



DUTCH
SAFETY BOARD

Investigations

The Dutch Safety Board has the legal obligation of investigating serious and very serious incidents involving Dutch seagoing vessels. This obligation also extends to the investigation of serious and very serious incidents involving seagoing vessels in Dutch territorial waters. The Dutch Safety Board carries out these investigations in accordance with the Kingdom Act concerning the Dutch Safety Board and the EU Directive 2009/18/EC of the European Parliament and the European Union Council of 23 April 2009, establishing the fundamental principles governing the investigation of accidents in the maritime transport sector. When the Dutch Safety Board decides that no structural safety shortcomings are involved with regard to a serious incident, a description of the occurrence is sufficient. The main goal of the Dutch Safety Board is to prevent accidents or the consequences thereof by determining lessons learned and formulating recommendations. Investigating who is to blame or liable is expressly not a part of the investigation of the Dutch Safety Board.

Shipping Occurrences Report

November 2018 – May 2019



Work on board ships is not without risk. The activities involved in the loading and unloading of ships are among those representing the greatest risks in the shipping industry. Crew members involved in these activities are faced with an ever changing working environment, with heavy objects and equipment constantly in motion.

This Shipping Occurrences Report focuses on the theme 'Safety during cargo handling operations'. It provides an insight into the factors that increase risks and into the necessity of permanent physical supervision of the working environment and the safe execution of tasks.

It gives an outline picture of the formal responsibility structure and the potential bottlenecks, and it considers the importance of cooperation between all parties involved in cargo handling operations, with the aim of increasing safety levels. That same level of importance still applies even when there are no laws or rules that impose statutory requirements.

Jeroen Dijsselbloem, *chairman of the Dutch Safety Board*



page 3



page 9



page 10

Safety during cargo handling operations

On 30 December 2016, a fatal accident occurred on board a Dutch seagoing vessel during the unloading of containers. A crew member was involved in releasing the containers so that they could be unloaded. While carrying out this work, he fell overboard. The Dutch Safety Board investigated this accident and in January 2019 published the report 'Fatal accident during unloading in Moerdijk - Lessons learned from the accident on board the A2B Future'.

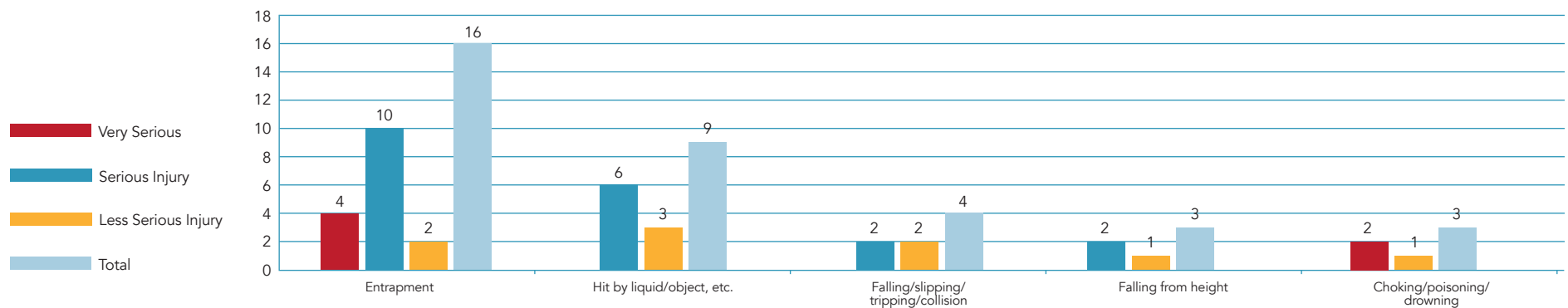
Together with previous accidents investigated by the Dutch Safety Board, this accident led the Board to focus attention in this Shipping Occurrences Report (SOR) on occupational accidents during loading and unloading operations (cargo handling) on board seagoing vessels. This includes work on or with cargo and work related to loading and unloading, such as working with cranes, securing (and releasing) loads for transport, opening and closing hatches, cleaning holds and coamings, and moving bulkheads.

