



Accident Report  
*ANL Progress*  
Person Overboard at Port of  
Lyttelton on 4 July 2004



## ANL PROGRESS

### CASUALTY DETAILS:

|                               |                                      |
|-------------------------------|--------------------------------------|
| <b>Date of Casualty:</b>      | 4 July 2004                          |
| <b>Time of Casualty:</b>      | 0115 hours New Zealand Standard Time |
| <b>Casualty Type:</b>         | Person Overboard                     |
| <b>Casualty Location:</b>     | Cashin Quay 2, Lyttelton             |
| <b>Weather Forecast Area:</b> | Conway                               |
| <b>Date MSA Notified:</b>     | 4 July 2004                          |
| <b>Investigator:</b>          | Zoe Brangwin                         |



## ANL PROGRESS

### Vessel Details:

|                                   |                                  |
|-----------------------------------|----------------------------------|
| <b>Ship Name:</b>                 | <i>ANL Progress</i>              |
| <b>Date of Build:</b>             | 1996                             |
| <b>Ship Category:</b>             | Cellular Container Ship          |
| <b>Certified Operating Limit:</b> | International                    |
| <b>Overall Length (m):</b>        | 139.05                           |
| <b>Maximum Breadth (m):</b>       | 24.15                            |
| <b>Gross Tonnage:</b>             | 9 991                            |
| <b>Net Tonnage (t):</b>           | 5 208                            |
| <b>Flag:</b>                      | Antigua & Barbuda                |
| <b>Registered Owner:</b>          | MS Osnabuck GmbH                 |
| <b>Ship Operator:</b>             | Broehan Bereederung BbR, Germany |
| <b>Classification Society:</b>    | Germanischer Lloyd               |



## SUMMARY

At 0105 hours on Saturday 3 July 2004, a stevedore from Lyttelton Stevedoring Services fell into the harbour from the container vessel *ANL Progress*, when he lost his balance while holding a three high lashing bar. The stevedore was rescued from the water and treated for hypothermia.



# Key Events

- 1.1 At approximately 1300 hours New Zealand Standard Time (NZST) on Saturday 3 July 2004, Stevedore 1 received a telephone call asking him to work the 'graveyard shift' (from midnight) that night and the afternoon shift on Sunday. He agreed to both shifts with an eight-hour break in between.
- 1.2 Stevedore 1 slept from about 1430 to 2030 hours. When he got up he had dinner with his family before going to work.
- 1.3 At approximately 2240 hours, Stevedore 1 arrived at work at Lyttelton Stevedoring Services. They were due to work on the container vessel **ANL Progress** that night. The vessel was late, so they did not start work until about 2335 hours. Stevedore 1 was designated as a wharf hand for the shift.
- 1.4 Stevedore 1 and 2 were assigned the task of removing container lashings. They commenced unlashings the containers in Bay 23, working their way along the containers, from starboard to port (wharf to sea).
- 1.5 At approximately 0105 hours, Stevedore 1 undid the lashings on the outboard container. To do this he was standing on the lashing platform on the outboard side of the ship (See *Appendix 1 – Photos 1 & 2*). He undid the one and two high lashing bars and placed them on the deck. He then undid the first three high lashing bar (the lashing bar that is attached from the base of the first container to the base of the third container), (See *Appendix 1 - Photos 3 & 4*) and put it on the deck. He had just taken off the last three high lashing bar and was holding it upright when he lost his balance due to the vessel's movement (caused by the easterly swell coming up the harbour).
- 1.6 The lashing bar tilted towards the water. Stevedore 1 let go of the bar, as it had already started to fall. As the bar fell towards the ship's side it caught him in-between his legs and took him with the bar into the harbour.
- 1.7 Stevedore 1 dived into the water head first. He yelled out to his partner for help while floating on his back and kicking himself towards the ship, as he drifted out.
- 1.8 Stevedore 2 raised the alarm. The stevedores onboard the vessel threw Stevedore 1 a light and then a lifebuoy. He got in the lifebuoy and was pulled towards the wharf. Once at the wharf he managed to climb up the ladder. He was in the water for approximately 15 minutes.
- 1.9 As soon as he was on the wharf, a group of Stevedores helped him to the Lyttelton Stevedoring Services building where he was put in the shower to warm up. The St Johns ambulance then arrived and gave him a full check before allowing him to go home. He was given a clean bill of health and returned to work the afternoon shift that day.



