

FINAL REPORT

**MAN OVERBOARD (LOSS OF LIFE)
FROM SUPPLY VESSEL
COASTLINK 8
IN THE SINGAPORE STRAIT
ON 26 AUGUST 2017**

MIB/MAI/CAS.023

**Transport Safety Investigation Bureau
Ministry of Transport
Singapore**

26 August 2018

The Transport Safety Investigation Bureau

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Contents	Page
SYNOPSIS	3
DETAILS OF VESSELS	4
1 FACTUAL INFORMATION	6
1.1 Narrative by the Crew of Coastlink 8.....	6
1.2 Narrative by the Master and crew of Chem Antares	12
1.3 Location of the accident	14
1.4 VTIS Plots.....	15
1.5 Information from Singapore VTIS.....	15
1.6 Autopsy report.....	15
1.7 Coastlink 8 manning	16
1.8 Coastlink Services Pte Ltd.	16
1.9 Code of Safe Working Practices for Merchant Seafarers (COSWP).....	17
2 ANALYSIS.....	18
2.1 Risk assessment on cargo transfer operation.....	18
2.2 Helm actions onboard Coastlink 8	19
3 CONCLUSIONS	21
4 SAFETY ACTIONS.....	22
5 SAFETY RECOMMENDATIONS	23

SYNOPSIS

On the evening of 26 August 2017, at about 2300H, the supply vessel Coastlink 8 came alongside the westbound chemical tanker, Chem Antares to provide a scheduled transfer of ship's stores while the latter was underway in the vicinity of Raffles Shoal.

Soon after the Coastlink 8 came alongside, and to facilitate the lifting of stores from the Coastlink 8, the mid-ship crane of the Chem Antares was lowered. When the crane hook had been attached to the cargo net containing the first lift, the bow of the Coastlink 8 began to veer starboard and it began moving away from the transit vessel.

In an attempt to guide the lift back on to the cargo deck for aborting the operation, the Master of Coastlink 8 handed the steering control of the vessel to another crew member and went out of the wheelhouse. While assisting to adjust the cargo net to its original position, the cargo net got lifted off the main deck and swung towards the transit vessel.

The Master although warned by the other crew to stay clear was hit by the swinging lift and thrown overboard. A search and rescue operation¹ was launched but his body could not be found, until four days later, and eventually recovered by Singapore Police Coast Guard at the sea off Marina South Pier.

The TSIB classified the occurrence as a Very Serious Marine Casualty and launched an investigation.

The investigation revealed that Coastlink 8 was not positioned on a steady heading before commencing the transfer operation. The Master had likely assumed that the veering of the vessel was due to the lift pulling the vessel's stern, rather than an incorrect positioning of the steering wheel to starboard. The Master, in an attempt to adjust the cargo net of the first lift to its original position, had inappropriately positioned himself in the path of a lift under strain. It was also found that none of the crew members were wearing a lifejacket/floatation device during the transfer operation where there was a risk of falling into the water.

The investigation also determined that the operator had not provided for clear guidance/instructions for the Master and crew of the supply vessel, in particular, on identifying the presence of hazards while performing transfer operations in transit.

¹ A total of five crafts were involved in the SAR operation (three from MPA, one PCG and one RSN)

DETAILS OF VESSELS

Name	Coastlink 8 ²	Chem Antares
Identification/ Licence No.	SC 4576 H	IMO 9286554
Flag	Belize City ³	Liberia
Call Signs	V3RY8	D5KW9
Type	Supply vessel (Non-SOLAS) ⁴	Chemical Tanker ⁵
Material	Wood	Steel
Owner/Company	Coastlink Services Pte Ltd.	ASM Maritime B.V
Builders	ParitJawa Shipyard, Malaysia	Fukuoka Shipbuilding Co., Japan
Year	2012	2004
Gross tonnage	63	11,580
Length	19.60m	144.03m
Breadth	5.50m	24.20m
Depth	2.20m	12.80m
Name/ Type of Engines	Cummins/ 1x350 HP Diesel	MAN B&W Diesel
Rudder	Twin rudder coupled and operated by hydraulic steering systems ⁶ (passive-type)	Streamline balanced rudder
Engine Power	260 KW @ 10 Knots	6150 KW @ 14 knots
Remarks	The Coastlink 8 came alongside to the Chem Antares for supply of stores and spares while underway and on an agreed course and speed to be maintained during the transfer operations	

²The C8 is a single deck supply vessel. The vessel is divided into the accommodation (wheelhouse and sleeping quarters) and cargo space area (located abaft the accommodation).

³ IMMARBE – International Merchant Marine Registry of Belize

⁴Non-SOLAS ship – A ship in respect of which the application of International Safety Management code is not mandatory. Additionally, there is no requirement for such class of vessels to be fitted with rudder/helm's indicator.

⁵ SOLAS Regulation V/19.2.5 – Safety of navigation, requires vessel of 500 gross tonnage and upwards shall be provided with:

“...rudder, propeller, thrust, pitch and operational mode indicators, or other means to determine and display rudder angle, propeller....to be readable from the conning position...”

⁶There is no rudder/helm indicator required by regulations. The Master/crew correspond the rudder angle to the number of steering wheel turns required to achieve the desired heading. The rudder swinging arc from 'Full' port rudder angle to 'Full' starboard rudder angle, or vice-versa, requires about 13 x 360 degrees turns on the steering wheel. Therefore, from mid-ship to 'Full' port or starboard rudder angle would require 6.5 x 360 degrees turns on the steering wheel. The number of turns were not marked or written at the steering position.

