

MA2016-10

**MARINE ACCIDENT
INVESTIGATION REPORT**

October 27, 2016



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.

Kazuhiro Nakahashi
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

October 6, 2016

Adopted by the Japan Transport Safety Board

Chairman Kazuhiro Nakahashi


Member Kuniaki Shoji

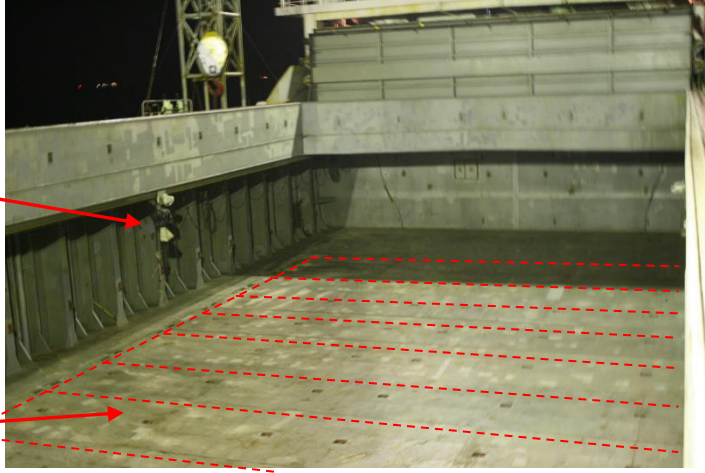

Member Satoshi Kosuda

Member Toshiyuki Ishikawa

Member Mina Nemoto

Accident type	Fatality of a crew member
Date and time	Around 22:15 on October 14, 2015 (local time, UTC+9 hours)
Location	Soma Port Berth 5, Fukushima Prefecture On a true bearing of approximately 251° and at a distance of 0.7 nautical miles (M) from North Breakwater Lighthouse, Soma Port (approximately 37° 51.3' N, 140° 57.2' E)
Summary of the Accident	<p>At around 22:15 on October 14, 2015, while the cargo ship ASIAN INFINITY was moored at Soma Port Berth 5 for cleaning work inside the cargo hold with the master and 16 other crew members (all nationals of the Republic of the Philippines) on board, the third officer fell from the 2nd deck of the No.2 cargo hold into the lower cargo hold.</p> <p>The third officer was taken to hospital, where he was pronounced dead.</p>
Process and Progress of the Investigation	<p>(1) Set up of the Investigation The Japan Transport Safety Board appointed an investigator-in-charge and two other marine accident investigators to investigate this accident on October 15, 2015.</p> <p>(2) Collection of Evidence October 16 and 17, November 4, 5, 17 and 26: On-site investigations and interviews</p> <p>(3) Comments from Parties Relevant to the Cause Comments on the draft report were invited from parties relevant to the cause of accident.</p> <p>(4) Comments from the Flag State and the substantially interested State Comments on the draft report were invited from the Flag State and the substantially interested State of the ASIAN INFINITY.</p>

<p>Factual Information</p> <p>Vessel type and name</p> <p>Gross tonnage</p> <p>Vessel number</p> <p>Owner, etc.</p> <p>Management company</p> <p>L×B×D, Hull material</p> <p>Engine, Output</p> <p>Date of launch, etc.</p>	<p>Cargo ship ASIAN INFINITY (registered in the Republic of Panama)</p> <p>5,577 tonnes</p> <p>9409699 (IMO No.)</p> <p>Emerald Green Maritime, S.A.</p> <p>Unitra Maritime Co., Ltd., (hereinafter referred to as “Company A”)</p> <p>104.37m x 17.00m x 11.50m, steel</p> <p>Diesel engine, 2,647kW</p> <p>May 29, 2009</p> <p>(See Photo 1)</p>  <p>Photo 1 ASIAN INFINITY</p>
<p>Information on the cargo hold, etc.</p>	<p>ASIAN INFINITY (hereinafter referred to as “the vessel”) had two cargo holds numbered 1 and 2 in order from the bow. Each cargo hold had pontoon hatch covers (hereinafter referred to as “hatch covers”) installed at the 2nd deck opening, enabling each cargo hold to be divided into upper and lower parts.</p> <p>Twelve hatch covers were laid inside the No.2 cargo hold, and when loading with bulk cargoes, a chain block was used to raise the hatch covers, move them toward the bow and stern and fasten them there.</p> <p>(See Photos 2 and 3)</p>

	 <p>Chain block used to move hatch covers</p> <p>Hatch covers</p> <p>Photo 2 No.2 cargo hold with hatch covers in position</p>  <p>Hatch covers</p> <p>Photo 3 No.2 cargo hold with hatch covers stacked</p>
Crew Information	<p>Master (Nationality: Republic of the Philippines), male, 64 years old Endorsement attesting the recognition of certificate under STCW regulation I/10 Master (issued by the Republic of Panama) Date of issue: April 1, 2014 (valid until December 31, 2016) Third Officer (Nationality: Republic of the Philippines), male, 46 years old Endorsement attesting the recognition of certificate under STCW regulation I/10 Second Officer (issued by the Republic of Panama) Date of issue: July 10, 2015 (valid until December 31, 2016)</p>
Injuries to Persons	Fatality One person (third officer)
Damage to Vessel (or Other Facilities)	None
Weather and Sea Conditions	Weather: Weather – clear, Wind direction – west, Wind force – 2 Sea conditions: Sea – calm, Tide – final phase of ebb