An analysis of the accidents that have been reported to the Dutch Safety Board since 1 January 2016 reveals that a total of 35 accidents occurred during loading and unloading operations (see Figure 1). In 16 of these accidents, crew members suffered serious injuries. In addition, 6 different accidents led to 6 fatalities. All fatal accidents were investigated by the Dutch Safety Board.

When the figures for the category 'loading and unloading' are compared with the total number of occupational accidents during the same period, it turns out that 1 in 7 accidents are related to loading and unloading operations. When we look at fatal accidents, it becomes clear that of all fatal accidents, almost 40% relate to placing or removing cargo on board at the start and end of a journey.

With the exception of the loading of tankers, loading and unloading operations are characterized by working with heavy objects and heavy equipment that is in motion. This demands additional alertness from the crew on board the vessel and dockworkers on shore. Factors which increase the risk of accidents during these operations include:

- Loading and unloading activities in multiple holds simultaneously;
- Work in zones where loading or unloading operations are being carried out, for example within the reach of cranes and hatch covers;
- Deck cargo and other obstacles that impair or even block visibility from the quayside, crane cabin, bridge and other locations on the deck;
- Motion of the vessel as a result of placing cargo on board or lifting cargo from the vessel;
- Pressure of time;
- Cooperation with other parties such as terminals and lashing companies, whereby the cooperation takes place (partly) on board and influences safe working practice.



Consequences of occupational accidents during loading/unloading and cargo handling operations. (Source: Dutch Safety Board)



Cargo handling operations on deck. (Source: Dutch Safety Board)

The more of these factors apply, the greater the risks and the greater the alertness required from those working on deck, in the hold or on shore. It is notable that in five of the six fatal accidents investigated by the Dutch Safety Board, the victims were out of sight of others.

The necessity of good-quality and permanent physical supervision of persons working at the heart of cargo handling operations is self-evident. It contributes to the safe execution of the work, certainly in a working environment that is constantly subject to change and motion. The organization of and responsibility for such supervision is therefore in general a key element of legislation and regulations regarding occupational safety.

In the shipping sector, the legislation and regulations relating to occupational safety and the related supervision activities are not always sufficient to cover all the risks. This above all emerges during loading and unloading activities involving interaction between ship and shore. Whereas in the case of the accident on board the A2B Future both the crew of the Dutch seagoing vessel and the employees of the terminal were subject to the same Dutch Working Conditions Act, in foreign ports the situation is clearly different. Local legislation and regulations at ports abroad do not apply on board the Dutch ships moored in those ports. Conversely, the Dutch Working Conditions Act does apply on board the ship, but not at the terminal. Another example is the situation whereby in accordance with local (trade union) requirements vessels are sometimes obliged to have the ship's cranes operated by local personnel without there being any knowledge of the background of the personnel in question.

Supervision on board

The primary responsibility for maintaining supervision of work lies with the employer(s). On board, in most cases that is the ship manager (ISM manager). The natural state of affairs is therefore for the tasks relating to supervision to be included in safety management systems and Risk Inventories and Evaluations and the accompanying Action Plans.

Practice reveals, however, that it is not always possible to maintain permanent physical supervision. In addition, it often emerges that crew members tasked with supervision are also simultaneously responsible for other operational tasks such as updating or preparing stowage plans, making travel preparations, the handling of hazardous substances, the monitoring of stability and draught, and managing other crew members. To correctly implement the supervision as laid down on paper requires more crew members, in particular when the lay time is reduced as a result of compelling external factors, in turn resulting in increased pressure of time. Such additional capacity is often not available on board, despite it being so important during high-risk activities.

Capacity on board

Capacity on board is a key factor in organizing and providing sufficient supervision of safe working on board. The minimum crew composition is laid down in the compulsory Minimum Safe Manning Document issued by the government. This crew composition is based on a manning plan drawn up by the ship manager which is submitted to and assessed by the Human Environment and Transport Inspectorate (ILT). If supervision on board, or any other activities critical to safety, is not sufficiently described in the manning plans and therefore are not reflected in the number of crew members on board, the ILT could use the Minimum Safe Manning Document to demand additional crew members.

Nonetheless, the ILT cannot be held (partly) responsible for undermanning on board a vessel. After all, the regulations on which crew composition are based are known as target regulations. In this connection, this means that placing additional crew members on board, over and above the minimum compulsory crew members in response to the needs of a particular situation, is a responsibility of the ship manager.