# Key Conditions

## 2.1 Particulars of *ANL Progress*, Ownership and Class

2.1.1 *ANL Progress* is a cellular container ship, built in 1996 and registered in St Johns, Antigua and Barbuda. The vessel has an overall length of 139.05 metres and a moulded breadth of 23.9 metres. She has a gross tonnage of 9 991.

2.1.2 The vessel is owned by MS Osnabuck GmbH & Co.Kg, operated by Broehan Bereederung BbR, Germany and chartered by ANL Container line PTY.LTD. The vessel is a regular visitor to Lyttelton.

## 2.2 Stevedoring

2.2.1 Lyttelton Port Company Limited (LPC), operates the port of Lyttelton. There are four stevedoring companies that work out of Lyttelton. Lyttelton Stevedoring Services (LSS), LPC, Pacifica and Toll.

2.2.2 Southern Cross Stevedores Limited is the parent company for LSS. Southern Cross Stevedores is based in Auckland and is the parent company for twelve stevedoring companies around New Zealand.

2.2.3 Stevedore 1, aged 54 years, is an employee of LSS. He was employed as a casual cargo handler and had been working for LSS for five years. He had also worked for LPC, Pacifica and Toll.

2.2.4 Stevedore 1 had received induction training from all four stevedoring companies. On the night of the accident, a stevedore with LSS, who had over 30 years of experience stevedoring at Lyttelton, partnered him.

2.2.5 Stevedore 1 was wearing the following clothing:

- Thermal vest
- T shirt
- Woollen work shirt
- Sweatshirt
- Thermal trousers
- Tracksuit pants
- Hard hat
- Overalls
- Heavy weather high vis Jacket
- Leather gloves
- Socks- walk and woollen
- Woollen beanie
- Steel cap lace up boots

2.2.6 Stevedore 1's warm thermal clothing, although very heavy when wet, would have helped to keep his body temperature from dropping too quickly.

## 2.3 Weather Conditions

2.3.1 The following extracts are from the coastal weather forecasts from the Meteorological Service of New Zealand Limited (MetService). It should be noted that the recreational forecast is not applicable to Lyttelton Harbour. However, the forecast gives a good indication of the weather that could have been expected in the harbour.

***Marine Weather Situation and Forecast issued at 1742hrs Saturday 03-Jul-2004 by MetService***

*GALE warning in force for sea area CONWAY*



### Forecast issued at 1742hrs Saturday 03-Jul-2004

Valid until midday Sunday for Inshore waters from Lyttelton Harbour to the Waimakariri River mouth.

Southwest 25 knots gusting 35 knots, easing to 15 knots late morning. Rough sea easing to slight in the morning. Fair visibility in a few showers clearing in the morning.

Outlook until midnight Sunday: Southwest dying out and northeast 15 knots developing. Fine.

Swell forecast to midday Sunday: Easterly swell about 1 metre.

2.3.2 At the time of the accident the sea temperature measured at the NIWA Sumner Head site was 9.2 degrees Celsius.

2.3.3 High tides at Lyttelton:

|          |      |            |
|----------|------|------------|
| Saturday | 1713 | 2.7 metres |
|          | 2332 | 0.3        |
| Sunday   | 0538 | 2.5        |

2.3.4 At the time of the accident the Lyttelton based MetService weather station read as follows:

| Time     | Wind Direction | Wind Speed | Air Temperature |     |
|----------|----------------|------------|-----------------|-----|
| 03/07/04 | 1800           | 230        | 14              | 8.5 |
|          | 2100           | 250        | 19              | 7.7 |
| 04/07/04 | 0000           | 240        | 16              | 7.6 |
|          | 0300           | 230        | 13              | 6.8 |



## 2.4 Lashing Safety

2.4.1 The three high lashing bars measure up to five metres in length and weigh up to a maximum of 24kgs.

2.4.2 LSS had no documented operating procedures for the handling of three high lashing bars.

2.4.3 Port of Otago Limited has an operating procedure in place that requires three high lashing bars to be handled by two stevedores.