Coastlink 8



Source: Marine Traffic.com

Chem Antares



© Mark de Bruin
MarineTraffic.com

1 FACTUAL INFORMATION

All times used in this report are Singapore Time (UTC + 8H).

1.1 Narrative by the Crew of Coastlink 8

1.1.1 On the morning of 26 August 2017, the supply vessel Coastlink 8⁷ (C8) received orders to transport and provide stores and spares⁸ for the transit vessel Chem Antares (CA) at about 2300H in vicinity of Raffles Shoal⁹ (rendezvous position). This position is located in Singapore territorial waters and within the westbound lane of the Singapore Strait, Traffic Separation Scheme (TSS).

1.1.2 At about 1900H, the fully loaded C8 (see **Fig.1**), manned as per its safe manning requirements, by three Indonesian crew comprising the Master, Engine Officer (EO) and Able Seafarer Deck (ASD), departed Penjuru wharf in Singapore with an estimated time of arrival (ETA) of about 2200H at the rendezvous position.



Fig.1 - C8 loaded with stores at Penjuru wharf

1.1.3 At about 2200H, C8 reached the rendezvous position and waited for CA to arrive. The crew observed the weather to be fine with good visibility. The wind was easterly at about 10 knots¹⁰ with slight sea and swell. The tidal stream was westerly at about 0.8 knot.

1.1.4 As a routine practice, the Master and crew discussed the transfer plan and agreed on the sequence of lifts. C8 being fully loaded with a low freeboard

⁷C8 had conducted about nine operations of supplying stores every month. The operations usually involved ship-to-ship transfer while underway.

⁸ It is common for ships to receive stores from supply vessels while underway. In this operation the vessels proceed at a pre-agreed course and speed to facilitate the lifting of stores by pallets using the crane of the receiving ship.

⁹ Rendezvous position Latitude 1° 09.8'N, Longitude 103° 42.7'E

¹⁰A knot is a unit of speed equivalent to the distance of one nautical mile travelled (1.852km) per hour.

of about one metre and keeping in mind C8's cargo stowage, the Master and crew, based on their past experiences decided to commence the first lift¹¹ from the centreline of the C8 (see **Fig.2**).

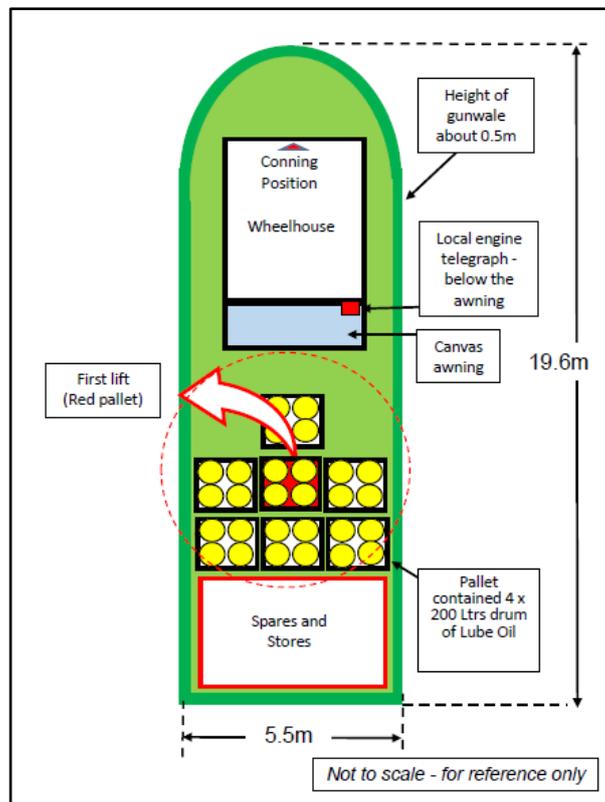


Fig.2 - Illustration of transfer plan

- 1.1.5 There was neither any discussion on personal safety¹² nor evidence of risk assessments being conducted.
- 1.1.6 At about 2245H, the Master identified that CA¹³ was about three nautical miles (nm) southeast of C8.
- 1.1.7 The respective Masters of C8 and CA established radio communications on VHF CH-17 and agreed on a plan for carrying out the ship-to-ship store transfer operation while underway¹⁴. The plan was for the C8 to come alongside on CA's starboard mid-ship side, in the vicinity of the latter's crane. Both vessels were to maintain a heading of about northwest by west (about 305°True) and at a speed of about 4 to 5 knots, while hugging the north side of the TSS, during the transfer operation.

¹¹ The first lift comprised a cargo net with 4 x 200-litre drums of lubricating oil, tightly wrapped together by plastic and placed on wooden pallet. The total weight of the lift was about 0.73 tonne (approx. density of 910 kg/m³).

¹² Personal safety among others, include the donning of personal floatation device/lifejacket by crew working on a craft in operation.

¹³ Using the Automatic Identification System (AIS).

¹⁴ Underway means that the vessel is not at anchor, or made fast to the shore, or aground.

