



**NATIONAL TRANSPORT SAFETY COMMITTEE
REPUBLIC OF INDONESIA**

FINAL REPORT

KNKT.21.04.08.03

Marine Casualty Investigation Report

Fatality On Board

***ASIAN CHAMPION* (IMO 9474656)**

Republic of Indonesia

12 April 2021

2021

The report is based upon the investigation carried out by the National Transportation Safety Committee (KNKT) in accordance with IMO Resolution MSC.255(84) and Indonesian Shipping Act (UU No 17/2008).

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The report is based on:

1. IMO Resolution MSC.255(84) on the Casualty Investigation Code.

The report is published by the National Transportation Safety Committee (KNKT), 3rd Fl. Transportation Building, Ministry of Transportation, Jln. Medan Merdeka Timur No 5, JKT 10110, Indonesia, in 2021.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Asian Champion, Anyer—Indonesia, 12 April 2021

EXECUTIVE SUMMARY

In the morning of 12 April 2021, the Bosun of *Asian Champion* received permission to prepare the unloading operation by using the ship crane.

After finished the work on the Crane No. 1, the Bosun with Cadet A and Cadet B began to prepare the Crane No. 3. The Bosun went up to the crane cabin No. 3, while the two cadets went up to the resting platform on the turret of crane No. 4.

The tasks that the cadets were supposed to finish were securing the chain for jib, securing electric wire and the last was to stand in a clear area from Crane No. 3 boom. All of those activities were done on the resting platform.

At around 08.06 LT, when the boom just out of the crane resting point, the tail (extra tip down part) of the boom swung and hit the Cadet B. He immediately collapsed on the resting platform and remained unconscious. Following the accident, the Cadet B was taken to a local hospital.

At around 09.20 LT, the Cadet B was received by the medical staff of emergency unit of the hospital. However, the medical team declared that the Cadet B had gone before he arrived at the hospital (death on arrival).

FOREWORD

Praise to be given to the Almighty God with the completion of the Final Report on the investigation into the crew fatality on board *Asian Champion* on 12 April 2021 in Anyer, Province of Banten, Republic of Indonesia.

The completion of this Final Report of Marine Accident Investigation was mandated by Indonesian Shipping Act No 17 Year of 2008 Articles 256 and 257 as well as Government Regulation of Transport Accident Investigations No 62 Year of 2013 Article 39 paragraph 2 Letter c which states that "The report of transport accident as referred to the verse (1) consists of the final report".

The report is the final output of the entire investigation process which covers fact information (which was also obtained with the assistance of the Transport Safety Investigation Bureau of Singapore or TSIB), analysis of causal factors that most likely contributed to the accidents, recommendations for prevention and improvement, and an appendix of other supporting documents. The report discussed the marine accident issues about what, how, and why the accident occurred and findings about the causes of the accident along with the recommendations of shipping safety to the parties aimed to minimize or prevent recurrence by the same factors in the future. The final report is issued or publicly published after requesting a response and/or feedback from regulators, operators, manufacturers of transportation facilities and other related parties.

The Final Report of the Marine Accident Investigation was made so that interested parties could learn and take lessons from the accident.

Jakarta, 6 December 2021

**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI**

CHAIRMAN



Dr. Ir. SOERJANTO TJAHOJONO

I. FACTUAL INFORMATION

Background of Investigation

The KNKT had received the first accident notification regarding fatality on board the *Asian Champion* on 14 April 2021 from the Singapore Government. Having considered the needs to launch an investigation immediately and at the same time there was a barrier for foreigners to come to Indonesia, the KNKT decided to investigate the case, despite this type of accident was not covered by any national legislations.

The investigations were done twice. The first was when the *Asian Champion* was still berthing in Anyer (the investigation team went onboard the vessel), while the second was when the crew members of *Asian Champion* were replaced by the new group. The second investigation (video call only) was to allow the crew members to take their time to recall better memory and managing their stress after lost their colleague.

The Accident

On 12 April 2021, at around 06.00 local time¹ (LT), a Singaporean bulk carrier completed the berthing. She berthed on her port side (heading towards south-west) of PT Asahimas Chemical's Port. She planned to unload all her salt grain cargo loaded from Dampier Port, Western Australia. Following the completion of berthing works, some crew members took a draft survey. Afterwards, deck crew members took a short rest.

