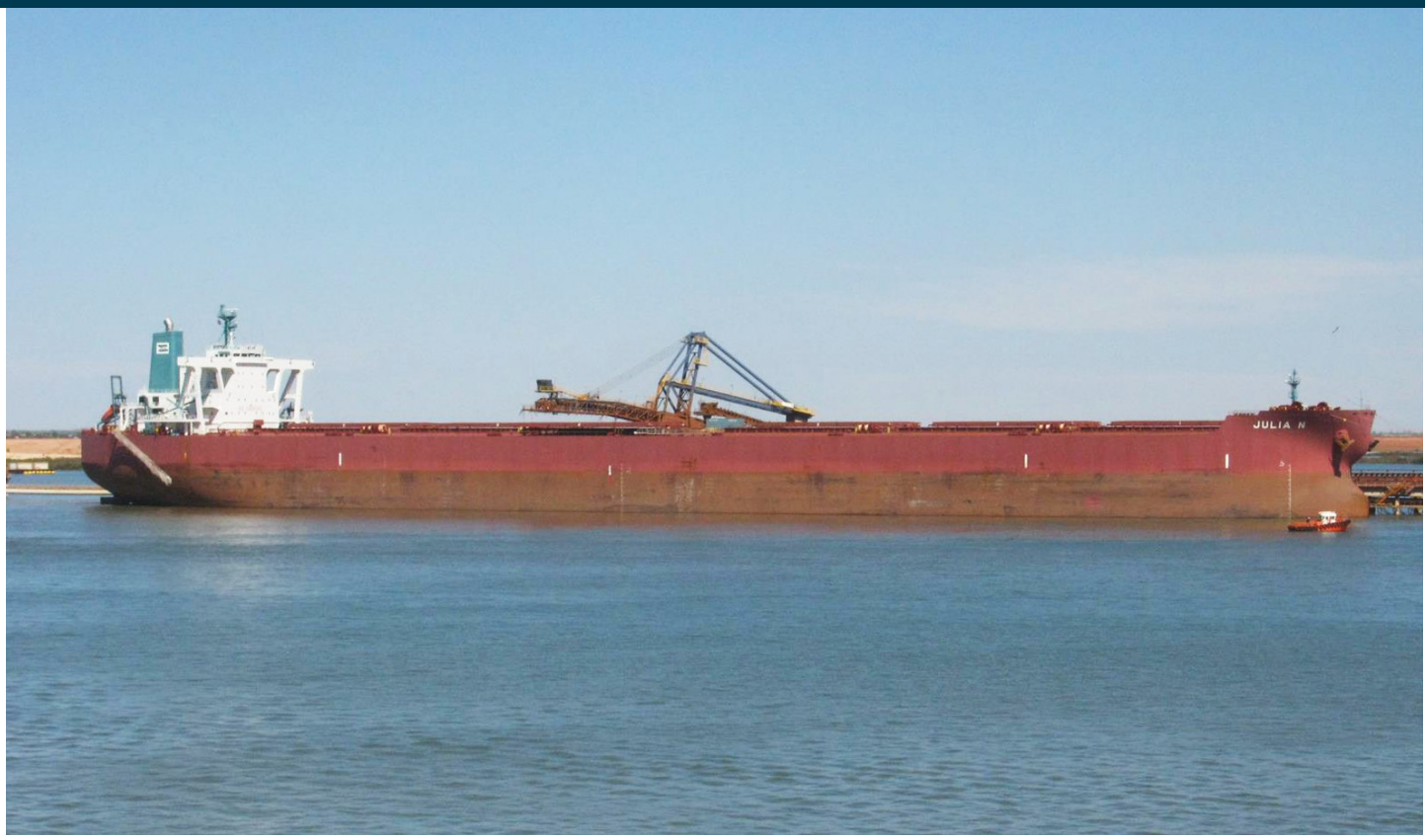
Australian Government
Australian Transport Safety Bureau

Serious injury of a crew member on board *Julia N*

Port Hedland, Western Australia | 28 June 2014



Investigation

ATSB Transport Safety Report
Marine Occurrence Investigation
310-MO-2014-005
Final – 24 September 2014