- 1.1.8 At about 2300H, when CA was about 0.5 nm to the south of C8, the Master maneuvered C8 to come alongside CA. Meanwhile, the ASD and the EO proceeded to the cargo area by the aft door, to prepare for the transfer operation. None of them was wearing a flotation device. The cargo area was sufficiently lit by deck lights on C8.
- 1.1.9 At about 2301H, both C8 was alongside CA, and on a nearly steady heading of about 306° True (T) doing about 4 knots. The cargo area was directly under the CA's crane hook. The C8 cargo area was further lit by the lights from CA's crane.
- 1.1.10 Once alongside, C8's Master gave verbal instructions from the wheelhouse by shouting across to the ASD and the EO to commence the transfer operation. Thereafter, the ASD and the EO signalled to the CA crew to lower the crane wire connected with a cargo hook.
- 1.1.11 Once the crane hook lowered to C8's cargo area, the ASD and the EO attached the cargo net of the first lift to the hook and signalled for CA crew to begin hoisting the first lift¹⁵.
- 1.1.12 At about this time, which was about 2302H, before the slack on the crane wire taken up, the bow of the C8 veered to starboard, and the supply vessel began moving away from CA shipside (see **Fig.3**).

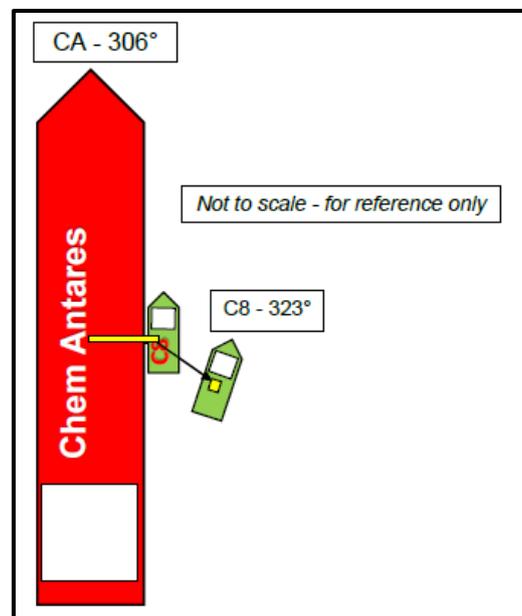


Fig.3 - Illustration on vessels' position at 2302H

¹⁵The crane wire was not taut (under tension) initially. The slack in the wire would have to be taken up before the wire became taut.

- 1.1.13 The ASD and the EO immediately signalled to CA crew to stop hoisting, and to re-lower the crane wire. At the same time, they shouted at the Master informing him of C8's movement away from CA's shipside.
- 1.1.14 Noting that C8 continued moving further away from CA's shipside, and with the crane wire becoming taut, despite it being continuously lowered by CA, the EO ran to the wheelhouse and personally informed the Master of the situation and of the need for him to give a "Port Helm" to bring C8 back to CA's shipside.
- 1.1.15 The EO recalled the Master responding that he had given a "Port Helm" but the bow was not coming to Port. The Master opined to the EO that the veering was likely due to the first lift pulling on C8's stern towards CA's shipside and instructed the EO to take over the steering wheel, which according to the Master was at "Port Helm" with the engines at minimum ahead. The Master then came out from the wheelhouse to the cargo space area and joined the ASD with the first lift.
- 1.1.16 The Master and the ASD positioned themselves on the inboard¹⁶ and outboard sides of the C8 respectively. As the strain on the wire increased from C8's continuous movement away from CA's shipside, it caused the first lift (marked as XX) to be lifted off C8's main deck. The pallet 'XX' was getting obstructed by the inboard pallet (marked as 'YY') (see **Fig.4**).

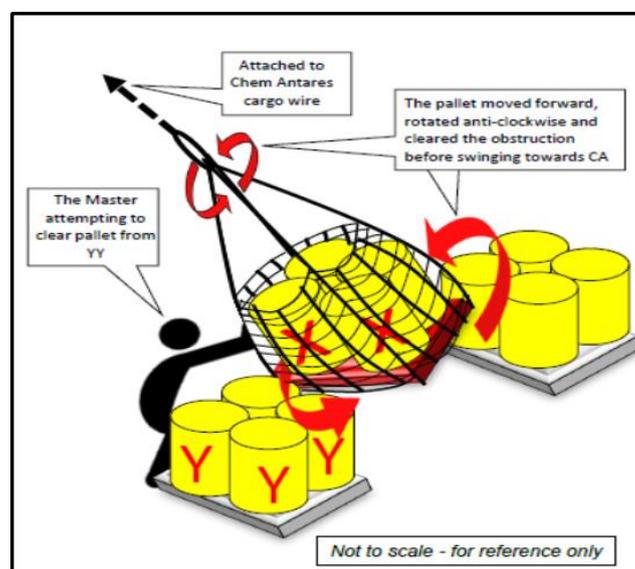


Fig.4 – Illustration of 'XX' obstructed by 'YY'

- 1.1.17 Initially, the Master thought of allowing 'XX' to be picked-up and discharged since it was already off the main deck, but seeing the difficulty to clear obstruction 'YY', the Master instructed the ASD that they should

¹⁶Inboard side of the C8 is the side closest to transit vessel CA.

abort the lifting operation. They signalled to CA's crew to further lower the crane wire in order to re-stow 'XX' back to its original position.

1.1.18 Both the Master and ASD began pushing 'XX' from side to side while guiding it back to its original position. As the distance between the two vessels increased, it concurrently caused the strain on the crane wire to further increase.

1.1.19 At some point, the ASD saw 'XX' moved slightly upwards and warned the Master to stand clear. At a time reported as 2303H, 'XX' moved upward, cleared the adjacent obstruction 'YY' and swung towards CA's shipside. The swinging lift 'XX' hit the Master and threw him overboard into the sea (see **Fig.5**).

