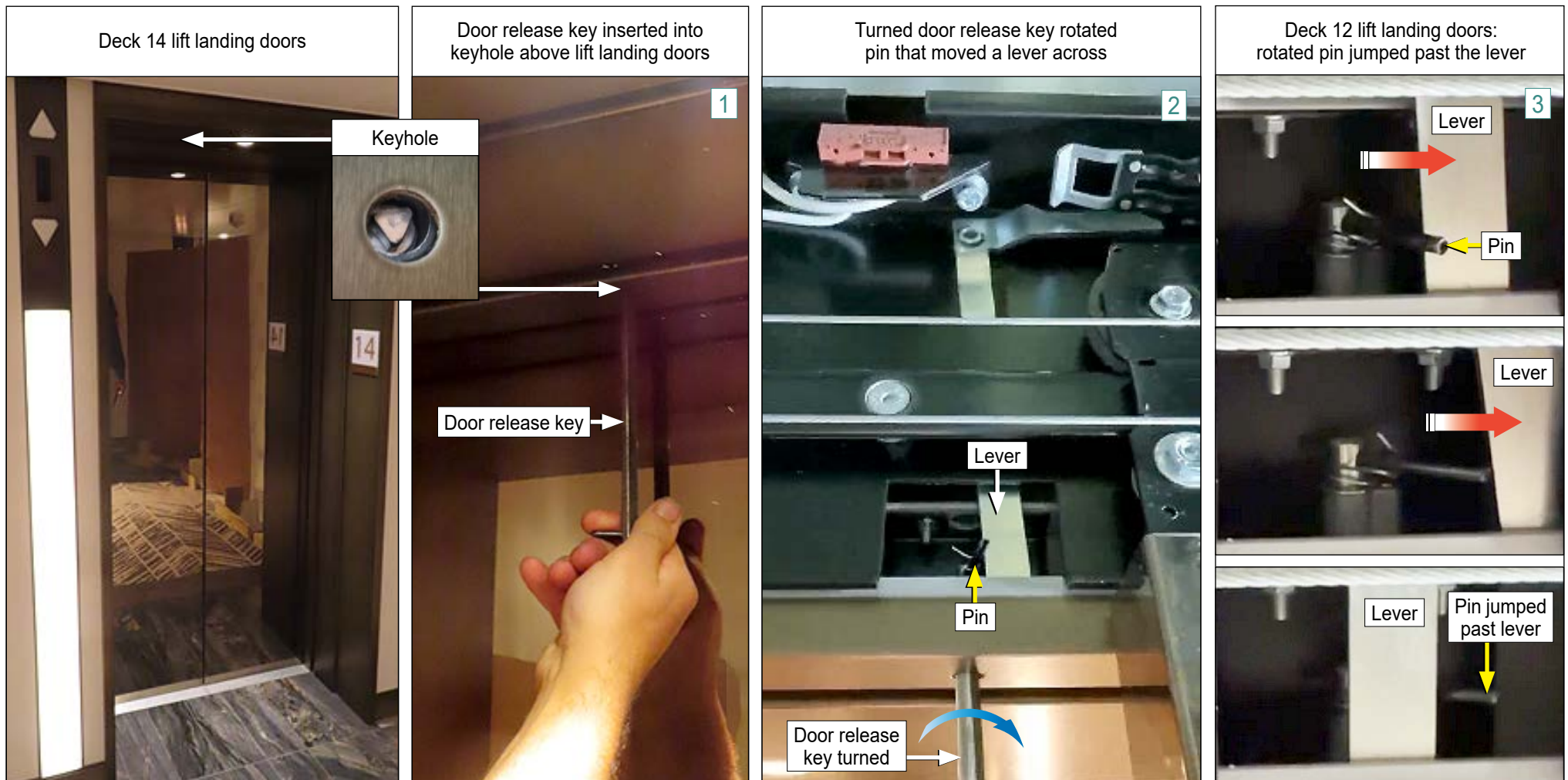


Figure 5: Door release mechanism

1.5.7 Shaft ladder

The lift shaft was fitted with a fixed ladder that was intended for emergency evacuation (**Figure 6**).



Figure 6: Lift shaft ladder viewed from deck 14

1.6 PROCEDURES

1.6.1 Carnival Corporation procedures

Carnival Corporation's safety management system (SMS) included occupational health and safety (OHS) procedure OHS-1207 – Working on Elevators. The procedure established minimum safety requirements for lift inspection, maintenance and rescue activities and stated that its purpose was to prevent injury or loss of life associated with lift work.

