MA2017-8

MARINE ACCIDENT
INVESTIGATION REPORT

August 31, 2017

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

August 3, 2017
Adopted by the Japan Transport Safety Board
Chairman Kazuhiro Nakahashi
Member Kuniaki Shoji
Member Satoshi Kosuda
Member Toshiyuki Ishikawa
Member Mina Nemoto

Accident type	Missing crew member
Date and time	Unknown (Between around 21:15 and 21:42 on May 21, 2016 (local time, UTC+9 hours))
Location	Unknown (Off the south of Cape Ashizuri, Tosashimizu City, Kochi Prefecture (approximately 32°40.5'N, 132°58.5'E to 32°41.9'N, 133°04.3'E))
Summary of the Accident	While chemical tanker FINE CHEMI was proceeding east toward Chiba Port, Chiba Prefecture, off the south of Cape Ashizuri, with a master and other 11 crew members onboard, the chief engineer went missing.
Process and Progress of the Investigation	The Japan Transport Safety Board appointed an investigator-in-charge and one other investigator to investigate this accident on May 22, 2016. May 25 and July 15, 2016: on-site investigation and interview Comments on the draft report were not invited from the party relevant to the cause of accident because the party is missing. Comments on the draft report were invited from the flag State of FINE CHEMI.
Factual Information	
Vessel type and name	Chemical tanker FINE CHEMI (registered in the Republic of Korea)
Gross tonnage	1,307 tons
IMO number	8909977
Owner	DONGNAM SHIPPING CO., LTD. (Company A)
Management company	EASTERN TANKER CO., LTD. (Company B)
Class	KOREAN REGISTER OF SHIPPING
L×B×D, Hull material	69.90m × 12.00m × 5.40m, Steel
Engine, Output	Diesel Engine, 1,250kW
Date of launch	October 1989 (See Photo 1)

Photo 1　FINE CHEMI

Structural Information

(1)　FINE CHEMI (hereinafter referred to as "the Vessel") had a forecastle and poop on the upper deck.

The poop was comprised of three levels: a navigation bridge deck, bridge deck, and poop deck. On the bridge deck and poop deck were crew rooms and other rooms (hereinafter referred to as "the accommodation space"). Around the accommodation space of the poop deck was a part that was exposed to rain and wind. The exposed part had a one-meter-high handrail and other fixtures.

There was an access opening to the engine room on the port aft side of the accommodation space on the poop deck. Stairs leading to the bridge deck and wheel house were installed on the starboard aft side.

A bulkhead light and work light on the handrail of the bridge deck were installed on the poop as lighting equipment; however, these lights were not on at the time of the accident, as the Vessel was underway.

(See Photo 2)

Photo 2　Port aft side of the Vessel

(2)　The engine room was located under the poop deck. The interior of the engine room was divided into two levels. In the center of the lower level were the main engine and a high ceiling rising to the upper level. On the upper level, built in a manner that surrounded the central part, there were an intercom　and other equipment and a stairway leading to an access opening to the

	accommodation space on the fore side, and a stairway leading to an access opening to the exposed part on the port aft side.
Crew Information	Master (Nationality: Republic of Korea), male, 53 years old First-grade maritime officer's certificate of competency (issued by the Republic of Korea) Date of issue: August 28, 2013 (valid until August 27, 2018) Chief engineer (Nationality: Republic of Korea), male, 60 years old Second-grade engineer's certificate of competency (issued by the Republic of Korea) Date of issue: March 25, 2016 (valid until September 6, 2020)
Injuries to Persons	One missing person (The chief engineer)
Damage to Vessel	None
Weather and Sea Conditions	Weather: Weather: Fair, Wind direction: North-northwest, Wind speed Approximately 3 m/s, Sea conditions: Wave height of approximately 1.0 meters, water temperature of approximately 22°C Current: Flowing east-southeast at approximately 2.0 to 2.5 knots Moonrise: Around 18:25 (Moon age: 13.8)
Events Leading to the Accident	The Vessel was proceeding east toward Chiba Port, Chiba Prefecture, off the south of Cape Ashizuri, with a master and 11 other crew members onboard (two with nationality of the Republic of Korea, two with nationality of the Republic of Indonesia, and seven with nationality of the Republic of the Union of Myanmar). The master, the third officer, and an able seaman were on bridge watch. Between around 19:30 and 19:45 on May 21, 2016, the third officer was asked by the chief engineer, who had come up to the bridge, to set up a call on a mobile phone. The third officer did so and then saw the chief engineer go out on the port wing, make a call on the mobile phone, and subsequently leave the bridge. Between around 20:00 and 20:15, the No. 1 oiler, who was on engineering watch, discovered an oil leak in the fuel oil purifier. He contacted the first engineer and oiler, who were on break, and the three began repairing the purifier. At around 20:45 and 21:05, the No. 1 oiler measured the main engine's exhaust temperature as instructed by the chief engineer. At around 21:15, the third officer received a telephone call from the chief engineer requesting him to lower the main engine's RPMs because the main engine's exhaust temperature was high. When the