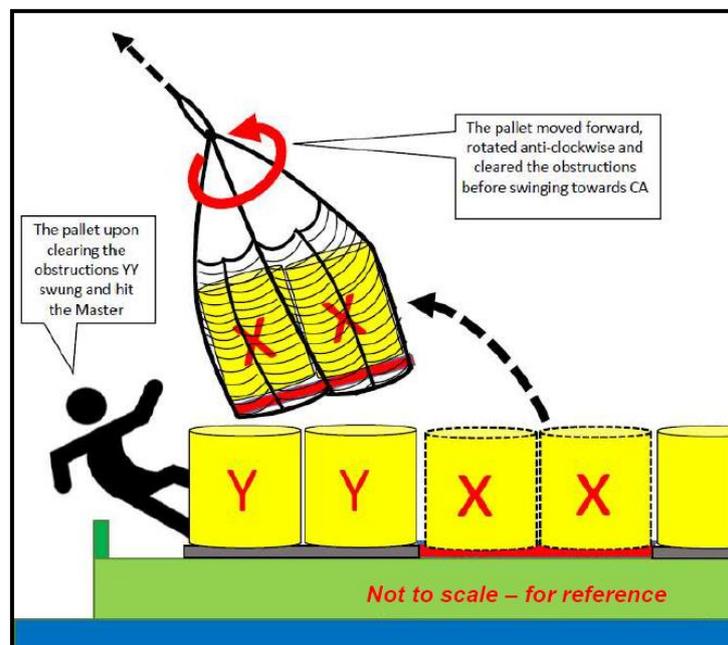


Fig.5 – Illustration of the 'XX' clearing the parcel 'YY'

1.1.20 The ASD was momentarily stunned before he shouted for help. The EO, on hearing ASD's call for help, looked over the wheelhouse's portside door and saw the Master struggling in the water. He instructed the ASD to throw a lifebuoy at the Master.

1.1.21 The EO stopped the engines and noted that C8 was by now slightly behind the crane's position at a horizontal distance of about 15m away from CA's crane outreach. The EO moved C8 further astern and performed series of maneuvers to clear C8's propeller away from the Master (see **Fig.6¹⁷**).

¹⁷Stage 1 – the position which the EO took the C8 away from the Master

Stage 2 – the position which the EO began maneuvers to recover the Master

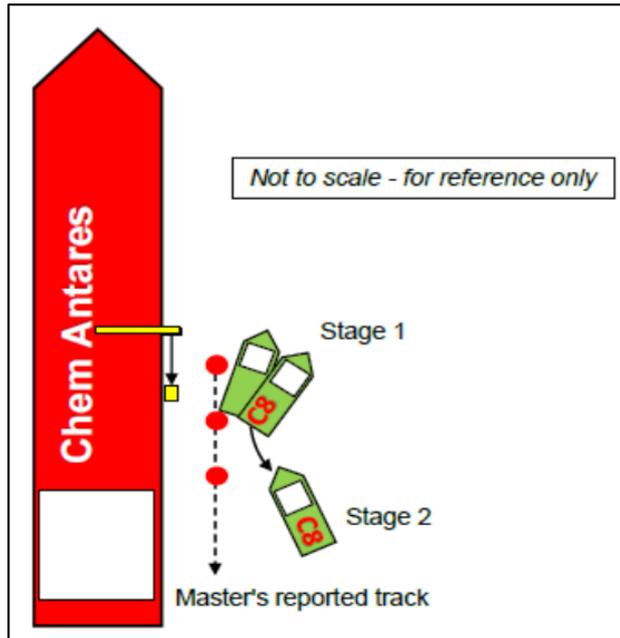


Fig.6 - Illustration on vessels' position after 2303H

- 1.1.22 While the port engine was at 'Full Astern', the EO gave the starboard engine 'Full Ahead' and turned the steering wheel anti-clockwise or 'Hard' to port. In doing so, he noticed that the steering wheel, had to be turned for about 10 turns before it came to a stop, which was more than what he had expected from a mid-ship position, i.e. 6.5 turns (see Fig.7).

