

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.

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Manoverboard during cargo operations **DETTE G**

Queen Elizabeth Dock, Hull
16 January 2012

SUMMARY

At 2309 (UTC) on 16 January 2012, an able seaman (AB) on board the Antigua & Barbuda registered container ship *Dette G* died as a result of falling overboard during cargo operations while the vessel was moored alongside Queen Elizabeth Dock in Hull, UK. The AB fell into a narrow gap between the vessel and the quay when disembarking from the vessel through a pilot gate. He quickly disappeared from view and his body was not recovered from the water until the following morning.

The MAIB investigation established that:

- Although not an authorised means of access, the pilot gate was occasionally used by the crew when the vessel was alongside.

- The dangers of using the pilot gate increased as the cargo unloading operations progressed and the vessel's freeboard increased.
- The deceased probably lost his balance or slipped.

The investigation also identified that the use of the pilot gate instead of the accommodation ladder was a significant shortcut that might have appeared to be safe to use. Consequently, some of the crew had probably developed a complacent attitude towards its use.

The action taken following the accident by the ship's manager, the container terminal operator and the port authority should help prevent a similar accident from occurring in the future. Therefore, the MAIB has not made any recommendations on this occasion.



Dette G

Photograph courtesy of www.jantiedemann.de

www.jantiedemann.de

FACTUAL INFORMATION

Narrative

At 2040 (UTC) on 16 January 2012, *Dette G* moored starboard side to alongside PD Ports' container terminal in the Queen Elizabeth Dock, Hull. The 3999gt vessel was close to the quay wall with only small rope fenders protecting the ship's side (**Figure 1**). A gangway was rigged from the vessel's aft deck to provide a means of access. It was a cold, clear and still night.

The vessel's cargo of 171 containers was loaded in the holds, and on deck in bays 2, 6, 10, 14, 18 and 22 (**Figure 2**). The containers were stacked four tiers high in bay 22 and three tiers high in bays 6, 10, 14 and 18 with each tier containing seven containers. Bay 2 was loaded with one tier of three containers. The vessel's draught was 6.3m aft and 5.7m forward.

At 2115, discharge of bay 14 was commenced using one of three shore cranes that were available. Working on the deck, which was very well lit, were an AB, Anton Trofimov, and an ordinary seaman (OS). The ratings were responsible for releasing the semi-automatic twistlocks securing the containers. They also had to remove the twistlocks from the top of the container stack after each tier had been discharged. To achieve this task, the ratings were transported between the quay and the top of the container stacks in a man-basket (**Figure 3**), which was lifted by crane, and was equipped with fall arrest devices and safety harnesses.

At 2200, a second crane started to discharge bay 22 with a shore stevedore releasing and removing the container fastenings. As only one man-basket was available, the basket was transported between the two cranes as required by a road tug.

Once bay 14 was empty, Anton and the OS helped to discharge bay 10 followed by bay 6. At 2300, the OS was relieved by an AB. The discharge of the uppermost tier in bay 6 was almost complete and the man-basket was being transported from the aft crane to the forward crane. Anton and the other AB agreed that Anton would go in the man-basket and clear the twistlocks from the top of the containers in bay 6 while the AB opened the hatch covers to enable the containers in the hold to be discharged. By now, the air temperature had fallen to about -1°C.

The AB was opening the hatch cover control box in bay 10 when Anton walked passed him on the starboard walkway, heading towards the stern. At about the same time, the only container remaining on the upper tier in bay 6, which weighed 8.3t and was the outer container on the port side of the stack, was lifted off the vessel. Moments later, at about 2309, the AB heard a scream. He immediately looked over the vessel's side and saw Anton's safety helmet on the quay below the pilot gate sited in the guardrails adjacent to bay 17 (**Figures 2 and 4**). The AB quickly ran aft to the cargo room where he found and alerted the second officer and the bosun. He then went to the aft deck to slacken the stern lines.

Anton's scream was also heard by the driver of the road tug being used to transport the man-basket, which had just stopped adjacent to bay 6. He saw Anton's safety helmet still oscillating on the quay below the pilot gate and immediately informed the terminal supervisor via hand-held radio that a crewman had possibly fallen overboard. The driver then approached the quay edge adjacent to the pilot gate, which was open, and on looking down saw Anton in the water between the ship and the quay. Anton was on the surface and was moving his arms. The driver estimated that the gap between the vessel and the quay was about 50cm. However, the vessel soon moved closer to the quay and the driver lost sight of Anton.