Role of the captain

In addition to the government and the ship manager, the captain also has formal authority when it comes to ensuring sufficient capacity, for example for the supervision of loading and unloading operations. In addition to the responsibility for ensuring the adequate execution of specified processes and work instructions, the captain also has the authority to demand additional crew members from his ship manager, if he considers it necessary.

Better safe than sorry

Permanent physical supervision can prevent serious accidents during loading and unloading operations. It is therefore vital that agreements be reached with other parties on the work to be carried out, safety barriers, supervision and training, even if there is no clear statutory obligation for doing so.

These agreements go beyond mere ship's management, transshipment terminals and crane operators. The way in which the work is divided during loading and unloading operations, the degree of complexity and the degree of risk involved in the interaction, and the way in which supervision is organized are often determined in the contracts with charterers, cargo owners and shippers. Although not clearly laid down in legislation and regulations, these parties do bear a vital responsibility for safety. By increasing their level of involvement, these parties could make a substantial contribution to safety.



Unsafe working situation due to fall risk. (Source: Dutch Safety Board)

Accident classification

In this Shipping Occurrences Report, the Dutch Safety Board registers the description of accidents on board ships sailing under the Dutch flag or accidents that have occurred within Dutch territorial waters and reports published during the period of 1 November 2018 to 1 May 2019.

Each accident has been classified based on seriousness. The categories match EU Directive 2009/EC/18:

Very serious: accident where the ship is a total loss or where there have been fatal victims or serious environmental damage.

Serious: accident involving a ship that cannot be classified as 'very serious' and where for example a fire, collision, grounding, etc. has occurred that has meant that the ship cannot continue to sail or causes environmental damage. This category also includes loss of control of the vessel following a technical failure if the vessel subsequently has to be assisted into port.

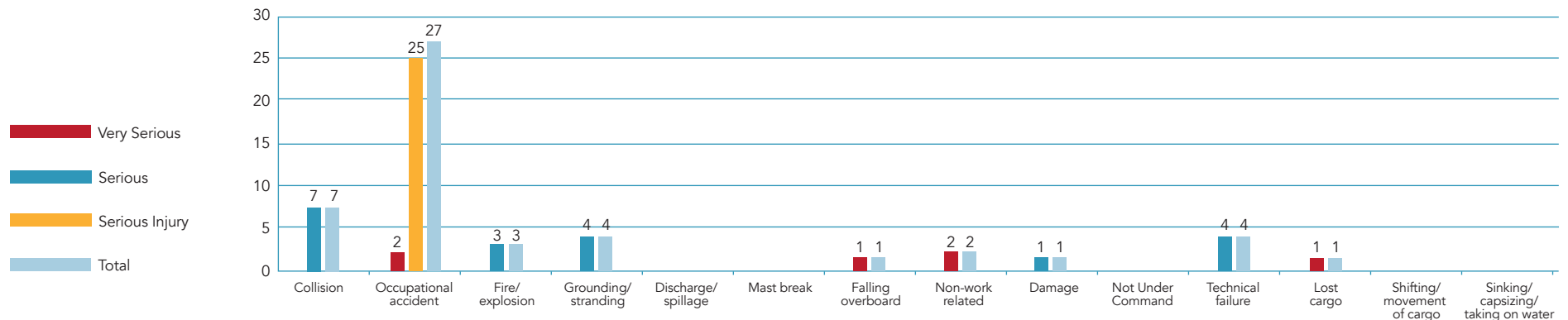
Less serious: accident that cannot be qualified as 'very serious' or 'serious'.

Marine incident: an event, or series of events, other than an accident that has taken place and is linked to shipping operations that put at risk the safety of the ship, a person on board or the environment or that would have put any of these at risk if it had not been rectified.

Serious injury: injury suffered by a person that has meant that the person has been incapacitated for work for more than 72 hours within seven days after the date on which the accident took place.

