



Report of Investigation
into the Fatal Accident onboard
“APOLLO LYNUX” in
PYONGTAEK, REPUBLIC OF
KOREA
on 4 March 2008



The Hong Kong Special Administrative Region
Marine Department
Marine Accident Investigation Section



Purpose of Investigation

This incident is investigated, and published in accordance with the IMO Code for the Investigation of Marine Casualties and Incidents promulgated under IMO Assembly Resolution A.849(20). The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department is to determine the circumstances and the causes of the incident with the aim of improving the safety of life at sea and avoiding similar incident in future.

The conclusions drawn in this report aim to identify the different factors contributing to the incident. They are not intended to apportion blame or liability towards any particular organization or individual except so far as necessary to achieve the said purpose.

The MAISSPB has no involvement in any prosecution or disciplinary action that may be taken by the Marine Department resulting from this incident.

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1. Summary

- 1.1 On 4 March 2008, while the vessel *APOLLO LYNUX* was berthed at Pyongtaek (平澤港), Republic of Korea, the crewmembers onboard was carrying out cargo holds cleaning after finishing discharge of the cargo of “Cassava Chip” shipped from Thailand.
- 1.2 At 0250 on 4 March 2008, all the hatch covers of cargo holds were closed and the pilot was onboard ready to take the vessel out of berth. It was found that one AB, who had assisted to close the hatch covers earlier, did not report duty to his station standby for sailing. A search for whereabouts of the AB was conducted by the crew but was in vain.
- 1.3 A detailed search for the AB was conducted while the vessel was in the anchorage. At 0325, the missing AB was found lying on the tank top inside No. 2 cargo hold. He suffered multiple injuries and was sent to the hospital and later certified dead.
- 1.4 The investigation into the accident revealed the main contributory factors to the accident as follows:
 - due to insufficient lightings inside the No.2 cargo hold at night, the AB was unable to see clearly any obstacles, such as the slings, wire rope, etc., lying on top of the pontoon. He might have lost his balance and fallen from the top of the stacked pontoon hatch cover on the tween deck onto the tank top of No. 2 cargo hold while he was preparing the sling wire for closing the hatch cover alone
 - the AB did not follow the safety precautions for handling pontoon hatch covers as laid down in the Company Safety Management System. He entered into the cargo hold alone at night without being noticed by other crewmembers.

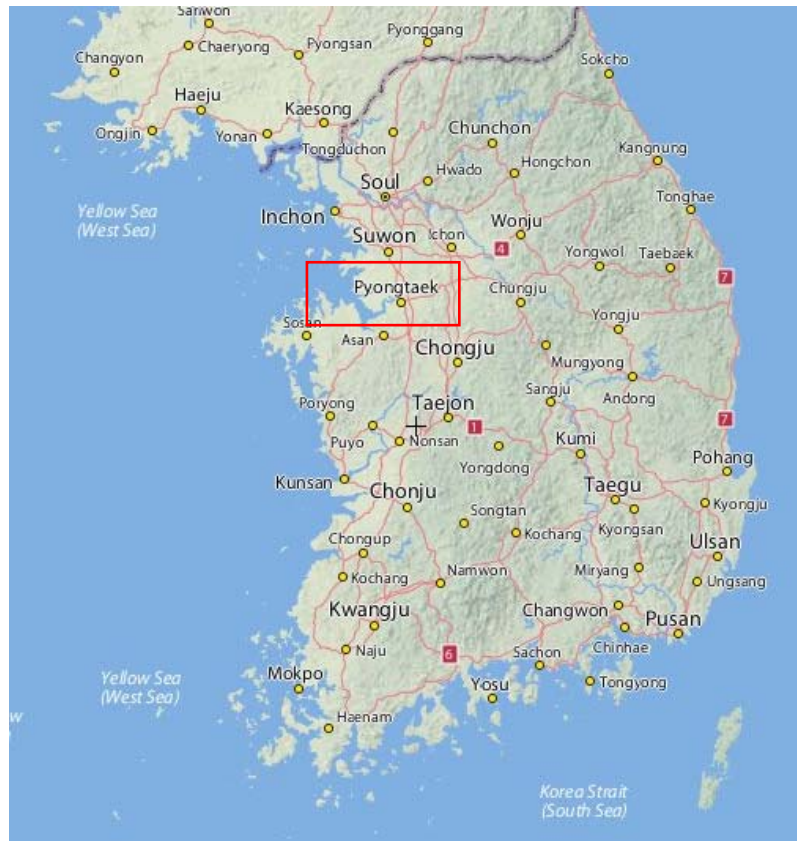


Fig.1 – Map showing the port Pyongtaek, South of Korea (source from <http://maps.yahoo.com>)