After the rest, the Bosun asked permission to the Chief Officer (CO) to prepare all cargo cranes for cargo operations. As planned by the crew, the cargo will be unloaded by ship crane because the Asahimas Port has no gantry facility. As the CO permitted the request, the Bosun with an Ordinary Seaman (OS) and a Cadet (henceforth called Cadet A) began to prepare the Crane No. 1. The Bosun went in to the crane cabin No. 1, while OS and Cadet A went to the resting point of Crane No. 1 (located on the turret of Crane No. 2 with a U-shape). Later, the Carpenter began the same work to prepare the Crane No. 2, assisted by the other two deck crew members.

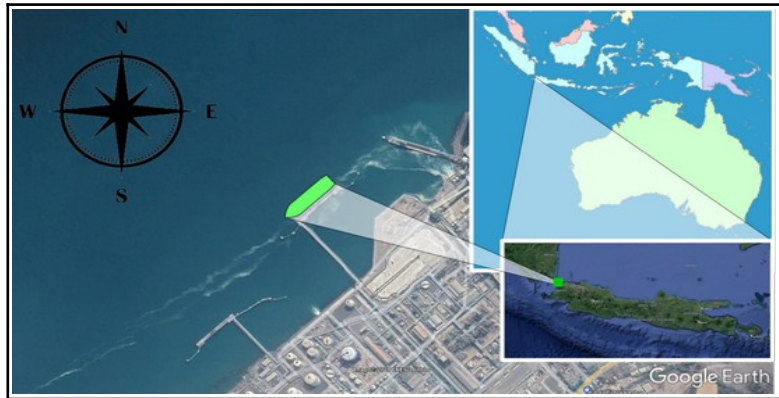


Figure 1: The *Asian Champion* whilst berthing at Asahimas Port, Anyer, Indonesia

At around 08.00 LT, after finished the works on Crane No. 1, the Bosun went off from the crane cabin No. 1 and went up to the cabin of Crane No. 3. At this time, the Bosun was assisted by the Cadet A and another cadet, namely Cadet B. They went up to the Crane No. 4 where the resting point of Crane No. 3 is located. The tasks that the cadets were supposed to finish were securing

¹ Local time is Western Indonesia Time (WIB) = UTC + 07.00.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Asian Champion, Anyer—Indonesia, 12 April 2021

the chain for jib, securing electric wire and the last was to stand in a clear area from Crane No. 3 boom. All of those activities were done on the resting platform.

At around 08.06 LT, when the Bosun was sitting in the cabin of Crane No. 3, he could not see both cadets in the vicinity of the jib, unless for one of those. The Bosun thought that both Cadets had already completed securing the chain and electric wire and were standing clear the head of the crane boom. The Bosun then began to lift up the crane boom. When the boom just out of the crane resting point, the tail (extra tip down part) of the boom swung into the right direction immediately (about 10 cm), that swing rightly hit the back of Cadet B. He immediately collapsed on the resting platform and remained unconscious.

Knowing of the accident, the Cadet A shouted an Able Seafarer Deck (ASD), on a hatch cover to inform about this. The ASD later broadcasted the accident via his portable radio. All deck operations were halted for a while. Ship crew several times called the vessel agent to immediately render medical assistance from the shore.

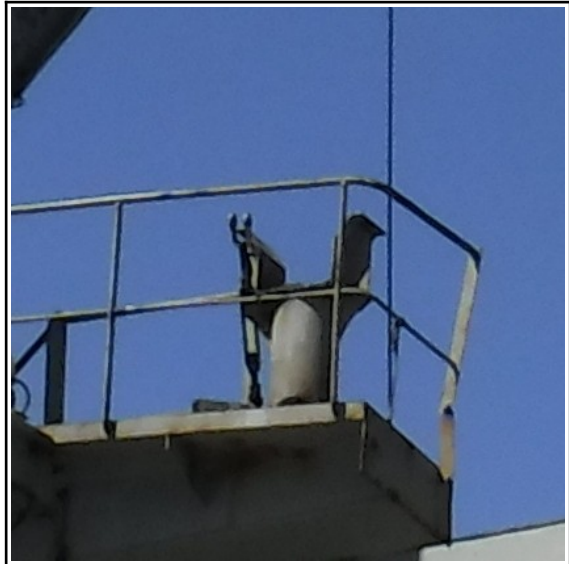


Figure 2: A resting platform of Asian Champion

At around 08.30 LT, an ambulance came up to the side of the *Asian Champion* via port side. The Cadet B was lowered down by using a stretcher. At around a half hour later, the Cadet B was taken to Krakatau Medika Hospital in Cilegon, around 15 km from the Asahimas Port.

