

FATAL MAN OVERBOARD FROM JOANNA

Alongside in Glasgow, Scotland,
13 December 2010

SUMMARY

At 1755 on 13 December 2010, an able seaman (AB) fell into the River Clyde from the St Vincent and the Grenadines registered cargo vessel *Joanna*, while the vessel was alongside in Glasgow, Scotland. He was recovered from the water about 25 minutes later, but could not be resuscitated.

The investigation identified that the AB almost certainly fell while climbing up to the port side platform of the straddle lift used to move the vessel's cargo hatch covers. It also found that: the AB was working while under the influence of alcohol; the means of access to the straddle lift platforms used by the ship's crew were unsafe; the opening and closing of the cargo hatch covers had

not been identified as a key element within the onboard procedures, and therefore the risks of accessing and operating the straddle lift had not been assessed; and important personal protective equipment (PPE) was either not available on board, or was not fit for purpose.

The vessel's manager has implemented a drug and alcohol policy, renewed its shipboard operations and risk assessments, provided new procedures for the operation of the straddle lift, and provided replacement PPE on board *Joanna*. In view of the action taken by the vessel's manager, no recommendations have been made.

Extract from The United Kingdom Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 – Regulation 5:

"The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of 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 13(9) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

© Crown copyright, 2011

You may re-use this document/publication (not including departmental or agency logos) free of charge in any format or medium. You must re-use it accurately and not in a misleading context. The material must be acknowledged as Crown copyright and you must give the title of the source publication. Where we have identified any third party copyright material you will need to obtain permission from the copyright holders concerned.

All reports can be found on our website:

www.maib.gov.uk

For all enquiries:

Email: maib@dft.gsi.gov.uk

Tel: 023 8039 5500

Fax: 023 8023 2459

Image courtesy of Fotoflite

Figure 1



Joanna

FACTUAL INFORMATION

Vessel, crew and environment

Joanna, a 2320t general cargo vessel, was built by Amels BV, Netherlands in 1983 and was registered in Kingstown, St Vincent and the Grenadines. She was owned by Joanna Shipping Ltd, managed by Jan Stepniewski I S-ka Sp z oo (Jan Stepniewski), and classed with the Polski Registr Statkow. The vessel had an overall length of 78.57m and a beam of 12.01m.

Joanna mainly operated in north-west Europe, the Baltic and the Mediterranean coastal areas. She had a crew of seven, with Polish being the working language on board.

The deceased, Stanislaw Bania, was Polish, 58 years old and an experienced AB who had worked for Jan Stepniewski since 2006. He had remained on board during the vessel's stay in Glasgow. At the time of the accident, Stanislaw was wearing thermal-lined overalls, a weatherproof jacket, wellington boots, a safety helmet, and gloves. Stanislaw was of stocky build, weighed about 89kg, and was able to swim.

It was dark, the air temperature was -1.6°C , and the deck was icy in places. The tidal stream was westerly at a rate of 1.5 knots, the water temperature was 2°C and the wind was light airs. The vessel's main deck was illuminated by lights sited on the front of the accommodation and on the foremast; no lights were sited on the port or starboard walkways between the cargo hatch coamings and the main deck guardrails.

Straddle lift

Joanna's single hold was fitted with 14 hatch covers that were moved using a straddle lift (**Figure 2**). The lift was fitted at build and spanned