The driver was joined on the quay by the second officer, who stepped down from the pilot gate, and the two men desperately tried to push *Dette G* away from the quay. When the vessel eventually moved, Anton was no longer visible.

At 2318, the terminal supervisor alerted the emergency services and, from 2338 onwards, fire, ambulance and police vehicles started to arrive. A top-lift truck used for stacking containers was used to keep *Dette G* off the quay while a search was conducted. At 0120 on 17 January, the search was suspended until daylight. At 1015, *Dette G* was moved 120m aft along the berth, and Anton's body was found and recovered from the dock by police divers a short while later.

The postmortem examination identified that Anton had suffered a fractured skull and concluded that the cause of his death was drowning and fatal head injury due to a fall. A screening of Anton's

body fluids identified that “*apart from evidence for previous Salicylate¹ use this is a negative toxicological screen.*”

Pilot gate

At the time of the accident, *Dette G* was on an even keel with a mean draught of 5.35m. The vessel's main deck was 1.3m above the quay and 0.8m above the top of a quayside bollard positioned directly beneath the gate (the photograph shown in **Figure 4** was taken after the vessel had been moved). The paint on the bollard was in good condition. A break in the hull's rubbing strake was sited below the pilot gate. Although the accommodation ladder was the only authorised means of access to and from the vessel when moored alongside, the pilot gate was occasionally used by the vessel's crew.

Crew

Dette G's crew comprised the master, chief officer, second officer, chief engineer, motorman, cook,

three ABs and an OS. The crew were Russian apart from the chief engineer, the motorman and Anton, who were Ukrainian. The level of manning met the requirements of the vessel's 'Minimum Safe Manning Certificate'.

Anton was 27 years old and he had joined *Dette G* on 9 September 2011 as an OS. He was enthusiastic and was considered to be very intelligent by his crew mates. Anton was promoted to AB on 22 December 2011. Onboard records indicate that Anton had rested for a minimum of 15 hours each day since 1 January 2012. Anton kept the 8 to 12 watches both when the vessel was at sea and moored alongside. When in port, he was also on standby to assist the rating on watch between 12 and 4 if required.

On the evening of 16 January 2012, Anton was wearing a high visibility weatherproof jacket, weatherproof trousers, gloves, a safety helmet, and boots. The tread on the soles of Anton's boots was in good condition.

¹ Salicylate is found in Aspirin, and a number of non-prescription medications.