2.4.4 Port Otago's procedure requires that all three high lashing bars are removed first. This ensures that the lashing platform is clear when handling this equipment.

2.4.4 Onboard **ANL Progress**, the two stevedores removed the smaller one and two high lashing bars first, which cluttered the lashing platform.

2.4.5 The following relevant extracts are taken from a Pacific Maritime Association (PMA) Safety Bulletin on Lashing Safety.

*“Technique: There are techniques to lashing. Walking the bar up, and sliding it down. Working with a buddy to lift a bar into a corner casting. Supervision and more experienced co-workers should be sharing their techniques that make lashing safer with the new workers. The key word is **control**. If a bar gets out of control from a worker it can come crashing down and injure anyone in the vicinity (There are a lot of "struck by" injuries associated with lasher accident statistics.) A bar falling across a ship's hand rail can act as a fulcrum and throw a person over the side. Awkward lifting positions and the heavy weight of the bar lead to back strains.”*

**Physical readiness:** *Lashing is tough, heavy work. Workers must be in good physical condition to have enough strength and endurance to do the job and not get hurt. Workers who are ill or fatigued or otherwise incapacitated are at risk to injury.*

- 2.4.6 The New Zealand Occupational Safety and Health publication, Guidelines for Prevention of Falls states:

*"Where a fall from any height could result in harm, some sort of fall protection should be used. Fall protection shall be supplied and used in any place where an employee is at risk of a fall of 3 metres or more. The employer can select the fall protection method that is most compatible with the type of work being carried out.*

*Each employee on a walking/working surface with an unprotected side or edge, which is 3 metres or more to a lower level shall be protected from falling by the use of a guardrail system, safety net system, or personal fall-arrest system."*

#### 2.4.7 Heights of More than 3 Metres

Regulation 21 of the Health and Safety in Employment Regulations 1995 states:

- (1) *In this regulation, the term "employer" does not include any "employer" who employs any employee to carry out any agricultural work in a place of work under the control of that employer.*
- (2) *Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that, where any employee may fall more than 3 metres*
- (a) *Means are provided to prevent the employee from falling; and*
- (b) *Any means so provided are suitable for the purpose for which they are to be used."*



- 2.4.8 The Maritime Safety Authority and Occupational Safety and Health jointly published the Code of Practice for Health & Safety in Port Operations.

##### **Section 2.6 Hold and Cargo Decks**

2.6.1 *All practicable steps are to be taken to ensure the safety of employees required to be in the hold or on the cargo deck of a ship.*

2.6.5 *Where a fall of more than 3 metres is possible, means must be provided to prevent a fall.*

2.6.11 *In the case of ships carrying containers, all practicable steps must be taken for ensuring the safety of employees lashing or unlashng the containers.*

##### **Section 7.2 Ships Hazards**

7.2.1 *As every ship presents a different set of hazards, an inspection needs to be carried out by a competent person prior to the commencement of work.*

7.2.2 *Any defects are to be reported to the appropriate person who has the authority to initiate the necessary action.*

- 2.4.9 The following media release was posted in the United Kingdom on Monday, February 23, 2004.

