



DUTCH
SAFETY BOARD

Fatal entrapment between quay and vessel during mooring

UK268 Jacoba Alyda, Lauwersoog



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4 December 2013

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Source photo cover: Inspection SZW-direction Arbo

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BACKGROUND

On 4 December 2013, a fatal accident occurred on board the fishing vessel UK268, the *Jacoba Alyda*. While mooring the vessel, one of the crew members tried to step onto the quay in order to grab hold of the hawser and fell in between the quay and the vessel, where he was crushed.

This was an very serious accident as referred to in the Casualty Investigation Code of the International Maritime Organisation (IMO) and EU Directive 2009/18/EC. This means that the Netherlands, as the vessel's flag state, is obliged to ensure that a safety investigation is conducted. This statutory investigation duty is also set out in the Dutch Safety Board Decree [*Besluit Onderzoeksraad voor Veiligheid*].

Dutch Safety Board investigators visited the site immediately following the incident to commence the investigation. The immediate cause that led the crew member to fall between the quay and the vessel could no longer be ascertained. None of the other crew or people in the vicinity actually saw the crew member fall between the quay and the vessel. However, the investigation did identify a number of probable causes, as set out in this Safety Board report.

RELEVANT FACTS AND BACKGROUND INFORMATION



Figure 1: The UK 268 Jacoba Alyda moored at the fishing port at Lauwersoog. (Source: Inspection SZW-direction Arbo)

Vessel name:	Jacoba Alyda (UK286)
Vessel owner:	K.J. Romkes Beheer B.V.
Home port:	Lauwersoog
Flag:	The Netherlands
Type:	fishing vessel
Year of build:	1979
Length:	24 metres
GRT:	208
Propulsion:	propeller
Bow thruster:	none
Date:	4 December 2013
Time:	23:30 hours
Location of occurrence:	Lauwersoog Harbour
Number of people on board:	4
Number of injuries/fatalities:	1 fatality
Damage:	none

On Wednesday 4 December the *Jacoba Alyda* entered Lauwersoog harbour after returning from a fishing trip and moored at the fish market at around 21:00 hours.¹ It was already dark outside with cloudy but dry conditions. The deck lighting was on and the quay was dimly lit by the street lighting from the fish market. There was a fairly strong wind from the north-west and it was one day before the spring tide.² The Royal Netherlands Meteorological Institute (KNMI) had issued an extreme weather warning on this day, forecasting very strong gusts of wind (code orange) for the north-western region of the country. On the morning of 5 December, this warning was scaled up to a weather alert (code red) for the northern regions. The combination of mounting north-westerly winds and the imminent spring tide had caused the water level in Lauwersoog harbour to rise. Wind was blowing the water up against the quay, creating a spray across the berths and causing the quay and wooden fender walls³ to become wet.

During this fishing trip, the *Jacoba Alyda* had entered Newcastle five days previous to seek shelter from bad weather. When the weather improved one day later, they returned to sea and were able to fish for another three days before the weather reports deteriorated once more and the captain decided to return to Lauwersoog. On average, the *Jacoba Alyda* returns to Lauwersoog harbour every ten days to land its catch, therefore the crew is well acquainted with the situation along the quay. The vessel needed two days to cross the distance from the fishing grounds to the port, which gave the crew an opportunity to rest a bit before their arrival in the port.

Immediately upon arrival they commenced loading the catch into a truck. Once they were finished, the captain informed the crew that the vessel had to be moved back 50 metres to make room for other fishing vessels that had come to land their catch. This was around midnight.

One of the crew members who had helped unload the fish onto the quay assisted with unfastening the hawsers. The 43-year-old Philippine was an experienced seaman who had come on board 11 weeks earlier. As there often was no quayside assistance in the harbour, it was his duty during mooring to step onto the quay from the vessel's stern and take hold of the hawsers. To do this, he had to assess for himself when to step onto the quay as the captain could not see the situation from the wheelhouse.

After the crew member had helped to unfasten the hawsers, he stepped from the quay onto the vessel's stern. The crew member was wearing rubber safety boots with anti-slip soles.

1 All times stated in this report are local times.

2 Spring tide is the tidal period in which the difference between high and low tide is greatest. This means that both the high water level is higher than average and the low water level is lower than average. Spring tide occurs once approximately every 14 days and on average just over 48 hours after the moment at which the tide-generating forces of the moon and the sun are both acting in the same direction and have a maximum mutually reinforcing effect. This occurs when the sun, the moon and the Earth are aligned, thus when there is a new moon or a full moon. Consequently, spring tide occurs twice every synodic month.