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Addendum

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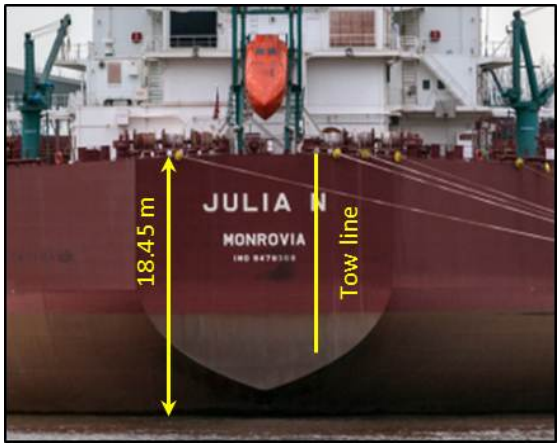
What happened

On the afternoon of 28 June 2014, the 327 m long bulk carrier *Julia N* (cover) entered the port of Port Hedland, Western Australia, and was manoeuvred alongside Anderson Point number two berth by the pilot with the assistance of four tugs.

At 1521[1], when it had been confirmed that the ship was in position, the pilot called the master of the tug at the stern of the ship to come in and retrieve its tow line (Figure 1 and Figure 2). When the tug was in position, the pilot asked *Julia N*'s master to instruct the aft mooring team (second mate and two seamen) to let go the tug's tow line.

Figure 1: Approximate position of the tow line during retrieval[2]

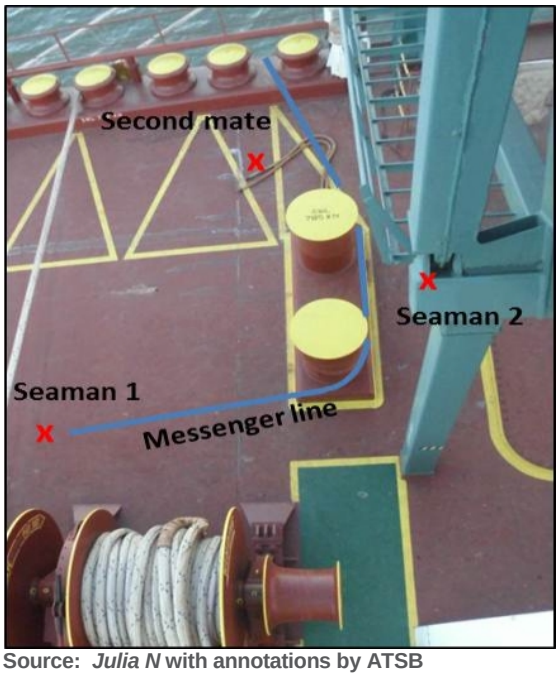


Source: Jens Boldt – Shipspotting with annotations by ATSB.

Figure 2: View of *Julia N* from the tug's bridge window

Source: Teekay Australia.

Figure 3: Crew and messenger line positions



Source: *Julia N* with annotations by ATSB

Seaman 1 (Figure 3) ran the messenger line[3] over the drum end of the mooring winch, while seaman 2 operated the winch to pull about 2 m of tow line inboard. The second mate wrapped the rope stopper around the main tow line while the messenger line was taken off the drum end and the eye of the tow line off the mooring bits. The messenger line was then put around the forward post of the mooring bits to assist with the controlled lowering of the tow line.

On board the tug, the general purpose hand was standing forward of the winch (Figure 4) ready to guide the tow line onto the winch drum and the engineer was at the remote winch controls inside the bridge.

The general purpose hand signalled to the engineer that he could begin heaving in the tow line but the engineer waited until he saw

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

2 Photo is for illustrative purposes. At the time of the incident, *Julia N*'s draft was less than shown in the photograph.

3 The messenger line was a 25 mm diameter rope attached to the eye of the main tow line by a short flat webbing sling. It was measured at 21.7 m long after the incident.

Figure 4: Position of the general purpose hand and the engineer.

Source: ATSB

the tow line being lowered.

As the tow line was retrieved, seaman 2's right leg somehow became entangled in the messenger line. He was then dragged about 4 m across the deck and into the rollers of the fairlead. When his legs entered the fairlead the messenger line came under tension and it severed the seaman's right foot.

As the eye splice of the tow line reached the fendering on the bow of the tug, both the general purpose hand and the engineer saw the line go tight. The general purpose hand signalled to the engineer but he had already stopped heaving.

