MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

ACCIDENT REPORT

VERY SERIOUS MARINE CASUALTY | REPORT NO 9/2019 | JULY 2019

Fall from height on board from freight ferry *Seatruck Pace* with loss of one life in Liverpool 17 December 2018

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SUMMARY

Shortly after 0820 on 17 December 2018, the assistant bosun on board the ro-ro freight ferry *Seatruck Pace* was found on the ramp between the main vehicle deck and the lower hold, having apparently fallen 4.5m, along with a heavy metal trestle. Several crew heard the sound of the trestle landing, but there were no witnesses. The assistant bosun was treated at the scene by the ferry's crew and paramedics and then taken to hospital. He died 3 days later.

The investigation identified that to fall from the main deck the assistant bosun must have crossed a temporary rope barrier on to a narrow section of deck between the ship's side and the open ramp hatch. It was not known why he moved into this area; his allocated work did not require him to do so and he was not wearing fall protection equipment. The investigation also identified:

- Although the risk of falling was apparent, it was accepted by the assistant bosun, who had probably taken similar risks in the past.
- Work practices adopted by other deck ratings during hatch cover maintenance 2 days earlier indicated that adherence to safety procedures was more a matter of routine and compliance, rather than conviction.

Seatruck Ferries Ltd, the ferry's manager, has taken actions aimed at preventing similar accidents, ensuring safe systems of work, and gauging and improving the safety culture among its crews. In view of the actions taken, no recommendations have been made.

Image courtesy of Seatruck Ferries Ltd

FACTUAL INFORMATION

NARRATIVE

At 0755[1] on Monday 17 December 2018, the deck ratings on board the ro-ro cargo ferry *Seatruck Pace* met in the crew coffee room. The ferry was moored at Brocklebank Dock, Liverpool, England. The bosun allocated the day's tasks to the ratings, who then dispersed.

At 0810, two ordinary seamen passed the assistant bosun, Roman Giersz, as they walked aft on the main vehicle deck towards the cargo office. The assistant bosun had not attended the meeting and was preparing to paint the forward edge of the hatch cover. He had with him a pot of orange paint, a short-handled paint roller and a rag **(Figure 1)**.

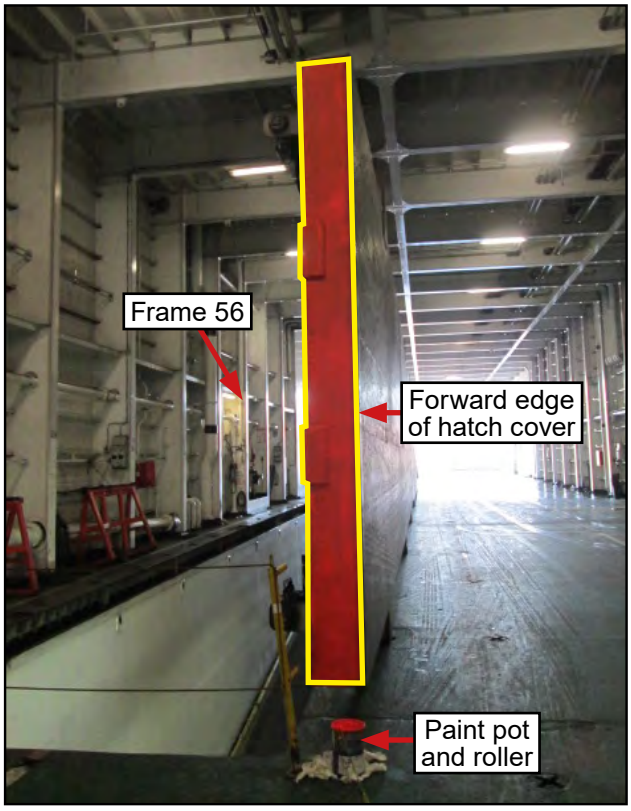

Figure 1: Hatch opening and cover (forward)

The two ordinary seamen continued to the cargo office, where the chief officer issued them a permit to work (PTW) authorising the use of tower scaffolding when pressure washing in the lower hold. The two ratings then walked down the ramp leading from the main vehicle deck into the lower hold. As they did so, one of them saw a trestle on the main vehicle deck, which was perpendicular to the hatch opening and was overhanging the starboard side of the ramp by several centimetres.