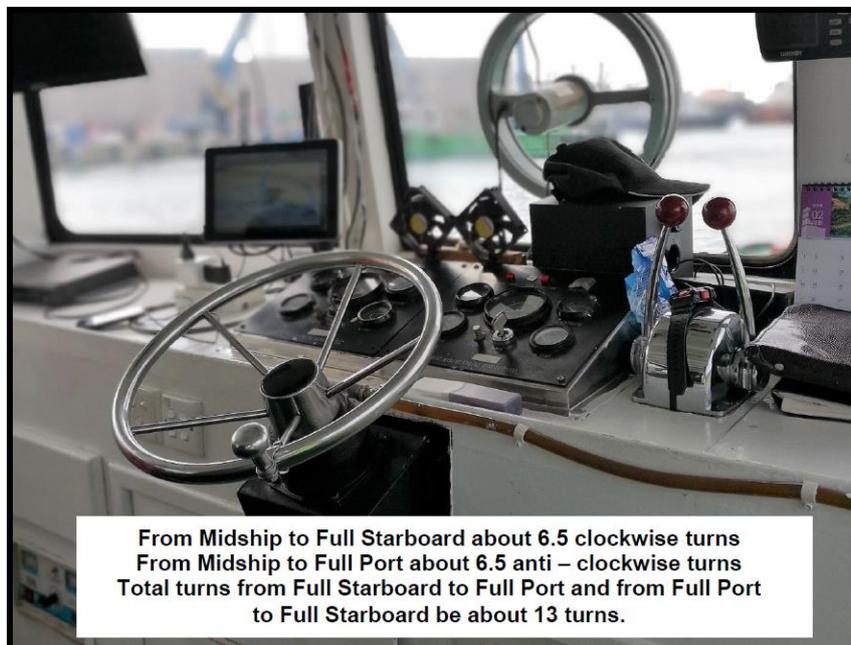


Fig.7 – Image of C8 steering wheel

- 1.1.23 By this time, C8's heading was almost perpendicular to CA's, and the EO noticed that the Master had drifted further towards the stern of CA. The EO reported the incident to MPA's Vessel Traffic Information Services (VTIS) West on VHF CH-73 while manoeuvring C8 towards the Master's location.

- 1.1.24 The ASD, who had thrown a lifebuoy to the Master, kept calling for the Master to grab it. The Master appeared dazed and only his right hand was seen moving above water. As the Master drifted away from the lifebuoy, the ASD threw a second lifebuoy with a lifeline attached to it. He saw the Master was attempting to grab the lifebuoy. The ASD kept calling for the Master to grab hold of the lifebuoy but saw the Master's movement weakened. Soon the Master disappeared underwater.
- 1.1.25 At about 2311H, crafts from the Police Coast Guard (PCG), Maritime and Port Authority of Singapore (MPA) and the Republic of Singapore Navy (RSN) arrived and immediately commenced search and rescue (SAR) operation for the Master but could not locate him in the vicinity of the occurrence.
- 1.1.26 The following morning, at about 0052H, C8 completed transfer operation with CA and returned to base with another Master dispatched by the operator. There were no damages sustained by C8 or injuries by its remaining crew.

1.2 Narrative by the Master and crew of Chem Antares

- 1.2.1 CA was scheduled to receive stores and spares from the supply vessel C8 while underway in the westbound lane of the Singapore Strait TSS on 26 August 2017.
- 1.2.2 The Master received information from his company's local agent of the rendezvous position and mode of communication with C8, which was on VHF Ch-17 for the transfer operation. A risk assessment was conducted in accordance with company's safety management system (SMS) and a permit to work was issued to allow transfer operation with the small craft.
- 1.2.3 One of the hazards identified was "*uncontrolled vessel's movement with the other vessel during operation*". Existing control measures included upgrading bridge watch condition and continuous communication with the supply vessel, with the resultant risk being "medium".
- 1.2.4 During the transit, the bridge team comprising the Master (in con), the Third Officer assisting in navigation and one ASD on hand steering. The composition of the bridge team was in accordance with the company's SMS for a routine navigation.
- 1.2.5 By about 2245H, CA passed Raffles Lighthouse, and steered northwest by west towards the rendezvous position. The Master noted the weather was fine with good visibility. The wind was light air with slight seas and swell.

- 1.2.6 At about 2255H, the CA established communication with C8 and proceeded on a steady northwest by west heading towards the rendezvous position. Both Masters agreed for the transfer operation to be conducted on a northwest by west heading (about 305°T), at a speed of about 4 to 5 knots.
- 1.2.7 At just before 2300H, C8 began approaching CA's starboard side, in the vicinity of the CA's cargo crane at CA's mid-ship. By this time, CA was at a heading of about 306°T and at a speed of about 4 knots.
- 1.2.8 Once C8 was alongside at about 2301H, the Chief Officer of CA prepared the vessel's cargo crane and noted that the cargo area of C8 was sufficiently lit from deck lights of the supply vessel and later by CA's crane lights.
- 1.2.9 As signalled by C8's crew (two men at aft deck who were wearing hard hats with no floatation devices), the crane hook was lowered. Once the crane hook had been successfully attached, Chief Officer on being signalled by C8's crew, instructed for the lift to be hoisted. The crew observed that C8's bow began to turn away from CA. This happened within a minute of C8 coming alongside.
- 1.2.10 Thereafter, one of the crew from the aft deck of C8 was seen as heading into the wheelhouse through the accommodation aft door. As C8 moved further away from CA's side, the Chief Officer instructed the crane operator to stop heaving and continued slacking the crane wire to prevent any risk of damage to the vessel's crane.
- 1.2.11 While the crane wire was continuously being lowered, another crew member came out of C8's wheelhouse (later identified as the Master). He was seen positioning himself at the inboard side of C8. Both men were seen as holding and guiding the first lift, while at the same time were giving signals for the crane operator to keep lowering the crane wire. These signals were duly conveyed by the Chief Officer to the crane operator and implemented.
- 1.2.12 As the distance between the two vessels increased further, the crane wire, despite continuously being lowered, remained taut and caused the first lift to be lifted-off C8's aft deck.
- 1.2.13 At about 2303H, the first lift moved upwards, rotated and swung towards CA's shipside. The C8's Master, who was positioned on the inboard side and standing in the swinging path of the lift was hit and thrown into the water, together with the lift.