Procedure OHS-1207 required personnel undertaking lift maintenance to have been instructed in safe lift working practices. Before starting work, personnel were required to conduct a job safety review (JSR) and review applicable risk assessments and relevant ship-specific and equipment-specific safety instructions.

Procedure OHS-1207 required a PTW whenever personnel were required to enter a lift shaft or lean into a shaft while the lift car was positioned between decks. OHS-1207 also required work areas to be protected against unauthorised access and specified arrangements for supervision and attendance during work inside lift shafts and pits.

Procedure OHS-1207 stated that lift safety devices were not to be bypassed while a lift was in service and that any safety devices disabled for maintenance purposes were to be reinstated before the lift was returned to service. The procedure further stated that the lift safety circuit was not to be disabled or bypassed.

1.6.2 Carnival UK procedures

Carnival UK implemented OHS-1207 through company-specific instruction CUK-OHS-1207-DI1 – CUK Specific Instructions. The instruction referenced the CUK Elevator Safety Instructions, which provided supplementary guidance for lift inspection, maintenance and rescue activities. The CUK Elevator Safety Instructions contained non-manufacturer specific safety information titled IMLS Safe Working on Lifts, which an external company had produced.

The IMLS Safe Working on Lifts guidance stated that maintenance activities should be conducted within a controlled and safe working environment. Key precautions included the isolation and lock-off of lift systems before work started, the use of appropriate PTW arrangements, effective communication between personnel involved in the task and measures to prevent inadvertent operation of the lift while maintenance was in progress. The guidance also covered the protection of personnel working within lift shafts, pits and on lift car tops through the use of barriers, safe access arrangements and emergency stop controls. Particular emphasis was placed on the verification of safety-critical systems, including brakes, safety circuits, door interlocks, governors and overspeed protection devices, before a lift was returned to service.

The IMLS Safe Working on Lifts guidance further highlighted the need for risk assessment, competent personnel and the safe management of passenger rescue operations where applicable. The guidance also stated that personnel carrying out emergency release operations should have demonstrated competence in the procedures and be authorised to take control of the operation.

1.6.3 Permit to work

Carnival Corporation operated a PTW system to control hazardous work activities on its vessels. Before work started, hazards were required to be identified, control measures implemented and the permit authorised by designated personnel. PTWs were required to be available at the worksite and copies held on the bridge and in the engine control room.

Carnival Corporation's procedures stated that, before any work on lifts started, the head of the electrical department was to determine whether a PTW and/or lock-out/tag-out (LOTO) was required.

The OHS-1207-F1 PTW – Working on Elevators checklist required a JSR to be completed and included checks to confirm that safe access arrangements were in place, the lift safety circuit had been inspected, appropriate barriers and signage had been erected, communications had been agreed and the lift had been isolated or placed in maintenance mode as appropriate. The permit also required a safety attendant to be appointed.

Before work could begin, the responsible officer was required to inspect the worksite, brief personnel on the task and associated precautions and sign the permit. Final authorisation was then provided by an authorising officer. On completion of the work, the permit required confirmation that the work area had been left safe and that any affected safety systems had been reinstated.

The signature space for the responsible officer/supervisor stated:

I have reviewed this permit with the workers/contractors and briefed them on work activity and safety precautions. I have personally inspected the work site and adjacent spaces and verified the information as per this permit and that safety procedures and equipment are in place.

Where the authorising officer was required to sign, the permit stated:

I am satisfied all the necessary precautions have been taken and I authorize the work to commence.

1.6.4 Job safety review

Carnival Corporation's OHS-1001 JSR procedure required that a JSR was undertaken before any job was carried out. The procedure applied to all personnel involved in the work, including contractors and could be completed individually or as a group.

The JSR was intended to identify hazards and confirm that personnel were comfortable to proceed with the task. The review required personnel to answer five questions:

*Do I know how to do the job?
Am I aware of the... hazards?
What could go wrong?
How can I make it safe?
Do I feel safe?*

Any hazards or concerns identified during the review were to be addressed before work started. The procedure stated that personnel should feel comfortable to speak up during the process. It was not a requirement to complete or submit a record of the JSR.