At about 0820, crew in the cargo office and the two ordinary seamen in the lower hold heard a loud crash on the ramp and hurried to investigate. The assistant bosun was found lying on the inboard side of the ramp in line with Frame 56 **(Figures 1, 2** and **3)**, with a trestle lying on its side and across the lower part of his right leg. The assistant bosun was on his back with his feet towards the lower end of the ramp, 12m from the forward end of the hatch opening above. The second officer immediately raised the alarm and went to the ferry's hospital to collect the medical kit.

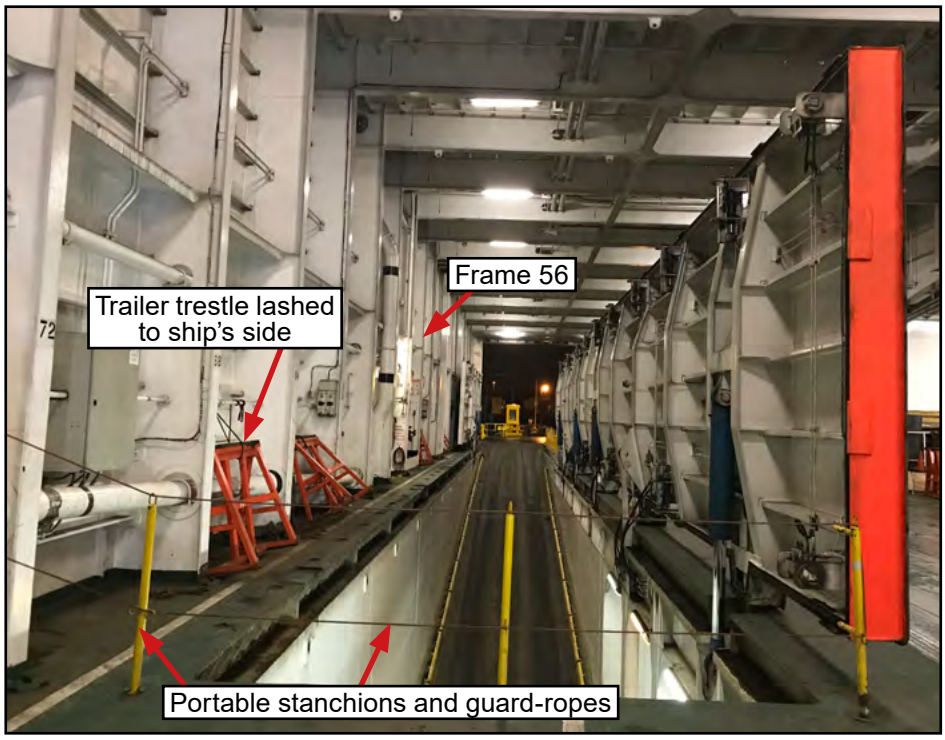

Figure 2: Hatch opening and ramp

The trestle was lifted from the assistant bosun's leg. He was conscious, but the chief officer quickly assessed that he had broken a leg and an arm. Soon after, the ferry's first-aid team, comprising the cook and two stewards, arrived at the scene. The emergency services were called at about 0825.

At 0845, an ambulance with three paramedics arrived on board *Seatruck Pace*, escorted by a Port of Liverpool police vehicle. The paramedics treated the assistant bosun where he was lying **(Figure 3)**,

[1] All times stated are local time (UTC).

until 0919, when he was taken to the Aintree University Hospital accompanied by the second officer.

On 20 December 2018 the assistant bosun died. It was reported that he had suffered a stroke. Subsequent postmortem examination indicated that the cause of death was a traumatic brain injury.