- 1.2.14 CA's Chief Officer informed the bridge and hurriedly hoisted the crane wire, hoping that C8's Master would still be clinging to the cargo net of the first lift. Unfortunately, when the first lift was hoisted clear from the water, there was no sign of C8's Master.
- 1.2.15 CA's Master immediately stopped the main engine, sounded the emergency alarm for "Man Overboard" (MOB) as per company's SMS and the crew proceeded to keep a lookout for the MOB. At the same time, the Master called VTIS West and reported the MOB occurrence. The latter broadcast safety messages to all vessels in the vicinity to keep a lookout for the MOB.
- 1.2.16 CA's Master called the C8 for information on the occurrence, but the responses received were unintelligible. The Master updated VTIS West and reported the occurrence to his company and in accordance with the SMS, completed documentation formalities for MOB situation.
- 1.2.17 CA did not sustain any damage from the occurrence and remained fit to operate. VTIS continued to broadcast safety messages about the MOB occurrence to vessels in the vicinity. Following completion of the transfer operation at about 0052H, and in view of the ongoing SAR operations, CA received clearance from the VTIS to continue her voyage.

1.3 Location of the accident

- 1.3.1 The accident occurred at about 1.4 nm west of Raffles Lighthouse, within the westbound lane of the Singapore Strait TSS (see **Fig.8**).

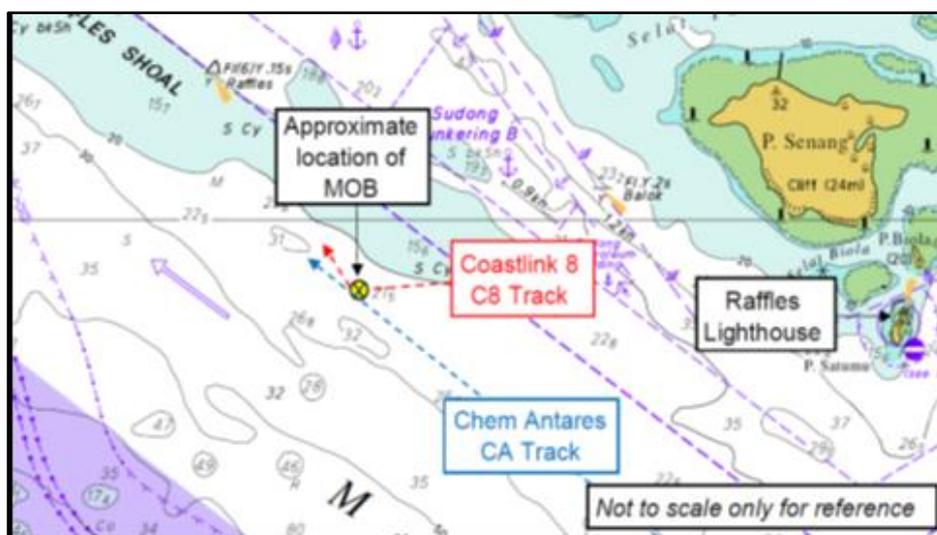


Fig.8 – Approximate location of MOB

1.4 VTIS Plots

1.4.1 VTIS plots and target list of both vessels prior to and during the occurrence:

Time	Coastlink (C8)		Chem Antares (CA)		Remarks
	COG (Degrees)	SOG (Knots)	SOG (Knots)	COG (Degrees)	
23:00:54	314.8°	3.8	4.1	306.0°	C8 alongside to CA
23:01:23	323.1°	3.8	4.0	306.1°	C8 veered to starboard
23:01:54	323.1°	3.8	3.9	305.8°	C8 maintained constant heading
23:02:25	323.1°	3.8	3.7	305.5°	
23:02:55	323.1°	3.8	3.6	305.9°	EO was conning C8
23:03:45	323.1°	3.8	3.5	306.1°	At about this time, the ASD shouted that the Master fell overboard
23:05:24 to 23:06:56	323.1° to 340.0°	1.4 to 2.3	3.2	306.1° to 305.0°	Stage 1 (Fig.6) EO turned the C8 bow away from the Master
23:05:28 to 23:12:00	340.2° to 284.9°	1.4 to 1.9	3.2	305.0° to 302.1°	Stage 2 (Fig.6) – Maneuver to recover the Master

1.5 Information from Singapore VTIS

1.5.1 On 26 August 2017 at about 2303H, VTIS received a report of a MOB occurrence, made safety broadcast and dispatched crafts to assist SAR operation.

1.5.2 The SAR operation ended four days later on 30 August 2017 at about 1230H when a decomposed body, later identified as that of the Master of C8, recovered by the PCG at sea off Marina South Pier.

1.6 Autopsy report

1.6.1 An autopsy conducted by the Forensic Division of the Health Sciences Authority revealed the cause of death as cardio-respiratory failure.

1.6.2 The report also mentioned that the deceased suffered from external injuries (full and partial thickness laceration) to the right and left buttocks.

1.7 Coastlink 8 manning

- 1.7.1 C8's manning¹⁸ comprised the Master, EO and ASD. The Master held a valid Certificate of Competency¹⁹ issued by the relevant Indonesian authorities. The certificate was appropriate for the vessel and supported with appropriate endorsements from the Flag Administration. The Master joined the vessel on 29 April 2017 and had about three years of in-rank experience onboard supply vessels.
- 1.7.2 The EO held a valid Certificate of Competency issued by the relevant Indonesian authorities. The certificate was appropriate for the vessel and supported with appropriate endorsements from the Flag Administration. The EO joined the vessel on 1 March 2017 and had about two years' in-rank experience on similar vessels.
- 1.7.3 The ASD held appropriate qualifications issued by the relevant Indonesian authorities, for his engagement onboard. He joined the vessel on 29 November 2015.