Heads of department were responsible for ensuring that personnel were trained in the JSR process and that reviews were completed before each job. Work supervisors were required to conduct JSRs and supervise the work to ensure that the agreed work plan was followed.

1.6.5 Lock-out/tag-out

Carnival Corporation's OHS-1101 LOTO procedure established a safe system of work for the isolation of machinery and systems containing hazardous energy during maintenance and repair activities. A JSR was required before work started and all energy sources were to be considered live until effective isolation had been verified.

The LOTO procedure required work involving hazardous energy to be supported by an isolation plan that identified the equipment to be isolated, the isolation boundaries and any associated hazards. Personnel undertaking the work were required to apply personal lock-out devices, verify that equipment had been de-energised before work started and maintain control of the isolation process throughout the task.

All LOTO activities required approval from an authorising officer and were recorded on a LOTO form, which was retained with the worksite's documentation. The procedure also required isolations to be reverified following breaks in the work and whenever conditions changed. Only qualified and authorised personnel were permitted to carry out work on energised electrical equipment where isolation was not practicable or de-energisation would introduce additional hazards.

1.6.6 Working at height

Carnival UK's OHS-1204 – Working at Height procedure defined working at height as work conducted *more than 2m above deck level, or less than 2m if risk of injury had been identified*. The procedure required PTW form OHS-1204-F1 to be completed before the work started and stated that work at height was only to be undertaken where there was no reasonably practicable alternative.

1.6.7 Manufacturer's safety documentation

OTIS Marine had supplied OEM documentation for the passenger and service lifts. This documentation included an instruction manual for the use and maintenance of the lifts and safety training material covering lift maintenance hazards, safety circuits, lift car top access, pit access and electrical energy control.

The OTIS instruction manual stated that maintenance was to be carried out by a qualified maintenance organisation and that risk assessments were to be undertaken by authorised and qualified personnel. The OTIS instruction manual also stated that ERO and MRO were only to be undertaken by trained and authorised personnel.

The OTIS safety training material identified hazards associated with lift maintenance that included moving machinery, electrical systems, fall hazards, adjacent cars and counterweights, limited space and electrical wiring. The training material also covered the need for personnel to undertake a job hazard analysis before starting work.

The OTIS training material included 'cardinal rules' for lift maintenance activities. These included requirements to maintain control of the lift when accessing or working on the lift car top, use LOTO controls where appropriate and fall protection when required and not ride on the lift car top while the lift was operating in normal service.

The OTIS lift car top access procedure included in the training material detailed how personnel should establish control of the lift before entering the lift shaft. This included verifying that the lift could not move with the landing doors open, placing the lift in inspection mode, operating the emergency stop and carrying out checks to confirm that lift movement was prevented before access was gained.

1.7 REGULATIONS

1.7.1 Design approval

Arvia's lift installations and associated safety systems were subject to design approval, testing and survey at construction by Lloyd's Register, acting as a Recognised Organisation⁵ on behalf of the Bermuda flag administration.

1.7.2 Safety management

The International Safety Management Code required lift systems to be managed through the company's SMS. This included arrangements for planned maintenance, inspection, defect reporting, corrective action and emergency response.

1.7.3 Training

The Bermuda Merchant Shipping and Fishing Vessels (Provision and Use of Work Equipment) Regulations 2019 required employers to ensure that personnel using work equipment received adequate training and instruction on the hazards associated with its use and the precautions to be taken.

1.7.4 Maintenance and working at height

Maintenance and troubleshooting activities undertaken within lift shafts were subject to the Bermuda Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Work at Height) Regulations 2019. These regulations required work at height to be properly planned, appropriately supervised and carried out using suitable equipment. The regulations applied wherever a person could fall a distance liable to cause injury if appropriate control measures were not in place.

⁵ Recognised organisation: An organisation authorised by a flag state to perform statutory surveys and issue certificates on its behalf.

1.8 PREVIOUS/SIMILAR ACCIDENTS

1.8.1 *British Mallard* – crew member fatality

On 27 January 2007, an electrical technician was fatally injured while attempting to rectify a lift defect on board the tanker *British Mallard*. After adjustments had been made to the lift door switches, the technician entered the lift shaft using a ladder. Shortly after the lift doors were closed, the lift car travelled upwards and trapped the technician between the lift car and the ladder.

