



Australian Government
Australian Transport Safety Bureau

Man overboard fatality from *Hyundai Dangjin*

Port Walcott, Western Australia | 10 July 2015



Investigation

ATSB Transport Safety Report
Marine Occurrence Investigation
321-MO-2015-004
Final – 19 January 2016

Cover photo: Toyo Sangyo Company, Japan

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Publishing information

Published by: Australian Transport Safety Bureau
Postal address: PO Box 967, Civic Square ACT 2608
Office: 62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150 (24 hours)
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

© Commonwealth of Australia 2016



Ownership of intellectual property rights in this publication

Unless otherwise noted, copyright (and any other intellectual property rights, if any) in this publication is owned by the Commonwealth of Australia.

Creative Commons licence

With the exception of the Coat of Arms, ATSB logo, and photos and graphics in which a third party holds copyright, this publication is licensed under a Creative Commons Attribution 3.0 Australia licence.

Creative Commons Attribution 3.0 Australia Licence is a standard form license agreement that allows you to copy, distribute, transmit and adapt this publication provided that you attribute the work.

The ATSB's preference is that you attribute this publication (and any material sourced from it) using the following wording: *Source:* Australian Transport Safety Bureau

Copyright in material obtained from other agencies, private individuals or organisations, belongs to those agencies, individuals or organisations. Where you want to use their material you will need to contact them directly.

Addendum

Page	Change	Date

The occurrence

A limited-scope, fact-gathering investigation into this occurrence was conducted in order to produce this short summary report and allow for greater industry awareness of potential safety issues and possible safety actions.

What happened

In the early hours of 10 July 2015, *Hyundai Dangjin* (cover) was in the final stages of loading its cargo of iron ore at Port Walcott, Western Australia. The ship was starboard side alongside the wharf and the chief mate and draught surveyor were on the wharf to check the ship's draught. They could see the forward and aft draught marks but not the midships marks.

At 0450,¹ the chief mate asked the second mate, via UHF radio, to read the midships draught on the ship's port (outboard) side. The ship's crew had already rigged a rope ladder (Figure 1) adjacent to the draught marks there.

Figure 1: Rope ladder, as rigged at the time of the accident



Source: Australian Maritime Safety Authority

In preparation to climb down the rope ladder, the second mate donned a life vest (non-inflatable flotation aid). The able seaman (AB) on duty offered to go down the ladder instead of the second mate, who was a large and heavy man. The second mate declined the AB's offer (mates are trained to read draught marks).

Just after 0455, the chief mate and draught surveyor returned from the wharf to the ship's office. The chief mate then called the second mate and asked for the midships draught. The second mate did not reply.

At that time, the second mate was near the bottom of the ladder, about 7 m below the ship's deck. He called out to the AB for help and said he was having difficulty. When the AB checked, he saw the second mate struggling to hold on to the ladder. As the AB looked around for a rope to throw down, the second mate fell into the water. The AB threw a nearby lifebuoy to the second mate and it landed a few metres away.

The second mate tried to swim to the lifebuoy, but was not able to reach it. The sea was rough (1.4 m sea on a 0.4 m swell) and the water temperature was about 22 °C.

Rescue attempts

At about 0458, the AB called the third mate on the radio and told him that the second mate had fallen into the water. The AB then climbed down the ladder and entered the water. At this time, the second mate was about 4 m from the ladder and drifting further away. The AB had difficulty breathing and swimming in the rough, cold seawater. He was unable to reach the second mate and returned to the ladder.

¹ All times referred to in this report are local time (WST), Coordinated Universal Time (UTC) + 8 hours.

The third mate reported the man overboard to the chief mate, before hurrying to the rope ladder. When he arrived there, he saw the second mate about 20 m from the ladder. His arms were moving slowly and he was not getting any closer to the lifebuoy about 3 m away. The third mate then went aft to get a lifebuoy with a lifeline attached.

At about 0510, the chief mate informed the master that the second mate had fallen from the rope ladder. The master left his cabin and went to the ship's office, where he ordered that the port accommodation ladder and pilot ladder be lowered to the water.

The AB was at the bottom of the rope ladder when an ordinary seaman (OS) arrived. The AB was already suffering from the effects of the cold water and was having trouble holding on to the ladder. The OS threw a rope to the AB and he tied it around his waist.

Meanwhile, the third mate returned with a lifebuoy with a lifeline and threw it towards the second mate. The lifebuoy landed close to him and he was able to get an arm through it. The third mate then started to pull him towards the ship's side near the rope ladder.

The AB had remained at the bottom of the ladder, to assist the second mate when he was close enough. When the second mate was about 5 m from the ship's side, crew at the scene saw that he was no longer holding onto the lifebuoy.

Raising the alarm

At about this time, the chief mate arrived on deck near the rope ladder. He saw the AB holding on to the bottom of the ladder, up to his waist in the water. The chief mate took the lifebuoy line from the third mate and instructed him to go to the bridge and raise the alarm.

At about 0512, the third mate rang the general alarm. He then announced over the ship's public address system that there was a man in the water, and for the crew to go to their muster stations.