	third officer informed the master of this request, the master told him that the main engine's RPMs were within the usable range. The third officer was instructed by the master to tell the chief engineer that there was no need to lower the RPMs, and the third officer communicated the master's instruction to the chief engineer. The No. 1 oiler saw the chief engineer making a telephone call in the engine room. The first engineer was asked by the chief engineer in the engine room if the work to repair the fuel oil purifier was proceeding well, after which the first engineer saw the chief engineer leave through the access opening to the exposed part on the port aft side. The No. 1 oiler went to the bridge, the chief officer's cabin, and other areas looking for the chief engineer to report the results of the main engine exhaust temperature measurements that he had been instructed to take by the chief engineer. However, the No. 1 oiler was unable to confirm whereabouts of the chief engineer. At around 21:23, the chief officer, who was in his cabin, began a search of the Vessel with all hands except those on watch on the bridge and engine room. However, because the search did not locate the chief engineer, the chief officer reported to the master the possibility that the chief engineer had fallen into the sea. At around 21:42, the master received the report and reduced speed, and at around 21:43, the master began a search of the area by reversing the Vessel's course and retracing her track. At around 21:54, the master reported that the chief engineer was missing to Japan Coast Guard (JCG), and subsequently contacted Company A and Company B. The master and the chief officer judged that the chief engineer was drifting to the east-southeast due to the effect of the current, and decided to search more in a direction off to the east-southeast than the location where the chief engineer was thought to have fallen into the sea. The Vessel continued searching until around 16:00 on May 23 but did not find the chief engineer, and subsequently headed to Chiba Port with the consent of JCG. The chief engineer was searched for by the Vessel as well as vessels and aircraft of JCG but was not found and became missing. (See Figure 1 Outline Map of the Course of the Accident Events)
Other Matters	(1) Information on the clothing the chief engineer At the time of the accident, the chief engineer was wearing a

short-sleeved polo shirt, pants, and slippers.

(2) Ordinary behavior of the chief engineer

The chief engineer used Korean when conversing with the master and chief officer and simple English when conversing with other crew members.

When returning from the engine room to his cabin in the accommodation space, the chief engineer left from the access opening leading to the exposed part on port aft side of the engine room, passed along the aft side of the poop deck, and used the stairway installed on the starboard aft side. When further proceeding from the bridge deck to the wheel house, the chief engineer used the stairway of the accommodation space.

(See Figure 1)