1.8 Coastlink Services Pte Ltd.

- 1.8.1 The principal activity of Coastlink Services, the company operating C8, was to operate non-SOLAS convention barges, tugboats and supply vessels.
- 1.8.2 The company operates eight supply vessels within Singapore territorial waters. Of these, seven were registered under Belize flag while one was registered under Singapore.
- 1.8.3 The company provided each craft with Personal Floatation Devices (PFD)²⁰ and instructions for its use by the crew and passengers. It was not mandatory²¹ for the crew to use these floatation devices during the craft's operation. There were no procedures or system in the company to carry

¹⁸ Minimum Safe Manning Certificate from the Belize administration require C8 to be provided with one Master and one Engine Rating for Coastal Trade

¹⁹ The International Convention on Standards of Training, Certification and Watch-keeping for Seafarers (or STCW), 1978 sets qualification standards for masters, officers and watch personnel on seagoing merchant ships.

²⁰ Personal Floatation Devices/ lifejackets provided onboard C8 are the types that are commonly used in the offshore industries.

²¹ Information from the Flag Administration requirement on donning of lifejackets/flotation devices where there is a risk of falling into the water was not received by the investigation team at the time of publishing the report. Singapore's Workplace Safety and Health (WSH) regulations require employers to provide lifejackets/flotation devices and for the employees to use them where there is a risk of falling into the water. WSH requirements applied to C8 when she was operating within Singapore port as a harbour craft. The occurrence took place outside of port limits.

out risk assessments, in particular, for conducting ship to ship stores/provision transfer operation.

1.9 Code of Safe Working Practices for Merchant Seafarers (COSWP)

1.9.1 The COSWP is a reference publication widely used by the industry for safe working practices on board ships. The code provides, among others, guidance and advice on safe working procedures and practices. None of the vessels of Coastlink Services carried a copy of the COSWP²² or a similar safety publication at the time of the occurrence.

1.9.2 Paragraphs in the COSWP of relevance to this occurrence are extracted:

a) Paragraph 8.12.1 - Where work is being carried out in an exposed position where there is reasonably foreseeable risk of falling overboard, a lifebuoy with sufficient line should be provided. In addition, and, as appropriate a working lifejacket, a personal floatation device or a buoyancy aid should be worn.

b) Paragraph 19.11.19 - Before any attempt is made to free the equipment that has become jammed under load, every effort should first be made to take the load off safely. Precautions should be taken to guard against sudden or unexpected freeing.

c) Paragraph 31.4.2 - If there is a chance that a seafarer could be knocked overboard during cargo operations, and then a self-inflating personal floatation device (working lifejacket) should be worn so as not to impede working movements. It must be capable, when activated, of turning the seafarer onto their back if unconscious.

d) Paragraph 31.8.8 – At all times, personnel should be alert to the danger of being hit or crushed should items of cargo swing during a lift or become dislodged through sudden movement of the ship. All seafarers should only approach a lift when it is safely on the deck and the weight is off the wire.

e) Paragraph 31.8.9 - Once a lift is connected, the seafarers should retreat to an appropriate safe haven before it is lifted.

²² The COSWP published by the UK Maritime and Coastguard Agency (MCA) provides best practice guidance for improving health and safety on board ships. The MCA requires UK registered ships to carry the COSWP on board. This publication is not mandated for carriage by the IMO.

2 ANALYSIS

The investigation team examined the following areas:

- a. Risk assessment on cargo transfer operation
- b. Actions of C8's crew

2.1 Risk assessment on cargo transfer operation

- 2.1.1 Receiving stores and spares is an integral part of vessel's normal operation. While most stores and spares are received when the vessel is alongside at berth or at anchor, it is however, not uncommon for the transfer operation to be carried out when the vessel is underway. To do so, requires detailed risk assessments by identifying hazards and mitigation of risks by implementing risk control options. While it may be a good practice to tether a line to the receiving vessel when transferring stores at anchor or alongside, such a practice, for safety reasons to prevent the craft being 'towed' by the larger vessel, is not the norm when transfer is being carried out with both vessels are in transit.
- 2.1.2 In this particular occurrence, the transfer operation between C8 and CA was agreed to be conducted while both vessels were steaming at about the same heading and speed, transiting the westbound lane of the Singapore Strait TSS.
- 2.1.3 When C8 came alongside CA at about 2300H, she was initially on a nearly parallel course as CA. The speed of both vessels was also similar. Without actually confirming that C8 and CA were maintaining their respective positions to allow commencement of a safe transfer, the Master of C8 gave instructions for crane wire to be lowered for lifting the first lift.
- 2.1.4 While the sequence of lift was discussed amongst the crew of C8, there were no discussions with CA or risk assessments conducted onboard C8 should either of the vessel's heading changes during the transfer. It appeared that there was a lack of guidance/instruction for identification of hazards while performing transfer operations in transit, provided for by the company of C8. In addition, none of the C8's crew donned a floatation device when handling stores from a low freeboard deck due to the absence of such a requirement by the company that operated C8.
- 2.1.5 Appropriate risk assessments done by the company and implemented onboard C8 may have been able to mitigate the risks of transfer operation while underway, such as, actions to be taken when the pre-agreed heading for a safe transfer could not be achieved and the donning of

floatation device during transfer operations where there is a risk of falling into the water.

- 2.1.6 Although, CA's risk assessment identified heading change as a possible hazard, communication with the supply vessel was determined to be risk control measure. However, when C8 requested for transfer operation to commence, CA did not seek confirmation on whether the pre-agreed heading had been achieved and it was safe to commence the transfer operation. When C8 was noted to veer away, there was no communication between both vessels on the course of actions, e.g. to abort the operation.