The accident was investigated by the Australian Transport Safety Bureau⁶. The investigation found that the lift instruction manuals did not provide sufficiently detailed safety guidance, the vessel's PTW and risk assessment processes had not been used and the personnel involved had neither fully identified nor understood the hazards associated with working in the lift shaft.

1.8.2 *MSC Colombia* – crew member fatality

On 8 August 2007, an electrical cadet was fatally injured while carrying out lift maintenance on board the container ship *MSC Colombia*. The MAIB preliminary assessment⁷ found that the electrical cadet did not fully understand the operation of the lift and that the company's risk assessment and PTW procedures had not been followed.

1.8.3 *Carnival Ecstasy* – crew member fatality

On 27 December 2015, the chief electrician on board the passenger vessel *Carnival Ecstasy* was struck by a lift counterweight while working inside a lift shaft. He died from his injuries.

Following the accident the vessel operator issued a fleetwide advisory notice stating that lift maintenance was to be carried out by trained electrical team members. The notice further advised that electrical team members were to identify and assess risks beforehand, follow safe working procedures, use a two-person buddy system for high-risk tasks, ensure lifts were in inspection mode before working on top of them and be supported by regularly reviewed risk assessments and safety procedures.

⁶ [ATSB report 235: British Mallard](#)

⁷ [MAIB preliminary assessment: MSC Colombia](#)

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 OVERVIEW

Arvia's ET was fatally injured when a lift reactivated while he was inside the lift shaft, resulting in him being crushed between the side of the shaft and the lift car. This section of the report will discuss the factors contributing to this accident, including communication, control, safety management and training.

2.3 THE ACCIDENT

The transport team had completed their troubleshooting and testing of PL14 when the SETO decided to test the lift and inspect the travelling cable L-bracket. At that stage, PL14 had been returned to normal operating mode and remained capable of responding to lift calls. The impromptu inspection relied on the SETO holding the lift doors open on deck 11 to prevent their automatic closure by interrupting the safety circuit and preventing lift movement while the ET went to the deck above. The ET, unable to open the deck 12 landing doors, instead proceeded to deck 14, where he manually opened the doors with his release key.

When the ET opened the doors on deck 14 this provided a secondary interruption of the safety circuit preventing lift movement. Because of the counterweight on the door mechanism the lift doors had to be held open, otherwise they would close. This meant that when the ET entered the lift shaft and the SETO moved away from the lift on deck 11, the lift car and landing doors on both decks closed, fully restoring the lift safety circuit and allowing the lift to move. This movement was in line with the lift's design and operating logic.

The lift reactivated because both sets of doors closed, restoring the safety circuit and allowing the lift to move. This exposed the ET to the hazard of the moving lift and resulted in the fatal accident.

2.4 COMMUNICATION AND PLANNING

The SETO's decision to inspect the travelling cable L-bracket arose during a running test after the night troubleshooting work had been completed. The inspection was not planned as a lift maintenance activity and the SETO and ET did not revise the PTW, conduct a JSR or stop to agree a method of work before the ET left the lift car to gain access from above.

A different mental model had developed between the SETO and the ET. The SETO intended to inspect the repairs to the L-bracket from the deck and did not intend to enter the lift shaft or expect the ET to do so. Conversely, the ET's actions indicate that he believed further access to the lift car top was required. Neither the SETO nor the ET appears to have recognised that their individual understanding of the task differed from that of the other and there was no communication as to how the task would be carried out.

When the ET was unable to open the deck 12 landing doors and instead proceeded to deck 14, a significant change occurred in the planned sequence of events. This change provided a further opportunity to pause the task, re-establish communications and confirm a safe method of work. However, no such pause occurred, and the differing assumptions remained unresolved. There was scant communication between the ET and the SETO and no clarification of what the ET meant when he shouted “OK boss” down to the SETO.

Communication between the SETO and ET was ineffective. This resulted in a lack of shared understanding of the task and actions that allowed the lift to return to a state that exposed the ET to the risk of unintended lift movement.

2.5 CONTROL OF LIFT MOVEMENT

The manufacturer’s procedures, the PTW and Carnival UK’s safety instructions all required personnel accessing the lift car top to establish control of the lift, activate the emergency stop and place the lift into inspection mode before entering the lift shaft or starting maintenance work.