3 Fender walls or guiding walls are structures that serve to slow the speed of a vessel as it approaches or threatens to run into a quay wall, bridge or lock. Historically, fender walls were made of wood, but today they often comprise a steel skeleton clad with hardwood. The use of wood ensures that steel vessels will incur less paint damage if they graze the structure, whilst also reducing the risk of sparks forming, which is a particular concern in tanker shipping.

As the vessel was moving astern, the north-westerly wind was pushing it against the quay. Because this made the astern movement more difficult, the captain compensated for the wind by manoeuvring away from the quay at regular intervals. When the captain slowed the vessel's speed the crew member probably attempted to step back onto the quay from the stern in order to be ready to take hold of the hawsers. At this point he fell between the quay and the vessel. The crew member managed to hold onto the slippery wooden fender wall so that he hung by his arms and only his legs were submerged in the water while his upper body remained dry. A fellow crew member who was engaged with the hawsers on the afterdeck heard a yell. He looked up and saw his colleague hanging from the wooden fender wall. Because the vessel was now in the right position, the captain was no longer manoeuvring to compensate and the north-westerly wind was once more pushing the vessel up against the quay. Being unable to pull himself up in time, the crew member became severely crushed between the quay fender wall and the vessel's hull.



Figure 2: Wooden fender wall and stern of the UK268 Jacoba Alyda. (Source: Inspection SZW-direction Arbo)

The colleague who had seen what happened stepped onto the wharf to aid the crew member. A second colleague who had been engaged with the hawsers on the foredeck also rushed over to the spot. This movement alerted the captain of the situation as he was until that time not aware that something was wrong. He could not see the location of the accident from the wheelhouse and there was no direct communication with the deck crew.



Figure 3: Rear view from the wheelhouse of the UK268 Jacoba Alyda. (Source: Inspection SZW-direction Arbo)

By this time the distance between the quay and the vessel had widened again and the crew member was freed. He was however no longer responsive and slipped into the water. The colleagues who had come to the crew member's aid were able to grab hold of him. In the meantime, people came over from the fish market and a nearby fishing vessel to assist and they helped the captain tie up the vessel. After approximately five minutes they were able to pull the lifeless crew member up onto the quay. They immediately began resuscitation and emergency services were alerted. Emergency services arrived at the site approximately ten minutes later, took over resuscitation and conveyed the crew member to the nearest hospital. On the way there it became apparent that further aid was of no use.

ANALYSIS & CONCLUSIONS

The incident analysis and conclusions are based on the Tripod method. This method of analysis presupposes failing safety provisions, or 'barriers'. These failing barriers are analysed with respect to the immediate causes, circumstances and underlying factors of the failure in the organisation. This resulted in the following findings:

The immediate causative factors (failing barriers)

- The crew member was able to become trapped between the wharf and the vessel because the vessel was not yet flush against the wharf when the crew member made his presumed attempt to disembark.
- As there was no quayside assistance to help with mooring and unmooring, the crew member had to leave the vessel himself.
- Because the captain was not aware of the crew member's fall, he did not keep the vessel clear of the wharf and the crew member became trapped between the vessel and the wharf.
- Due to the short space of time between his falling from board and becoming trapped, the crew were furthermore unable to pull the crew member up in time.

Factors that contributed to the accident

Environmental factors

The difference between the deck lights and the lighting in the vicinity may have impeded the crew member's depth perception. This may have caused him to attempt to step off the vessel at a point when the vessel was not yet flush against the wharf.

The wooden revetment was slippery from the wet conditions and accretion of moss, which may have been one of the factors that caused the crew member to slip upon disembarking from the vessel. (It should be noted that the revetment is intended as a fender and not as an aid to embarkation or disembarkation.)

Lack of communication

In shipping it is customary that crew members are not allowed to disembark until the captain has ascertained that the vessel is correctly positioned along the wharf. The UK268 had no procedure for conducting this check. The captain left it to the crew member himself to make this judgement.

Owing to the lack of communication among the deck crew and the fact that the captain did not have a view of the disembarkation point, the captain was unaware of the crew member's situation. As a consequence, he was not able to keep the vessel clear of the wharf in order to prevent the crew member from being crushed.

LESSONS LEARNED

Communication between disembarking crew and the captain is crucial, all the more in situations where the captain does not have an unobstructed view of the disembarking crew members. Clear agreements regarding when a crew member is permitted to disembark and the use of walkie-talkies could be useful in this respect, as would discussing the manoeuvre to be undertaken in advance.

Where possible, quayside assistance should be called in to take the hawsers, especially during dark night-time hours. If this is not possible, there should be a full risk evaluation on hand and the crew should be made aware of the dangers. In cases where there is no quayside assistance available it is particularly important to provide such a risk evaluation regarding disembarkation during mooring and unmooring of the vessel. This would also serve to prevent unnecessary movements on and off the vessel.



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