

MA2013-7

**MARINE ACCIDENT
INVESTIGATION REPORT**

July 26, 2013



The objective of the investigation conducted by the Japan Transport Safety Board in accordance with the Act for Establishment of the Japan Transport Safety Board is to determine the causes of an accident and damage incidental to such an accident, thereby preventing future accidents and reducing damage. It is not the purpose of the investigation to apportion blame or liability.

Norihiro Goto
Chairman,
Japan Transport Safety Board

Note:

This report is a translation of the Japanese original investigation report. The text in Japanese shall prevail in the interpretation of the report.

MARINE ACCIDENT INVESTIGATION REPORT

July 4, 2013

Adopted by the Japan Transport Safety Board

Chairman Norihiro Goto

Member Tetsuo Yokoyama

Member Kuniaki Shoji

Member Toshiyuki Ishikawa

Member Mina Nemoto

Accident Type	Fatality of a crew member
Date and Time	About 01:05, June 7, 2012 (local time, UTC+9 hours)
Location	Fukuyama Port About 132° true, 2.6 nautical miles from JFE Steel Fukuyama Port Shingai leading light (front light), Fukuyama City, Hiroshima Prefecture (approximately 34° 25.8' N, 133° 26.8' E)
Process and Progress of the Investigation	<p>The Japan Transport Safety Board appointed an investigator-in-charge and a marine accident investigator to investigate this accident on June 7, 2012.</p> <p>Comments on the draft report were invited from parties relevant to the cause of the accident.</p> <p>Comments on the draft report were invited from the flag State of JUNIPER PIA.</p>
Factual Information	<p>Vessel type and name General cargo ship JUNIPER PIA</p> <p>Gross tonnage 4,382 tons</p> <p>IMO number 9016179</p> <p>Port of registry Jeju (Republic of Korea)</p> <p>Owner PIA SHIPPING CO., LTD. (Republic of Korea)</p> <p>Management company SEOK CHANG MARITIME CO., LTD. (Republic of Korea)</p> <p>Classification society KOREAN REGISTER OF SHIPPING (Republic of Korea)</p> <p>Lr × B × D 100.04 m × 17.60 m × 8.70 m</p> <p>Hull material Steel</p> <p>Engine, Output Diesel engine, 2,944 kw</p> <p>Date of launch June, 1991</p> <p>Cargo holds and hatch covers JUNIPER PIA (hereinafter referred to as “the Vessel”) had two cargo holds consisting of No.1 cargo hold and No. 2 cargo hold, numbered in order from the bow side, which were about 8.5 m deep from the hatch coaming. The hatch covers of the cargo holds were a</p>

pontoon type, and each cargo hold had 12 hatch covers. Removed hatch covers were placed in pairs on top of each other on both sides of the upper deck.



Photo 1: Overview of the Vessel



forward
↕
aft

Photo 2: No. 2 Cargo Hold and Removed Hatch Covers

Crew Information

Master (Nationality of the Republic of Korea), Male, 65 years old
First Class Deck Officer Certificate (issued by the Republic of Korea)

Date of Issue: October 31, 2011

(valid until October 31, 2016)

Second officer (Nationality of the Republic of Korea), Male, 21 years old

After graduating from a maritime high school in the Republic of Korea, he boarded the Vessel and other cargo ships of the same type with the Vessel for about one year as an apprentice officer, about two years as a third officer and about one month as a second officer.

According to the master, he had no health problem when the accident occurred.

Injuries to Persons	Death: one person (the second officer)
Damage to Vessel	None
Events Leading to the Accident	<p>On June 4, the Vessel, boarded by the master and 14 other crew members, departed in ballast from Incheon Port, Republic of Korea for Fukuyama Port for the purpose of loading about 5,000 tons of steel coils. After letting go anchor at Fukuyama Port C-1 anchorage at about 18:05, June 6, the Vessel removed the hatch covers of the cargo holds while at anchor.</p> <p>At about 00:45, June 7, the master instructed the crew to stand by at their respective stations for entering port, when the second officer came on the bridge.</p> <p>Heaving up anchor at about 00:55, the Vessel started proceeding to JFE Steel No. 2 Export Berth in Fukuyama Port (hereinafter referred to as “No. 2 Berth”).</p> <p>A few minutes before the accident, the second officer reported to the master that he would stand by at the aft station from that time on, and went out of the bridge.</p> <p>Immediately before the accident, the boatswain and an ordinary seaman saw the second officer pass in front of them and enter the pump room on the stern side of No.2 cargo hold when they were sitting facing toward the stern on hatch covers near a starboard entrance to the accommodation space and were waiting for the chief officer to stand by at the forward station with them.</p> <p>Afterward, hearing a scream at about 01:05, the boatswain and the ordinary seaman thought that something had happened to the second officer although No. 2 cargo hold was too dark for them to know what had happened inside, and informed other crew members of it. After the inside of No.2 cargo hold was lit, the second officer was found lying and bleeding at the starboard aft end of No. 2 cargo hold.</p>



Photo 3: Entrance to Accommodation Space and Entrance to Pump Room

Hearing loud voices outside the bridge, the master instructed the third officer to check what had happened. Upon receiving a report that the second officer had fallen into No. 2 cargo hold, he sent an urgency call (Pan-pan) on the international VHF radio telephone, and notified the Japan Coast Guard of the occurrence of the accident.