The lift car top inspection controls and emergency stop switches fitted to PL14 were intended to prevent uncontrolled movement during maintenance. However, those controls had not been established during the inspection before the ET entered the shaft. The only barriers preventing lift movement were the open landing doors and the associated interruption of the safety circuit. Those interlocks were not a lock-out because they reset automatically when the landing doors closed. Consequently, protection against lift movement depended on personnel maintaining the intended configuration of the lift and coordinating their actions correctly. Once the deck 11 and deck 14 doors closed, the lift safety circuit was restored and the lift responded as designed to the outstanding call for deck 17. The hazard of uncontrolled lift movement while personnel were in a lift shaft resulted in a similar fatal accident on board *British Mallard* in 2007.

The reason why the ET entered the shaft could not be determined with certainty because there were no witnesses. It is possible that the ET intended to gain access to the lift car top to either isolate the lift using the emergency stop and inspection controls or facilitate the inspection of the L-bracket by opening the deck 12 landing doors from inside the lift shaft. Regardless of his intent, the ET almost certainly entered the shaft believing that the lift would remain stationary while he was in the shaft. With the use of self-resetting systems as a barrier the lift’s stationary status could not be assured.

The system of work for lift maintenance relied on the use of door interlocks to prevent movement when accessing the lift car top. This did not provide an effective safety barrier as the interlocks were self-resetting when the doors closed, placing the crew at risk.

2.6 SAFETY MANAGEMENT

The troubleshooting and repair of PL14 was subject to several safety management controls, including the PTW system, JSRs, LOTO procedures, working at height controls and the lift-specific requirements contained within OHS-1207 and the OTIS maintenance procedures. These controls were intended to ensure that hazards were identified, appropriate precautions were implemented and changes to the scope of work were recognised and managed.

During the troubleshooting period, PTWs were raised by the 3ETO and authorised by the 1ETO, who was working day shifts. The 3ETO and 1ETO signed the PTW several hours before the maintenance activity started to confirm that the necessary precautions had been taken. However, in practice, the 1ETO as the authorising officer could not verify that the stated precautions were in place at the time the work was undertaken.

The troubleshooting activity evolved over two nights as additional faults were identified and alternative methods of access were adopted culminating with the SETO's impromptu inspection of the repairs. The intended troubleshooting work and inspection could not be completed because of the defective landing door release mechanism on deck 12. Those changes introduced additional hazards, including access from a higher deck, use of the lift shaft ladder, work at height and reliance on informal coordination rather than formal barriers. The effectiveness of the control measures therefore became increasingly dependent upon the judgement and coordination of those involved rather than on formal safety barriers. Similar deficiencies in the application of permit to work and risk assessment processes were identified following the fatal accident on board *MSC Colombia* in 2007.

The safety management controls applicable to the troubleshooting and repair of PL14 were used ineffectively to identify and manage the hazards created by changes to the work scope. The practice of authorising permits to confirm all the necessary precautions had been taken before the controls were in place and before the workers were on duty reduced the effectiveness of the PTW system as an independent supervisory control, while the SETO's unplanned inspection introduced activities that fell outside the authorised scope of work. The absence of formal reassessment meant that additional hazards associated with accessing the lift shaft from deck 14, using the lift shaft ladder and working at height, were not systematically identified and controlled.

The PTW system on board *Arvia* was implemented ineffectively during the lift inspection and repair work. This resulted in inadequate oversight of the safety precautions and a failure to identify that the task had fallen outside the authorised scope of work, placing the crew at risk.

2.7 TRAINING

The level of lift-specific training and experience varied among the transport team involved in the maintenance work. The SETO had completed OTIS training and the ET and AET had completed lift safety courses from other providers. The 3ETO, who was responsible for the supervision of the lift maintenance and the creation of the PTW, had not completed any formal lift safety training during their employment with Carnival UK.

Lift maintenance involves hazards that differ from those routinely encountered during other electrical maintenance activities. Safe execution of the work requires a detailed understanding of lift safety circuits, door interlocks, inspection mode controls, emergency stops, lift shaft access arrangements and the circumstances in which those controls can be defeated or restored. Although on-the-job experience can contribute to competency, sole reliance on operational experience increased the likelihood that those involved had developed different understandings of hazards and acceptable working practices. In particular, the 3ETO's understanding was wholly dependent on experience rather than supported by training. The importance of

lift-specific competence was recognised following the fatal *Carnival Ecstasy* accident in 2015, after which the vessel operator reinforced training and safe working requirements for lift maintenance personnel.