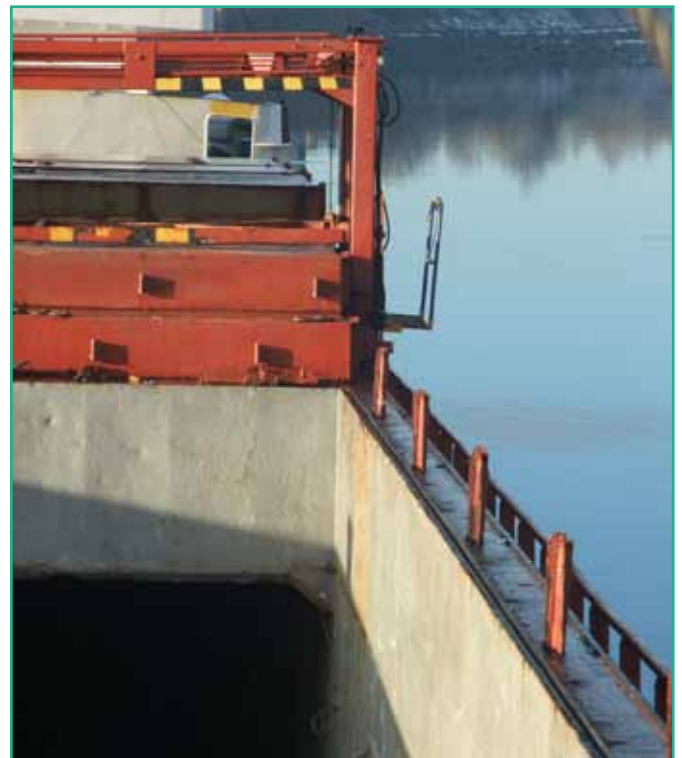
Figure 2



the width of the cargo hold. It was operated by the bosun from its starboard platform, assisted by an AB on its port platform.

The platforms (**Figure 3**) were 1.65m above the deck and were 0.39m deep. Each platform was fitted with a guardrail on its outboard side, but no protection was fitted at the fore and aft ends. A number of hand/foot supports were fitted to the aft uprights of the lift, the lowest of which was 1.9m above the deck. The distance between the deck guardrail and the hatch coaming was 0.5m and the uppermost guardrail was 1m above the deck and 3.6m above the waterline.

Figure 3



The crew usually accessed the platforms either by climbing up from the main deck or via the hatch covers. **Figure 4** shows the method usually adopted by the crew to reach the platform from the main deck. The crew climbed up the guardrails while facing the straddle lift and holding on to the hand/foot supports on the aft upright. When on the top guardrail, the crew would step across to the platform. To approach the platforms from the hatch covers, the crew either had to duck under the lift's main beam or swing outboard of the aft upright using the hand/foot supports provided.

Figure 4



start the following morning. In readiness, the crew unlash the deck cargo before finishing for the day.

Cargo discharge started at 0700 on 13 December 2010. Stevedores lifted the nine tanks stowed on the hatch covers onto the quayside using a shore crane. When the deck cargo had been discharged, the crew cut off the fastening and stoppage points that had been welded onto the hatch covers. The bosun and Stanislaw then moved the aft covers with the straddle lift so that the cargo stowed in the aft section of the hold could be discharged. Discharge started again at approximately 1440.

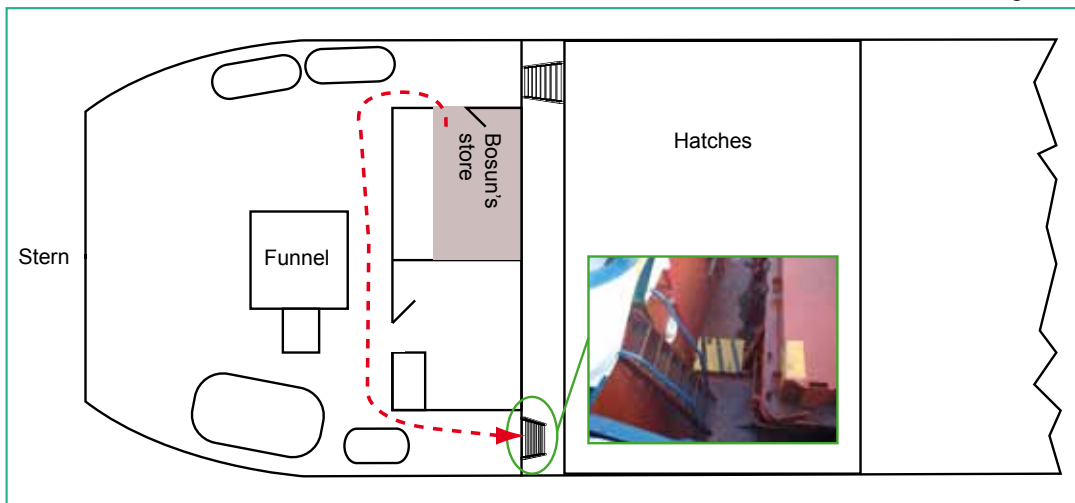
By 1600, the only cargo remaining on board was six tanks stowed under the forward hatch covers. The bosun and Stanislaw replaced the aft hatch covers over the aft section of the hold and then removed the forward hatch covers and placed them on top of the aft covers. Stevedores then lifted the remaining cargo from the hold.

Cargo operations were completed at 1745, and the chief officer instructed the bosun and Stanislaw to “close the hatches”. The two ratings left the bosun’s store and went to the ladder providing access to the main deck on the starboard side (**Figure 5**). The bosun then went down the ladder and made his way along the starboard side of the main deck towards the straddle lift which was stowed amidships. It is assumed that Stanislaw also went down the ladder to make his way towards the port platform. Using the deck guardrail as a ladder, the bosun climbed onto the straddle lift platform and waited for Stanislaw to appear on the port side.