Julia N's second mate ran to the ship's rail and signalled to the general purpose hand to slacken the line. Then, on the general purpose hand's signal, the engineer paid out about 2 m of line.

At 1524, the pilot advised Port Hedland Vessel Traffic Service (VTS) that there was a medical problem on board the ship and instructed the tug's master to hold position with a slack line as there had been a problem on the aft mooring deck with the line. A short time later, after receiving more information, the pilot advised VTS what had happened. He also requested medical assistance from the terminal operator.

Between 1545 and 1555, two launches arrived with first aid personnel and, at 1601, a helicopter with two paramedics landed on board *Julia N*.

At 1644, the helicopter departed with the injured seaman. He was taken to the Port Hedland Hospital, where he was provided with medical treatment.

At 1750, the pilot reported to VTS that *Julia N* was all fast alongside the berth and he was departing the ship.

The injured seaman continued to receive treatment in the Port Hedland Hospital until he was repatriated on 12 July.

ATSB comment

From his position at the port bridge console, the tug's engineer could see the tow line, the winch and the general purpose hand. However, due to the freeboard of the ship, no one on board the tug could see past the ship's main deck hand rails. As is usual, the tug's crew had no direct radio communications with the ship's aft mooring team, and were therefore reliant on visual contact with the mooring team for all communications.

There were three crew members (second mate and two seamen) on the aft deck for mooring operations and it is likely that the second mate felt that he needed to assist the two seamen when releasing the tugs line from the bits. However, when doing so, he was not at the ship's side where he had a clear line of sight of the tug, and as such had relinquished his supervisory role. Then, when the seaman became entangled in the messenger line, there was no one on the aft deck of the ship in a position to signal to the tug's crew to stop retrieving the line.

The investigation was not able to interview the injured seaman, and from the evidence provided, was not able to ascertain how the seaman's leg became entangled in the messenger line while it was being retrieved on board the tug.

There is no clear evidence to determine the actions of the second mate and how they were interpreted by the tug's crew as a positive signal to retrieve the tow line.

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 safety action in response to this occurrence.

Teekay Australia

A Safety Alert was sent to all of its managed ships advising of the accident, the safety message and safety actions to be taken.

Neu Seeschiffahrt

Each managed ship received a *Corrective and Preventative Action Report* which contained the company's internal investigation report, references to various procedures related to mooring and tug operations as well as corrective actions and long term preventative actions.

Safety message

Mooring operations are often seen as a routine task but contain dangers that are often not realised until it is too late. As they cannot be directly observed, the forces that can be exerted on mooring and towing lines, even by their own weight, are often underestimated by those working around them.

Serious injury is likely when there is an incident during tug and mooring operations, but the likelihood of such an occurrence can be managed through effective risk assessment, training, supervision, communications and good housekeeping – both prior to and during berthing operations.

The ATSB's *SafetyWatch* highlights the broad safety concerns that come from its investigation findings, and from the occurrence data reported by industry. One of the ATSB's current *SafetyWatch* concerns relates to marine work practices. Readers are encouraged to examine the information and experiences presented at the web link below, and relate those to the context of their own duties.

www.atsb.gov.au/safetywatch/marine-work-practices.aspx.

General details

Occurrence details

Date and time:	28 June 2014, 1530 (UTC +8)	
Occurrence category:	Serious incident	
Primary occurrence type:	Serious injury	
Location:	Port Hedland, Western Australia	
	Latitude: 20° 19.5' S	Longitude: 118° 34.65' E

Vessel details

Name:	*Julia N*	Year built:	2012
IMO number:	9479369	Deadweight:	297,077
Flag:	Liberia	Summer draught:	21.40 m
Classification society:	Det Norske Veritas	Length overall:	327 m
Owner(s):	General ore carrier XXVIII	Moulded breadth:	55 m
Manager:	Neu Seeschiffahrt	Main engine(s):	1 x 6S80MC-C, 2 Stroke,

Name:	*RT Inspiration*	Year built:	2013
IMO number:	9559262	Bollard pull	85 t
Flag:	Malta	Length overall:	31 m
Classification society:	Lloyd's Register	Moulded breadth:	12 m
Owner(s):	Elisabeth Ltd	Moulded depth:	4.4 m
Manager:	Teekay Shipping Australia	Main engine(s):	3 x 6L28HX

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.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.

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