2.2 Helm actions onboard Coastlink 8

- 2.2.1 The EO who had the con during recovery of the Master from the sea, had to turn the steering wheel anti-clockwise for more than 10 turns, before it came to maximum port helm, indicating that the actual position of the steering wheel when the EO took over from the Master, was likely at mid-starboard helm's position, instead of at the mid-ship position.
- 2.2.2 Considering the hours of darkness when the incident occurred, C8 being the smaller craft, would likely have been affected by the bow waves of the CA. With no helm/rudder indicator, the Master in trying to maintain C8's position alongside, while at the same time keeping the bow away from the shipside, may have lost his situational awareness. It is likely that the Master had unintentionally placed the steering wheel position more to starboard without realising it that had caused the vessel to move away from CA's shipside.
- 2.2.3 The Master's assumption that the veering was a result of the crane wire pulling on C8's stern towards CA was contrary to the witness account, which stated that there was no load on the crane wire.
- 2.2.4 The Master could have communicated to CA's Master on his difficulty to maintain a nearly parallel heading so that appropriate steps could have been taken by CA, such as further reduction in speed for both vessels to be safely alongside before the crane was hooked to the first lift or aborting the operation.
- 2.2.5 When the EO informed the Master that the vessel was veering to starboard, the Master left the wheelhouse and was working around the stuck lift with the ASD, where the working area was limited. Despite the crane wire being continuously lowered, it remained taut, due to C8 moving constantly away from CA's shipside. As a qualified and experienced boat

handler, the Master of C8 should have continued with the conning of the vessel and should not have left the boat handling in the hands of the EO²³ who might not have had the same experience as the Master.

- 2.2.6 The Master, being an experienced seaman, did not realise the danger of standing in the vicinity of suspended weight that was likely to swing considering the movement of C8 relative to CA. It appeared that the Master might have been focused in trying to get the first lift out and disregarded his own safety. Though the ASD warned the Master to stay clear when the lift was seen moving upward, the event occurred too quickly and caught the Master off-guard. The Master might have suffered injuries after being hit by the swinging lift and affected his ability to stay afloat for a longer duration.
- 2.2.7 While C8 is a Non-Convention vessel and International Safety Management (ISM²⁴) Code does not apply, a safe operation is the responsibility of those who are tasked with the vessel's operation. It would have been beneficial if the company could have implemented best safe working practices such as those contained in the COSWP as outlined in paragraph 1.9.2.
- 2.2.8 Information contained in the COSWP could have provided the company, Master and the crew of the supply vessel with a better understanding of the risks involved when performing transfer operations.

²³ It is not uncommon for a supply vessel, where the number of crew is limited, the crew have a minimum understanding of each other's tasks. In the case of the EO, being an engine officer, have a minimum working knowledge of how to con the vessel. The boat handling ability of the EO did not contribute to the occurrence.

²⁴ ISM provides for safety management on board ships.

3 CONCLUSIONS

From the information gathered, the following findings are made. These findings should not be read as apportioning blame or liability to any particular organisation or individual.

- 3.1 The reason for C8's bow to veer to starboard soon after she came alongside CA could have been due to the helm being inadvertently at the starboard side. The C8's crew did not ascertain a parallel heading with CA prior to commencing the transfer operation.
- 3.2 The Master of C8 had incorrectly identified the cause of the veering as being the first lift pulling on C8's stern towards CA's shipside and attempted to place the lift back to its position instead of attempting to adjust the heading of C8.
- 3.3 To adjust the lift on the main deck area of the supply vessel, the Master left the steering of C8 under the charge of the EO and assisted with the cargo operation in an attempt to place the first lift back to its original position. The Master did not recognise that he was standing in the path of the cargo swing as he was hit by the swinging cargo lift and thrown into the sea.
- 3.4 The Master and the other crew members onboard C8 were not wearing floatation devices at the time of the occurrence as the company did not mandate the donning of flotation devices while performing operation where there was a risk in falling into water.
- 3.5 The company had not provided sufficient guidance/instructions for the Master and crew of C8 in the conduct of proper risk assessment involving cargo transfer operation while underway.

4 SAFETY ACTIONS

Arising from discussions with the investigation team, the following safety actions were taken by the supply vessel operator.

- 4.1 The company of C8 carried out additional training for all crew on the importance of personal protective equipment, in particular, use of floatation devices when in operation.
- 4.2 Written instructions were provided onboard their craft mandating the use of floatation devices.
- 4.3 Recognising the difficulty and demanding task involving ship to ship cargo transfer operation while in transit, the operator has provided for additional crew to assist in the cargo transfer operation.

5 SAFETY RECOMMENDATIONS

A safety recommendation is for the purpose of preventive action and shall in no case create a presumption of blame or liability.

It is recommended that:

- 5.1 Coastlink Services Pte Ltd., as the operator of C8, provides proper guidance/instructions to its crew in the conduct of risk assessments on transfer operations, especially when underway, by identifying hazards and mitigating the risks with appropriate measures. **[TSIB-RM-2018-11]**
- 5.2 IMMARBE, being the flag Administration of the Coastlink 8, to mandate the carriage of a publication like the COSWP so that the operators of non-Convention vessels, can take reference from such a publication in the conduct of safe operations onboard. **[TSIB-RM-2018-12]**

End of Report