Figure 1: *Dette G* alongside Hull container terminal

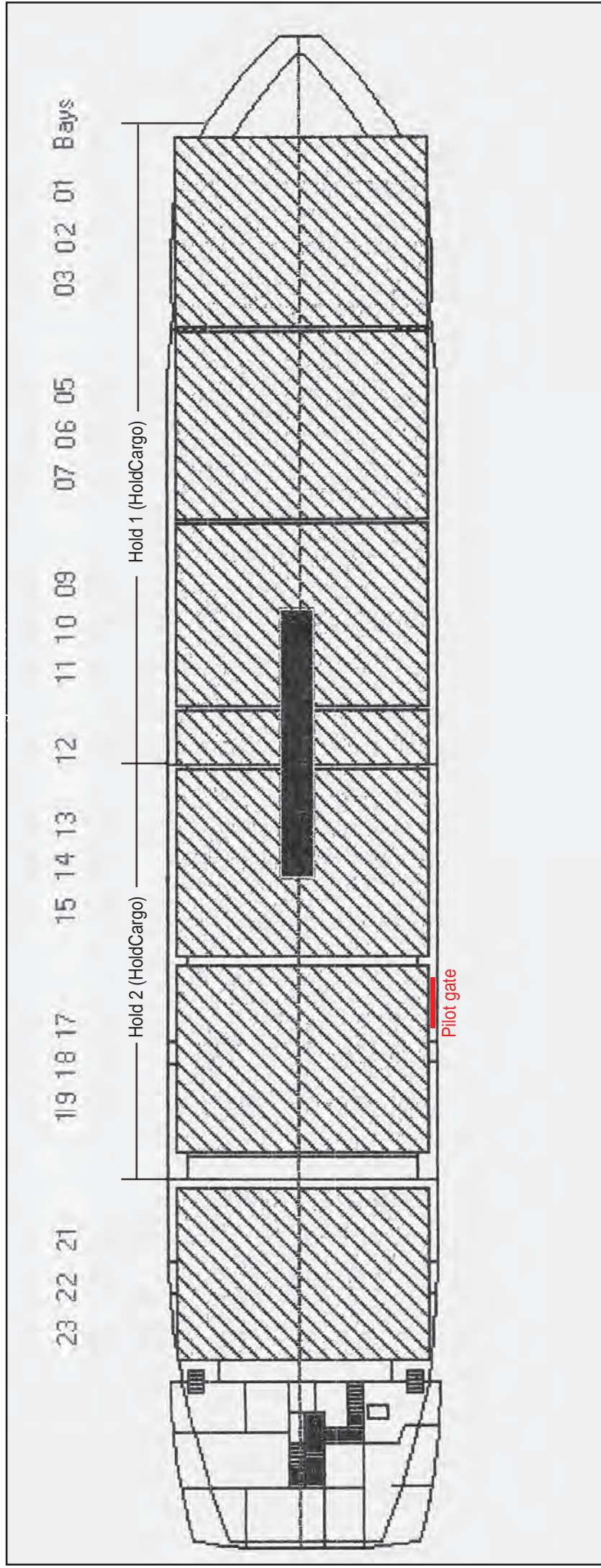


Figure 2: Hold and container bay configuration



Figure 3: Man-basket

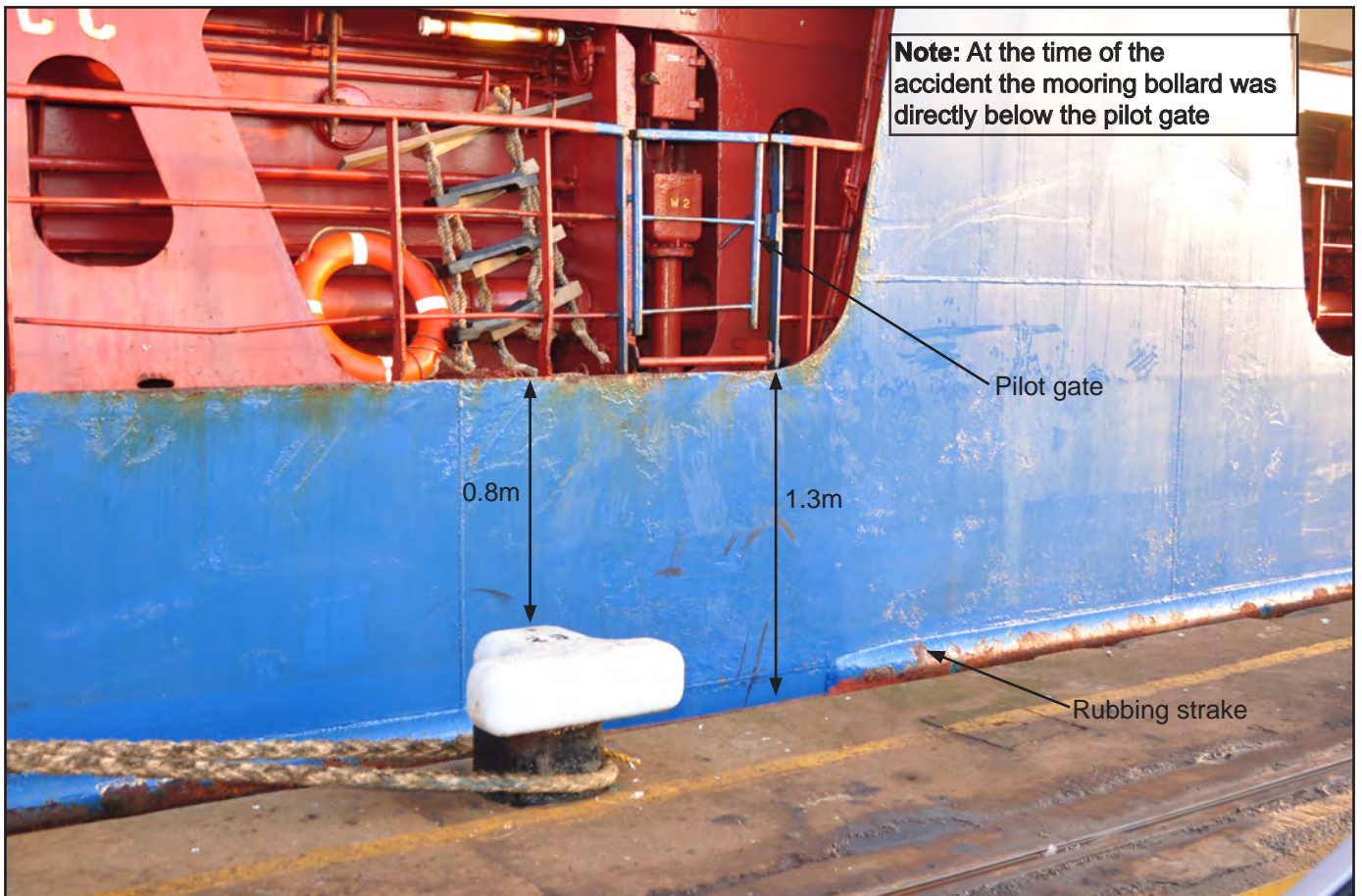


Figure 4: Pilot gate

Cargo operations

Dette G was on a time charter and was operating a liner service between Gdynia, Poland and Hull, UK. In Gdynia, the containers were secured and un-secured by shore stevedores. In Hull, the ship provided crew to complete this work when one shore crane was used. The onboard risk assessment for cargo operations identified two hazards: *risk of falling when working aloft*, and *risk of health damage by cargo, crane etc* [sic]. The control measures specified in the assessment were *Full PPE Incl. U safety harness. Instruction of crew* [sic].

When the vessel's containers were loaded or discharged using two cranes, PD Ports provided stevedores to secure and un-secure the containers being lifted by one of the cranes. PD Ports' safe systems of work required its stevedores to always use ships' gangways to embark and disembark from vessels moored alongside. The stevedores were also made aware of the possibility of vessels moving and listing during cargo operations, and they were briefed during toolbox talks at the start of each shift to report any unsafe practices or safety concerns.

In March 2010, following reports from shore stevedores at PD Ports, *Dette G's* agent wrote to the vessel's master advising that his crew must walk along the designated walkway until clear of the terminal area, and that they must also wear high visibility clothing. One month later, the agent also wrote to the master of *Anna G*, a container ship also managed by Gerdes Bereederungs und Verwalungs GmbH & Co.KG advising, inter alia, that his crew must wear safety harnesses when working on top of containers. During the discharge of containers on 16 January 2012, a stevedore saw at least one of *Dette G's* crew use the pilot gate as a means of access.

ANALYSIS

The fall