Narrative

Joanna berthed starboard side to (bow east) alongside Shieldhall berth 2, Glasgow at 1645 on 12 December 2010. Her cargo of whisky still tanks was stowed in the hold and on top of the hatch covers. Cargo discharge was scheduled to

Figure 5



Soon afterwards, the bosun called out to Stanislaw because he could not be seen on the port platform as expected. There was no response. The bosun immediately climbed on to the hatch covers and walked across to the port side. He saw Stanislaw face-down in the water between 1 and 2 metres from the vessel's hull. The bosun ran to the master's cabin, shouting to raise the alarm along the way. The master immediately telephoned the ship's agent, but there was no reply, so he rushed to the bridge and sounded the manoverboard alarm.

On the poop deck, the chief engineer and cook heard the bosun's shouts and looked over the port side of the vessel. They saw Stanislaw floating towards the stern and shouted out to him. Without delay, the chief engineer collected a lifebuoy and line. He and the cook then went on to the quayside where a ladder (**Figure 6**) was sited astern of the vessel.

Figure 6



Still dressed and with his shoes on, the cook went down the ladder and into the water. The chief engineer passed the lifebuoy to the cook, who then swam about 10m to reach Stanislaw. He turned Stanislaw over so that his mouth was clear of the water. Then, assisted by the chief engineer pulling on the lifebuoy line, the cook made his way back towards the ladder, bringing Stanislaw with him.

The commotion on board *Joanna* alerted the shore-side crane foreman and crane driver who went to the vessel to see what was happening. When they saw the two men in the water, the crane foreman immediately telephoned the port authority and requested that the emergency services attend. He also arranged for a personnel transfer basket to be made available.

At 1757, the cook and Stanislaw reached the ladder. The bosun lowered a line with a grappling hook, which the cook placed through the front of Stanislaw's clothing. The bosun and chief officer then heaved on the line to keep Stanislaw's face clear of the water. The cook then climbed out of the water because he was beginning to lose the feeling in his legs and hands.

By 1810, the first of the emergency services had arrived on the quayside and the transfer basket was connected to the crane's hook. At 1814, the basket was lowered over the water. Inside the basket were a harbour pilot who had been attending an adjacent vessel, the crane foreman, and another port foreman. Stanislaw was pulled into the basket and was landed on the quay at 1820. He was then taken to hospital by ambulance but was declared deceased at 1953.

Postmortem examination

A postmortem examination concluded that Stanislaw had died from cold water immersion. There was no sign of significant injury. The report stated '*Whilst the most obvious cause of death would be drowning or even hypothermia, death as a result of vagal inhibition (reflex cardiac arrest) is also a possibility, causing sudden death when an individual is immersed in water, particularly if the water is very cold. There are no specific post mortem features when death has been due to vagal inhibition. Given that this man appears to have been recovered from the water relatively quickly, hypothermia as a cause of death would seem unlikely. As death due to drowning cannot be confirmed, and death as a result of vagal inhibition cannot be excluded, it is considered best to regard the cause of death as cold water immersion, encompassing both mechanisms.*'[sic]

Analysis of postmortem blood revealed that Stanislaw had a blood alcohol concentration of 193mg/100ml.

Procedures and audit

A procedure for 'Loading and Unloading' was issued to *Joanna* in March 2002 by the ship's manager with the stated aim of defining 'the principles for preparing a vessel for the safe loading, transportation and unloading of cargo'. It was also issued to the other three vessels within the ship manager's fleet, none of which were fitted with a straddle lift.

The procedure included instructions on: ensuring the readiness of loading gear; preparing the vessel for loading; loading and unloading; securing the cargo; and checking the cargo during the voyage. It did not include any reference to the operation of the straddle lift, which was also not included in the vessel's crew familiarisation requirements.

The vessel's manager had not provided a written drug and alcohol policy for its fleet. However, he had informed the masters that the consumption or possession of alcohol on board their vessels was not permitted, and *Joanna's* master did not allow the consumption of any drugs or alcohol on board his vessel.

On 15 May 2008, a renewal safety management certificate (SMC) audit had been conducted in accordance with the International Safety Management (ISM) Code by Polski Registr Statkow, on behalf of the St Vincent and the Grenadines Maritime Administration. Only one observation was made, which referred to the maintenance of fixed mooring equipment. An internal audit of the vessel was last conducted by the ship manager on 25 July 2010. The only non-conformity identified concerned the vessel's garbage handling records.