##### **"SAFER SYSTEMS OF WORK FOR STEVEDORES**

*The Maritime and Coastguard Agency (MCA) acting with the HSE has required ships' operators to improve access for the work of lashing containers on deck for stevedores who must otherwise balance on a narrow ledge to fit lashing bars to the outside tiers. The operators have in the interim restricted the loading in these areas and are addressing similar potential problems on ships under construction.*

*For stevedores, the disposition of containers on ships involves tasks on unprotected platforms with a potential fall over the side of the vessel or into the well deck, risking serious or even fatal injury. The most common cause of incidents is the lack of suitable and safe access to lashing workstations forcing, in some cases, stevedores and crew to use unorthodox and unsafe work practices. Present practices can also give rise to musculoskeletal disorders, because of heavy lashing bars being handled often in awkward positions.”*



## Contributing Factors

*N.B. These are not listed in order of importance.*

- 3.1 The weight and length of the three high lashing bar.
- 3.2 The restricted space in which the stevedore had to work.
- 3.3 Stevedore 1 was handling the bar alone.
- 3.4 The easterly swell conditions caused the vessel to range alongside the berth.
- 3.5 The lashing platform did not have a guardrail.
- 3.6 Stevedore 1 was not equipped with a fall arrest system.

## Cause

### Human Factor

|  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> Failure to comply with regulations | <input type="checkbox"/> Drugs & Alcohol | <input type="checkbox"/> Overloading           |
| <input type="checkbox"/> Failure to obtain ships position or course    | <input type="checkbox"/> Fatigue         | <input type="checkbox"/> Misconduct/Negligence |
| <input type="checkbox"/> Improper watchkeeping or lookout              | <input type="checkbox"/> Physiological   | <input type="checkbox"/> Error of judgement    |
| <input type="checkbox"/> Lack of knowledge                             | <input type="checkbox"/> Ship Handling   | <input checked="" type="checkbox"/> Other      |

### Environmental Factor

|   |   |                                    |  |
|---|---|------------------------------------|--|
| <input checked="" type="checkbox"/> Adverse weather | <input type="checkbox"/> Debris           | <input type="checkbox"/> Ice       | <input type="checkbox"/> Navigation hazard |
| <input type="checkbox"/> Adverse current            | <input type="checkbox"/> Submerged object | <input type="checkbox"/> Lightning | <input type="checkbox"/> Other . . .       |

### Technical Factor

|   |   |   |
|---|---|---|
| <input type="checkbox"/> Structural failure | <input type="checkbox"/> Wear & tear            | <input type="checkbox"/> Steering failure                   |
| <input type="checkbox"/> Mechanical failure | <input type="checkbox"/> Improper welding       | <input type="checkbox"/> Inadequate firefighting/lifesaving |
| <input type="checkbox"/> Electrical failure | <input type="checkbox"/> Inadequate maintenance | <input type="checkbox"/> Insufficient fuel                  |
| <input type="checkbox"/> Corrosion          | <input type="checkbox"/> Inadequate stability   | <input checked="" type="checkbox"/> Other                   |

*Human Factor Other = Insufficient Procedures*

*Technical Factor Other = Inadequate Fall Protection*

- 4.1 Stevedore 1 fell from **ANL Progress** into the harbour when he lost his balance whilst holding a three high lashing bar.



# Recommendations

- 5.1 It is the opinion of the Maritime Safety Authority that by failing to provide fall protection LSS failed to comply with Regulation 21 of the Health and Safety in Employment Regulations 1995 and the Section 2.6.5 of The Code of Practice for Health & Safety in Port Operations.
- 5.2 It is recommended that Southern Cross Stevedores Limited implement and document standard safety operating procedures for working with lashing bars across all their stevedoring companies.
- 5.3 It is recommended that this report be disseminated to all port and stevedoring companies to highlight the potential danger of this happening elsewhere. It is additionally recommended that they too implement and document appropriate standard safety operating procedures for working with lashing bars and ensuring their operation complies with The Code of Practice for Health & Safety in Port Operations
- 5.4 It is recommended that the dangers associated with lashing, should be the topic of frequent pre-work safety talks. Lasher injury avoidance should focus on physical readiness, technique, awareness, care, and safety equipment.
- 5.5 Employers, supervisors and employees are all responsible for safety and reducing cargo-handling injuries.
- 5.6 Employees must use their safety equipment and safe techniques. They should also report unsafe conditions to their employers.
- 5.7 It is recommended that all stevedoring companies require the use of fall protection on platforms over three metres.
- 5.8 It is recommended that the Maritime Operations Division of the Maritime Safety Authority in conjunction with Occupational Safety and Health look further in to the issue of lashing safety onboard container vessels with special reference to the feasibility of fall protection.
- 5.9 It is recommended that the Maritime Safety Authority correspond with the Maritime Coastguard Agency to find out what they are doing with regard to the relevant construction and design issues mentioned in their media release.