As nobody saw Anton fall into the water, the exact circumstances of his death cannot be determined. However, as he was on his way to the quay to await the arrival of the man-basket, and his safety helmet was found below the pilot gate, which was open, there is very little doubt that Anton fell when

stepping from the ship to the quay via the pilot gate. Several factors could have caused Anton to slip or lose his balance, including:

- The 0.8m drop from the deck to the top of the bollard.
- The painted surface of the bollard below the pilot gate was likely to have been slippery, particularly in the freezing temperature.
- The vessel's movement following the discharge of the last container remaining on the upper tier of bay 6.

In view of Anton's hours of rest recorded during January 2012, and the results of the toxicology tests following his death, his actions do not appear to have been influenced by fatigue, or by drugs or alcohol.

As Anton fell between the ship and the quay, it is clear that *Dette G's* movement during cargo operations had caused the gap between the ship and the quay to widen to at least 50cm, particularly in the vicinity of the pilot gate where there was a break in the rubbing strake (**Figure 4**). Furthermore, the vessel's continued movement, which brought her back towards the quay, prevented Anton's immediate recovery from the water.

The use of the pilot gate

Anton opted to get to the shore via the pilot gate despite a correctly rigged and suitable gangway being available. The vessel's crew were known to use the gate when alongside and one of the crew was seen using the gate during the evening. Therefore, it is possible that Anton had used the pilot gate before his accident.

Anton had been working between bays 6 and 14. Therefore, to access the man-basket, he would have had to walk aft along the main deck, climb a ladder up to the accommodation deck, descend the gangway, and then walk along the quay to the crane. Using the pilot gate, which was situated on the main deck close to the bays being discharged, was therefore a significant shortcut.