An annual ISM Document of Compliance (DOC) audit was conducted by Polski Registr Statkow at the ship manager's office on 17 September 2010 which made one observation, namely "*no evidence that assess all risks are implemented in ISM.*" [sic]. As a result, the ship manager started to compile a list of key shipboard hazards on board its vessels. At the time of Stanislaw's fall, the risk assessments had not been completed and, therefore, none were available on board.

ANALYSIS

The fall

As Stanislaw accompanied the bosun to the top of the ladder leading to the starboard side of the main deck, it is almost certain that, like the bosun, he intended to access the platform on the straddle lift from the main deck using the guardrails. The alternative would have been via the hatch covers, which were accessed by a gangway on the port side of the accommodation deck, forward of the bosun's store (**Figure 5**).

The use of the guardrails to climb to the straddle lift's operating platforms was clearly dangerous, as the area beneath the lift was confined, and over balancing or slipping could easily result in a person falling on to the deck or overboard. In this case, the risk of falling was significantly increased as Stanislaw was almost 2.5 times over the limit for alcohol for professional seafarers who are on duty, as detailed in the Railways and Transport Act 2003. While it is noted that the effects of alcohol vary between individuals, they are generally considered to impair motor co-ordination, slow down reaction times, and reduce peripheral and night vision. Alcohol can also increase a person's confidence levels, frequently resulting in a person being more likely to take risks. In addition to Stanislaw's potential impairment through alcohol, the soles of his wellington boots were almost totally bare of tread and his leather gloves had been smoothed through use. Consequently, neither the wellington boots nor the gloves would have provided much grip, particularly on the wet or icy metal surfaces of the guardrails and hand-holds when stepping from the top guardrail to the straddle platform.

On slipping or losing his balance, it is possible that the surprise of the fall combined with the speed of events and the effects of alcohol prevented Stanislaw from crying out as he fell the 3.6m to the water below. However, it is equally possible that the bosun, the chief engineer and the cook simply did not hear any noise that Stanislaw might have made.

Rescue

Although it is not known exactly how long Stanislaw had been in the water before he was seen by the bosun, given that the tidal flow had not yet carried him the 40m from beneath the straddle lift to the vessel's stern, it is likely to have been less than 1 minute. However, he was already

motionless and face-down in the water when first seen. Therefore, his loss of consciousness was rapid which, together with the absence of any audible cries for assistance, or injury, strongly supports the scenario that Stanislaw suffered a reflex cardiac arrest, or a gasp reflex resulting in water inhalation, when he fell into the near ice-cold water. Without the assistance of a lifejacket to keep his mouth clear of the water it is not surprising that he was quickly debilitated. Had Stanislaw not been wearing clothing which provided a degree of buoyancy, he would probably have quickly submerged.

By the time the cook managed to reach Stanislaw and raise his face clear of the water, he had already been immersed for several minutes. A period of about 25 minutes then elapsed before he was recovered from the cold water, which further reduced his chances of survival. The crew were unable to deploy the vessel's fast rescue boat because of its location on the inboard side of the vessel. However, they and the shore workers reacted quickly and positively to the emergency and, in view of the height of the quay and Stanislaw's build, worked well together to recover him from the water in difficult circumstances.

Onboard practices

The routes used by the crew to get on to the platforms on the ends of the straddle lift were inherently unsafe because they exposed the crew to the risk of falling from height. The UK's Merchant Shipping (Safe Movement on Board Ship) Regulations which applied to *Joanna* when she was alongside in Glasgow, require an employer and master to '*ensure that safe means of access is provided and maintained to any place on the ship to which a person may be expected to go*'.

Without a dedicated ladder or similar means of access, any slip or loss of balance, either when climbing the ship side guardrails or when moving on to the platform from the hatch covers, had significant potential to result in a fall onto the deck, or over the ship's side to the water or quayside, and cause serious injury. It was therefore only fortuitous that similar accidents had not occurred in the past.

The crew were also exposed to the risk of falling when standing on the platforms due to the absence of any guardrails or similar protection at the platforms' fore and aft ends. Although the distance

to the deck below was only 1.65m, this was still sufficient for the potential consequences of any fall from the platforms to be serious.

Safety culture and management

A number of factors strongly indicate that the safety culture and safety management on board *Joanna* were not robust.