2. Description of the vessel (see Fig.2)

Name of Vessel: *APOLLO LYNUX*
IMO No: 9087673
Call Sign: VRZN3
Port of Registry: Hong Kong, China
Ship Type: General Cargo Ship
Gross Tonnage: 6290
Net Tonnage: 2847
Length (LOA): 100.72 m
Breadth: 18.60 m
Year of Built: 1994
Class: Nippon Kaiji Kyokai



Fig. 2 - Photograph of *APOLLO LYNUX*

3. Sources of Evidence

- 3.1 The Master and crewmembers of *APOLLO LYNUX*;
- 3.2 The Management Company of *APOLLO LYNUX*;
- 3.3 The Certificate of Dead issued by the hospital in Republic of Korea.

4. Outline of events

All times were local time in Korea (UTC +09).

- 4.1 On 4 March 2008, the general cargo vessel *APOLLO LYNUX* was berthed at Pyongtaek (平澤港), Republic of Korea (see Fig. 1). The crewmembers onboard were carrying out cargo holds cleaning after finishing discharge of the cargo "Cassava Chip" shipped from Thailand.
- 4.2 At about 0200 on 4 March 2008, after all cargo holds were cleaned, deck crewmembers started to close hatch covers and secure all deck cranes and derricks in stowage positions prior to ship's sailing in the morning on the same day.
- 4.3 After the deck crewmembers closed No. 1 cargo hold pontoon hatch covers on the tween deck, the Bosun ordered the crewmembers to close the pontoon hatch covers on the tween deck of No. 2 cargo hold. However, after the crewmembers came out from No. 1 cargo hold, the Bosun changed his work order. He ordered to close No. 1 cargo hold hatch cover on the main deck and secure No. 1 deck crane first.
- 4.4 At 0250, all hatch covers for the cargo holds were closed and the pilot was onboard to take the ship out of berth. All crewmembers were mustered to report duty at their respective stations standby for sailing. At that time, it was found that one AB was missing.
- 4.5 The ship Master dispatched a crewmember to look for him in his cabin but still could not find him. The Master then made an announcement using the public address system requesting all crewmembers to report duty to their station for sailing, but still the AB did not show up.
- 4.6 After failing to locate the missing AB, the Master decided to take the vessel to anchor in the inner anchorage where he launched a search for the missing seaman.
- 4.7 At 0325, the body of the missing AB was found on the tank top inside No. 2 cargo hold (see Fig. 3). He suffered multiple injuries with a pool of blood around his head, and there was no sign of breathing and pulse. His body was lifted onto the main deck waiting for rescue.
- 4.8 The Korean Coast Guard was reported of the accident and medical assistance was requested to the injured. The AB was transferred to local hospital and was certified dead later.

M.V. APOLLO LYNUX GENERAL ARRANGEMENT

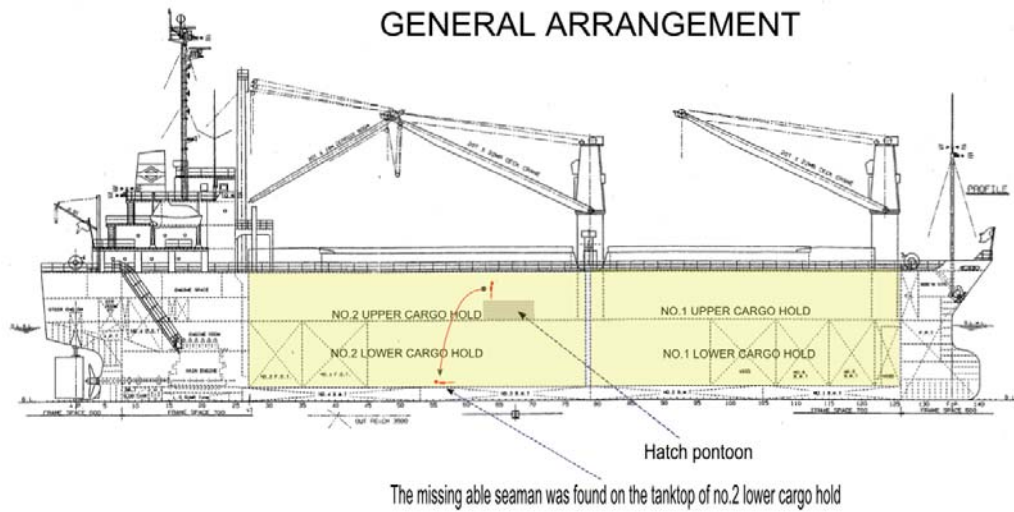


Fig 3 - The able seaman was found seriously injured on the tank top of No. 2 hold

- 4.9 The cause of death of the AB as stated in his body examination certificate issued by the Korean Hospital was due to serious brain injury resulted from falling down from height.