Moreover, as the vessel had a mean draught of 6m when the discharge of the containers was commenced, the difference in height between the deck and the top of the quayside bollard below the pilot gate would have been about 15cm. Given that the vessel was very close to the quay, Anton would have been able to step through the pilot gate and onto the bollard without difficulty. In such

circumstances, the use of the pilot gate would not only have saved time, it would also have been easier to use than the gangway and might have appeared to be risk-free. The temptation to use the pilot gate in preference to the gangway was therefore considerable.

However, as the discharge of the cargo progressed and *Dette G's* freeboard increased, the use of the pilot gate as a means of access became more dangerous. Notably, the height of the deck above the bollard increased to 80cm as the containers were discharged, and the vessel would have started to rock from side to side and to oscillate towards and away from the quay as the containers were lifted.

Means of access

Dette G's accommodation ladder (**Figure 1**) was properly secured and was fitted with a safety net. The ladder was rigged to meet the requirements of The Merchant Shipping (Means of Access) Regulations 1988 and the Code of Safe Working Practices for Merchant Seamen (CoSWP), which apply to all merchant vessels in UK ports. The pilot gate did not and, notwithstanding the ergonomic advantages it afforded to the crew working on deck, it should not have been used as a means of access alongside. Although PD Ports had recognised the risks associated with the use of unauthorised means of access combined with vessel movement during cargo operations, the vessel's manager and crew clearly had not. The onboard risk assessment covering cargo operations was scant, and it is not surprising that a complacent attitude towards the use of the pilot gate had developed among at least some of the crew.

CONCLUSIONS

- Anton almost certainly fell into the water when stepping from the ship to the quay, via the pilot gate.
- Anton fell because he lost his balance or slipped.
- The vessel's movement towards the quay following Anton's fall prevented his immediate recovery from the water.
- The use of the pilot gate instead of the gangway was a significant shortcut that might have appeared to be free from risk.

- The risks associated with the use of the pilot gate increased in tandem with the vessel's increase in freeboard.
- The pilot gate was not an authorised means of access and should not have been used as such.
- Some of the crew had probably developed a complacent attitude towards the use of the pilot gate when the vessel was alongside.

ACTION TAKEN

Actions taken by other organisations

Gerdes Bereederungs und Verwaltungs GmbH & Co.KG has:

- Issued a circular to all its vessels emphasising that crew must only use the gangway provided as a means of access on and off the vessel.
- Instructed its masters that pilot gates must remain closed other than when embarking or disembarking a pilot.
- Provided additional working lifejackets for use by crew working on deck.
- Advised its masters to conduct further training in man overboard.

PD Ports has:

Issued a safety alert which has been circulated by Port Skills and Safety, the ports industry's organisation for health, safety, skills and standards. The alert details the circumstances of the accident and reiterates that only safe and properly slung means of access to vessels should be used, and that shore workers must report any unsafe act or near misses involving vessels' crews.

ABP Humber has:

Included this accident as a case study in its toolbox talks. The brief provided advises that only a ship's or a shore gangway is to be used, and emphasises:

NEVER step or jump between ship and quay

Recommendations

In view of the actions taken, no recommendations have been made on this occasion.

SHIP PARTICULARS

Vessel's name	<i>Dette G</i>
Flag	Antigua & Barbuda
Classification society	Germanischer Lloyd
IMO number	9122241
Type	Container Ship (fully cellular)
Registered owner	Dette G
Manager	Gerdes Bereederungs und Verwaltungen GmbH & Co.KG
Construction	Steel
Length overall	101.13m
Registered length	96m
Gross tonnage	3999
Minimum safe manning	10
Authorised cargo	Containers

VOYAGE PARTICULARS

Port of departure	Gdynia, Poland
Port of arrival	Hull, United Kingdom
Type of voyage	International
Cargo information	Containers
Manning	10

MARINE CASUALTY INFORMATION

Date and time	16 January 2012 at 2309 (UTC)
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Queen Elizabeth Dock, Hull
Place on board	Pilot gate
Injuries/fatalities	One fatality
Damage/environmental impact	Not applicable
Ship operation	Cargo discharge
Voyage segment	Not applicable
External & internal environment	Air temperature: -1°C Water temperature: 3°C Wind: light airs Weather: clear
Persons on board	10