<p>Events Leading to the Accident</p>	<p>(1) Movements of the vessel</p> <p>The vessel moored at Soma Port Berth 5 at around 07:19 on October 13, 2015, the work of unloading wooden pellets was carried out between around 11:00 on the 13th and around 18:00 on the 14th, and cleaning work in the No.1 cargo hold was started at around 18:00, since the vessel was due to load steel coils and other steel materials at the next port of call.</p> <p>Cleaning work in the No.1 cargo hold of the vessel finished at around 21:30, after which the chief officer took command on the upper deck, and four crew members (the second officer, the third officer, the boatswain and an able seaman) started cleaning work in the upper cargo hold inside the No.2 cargo hold with the hatch covers in position.</p> <p>When the cleaning work on the 2nd deck part inside the No.2 cargo hold of the vessel was nearly finished, at around 22:10 the third officer and able seaman used the chain block to remove the third hatch cover from the stern (hereinafter referred to as “this hatch cover”; this hatch cover was 2.325m long and 12.970m wide, and it weighed 6,965kg) to prepare for cleaning work inside the lower cargo hold, then continued with the cleaning work.</p> <p>At around 22:15, the second officer heard a shout and the sound of something hitting the inner bottom plating of the lower cargo hold*¹, and on shining a flashlight to confirm the lower cargo hold from the starboard side of the opening formed by removing this hatch cover (hereinafter referred to as “this opening”), discovered the third officer lying prone on the inner bottom plating on the port side.</p> <p>The second officer called out loudly to inform the chief officer on the upper deck that the third officer had fallen, and then started rescue and other response action together with the master, who had been contacted by the chief officer.</p> <p>At around 22:23, the marine supervisor*², who had been resting on board, contacted the fire station, and at around 22:28 an ambulance arrived.</p> <p>The third officer was taken to the hospital by ambulance at around 23:45, but was pronounced dead at around 00:04 on the 15th, the cause of death being a head injury and loss of blood accompanying a fracture of the left femur.</p> <p>(See Attached Figure. 1 map of location of the accident)</p> <p>(2) Positions of crew members at the time of this accident</p> <p>The master was resting in his cabin.</p> <p>The chief officer was commanding cleaning work on the port</p>
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*¹ “Inner bottom plating” is plating comprising the upper layer of a double bottom structure.

*² “Marine supervisor” is a person who has been asked to be dispatched from the cargo owner or similar to the operator to ensure the smooth progression of cargo handling.

side of the upper deck.

The second officer and the able seaman were engaged in removing dirt from the upper cargo hold by using high-pressure cleaning equipment to spray clean water near the starboard bow side of this opening.

The third officer and the boatswain were both engaged in using water mop implements (squeegees) to mop away the water remainder, the former on the 2nd deck near the port side of this opening and the latter near the ladder on the port side, respectively.

(See Figure. 1)

The third officer and the boatswain were not visible to the chief officer.

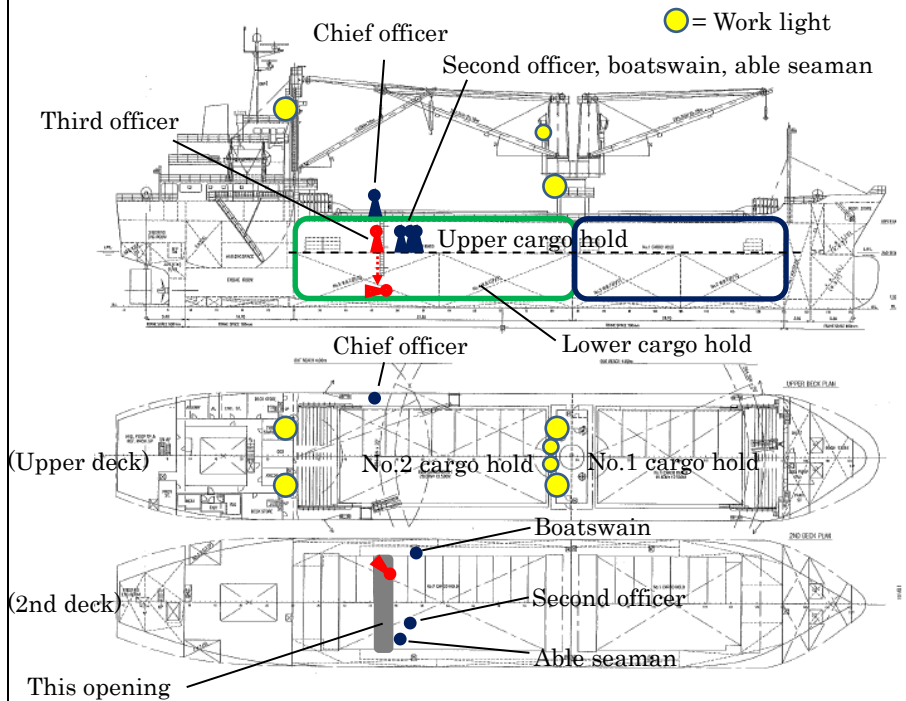


Figure.1 Positions of crew members (general arrangement)

(3) Situation at the time of the accident

Although the fallen helmet and squeegee were found in the location where the third officer fell, no crew member witnessed the circumstances of the fall.