First, given the volume of alcohol in Stanislaw's blood at the time of his death, it is clear that he had been drinking alcohol on board since the ship had been in Glasgow. Although this was contrary to the master's orders, the ship manager had not provided a written policy to control the distribution and consumption on board its vessels with the aim of ensuring their crews were not impaired when performing their duties. Consequently, no guidance was available to the crew and, importantly, the master had no means of testing for alcohol consumption on board.

Second, although the vessel had been provided with a procedure for loading and unloading cargo, the hazards to the ship's crew associated with the operation of the straddle lift, although readily apparent, had not been formally identified or assessed, and the crew appear to have followed established onboard working practices without considering whether it was safe to do so.

Finally, some of the PPE on board was either inadequate or not fit for purpose. Stanislaw's boots and gloves had worn smooth, indicating that more frequent monitoring and, if necessary, replacement was required. However, Stanislaw's boots were also unsuitable for wear during cargo operations. This, combined with the lack of lifejackets for use on deck and the absence of any test or standards markings on the fall restraint harnesses, indicates that much tighter control of PPE on board is necessary.

As the lack of risk assessments had been highlighted by Polski Registr Statkow during its DOC audit on 17 September 2010, it is unfortunate that a quicker response to the classification society's observation was not forthcoming. Even the most rudimentary risk assessment would undoubtedly have highlighted the need to remove or mitigate the hazards to *Joanna*'s crew when accessing or operating the straddle lift through structural changes, collective measures, robust procedures, and/or the provision of suitable PPE.

CONCLUSIONS

- Stanislaw Bania almost certainly fell into the water while trying to climb on to the port operating platform on the straddle lift via the deck guardrails.
- Stanislaw's performance was probably impaired by alcohol, which significantly increased the risk of him losing his balance or slipping.
- Neither the wellington boots nor the gloves worn would have provided Stanislaw much grip, particularly on the wet or icy guardrails and hand-holds.
- It is possible that Stanislaw suffered reflex cardiac arrest or a gasp reflex when he fell into the cold water, resulting in his rapid debilitation and loss of consciousness.
- The crew and the shore workers reacted quickly and positively, and did well to recover Stanislaw from the water in difficult circumstances.
- The access routes used by the crew to get on to the platforms on the ends of the straddle lift were inherently unsafe.
- The crew working on the lift platforms were exposed to the risk of falling because the fore and aft ends of the platforms were not provided with guardrails or similar means of protection.
- The risk of falling when accessing, or working on, the lift's operating platforms had not been recognised by either the vessel's managers or her crew.
- Important PPE on board *Joanna* either was inadequate or was not fit for purpose.
- Although the ship manager was aware 3 months before the accident that no risk assessments had been conducted on board *Joanna*, it had not completed remedial action.

ACTION TAKEN

Jan Stepniewski I S-ka Sp z oo shipping company has:

- Implemented a drug and alcohol policy.
- Reviewed its key shipboard operations which now include the opening and closing of hatches.
- Provided written procedures for the operation of the straddle lift.
- Completed risk assessments to improve the safety of operations on board its vessels
- Provided two safety harnesses and two working lifejackets on board *Joanna*.

RECOMMENDATIONS

In view of the action already taken by the vessel's managers no recommendations have been made.

**Marine Accident Investigation Branch
June 2011**

SHIP PARTICULARS

Vessel name	<i>Joanna</i>
Flag	St Vincent and the Grenadines
Classification society	Polski Registr Statkow
IMO number	8200802
Type	Cargo ship
Registered owner	Joanna Shipping Ltd
Manager(s)	Jan Stepniewski I S-ka Sp z oo
Construction	Steel
Length overall	78.57m
Registered length	76.4m
Gross tonnage	1525
Minimum safe manning	7
Authorised cargo	In ballast

VOYAGE PARTICULARS

Port of departure	Pescara, Italy
Port of arrival	Glasgow, Scotland
Type of voyage	Short international voyage
Cargo information	In ballast
Manning	7

MARINE CASUALTY INFORMATION

Date and time	1755 on 13 December 2010
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Glasgow, Scotland
Place on board	Person overboard
Injuries/fatalities	One fatality
Damage/environmental impact	None
Ship operation	Cargo
Voyage segment	Berthed alongside
External & internal environment	It was dark, the air temperature was -1.6°C, and the deck was icy in places. The tidal stream was westerly at a rate of 1.5 knots, the water temperature was 2°C and the wind was light airs. The vessel's main deck was illuminated by lights sited on the front of the accommodation and on the foremast.
Persons on board	7