At around 09.20 LT, the Cadet B was received by the medical staff of emergency unit. However, the medical team declared that the Cadet B had gone before he arrived at the Hospital.

Medical Examination

After the Cadet B arrived at the hospital, the medical team inspected his condition. He was seen had a haematoma on the chest a little bit to the right; only half eye balls were seen; the eye pupils were widened perfectly (mydriasis) without any response to the light, no blood seen out from his skin; the skin colour was pale; no heart pulse; no breathing sign and he was still wearing the PPE as the other crew members. On the back of Cadet B, there were some signs of livor mortis, specifically red-blue marks due to the blood did not flow and influenced by the gravity on the lowest body part along the blood vessel. From those signs, there was no vital sign that could say that the Cadet B was still alive.

Due to there was no request of an autopsy, the Krakatau Medika Hospital did not undertake further information regarding the direct cause of the death. The crew was declared death on arrival (DOA).

Technical Information of Vessel

Asian Champion (IMO 9474656) is a Singaporean bulk carrier which was built in 2012 by Cosco Zhoushan Shipyard Co., Ltd., Zhoushan, China. She is classed into DNV-GL. Her GT is 33,035,

while her length (LBP) is 185.0 m and her width is 32.3 m. In a fully loaded, her scantling draft is 12.8 m.

Her main engine of MAN-B&W 6S50MC-C with 6 cylinders is able to deliver a maximum output power of 9,480 kW to perform a service speed of 14.2 knots. She is equipped with 3x auxiliary engines MAN 5L23/30H with 5 cylinders for each and each could produce a power of 650 kW. She is also equipped with a Cummins emergency generator set by Dongfeng Cummins Engine Co., Ltd.

At the time of the accident, U-Ming Marine Transport was recorded as the company manager (based in Taipei, Taiwan) and registered owner as well as the operator (based in Singapore).

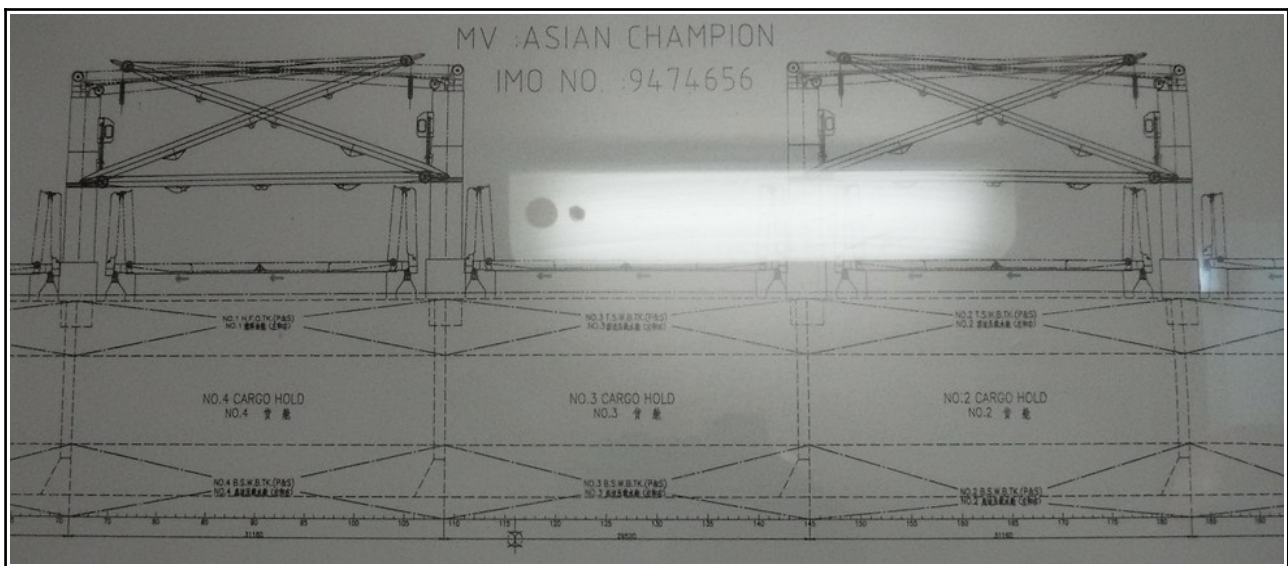


Figure 3: Cranes of Asian Champion

The *Asian Champion* has four cranes to un/load cargo in her five cargo holds. The resting point of Crane No. 1 is located at the Crane No. 2, while the resting point of Crane No. 2 is located at the Crane No. 1. The same relation also happens to the Crane No. 3 and No. 4.