The varying level of training and experience among the transport team reduced assurance that personnel shared a common understanding of the risks associated with lift maintenance, or of the controls necessary to prevent unintended lift movement. The officer responsible for creating the PTW and for supervising the lift maintenance had not received formal lift safety training, which may have reduced their awareness of the hazards associated with lift maintenance activities.

2.8 EQUIPMENT FAILURE

The deck 12 landing door release mechanism for PL14 did not operate when the release key was used and post-accident testing confirmed that the mechanism was defective. Access to the lift car top from deck 12 was therefore not possible and the ET instead used the lift shaft's fixed ladder to access the lift shaft from the deck above. The ET had used the lift shaft ladder several times during the preceding troubleshooting work to gain access to the lift car top. Initially, this was probably because the lift was stuck at deck 11 so moving it to facilitate access was not an option. However, the lift was able to move freely by the time of the accident so it was therefore possible to move it to another deck with a working door release.

The advantage of directly accessing the lift car top was to access emergency stop and inspection controls without entering the lift shaft. While this was not possible when accessing from the deck above, the ET probably considered this method to be achievable and safe because the practice of access from deck 14 had been used multiple times during the repair period without adverse outcomes.

The defective landing door release mechanism changed the lift car top access arrangements. This indirectly contributed to the circumstances of the accident by prompting use of an alternative access route before the lift had been placed under positive control.

SECTION 3 – CONCLUSIONS

3.1 SAFETY ISSUES DIRECTLY CONTRIBUTING TO THE ACCIDENT THAT HAVE BEEN ADDRESSED OR RESULTED IN RECOMMENDATIONS

1. *Arvia's* ET was fatally injured when a lift reactivated while he was inside the lift shaft, resulting in him being crushed between the side of the shaft and the lift car. [2.2]
2. The lift reactivated because both sets of doors closed, restoring the lift safety circuit and allowing the lift to move. This exposed the ET to the hazard of lift movement and resulted in the fatal accident. [2.3]
3. Communication between the SETO and ET was ineffective. This resulted in a lack of shared understanding of the task and actions that allowed the lift to return to a state that exposed the ET to the risk of unintended lift movement. [2.4]
4. The system of work relied on the use of door interlocks to prevent movement when accessing the lift car top. This did not provide an effective safety barrier as the interlocks were self-resetting when the doors closed, placing the crew at risk. [2.5]
5. The PTW system on board *Arvia* was ineffectively implemented during the lift inspection and repair work. This resulted in inadequate oversight of the safety precautions and a failure to identify that the task had departed from the authorised scope of work, placing the crew at risk. [2.6]

3.2 SAFETY ISSUES NOT DIRECTLY CONTRIBUTING TO THE ACCIDENT THAT HAVE BEEN ADDRESSED OR RESULTED IN RECOMMENDATIONS

1. The officer responsible for creating the PTW and supervising the lift maintenance had not received formal lift safety training, which may have reduced their awareness of the hazards associated with lift maintenance activities. [2.7]
2. The defective landing door release mechanism changed the lift car top access arrangements. This indirectly contributed to the circumstances of the accident by prompting use of an alternative access route before the lift had been placed under positive control. [2.8]

SECTION 4 – ACTION TAKEN

4.1 ACTIONS TAKEN BY OTHER ORGANISATIONS

Carnival UK Ltd has:

- Instructed all SETOs in its fleet to discuss and reiterate the requirements for lift maintenance and lift rescue with their teams. In particular, the requirement to establish communication between all crew members executing the maintenance, the prohibition of using the fixed ladder in the lift shaft to gain access to the lift car top and the correct management of the PTW.
- Updated the generic training materials in CUK-OHS-1207-DI1 – CUK Specific Instructions with OEM-specific safety information.
- Implemented an interim requirement for all personnel involved in lift maintenance to have successfully completed basic safety training conducted by the OEM or a third-party lift service supplier within the last 6 months. This interim requirement will be reassessed by Carnival UK Ltd after a competency framework review.
- Introduced a competency verification process for personnel undertaking lift maintenance activities. Personnel completing basic lift safety training are required to successfully complete a post-training assessment, with the outcome of both the training certification and assessment formally recorded.

SECTION 5 – RECOMMENDATIONS

Carnival UK Ltd is recommended to:

2026/159 Review the use of self-resetting lift door interlocks as a safety barrier to prevent activation of lifts during maintenance or inspection.

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