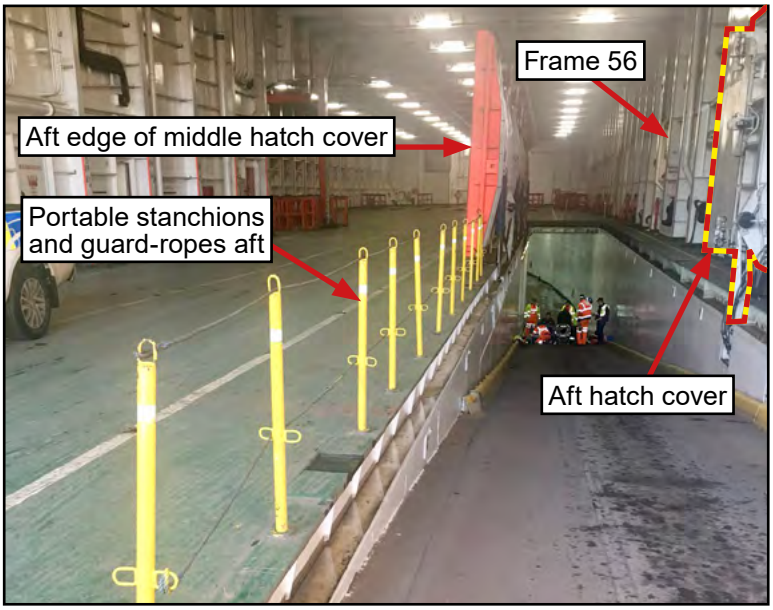

Figure 3: Paramedics on scene

VESSEL

Seatruck Pace was built in 2009 and was one of seven freight ferries managed by Seatruck Ferries Ltd (Seatruck), which operated between the UK and Ireland. During its time in service, the ferry plied almost exclusively between Liverpool and Dublin, completing approximately 12, 8-hour crossings each week.

Seatruck Pace carried up to 120 semi-trailers[2] and 12 lorries with drivers. Loading and discharge was via the stern ramp. When secured on deck, the semi-trailers were supported by trestles **(Figure 2)**, each weighing 167kg. The ferry laid over in either Liverpool or Dublin every other Sunday to Monday.

CREW

Seatruck Pace's crew were employed by Seatruck through a subsidiary manning agency. Contracts varied between 6 weeks on and 6 weeks off for officers and 8 weeks on and 4 weeks off for ratings. The crew were Polish nationals, except for the master, who was Estonian, and all met the STCW[3] certification requirements for their roles on board. The crew had also completed onboard familiarisation training, which included demonstrating a knowledge of risk assessments and safe working practices.

The assistant bosun was 66 years old and was a petty officer. He had worked on board *Seatruck Pace* since the ferry had been in service, starting as an able seaman (AB). The assistant bosun was well liked by the rest of the crew, who regarded him as a father figure. He was hard-working, self-motivated and often worked alone and unsupervised. The assistant bosun last joined *Seatruck Pace* on 10 December 2018 for what he intended to be either his final or penultimate contract on board before retiring.

The assistant bosun was physically fit and had no known mobility issues. His last medical certificate, issued in March 2018 and held on board by *Seatruck Pace*'s master, stated that he was 170cm tall and weighed 85kg. It also indicated that the assistant bosun was medically fit and had no conditions that required prescription medication. However, the assistant bosun had informed some of the crew that he had changed his diet because of high blood-sugar levels. Following the accident, it was determined that the assistant bosun was taking prescribed medication for the treatment of high blood pressure and Type 2 diabetes.

The chief officer was 33 years old and had been employed by Seatruck since 2010. He was promoted to chief officer and first sailed on board *Seatruck Pace* in 2016. The chief officer was also the ferry's safety officer, the duties of which included ensuring crew compliance with safety procedures, raising accident reports, overseeing training drills and chairing the vessel's Safety Committee. The chief officer had not undertaken specific training in relation to his responsibilities as safety officer.

[2] Semi-trailer – a trailer that is designed to be coupled to a semi-trailer towing vehicle (tractor unit) and to impose a substantial part of its weight on the towing vehicle.

[3] International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended (STCW Convention)

HATCH COVER

Access to the lower hold was via a 3.5m wide permanent ramp through a hatch on the starboard side of the main vehicle deck. The hatch cover was divided into three sections along its length, with the forward and middle sections hinged on the inboard side of the hatch and the aft section hinged on the outboard side **(Figure 3)**.

The hatch cover sections were hydraulically operated and were designed to be locked in either the fully opened or fully closed positions. The hydraulic system was not designed to support the hatch covers in intermediate positions. The ferry's deck officers held the keys to the hydraulic control panel. Written procedures for operating the ramp hatch covers were contained in the operating and maintenance instruction manual for the stern ramp and ramp hatch systems. An abridged version was fixed to the ramp hatch control panel.