There was no modification recorded on the Crane No. 3 and its resting point. The only change was in terms of maintenance of the Crane No. 3, such as the renewal of luffing wire in June 2019 and the hoisting wire in December 2020. Since November 2020, all ship's cargo cranes have been operated about eight times without any issues.

Prior to sailing to the heavy weather area, the edge of the jib should be tightened to the resting point as fast as possible by using additional tool, usually a wooden part. Otherwise, the jib can still move and lose from its tightening point. On board the *Asian Champion*, a triangular type of the wooden pieces were used to chock and buffer space at U-shape of resting holder of each crane. To prepare the use of crane, usually two crew members were involved to release the jib from triangular removing the wooden pieces, including to secure and store the equipment in the resting point.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Asian Champion, Anyer—Indonesia, 12 April 2021



Figure 4: Sunlight at around 09.00
LT

Vessel Crew

At the time of accident, there were 20 crew members on board the *Asian Champion*, including the Master. All of them were Chinese.

Both Cadet A and Cadet B joined on board the *Asian Champion* for five months. During preparation of ship's crane, the cadets usually assist the crane operator to remove the electric wire and to secure wire cable. Because the electrical wire should be reconnected again to the grabber, it was impractical for the cadets to get off from the resting platform. Therefore, they usually only stood or move backward to avoid the path of jib while moving.

Based on interview with the medical staff of hospital and several crew members, the Cadet B wore the usual safety gear at the time of the accident. The safety gear comprised of boots, overall and helmet.

The Bosun also already joined the *Asian Champion* for five months. Before the *Asian Champion*, he previously handled the same crane type on another vessel. He did not feel any uncomfortable or confusing in controlling the ship crane. He did not have any visual impairment or any sickness at the accident time.

After completing the berthing works, the Bosun did not feel any tiredness, sleepy or unwellness. He felt the everything was as normal as usually, including when he was sitting in the crane cabin. At the accident time, the Bosun did not feel the sunlight was too hot or too bright for him (see Figure 4).

Working Procedures

In regards the procedures of crane works, there are some pertinent procedures available. Medical care and first aids (issued January 2021), shipboard emergency plan (issued in January 2021), training record (issued in January 2021) which contains dozens of training record and Standard Operation Procedure of Crane Operation (no explanation of issue date and has different layout than the other procedures).

Standard Operation Procedure of Crane Operation covers two major parts: hoisting the deck crane jib and recovering the deck crane jib. The length of the Crane Operation Procedure is about one and a half pages. All procedures are printed into two languages, English and Chinese.

Both Cadet A and Bosun acknowledged that there was no familiarisation in regards the ship's cranes. The only knowledge



Figure 5: Sample of the safety
gear wore by Cadet B

transfer was about the safety in general, for instance the use of personal protective equipment (PPE), working over height and over side.

II. ANALYSIS

Factors Behind the Crane Hit

The accident of crane hit the body of a seafarer has indicated that the risk controls did not work properly. Even though this accident rarely occurs onboard the *Asian Champion*, once it occurred, the fatality onboard becomes hot issue amongst the seafarers, company and related parties.

As told by the Bosun, the possible factor relied behind the miscalculated decision in moving the jib was due to improper mental model. Based on his experience in controlling the ship crane, he usually assumes that his counterparts (two cadets) always hide in the vicinity of resting platform to avoid the impact and path of the crane after their works are completed. This mental model, further, creates a habit in his mind that the practice is always as usually, despite was not quite sure whether all of his colleagues are already hiding or it was only his assumption.

The decision of the crew members in positioning themselves in a safe area from the crane also uncovers an unsafe habit on board the *Asian Champion*. According to the information obtained by the TSIB during the interview, the Master/Chief Officer of the vessel informed that they have insisted for all assisting crew to come down from the resting platform and either give hand signal or using the portable radio to signal the crane operator for booming up and swinging the crane jib. However, the actual practice prior to the accident unfold the opposite situation. Therefore, this unsafe habit was clearly incorrect practice which against the safety message from the Master/Chief Officer.

Another possible factor in this accident was the inertia of the tension on the crane. The triangular wooden pieces was likely created a high tension on the crane system which was dangerous for the crew in the vicinity if the tension was not released properly. When the crane's electrical power was still off and at the same time the Cadet B was releasing the crane from the wooden pieces, this situation would be highly probable made the crane swung towards him. This circumstance highlights the importance of releasing the crane tension prior to releasing the crane from wooden pieces which did not show on the crane work procedures.