5. Analysis of Evidence

The analysis was based on the information provided by the Ship Management Company and the Master and crewmembers of the vessel.

5.1 Weather Condition

At the time of the accident, it was in the early hours after mid-night. The vessel was berthed alongside pier with slight sea condition and there was not raining. The weather was considered not a contributory factor causing the accident

5.2 Experience of Crew

- .1 The Chief Officer had joined the vessel on 18 January 2008. He had accumulated 18 months of sea services in the rank of Chief Officer onboard ships.
- .2 The Bosun had joined the vessel on 21 June 2007. He had accumulated 24 months of sea services in the rank of Bosun onboard ships.
- .3 The AB had joined the vessel on 18 January 2008 who had 10-year experience onboard ships.
- .4 The training and competence of above crewmembers are considered adequate for the work.

5.3 Physical Condition of the Deceased AB

The deceased AB was a male Chinese national at the age of forty (40). He was in good health and was medically fit for his duty. There was no evidence to indicate that he had been affected by alcohol or medicine.

5.4 Working Condition, Environment and Procedures

- .1 The deceased AB was assigned regular 0400-0800 and 1600-2000 watch duty in port of Pyontaek since the vessel had berthed at 0600 on 1 March 2008. There was no overtime work or special assignments assigned to the AB. Also there was no evidence to show that the deceased AB had insufficient rest, nor he had suffered from fatigue due to work prior to the accident.
- .2 At the time of the accident, it was dark at night and lighting was provided on main deck and upper cargo hold but not provided in the lower hold of No. 2 cargo hold (Fig. 4). When the crewmembers were closing the hatches, they could not see the AB who had fallen onto the tank top of No. 2 lower hold as

the lighting from tween deck and main deck could not reach the lower part of the hold. After the ship departed from berth, the AB was later found in location about 3 metres from port side vertical plating and midway between forward and after transverse bulkhead of No. 2 hold.

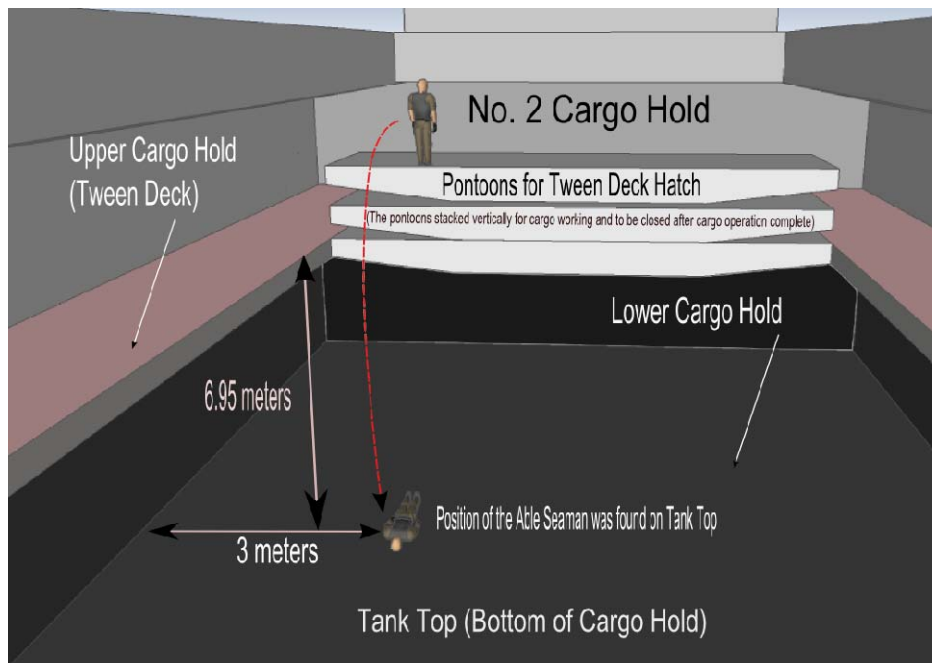


Fig 4 - The location of the Able Seaman was found on the tank top of No. 2 lower cargo hold