When closed, the hatch cover formed part of the main vehicle deck and onto which semi-trailers were loaded. When open, portable stanchions and guard-ropes were rigged along the forward edge of the open hatch **(Figure 2)** and along the inboard edge opposite to the aft hatch cover section **(Figure 3)** to protect crew from falling onto the ramp below. When discharging, the assistant bosun's duties included the rigging of the forward stanchions and guard-ropes.

Portable stanchions provided for use along the outboard edge of the open hatch were not routinely used **(Figure 4)**. The deck between the starboard ship's side and the hatch edge adjacent to the forward and middle hatch cover sections was 90cm wide. It contained a re-fuelling point, a fire hose and hydrant, the emergency control panel for the hatch covers' hydraulics, and trestles, none of which the crew were required to access when the hatch cover was open. It was usual practice for the trestles to be placed parallel to the ship's side and secured with rope lashings **(Figure 2)** before the hatch covers were opened.

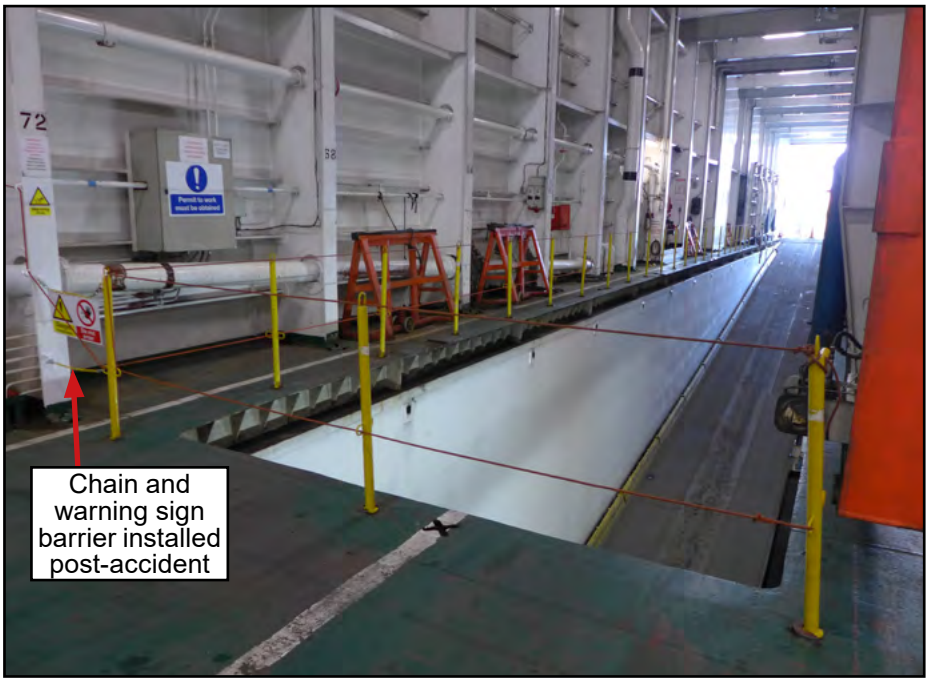

Figure 4: Portable stanchions and guard-ropes rigged on outboard side of hatch after the accident

RECENT MAINTENANCE

Seatruck Pace's planned maintenance system included checks on the hatch cover's locking system and structure, inspection of its watertight seal, and its general husbandry. The hatch cover's technical manuals detailed the maintenance tasks required, but they did not provide guidance on how they were to be completed.

Work on the hatch cover had last been undertaken on Saturday 15 December 2018 (2 days before the accident), when *Seatruck Pace* was in Dublin. After cargo discharge, the hatch cover was left open and the bosun and an AB positioned a trestle perpendicular to the ferry's starboard side, so that part of the trestle was overhanging the hatch edge. The outboard end of the trestle was secured to pipes on the ferry's side with a chain and hook arrangement. The forward section of the hatch cover was then lowered until it rested on the trestle **(Figure 5)**. The trestle was placed as a precautionary measure and was intended to support the hatch cover in the event of hydraulic failure.