After the Vessel berthed at No. 2 Berth at about 01:55, the second officer was taken to a hospital by ambulance, where he was confirmed dead. According to the autopsy, the cause of his death was comminuted fracture of the skull, skull base fracture, traumatic cerebral hemorrhage and hemorrhagic shock.

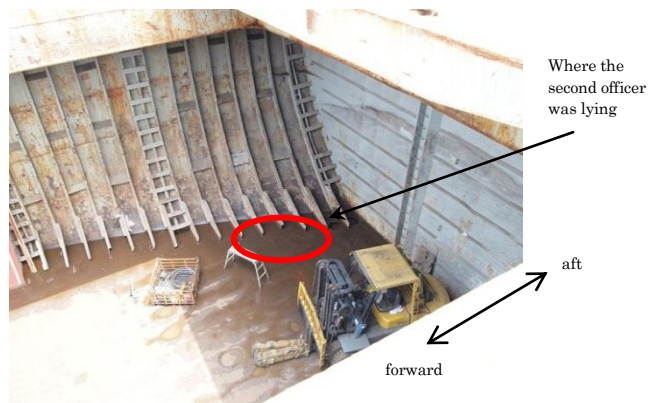


Photo 4: Accident Site
(The starboard aft end of No. 2 cargo hold)

Weather and Sea Conditions	Weather: clear, Wind direction: North, Wind force: 3, Wave direction: North, Sea state: 3
Other Information	<p>According to the master, the Vessel was neither rolling nor pitching while underway when the accident occurred.</p> <p>In the pump room which the second officer entered, there was</p>

a hydraulic pump to drive a mooring winch placed on the poop deck as well as a switch for starting the pump. The hydraulic pump was usually started by an able seaman or an oiler.

In addition, according to the master, there was no other work to be done inside the pump room than the starting of the hydraulic pump.



Photo 5: Inside of Pump Room (Seen from the port side)

The width of the passageway between the pump room and No. 2 cargo hold was about 125 cm, and the height of the hatch coaming was about 100 cm. The height of the two hatch covers placed on top of each other on the upper deck was about 95 cm.