- .3 The AB, who was not aware that the Bosun had changed the order to close the hatch and to stow the crane of No. 1 hold first, entered the no. 2 hold on his own.
- .4 The pontoon hatch covers for tween deck inside cargo hold were handled by cargo cranes using sling wires (Fig 5). The AB might have gone down into the hold No. 2 alone to prepare the sling wires on top of the stacked pontoon without the knowledge of other crewmembers. No witness saw how the AB had fallen from the tween deck onto the tank top of No. 2 hold.
- .5 The officer in charge of the cargo operations (i.e. the Chief Officer and / or the Bosun) did not monitor closely the safety of crew working inside cargo holds, and did not take a heads count after they had come out from the holds. They were not aware that the AB was missing until the ship was ready to depart from berth.
- .6 The communication between the Bosun and other crewmembers was not effective while working inside the cargo holds. The accident might have been prevented or the injured AB could have been rescued earlier if good

communication and heads count were maintained.



Fig 5 – The picture shows the stacked pontoons on tween deck of No. 2 cargo hold with the lifting sling wires for lifting by cargo crane

5.5 Shipboard Safety Management on Procedures of Work

1. The deck crew did not follow the following safety precautions laid down in the Company Safety Management System's Equipment Operating Manual for handling pontoon hatch covers:
 - if the operation is at night, ensure the illumination is provided inside cargo hold and avoid closing hatch without illumination;
 - two persons are required when operating of hatch opening / closing, and wear personal protective gears and avoid slipping and falling down.
- .2 There was no procedure in the Equipment Operating Manual to assign a responsible person to monitor the safe operation and establish effective communication while working inside the cargo holds or similar spaces of the ship. However, similar safety procedures laid down in the Manual such as the Permit-To-Work system for entering enclosed spaces is not relevant to this incident.

6. Conclusions

- 6.1 On 4 March 2008, while the vessel *APOLLO LYNUX* was berthed at Pyongtaek (平澤港), Republic of Korea, the crewmembers onboard was carrying out cargo holds cleaning after finishing discharge of the cargo of “Cassava Chip” shipped from Thailand.
- 6.2 At 0250 on 4 March 2008, all the hatch covers of cargo holds were closed and the pilot was onboard ready to take the vessel out of berth. It was found that one AB, who had assisted to close the hatch covers earlier, did not report duty to his station standby for sailing. A search for whereabouts of the AB was conducted by the crew but was in vain.
- 6.3 A detailed search for the AB was conducted while the vessel was in the anchorage. At 0325, the missing AB was found lying on the tank top inside No. 2 cargo hold. He suffered multiple injuries and was sent to the hospital and later certified dead.
- 6.4 The investigation into the accident revealed the main contributory factors to the accident as follows:
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 - the AB did not follow the safety precautions for handling pontoon hatch covers as laid down in the Company Safety Management System. He entered into the cargo hold alone at night without being noticed by other crewmembers.
- 6.5 The other safety factors to the accident are:
- the communication between the Bosun and other deck crews were not effective, he was not aware of the AB had gone inside the cargo hold alone;
 - the Chief Officer and / or the Bosun did not monitor closely the safety of crew working inside cargo holds, no heads count was carried out after coming out from the holds;

7. Recommendations

- 7.1 A copy of the investigation report is to be sent to the Ship Management Company and the Master of *APOLLO LYNUX* advising them the findings of the accident investigation.
- 7.2 The Ship Management Company and Master of ship are required to:
- .1 review the relevant work procedures in the Safety Management System and provide sufficient training onboard so as to ensure:
 - the crewmembers should not enter into cargo hold alone without the knowledge of the responsible person;
 - effective communication should be established between person in charge of work and the crewmembers working inside cargo hold before entry into cargo hold;
 - precautionary measures and protection to prevent crew falling from the top of the pontoon are taken when securing the sling wires for hatch opening / closing operation;
 - .2 conduct regular internal safety shipboard audits to ensure that all shipboard staff follows the safe working procedures stipulated in the Company Safety Management System Manual.
- 7.3 A Merchant Shipping Information Note (MSIN) should be issued to promulgate the lessons learnt from this fatal accident.

8. Submissions

- 8.1 In the event that the conduct of any person or organization is criticized in an accident investigation report, it is the policy of the Marine Department that a copy of the relevant parts of the report is given to that person or organization so that he can have an opportunity to rebut the criticism or offer evidence not previously available to the investigating officer.
- 8.2 The final draft of the report was sent to the Management Company and the Master of the vessel for comment.
- 8.3 Submissions on the report were received from the Management Company, they concern of the following issues:
- The safety arrangements / procedures on the provision of communication was provided while working inside the cargo holds of the ship;
 - The procedures of safe working practices in cargo hold stipulated in the company's Safety Management System manual.
- 8.4 Amendments to the investigation have been made as appropriate.