With the forward section of the hatch cover resting on the trestle, the AB removed rust from its outboard edge with a chipping hammer and an angle grinder. An OS then primed the prepared areas. Meanwhile, the assistant bosun cleaned the vertical forward and aft edges of the middle and aft hatch covers, which

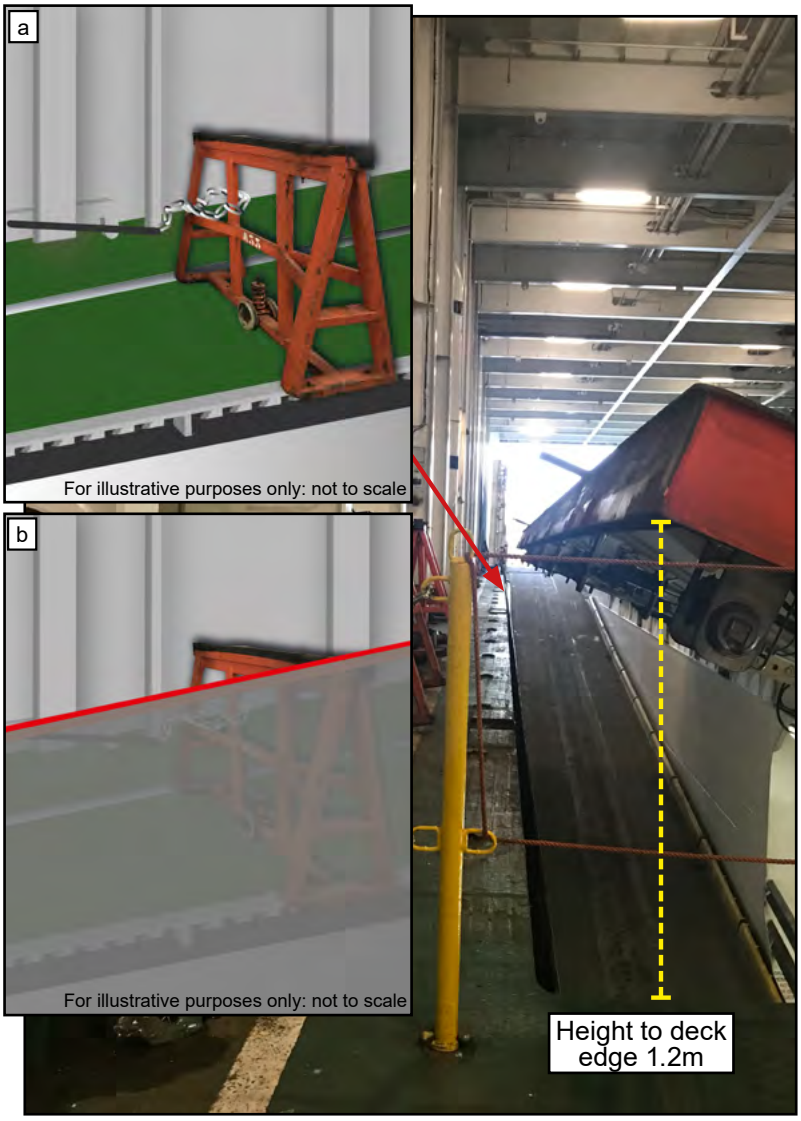

Figure 5: Open hatch cover (**illustration a**: approximate position of trestle overhanging hatch edge and **illustration b**: hatch cover resting on trestle)

remained fully open. The work was not authorised by a PTW, none of the ratings wore a safety harness, and portable stanchions and guard-ropes were not rigged along the side of the exposed edge.

On completion of the work, the forward hatch cover section was opened fully, and the trestle was repositioned against the ship's side. The AB expected that the treated areas would be re-painted the following day. The hatch covers were later closed during the loading of a full cargo of semi-trailers before *Seatruck Pace* departed Dublin in the evening.

At 0255 the following morning (16 December), *Seatruck Pace* arrived at the ro-ro berth in Brocklebank Dock, Liverpool. The hatch cover was opened during the cargo discharge. At 0550, *Seatruck Pace* shifted along the quay to allow another ferry access to the linkspan, but the ferry returned to the ro-ro berth at 1310. Between the berth shifts, the deck ratings completed several maintenance tasks, including the pressure washing in the lower cargo hold, for which a PTW was issued. At 1330, most of the deck crew, including the assistant bosun, finished work. The vessel remained alongside overnight; the hatch cover remained open.