Other Matters

- (1) The third officer have taken the rest of six hours before the cleaning work, the third officer seemed to be in good health.
- (2) The four crew members (second officer, third officer, boatswain and able seaman) had put on helmets, work clothes, safety shoes and other gear before starting cleaning work in the cargo hold.
- (3) By switching on work lights installed on the upper deck and elsewhere, the inside of the upper cargo hold could be made bright enough to prevent any obstruction to cleaning work at

	<p>night, and it was possible to see this opening.</p> <p>(4) At the time of this accident, the vessel was not subject to pitching or rolling due to waves or similar.</p> <p>(5) The height from the inner bottom plating of the lower cargo hold to the inside of the 2nd deck part of the No.2 cargo hold was about 6m.</p> <p>(6) No fence or similar structure designed to prevent falls near this opening had been erected on the vessel at the time of this accident.</p> <p>(7) Company A had produced a Safety Management Manual based on the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code), but had not specified any procedure for cleaning work inside the cargo hold.</p>
<p>Analysis</p> <p>Involvement of crew members</p> <p>Involvement of vessel, engine, etc.</p> <p>Involvement of weather and sea conditions</p> <p>Analysis of the findings</p>	<p>Applicable</p> <p>Not Applicable</p> <p>Not Applicable</p> <p>(1) The cause of death of the third officer was loss of blood accompanying a head injury and fracture of the left femur.</p> <p>(2) It is probable that, while the vessel was moored at Soma Port, the chief officer took command of cleaning work on the port side of the upper deck, switched on work lights installed on the upper deck and elsewhere, then engaged in cleaning work inside the cargo hold in preparation for loading at the next port of call.</p> <p>(3) It is probable that, when the third officer and able seaman had nearly finished cleaning work on the 2nd deck part inside the No.2 cargo hold, they removed this hatch cover at around 22:10 to prepare for cleaning work inside the lower cargo hold, but did not take measures to prevent a fall.</p> <p>(4) It is probable that the third officer was witnessed carrying out mopping work on the port side of this opening, which later became a blind spot from the chief officer's perspective.</p> <p>(5) It is probable that, at around 22:15, the second officer heard a shout and the sound of something hitting the inner bottom plating of the lower cargo hold, thought that someone had fallen inside the lower cargo hold, and shone a flashlight from this opening to check, whereupon he discovered the third officer lying prone on the inner bottom plating immediately below the port side of this opening.</p> <p>(6) It is probable that a helmet and squeegee were lying near the third officer as he lay prone.</p>

	<p>(7) At the time of this accident, work lights installed on the upper deck and elsewhere on the vessel were switched on, and it was bright enough to prevent any obstruction to cleaning work inside the upper cargo hold.</p> <p>(8) It is probable that, at the time of this accident, the vessel was not subject to pitching or rolling due to waves or similar.</p> <p>(9) Therefore, it is probable that the third officer fell from this opening inside the lower cargo hold because he was engaged in cleaning work with this hatch cover removed while cleaning work was being carried out inside the cargo hold in preparation for loading, but that because there were no witnesses, it was not possible to clarify the circumstances of the fall.</p> <p>(10) It is somewhat likely that, because Company A had not specified any procedure for cleaning work inside the cargo hold of this vessel in its Safety Management Manual, it had not taken any measures to prevent a fall.</p>
Probable Causes	<p>It is probable that this accident occurred when the third officer fell from this opening on the 2nd deck into the lower cargo hold, because, while the vessel was moored at Soma Port night, he was engaged in cleaning work with this hatch cover removed when cleaning work was being carried out inside the cargo hold in readiness for loading.</p>
Safety Actions	<p>1. Safety actions taken</p> <p>Company A notified an outline of this accident to vessels under its management, painted yellow lines around hatch covers so that they could be recognized as hazard areas (potential fall locations), and made the following matters obligatory.</p> <p>(1) When engaged in cleaning work on the 2nd deck, the hatch covers must always be in position.</p> <p>(2) When working in potential fall locations, fences or similar must be erected.</p> <p>2. The following measures are possible to prevent recurrence of similar accidents</p> <p>(1) It is desirable that masters on board cargo ships in which hatch covers have been installed to divide cargo holds into upper and lower parts should erect fences or similar to prevent falls when hatch covers have been removed.</p> <p>(2) It is desirable that vessel management companies should thoroughly familiarize crews, for example by including statements in the Safety Management Manual or elsewhere highlighting the danger of falls when hatch covers are left open and referring to the erection of fences or similar.</p>

Attached Figure. 1 map of location of the accident