Appendix 1



Photo 1 – Lashing Platform From Which Stevedore 1 Fell

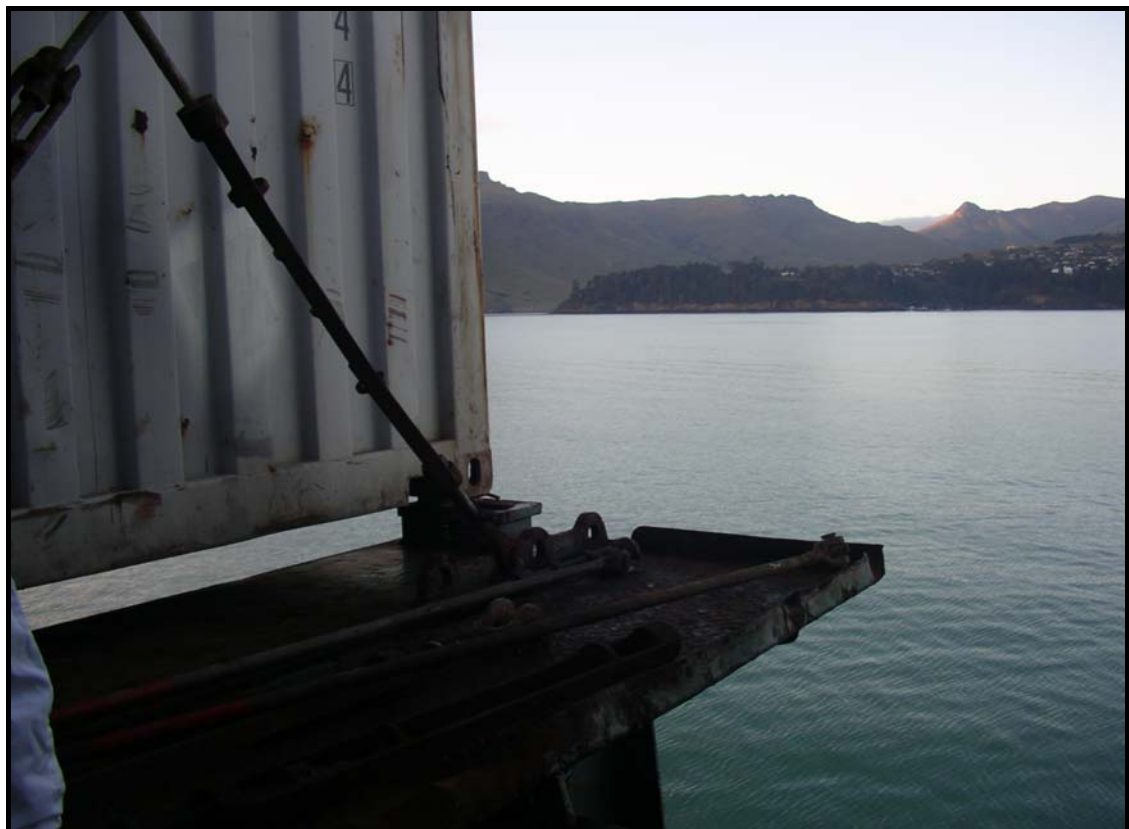
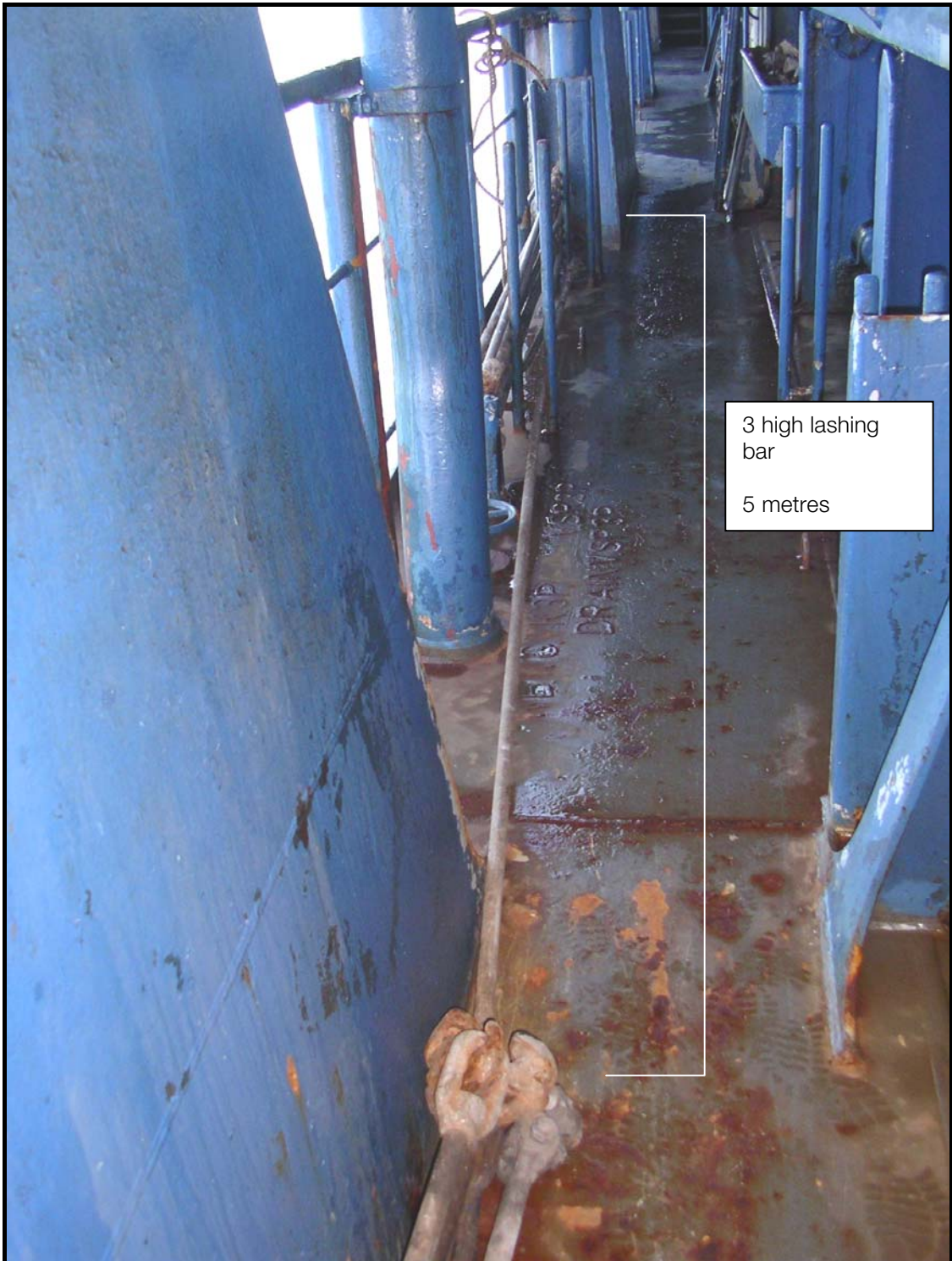


Photo 2 – Lashing Platform From Which Stevedore 1 Fell

Appendix 1 cont.



3 high lashing  
bar  
5 metres



Photo 3

Appendix 1 cont.