ONBOARD SAFETY MANAGEMENT

Seatruck Pace's safety management system (SMS) included, inter alia, policy statements, personnel responsibilities, resources, and procedures for shipboard operations and emergencies. The onboard documentation stated the purpose of risk assessments and provided guidance for their completion. A library of generic risk assessments included hatch cover maintenance when using scaffolding and a mobile elevated working platform. The SMS provided little guidance as to when additional task-based risk assessments were to be undertaken.

The PTW system required permits to be issued for hot work, working aloft/over the side, enclosed space entry, and work on electrical equipment and machinery that posed a hazard. Two forms were used, one for enclosed space entry and another for the remaining tasks. Only officers were authorised to issue a PTW. The PTWs issued on board *Seatruck Pace* had copies of the applicable generic risk assessments attached.

SHORE MANAGEMENT

Seatruck was based in Heysham, England, which enabled the shore-based managers to regularly visit its Irish Sea fleet outside of periodic internal audits. Consequently, the designated person and the marine and technical managers knew many of the crew at a personal level. Crew and shore-based manager retention was good.

The ship manager promoted safety in several ways, including: monetary awards for accident and 'near accident' reporting; a 'ship of the year' award, based on safety records; and the inclusion of a 'safety moment' at board meetings. Seatruck assessed cargo movements on deck to be the biggest risk of injury on board its vessels, particularly in Heysham where the port's stevedores drove the tractor units to move the semi-trailers but worked under the harbour authority's SMS. This was the first accident on board a Seatruck ferry that resulted in a crew fatality since the company was established in 1996.

ANALYSIS

THE FALL

There were no witnesses who saw how the assistant bosun and the trestle came to be lying on the ramp between the main vehicle deck and the lower hold. However, the assistant bosun was last seen on the main deck at the forward end of the open hatch only minutes before, and his injuries were consistent with a fall from height. Therefore, it is almost certain that the assistant bosun fell from the main deck. As only one noise was heard, and the trestle was found lying on the assistant bosun's right leg, it is also almost certain that the assistant bosun and the trestle fell at the same time, from the same location.

The assistant bosun was found on the inboard side of the 3.5m wide permanent ramp, adjacent to Frame 56 **(Figures 1, 2** and **3)**, but access to the hatch above was blocked on the inboard (port) side by the open hatch cover and protected on the forward edge by the guard ropes. The forward end of the hatch opening was 12m away. Therefore, the assistant bosun could only have fallen onto the ramp from the outboard (starboard) edge of the hatch opening, which was not protected along its length. The vertical distance from the main vehicle deck to the ramp at Frame 56 was 4.5m. It cannot be determined whether the assistant bosun's medical condition was contributory to his fall.

THE TEMPORARY BARRIER

To have fallen over the outboard edge of the open hatch on the main vehicle deck in way of Frame 56, the assistant bosun must have passed through the temporary rope and stanchion barrier at its forward end and then moved 12m aft, along the 90cm wide deck **(Figure 2)**. It is only possible to speculate on why the assistant bosun entered this hazardous area.

The assistant bosun had been tasked to paint the leading edge of the hatch cover's forward section, which could be reached without crossing the barrier. In addition, he did not require access to the hatch cover's emergency control panel, the fire hose or the refuelling point, which were located between the ship's side frames aft of the barrier. However, that the assistant bosun and the trestle fell onto the ramp together, strongly indicates that whatever he was doing was connected to the trestle. The trestle weighed 167kg and would have been difficult for one person to move.

To paint the forward edge of the hatch cover the assistant bosun had collected a pot of paint and a roller from the paint store, but as the hatch cover was open and the forward edge was vertical, a roller extension handle would have been required to reach its upper half. Therefore, the possibility that the assistant bosun intended to lower the hatch cover onto a trestle in order to reach all the top half of the forward edge, cannot be dismissed. As the trestle that fell was probably the trestle seen overhanging the hatch opening by the OS, it is also conceivable that the assistant bosun was attempting to re-secure the trestle, which could have been moved any time since the hatch had been opened the previous morning, to the ship's side.