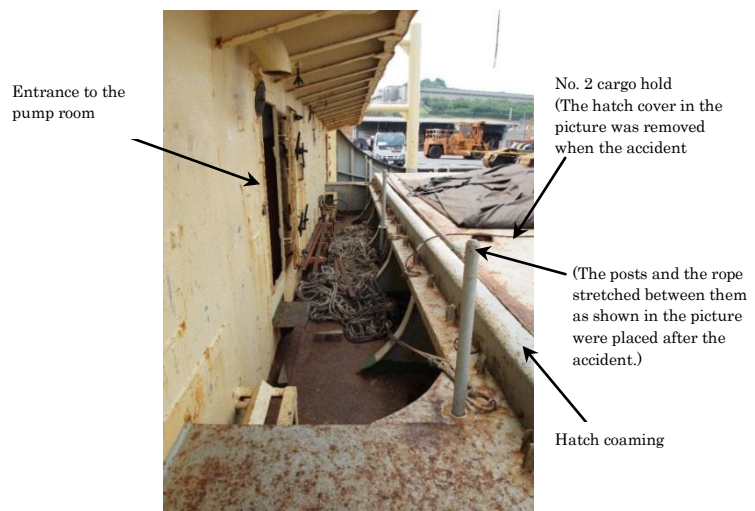


Photo 6: Passageway and Hatch Coaming

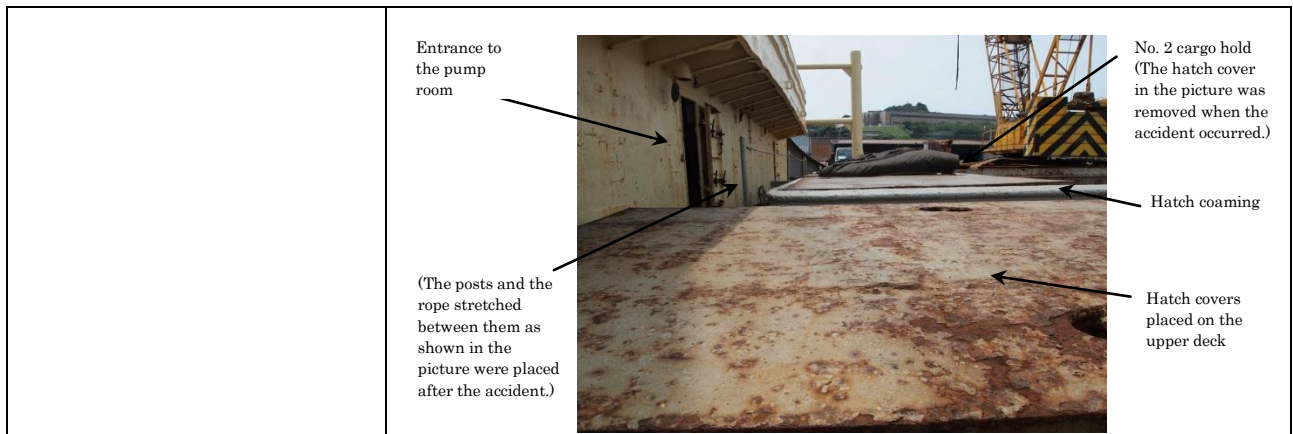


Photo 7: Hatch Coaming and Hatch Covers on the Upper Deck

The Vessel was requested by the shipping agent to remove the hatch covers before berthing, if possible. The reason for removing the hatch covers before berthing was that loading or unloading works could be started earlier following berthing, which as a result would shorten the duration at berth, and improve the operating efficiency. However, when it was considered dangerous for the Vessel to remove the hatch covers before berthing, it was also possible to remove the hatch covers after berthing.

It was the Vessel’s practice to remove the hatch covers before berthing on receiving the same request when loading or unloading cargo at a JFE Steel berth in Fukuyama Port. The Vessel had never been requested to remove the hatch covers before berthing at ports other than Fukuyama Port. It took the Vessel about one hour to remove all of the hatch covers.

According to the master, the second officer had the experience of calling at Fukuyama Port about seven times as a crew member on board the Vessel.

<p>Analysis</p> <p>Involvement of the Crew</p> <p>Involvement of the Ship Structure and the Engine</p> <p>Involvement of the Weather and Sea Conditions</p> <p>Analysis of the Findings</p>	<p>Unknown</p> <p>Yes</p> <p>None</p> <p>(1) The cause of the death of the second officer was comminuted fracture of the skull, skull base fracture, traumatic cerebral hemorrhage and hemorrhagic shock.</p> <p>(2) It is probable that when the boatswain and the ordinary seaman</p>
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	<p>saw the second officer enter the pump room on the stern side of No.2 cargo hold when they were sitting facing toward the stern on hatch covers near a starboard entrance to the accommodation space, while the Vessel was proceeding to No. 2 Berth in Fukuyama Port with the hatch covers of the cargo holds removed.</p> <p>(3) It is probable that hearing a scream at about 01:05, the boatswain and the ordinary seaman thought that something had happened to the second officer and informed other crew members of it, and the second officer was found by them lying at the starboard aft end of No. 2 cargo hold.</p> <p>(4) It is probable that the second officer died by falling from the starboard aft corner of the opening of No. 2 cargo hold after he went out of the pump room because the hatch covers of the cargo holds were removed, according to the findings that he was found to enter the pump room by the boatswain and the ordinary seaman. However, it was not possible to determine how he fell because there was no witness.</p> <p>(5) It was not possible to determine the reason why the second officer entered the pump room because he died.</p> <p>(6) It is somewhat likely that the accident could have been avoided if the following measures had been taken by the Vessel.</p> <ul style="list-style-type: none"> ▪ Set up a safety barrier such as a fall protection fence while hatch covers are removed. ▪ Ensure that the crew move safely on upper deck passageways. ▪ Give the crew a warning when hatch covers are removed before berthing. ▪ Light up the cargo holds to the extent that doing so will not interfere with safe navigation while sailing at night with hatch covers removed.
Probable Causes	<p>It is probable that the accident occurred when the second officer fell into No. 2 cargo hold because the hatch covers of the cargo holds were removed while the Vessel was proceeding to No. 2 Berth in Fukuyama Port at night.</p>
Actions Taken	<p>After the accident, a fall protection fence (three posts and a rope stretched between them) was set up on the Vessel on the stern side of the hatch coaming of No. 2 cargo hold (see Photo 3, Photo 6 and Photo 7). It was also decided that hatch covers should not be removed before berthing.</p>