In terms of the communication, there are two types of communication signal which could inform the crane operator. The first is the visual sign. This is the most conventional and widely used in crane operations. Usually the colleague of a crane operator gives a hand signal which tells when to lift up, stop, swing, go down and other meanings. The visual communication is also easy to be learnt by any level of workers. Should this visual communication was being engaged by two cadets at the accident time, would deter the misjudgement prior to moving the jib.

The second type of communication is by using the voice via portable radio (handy talkie). Based on interview, this type of communication also did not appear in the crane operation. The only reason

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Asian Champion, Anyer—Indonesia, 12 April 2021

for not using this was due to the noise from the environment. However, the voice here could be replaced with something other than human voice, such as buzz, ping, alarm or similar audible, without using the human voice. This allows the crane operator and his colleagues no need to ask for repeat the voice message as the voice is clearly understood.

Having looked at the procedures of works related to the ship crane, it clearly demonstrated that there were some risk controls which did not work as usually. In addition, some of them did not exist to prevent the flaw in the safety system. The procedure of crane operation has mentioned about the work of unsecure the turnbuckle of jib from the beginning until shut down the power of ship crane. However, it did not explain anything specific about how to communicate or to give a sign which means the workers on the resting platform are safe and it is safe to move the jib.

Those conditions have created a mental model based on their habit in working. In the mind of crew members who assist the crane operator, they most likely think that the crane operator always waits until they completed their works on the resting platform. Similarly, the crane operator most likely thinks that several minutes that the crane operator provides to the assistants on the resting platform is sufficient for them to complete their work and take a safe position and location from the crane. At this circumstance, there was no clear sign sent and received between crane operator and the assistants to inform that it is safe to move the crane. This habit then created unsafe act which on 12 April resulted the loss of life of one crew on board. Therefore, there is a substantial need to revise the procedure to also cover communication and protection of workers on the resting platform.

The Proximate Cause of the Death

When the Cadet B arrived at Krakatau Medika Hospital, the medical team concluded that he had gone before arrived at the hospital. There were some ship crew members told the investigation team that the Cadet B gave a sign on his eyes, but could not tell anything. They also told the investigation team that the crane hit the back of Cadet B whilst he was doing something facing towards the sea (crane was on his back).

However, based on the explanation from the medical team, the Cadet B was probably hit from the front, instead of from the back, whilst he was doing something facing towards the crane. Referring to the tasks of crew members on the resting platform, the Cadet B was likely releasing the wooden pieces (facing towards the crane) right before he was hit by the crane.

Regardless the position and direction of the Cadet B at the time when crane hit him, the face expression of Cadet B showed that he suffered a high degree of pain on the area above his chest. Without any blood stain came out from his chest, this indicated that the impact between his body with blunt object with a fatal consequence. This was



Figure 6: The position and direction of Cadet B based on witness of crew members

proven by the witness of Cadet A who saw him suddenly fell to the floor right after he was hit by the jib.

Having analysed the livor mortis on the back of the Cadet B, this expressed the approximate time of death. Usually, the livor mortis appears around a half until one hour after someone dies. Assume that the Cadet B was declared dead at 09.30 LT, thus he died around 08.30—09.00 LT. In the other words, the Cadet B was highly possibility died before he was taken to the Krakatau Medika hospital.

III. SUMMARY

Findings

- The Cadet B was declared death on arrival.
- The Crane No. 3 had no issue or damage before and after the accident.
- The visual from crane cabin to the resting platform was partly obstructed by the crane.
- The Cadet A had no visual issue with the brightness of sunlight.

Contributing Factors

There were no specific guidelines on how to ensure the workers on the resting platform are safe from the crane when the crane operator operates the crane.

IV. RECOMMENDATION

U-Ming Marine Transport Corporation

1. To revise the existing procedure of crane works to be more detailed, particularly in regards to the safety of workers on the resting platform, how to communicate between workers on the platform and the crane operator as well as releasing the crane tension.

Regarding this recommendation, the U-Ming Marine Transport Corporation has initiated several safety actions, specifically issued a circular letter regarding the lessons learnt to the internal employees and crew members, posted a warning sign on the window of crane and revised some procedures related to the crane operations.

Status: Closed

V. SOURCES OF INFORMATION

Crew members of *Asian Champion*.

Medical staff of Krakatau Medika Hospital.

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