SAFETY

The safety barrier protecting the open hatch had been rigged by the assistant bosun the morning before his accident and, in view of his time and experience on board *Seatruck Pace*, he was aware that the barrier's purpose was to protect crew from the hatch's exposed edges. While it is not certain why the assistant bosun crossed the barrier, in common with many occupational accidents it is highly unlikely that his action was an aberration. The assistant bosun, who preferred to work unsupervised, had probably taken similar action in the past, recognising and accepting the risk of falling on the basis that 'it would not happen to him.'

A similar attitude to safety was evident among *Seatruck Pace*'s crew during the earlier hatch cover maintenance on 15 December. On that occasion, the crew involved had accessed the hatch cover's outboard edge from the outboard side of the vehicle deck using a trestle to support the cover at a convenient height, rather than tower scaffolding, which was in use in the lower hold, or a mobile elevated platform, which was not on board at the time. The use of a trestle was an unusual practice that was not included in the ferry's generic risk assessments. However, a specific, task-based risk assessment, which could have identified the hazards involved and mitigation measures to be taken, was not completed. Instead, the risk of the AB and the OS falling through the 1.2m gap between the hatch cover and the hatch opening **(Figure 5)** was accepted, and mitigation measures such as the rigging of an additional temporary safety barrier along the outboard edge of the hatch opening, or the wearing of safety harnesses, were not considered.

The documentation and procedures on board *Seatruck Pace*, such as generic risk assessments and PTWs, were comprehensive and assisted with providing safe systems of work on specified tasks. For these tasks, such as pressure washing, that necessitated crew to work from height on tower scaffolding, the associated paperwork and precautions were implemented. However, despite Seatruck's focus on safety, it is evident from the circumstances of the assistant bosun's fall and the earlier hatch cover maintenance that the crew's adherence to the safety procedures was more a matter of routine and compliance, than of understanding and conviction.

CONCLUSIONS

- The assistant bosun crossed a safety barrier and then fell 4.5m from the main deck onto the ramp with the trestle.
- The task the assistant bosun had been allocated did not require access to the unprotected deck edge beyond the rope barrier, and it is not known why he entered the hazardous area.
- The risk of falling was apparent but was accepted by the assistant bosun, who had probably taken similar risks in the past.
- Work practices adopted by other deck ratings during hatch cover maintenance 2 days earlier indicated that adherence to the vessel's safety procedures was more a matter of routine and compliance than of understanding and conviction.

ACTIONS TAKEN

Seatruck Ferries Ltd has:

- Reminded its masters of the dangers of bypassing safety control measures and prompted them to review the safety of deck openings.
- Provided safety chains, fittings and warning signs for use on the temporary barriers rigged on the main vehicle decks of its ferries.
- Reviewed its risk assessment and PTWs concerning working at height.
- Introduced a procedure for recording the use of safety harnesses.
- Committed to ensuring that all masters and safety officers complete a Maritime and Coastguard Agency safety officers' training course.
- Completed a 'safety culture survey' among its senior management, and senior managers have attended the Health and Safety Executive's (HSE) '*Behaviour Change – Achieving Health & Safety Culture Excellence*'.
- Engaged HSE consultants with the aim of forming a safety culture steering group and implementing the HSE's Safety Climate Tool.
- Undertaken to revise the SMS to highlight that specific items of equipment should only be used for their intended purpose, e.g. trailer trestles should only be used to support trailers.

RECOMMENDATIONS

In view of the actions taken, no recommendations have been made

SHIP PARTICULARS	
Vessel's name	*Seatruck Pace*
Flag	Cyprus
Classification society	DNV-GL
IMO number/fishing numbers	9350678
Type	Ro-Ro cargo ship
Registered owner	Seatruck Shipholding I Ltd
Manager(s)	Seatruck Ferries Ltd
Year of build	2009
Construction	Steel
Length overall	142m
Registered length	133.97m
Gross tonnage	14759
Minimum safe manning	11
Authorised cargo	Ro-ro cargo
VOYAGE PARTICULARS	
Port of departure	Dublin
Port of arrival	Liverpool
Type of voyage	Short international
Cargo information	Articulated road trailers
Manning	21
MARINE CASUALTY INFORMATION	
Date and time	17 December 2018 at 0818
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Lower hold ramp
Place on board	Cargo hold/vehicle deck
Injuries/fatalities	1 fatality
Damage/environmental impact	None
Ship operation	Maintenance
Voyage segment	Alongside
External & internal environment	Daylight
Persons on board	21