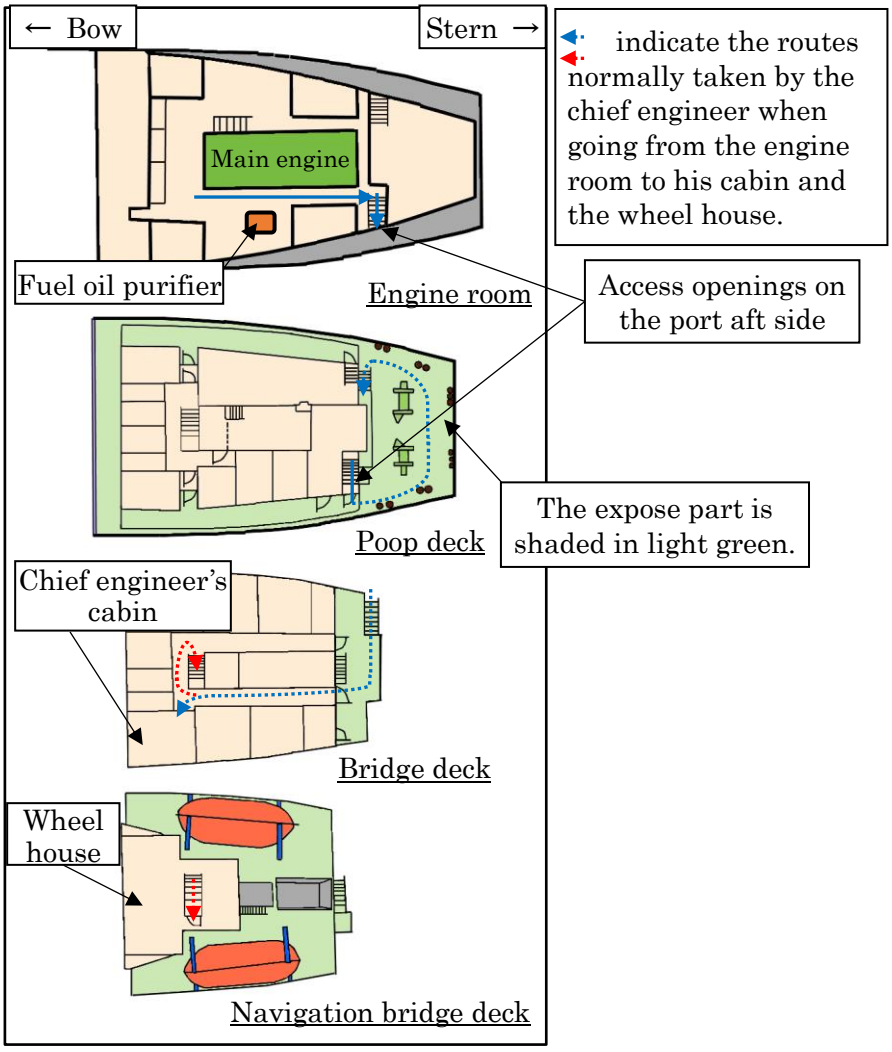

Figure 1 Route from the Engine Room to the Accommodation Space, etc.

(3) Watchkeeping arrangement in the engine room

The watchkeeping arrangement in the engine room was as

shown in Table 1.

Table 1　Watchkeeping Arrangement in the Engine Room

Watch Time (Hours)	Crew Member on Watch
00:00 to 04:00, 12:00 to 16:00	Oiler
04:00 to 08:00, 16:00 to 20:00	First engineer
08:00 to 12:00, 20:00 to 24:00	No.1 Oiler

It should be noted that the chief engineer was not made a watchkeeper so that he could respond to situations at any time.

(4) Information on the sea conditions

At the time of the accident, the sea was calm; however, there were occasional swells from the southwest that lifted the Vessel slightly from the stern.

(5) Information on the consumption of alcohol

At around 16:00 on May 21, 2016, the chief steward saw the chief engineer drink about half of a shochu (360-ml bottle, alcohol content of 17.5%) while chatting with the chief engineer in the galley.

At around 20:30, the chief officer was visited by the chief engineer while resting in his cabin. As the two were chatting while smoking, the chief officer detected the smell of alcohol on the chief engineer. When the chief officer asked the chief engineer if he had consumed alcohol, the chief engineer replied that he had because he had difficulty sleeping. However, the No. 1 oiler, who saw the chief engineer around the same time when he entered the engine room, did not notice anything out of the ordinary.

Analysis

Involvement of crew members: Unknown

Involvement of vessel, engine, etc.: Unknown

Involvement of weather and sea conditions: Unknown

Analysis of the findings

(1) Conditions of the chief engineer's falling into the sea

As the Vessel was proceeding east toward Chiba Port off the south of Cape Ashizuri, the chief engineer was seen leaving the engine room through the access opening to the Vessel's exposed part at around 21:15 on May 21, 2016. Given that it became clear that the chief engineer could not be found on the Vessel at around 21:42, it is probable that the chief engineer fell into the sea between these two times.

	It is somewhat likely that, when the chief engineer went out onto the exposed part, upon which are installed a handrail and other fixtures, at night, in an intoxicated condition, and wearing slippers, he lost his balance when the Vessel pitched and rolled in the swells and fell into the sea. However, because there were no witnesses and because the chief engineer is missing, it was not possible to determine the circumstances of the chief engineer's falling into the sea. (2) The influence of consumed alcohol Given that the chief engineer was consuming alcohol at around 16:00 and that he smelled of alcohol at around 20:30, it is probable that he was intoxicated, even though nothing about him appeared unusual when he entered the engine room around 20:30. However, it was not possible to determine the influence of consumed alcohol.
Probable Causes	It is probable that the accident occurred when, as the Vessel was proceeding east toward Chiba Port at night off the south of Ashizuri, the chief engineer fell into the sea after leaving the access opening that leads from the engine room to the exposed part of the Vessel.

Attached Figure 1　Outline Map of the Course of the Accident Events