The AB could not assist the second mate who was drifting further away, so he climbed the ladder to the deck. He was suffering from the effects of the cold water and exhaustion and was escorted to the ship's hospital by two other crewmembers.

As the second mate drifted further aft, the chief mate continued to call out to him and shine a torch in his face. He did not receive any response.

When the third mate returned to the main deck, the accommodation ladder had been lowered to the water level. He climbed down and was able to drag the second mate onto the ladder's lower platform. He then commenced cardio pulmonary resuscitation (CPR) on the second mate while the accommodation ladder was being raised to deck level with both men on its lower platform.

By 0520, two members of the terminal's emergency response team and the port's emergency management officer had boarded *Hyundai Dangjin*. Shortly after, when the accommodation ladder was at deck level, they visually assessed the second mate and detected no signs of life.

The master was concerned due to the gap between the ship's side and the accommodation ladder platform, and the second mate's weight. In order to avoid a further incident, he instructed his crew to transfer the second mate to the deck using the stores crane and a suitable sling. The master then went to inform the ship's managers of the accident.

At 0540, the AB, suffering from hypothermia symptoms, was taken ashore for assessment at a local hospital.

At about 0555, a St John Ambulance paramedic boarded the ship. By this time, the second mate had been moved to the deck, CPR was continued and the paramedic assessed him. At 0605, after finding no sign of life, the paramedic informed the master that the second mate had died.

ATSB comment

The rope ladder had been rigged upside down (Figure 1). With their wrong side up, the ladder steps (folded aluminium) did not provide a flat surface to stand on comfortably. Further, the steps were not good handholds.

The sole precaution taken by the second mate while reading the draught marks was his life vest. No fall prevention measures were put in place or used. The life vest's specifications could not be determined but similar types provide around 7 to 10 kg of buoyancy.

While the AB was standing by on deck, man overboard response measures (such as a lifebuoy with light and line near the ladder) were not in place. Fortunately, his well-intentioned but impulsive descent of the ladder in an attempt to rescue the second mate did not result in another casualty.

The second mate's initial post mortem examination report stated the cause of death as 'undetermined (pending further investigation)'. However, the report noted that some findings of the examination 'could be seen with drowning'. The report stated that the body was of a man of large build and included his height and weight. This is consistent with the attending police officer's report, which noted that the second mate 'was a man of large overweight build'.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Toyo Sangyo

Toyo Sangyo Company (Toyo Sangyo), *Hyundai Dangjin's* managers, have taken the following safety actions to avoid a similar accident.

Review of shipboard safety management system

Toyo Sangyo's review of its shipboard safety management system (SMS) resulted in a 'Safe Draft Check Instruction' being included in the procedures related to cargo operations for bulk carriers. The instruction details the procedures (including permits to work) when checking the ship's draught from a rope ladder.

The ship's managers issued a circular to its managed fleet to raise awareness of the accident, lessons learned and inform crew of the changes to SMS procedures.

Rio Tinto Iron Ore

Review of draught survey methods

Rio Tinto Iron Ore, the Port Walcott terminal managers, reviewed the draught survey methods at its terminals. As a result of the review, the reading draught marks from rope ladders was prohibited. An alternate method, using a manometer, was put in place.

Rio Tinto Iron Ore has promulgated the revised draught survey requirements and methods through a circular to all of its terminals. The revised requirements and methods have also been provided to ship's agents for inclusion in pre-arrival information for shipmasters.

Safety message

In many cases, little attention is paid to planning apparently straightforward tasks, such as using a rope ladder. This can lead to important factors and relevant considerations not being taken into account, including the experience and physical ability of persons undertaking the task.

The ATSB SafetyWatch highlights the broad safety concerns that come out of our investigation findings and from the occurrence data reported by industry. [Marine work practices](#) is one of those safety concerns.



General details

Occurrence details

Date and time:	10 July 2015, 0458 (UTC + 8)	
Occurrence category:	Accident	
Primary occurrence type:	Fatality	
Location:	Berth 4, Port Walcott, Western Australia	
	Latitude: 20° 35.33' S	Longitude: 117° 10.50' E

Ship details

Name:	<i>Hyundai Dangjin</i>	Year built:	2012
IMO number:	9582245	Gross tonnage:	132 587
Flag State:	Liberia	Length overall:	329.95 m
Classification society:	Nippon Kaiji Kyokai	Moulded breadth:	57 m
Owner(s):	Seno Kisen/Estrella Navigation	Summer draught:	18 m
Manager:	Toyo Sangyo Company, Japan	Main engine(s):	1 x 7S80MC-C

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

Australian Transport Safety Bureau

Enquiries 1800 020 616

Notifications 1800 011 034

REPCON 1800 011 034

Web www.atsb.gov.au

Twitter @ATSBinfo

Email atsbinfo@atsb.gov.au

Facebook [atsbgovau](https://www.facebook.com/atsbgovau)

Investigation

ATSB Transport Safety Report

Man overboard fatality from *Hyundai Dangjin*
Port Walcott, Western Australia on 10 July 2015

321-MO-2015-004

Final – 19 January 2016