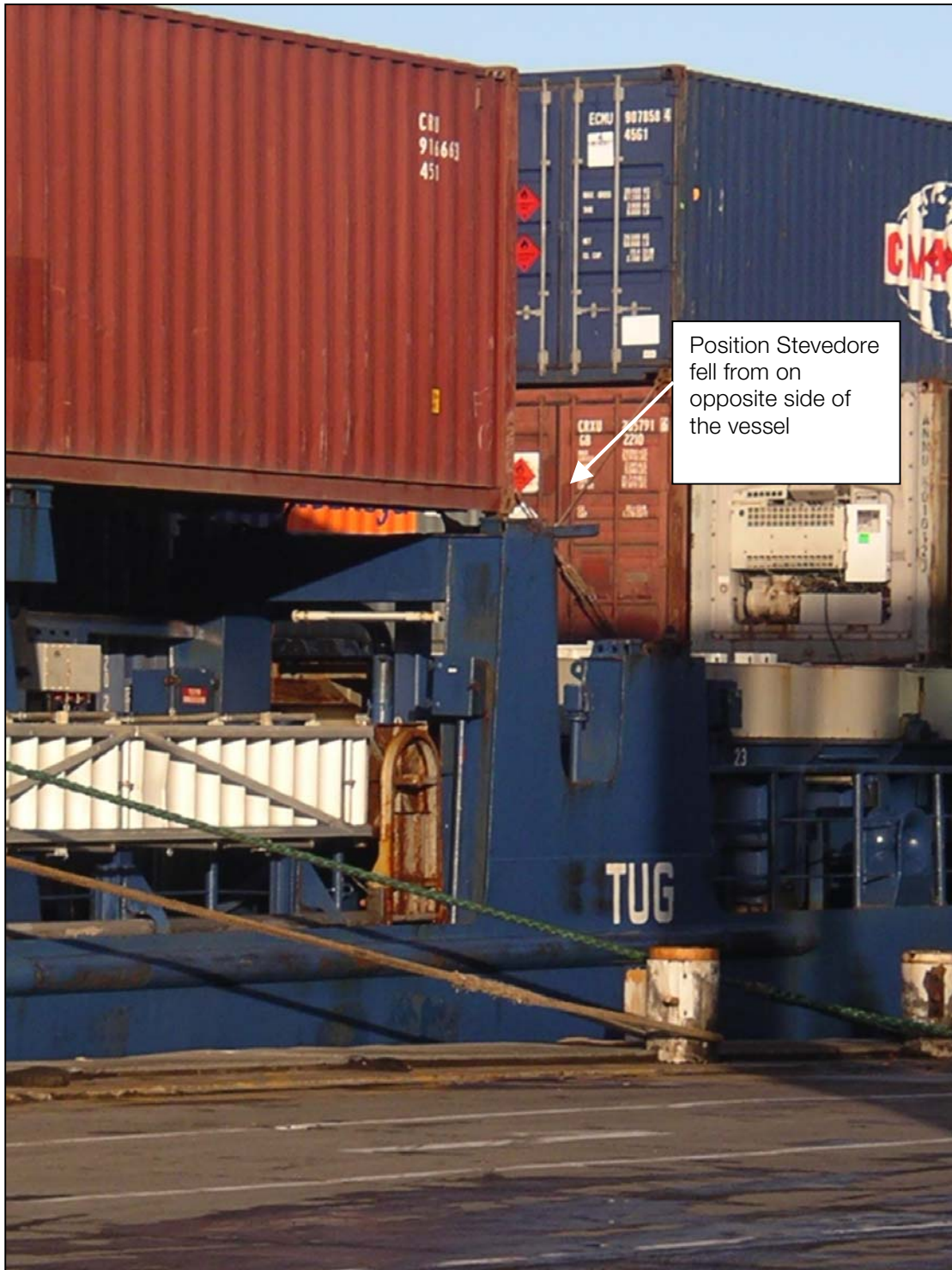


Photo 4