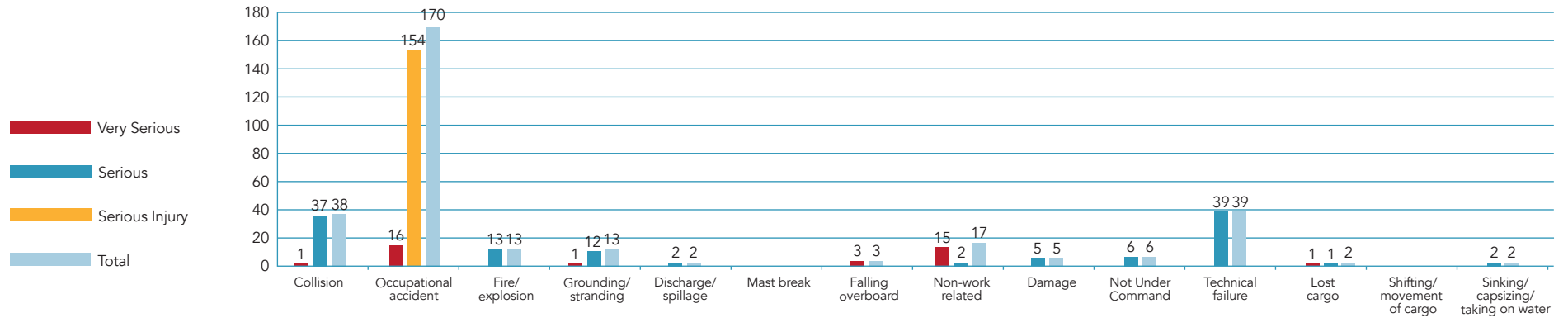
This report lists incidents from the following categories: *very serious*, *serious* and *serious injury*. In addition to details about the reporting period, on this occasion a multiyear overview is also included. This provides a greater insight into trends.

In the following figures, occupational accidents occupy a prominent position. The prevention of occupational accidents has also been awarded a prominent position in (international) rules. The international Maritime Labour Convention (MLC 2006), which contains these rules, is viewed alongside the SOLAS Treaty, the Marpol Treaty and the STCW Treaty as the fourth pillar of maritime regulations applicable on board seagoing vessels. MLC 2006 was drawn up under the flag of the International Labour Organisation (ILO).

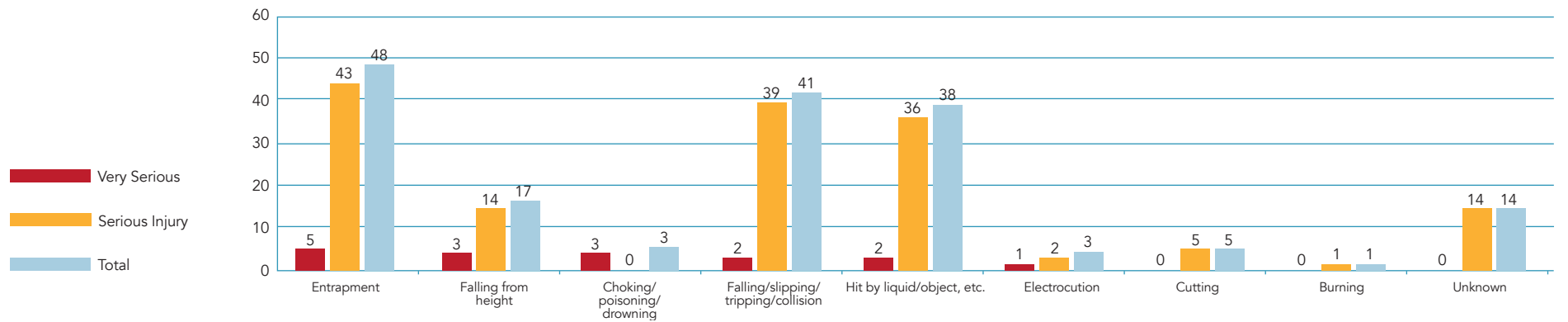


Serious and very serious accidents, shipping, period November 2018 to June 2019. (Source: Dutch Safety Board)

Greater insight into the nature of these accidents can assist in increased safety awareness among employers, employees and other parties in the maritime sector. For that reason, in Figure 6 of this report, occupational accidents are displayed on the basis of causes of injury.



Serious and very serious accidents, shipping, period 2016 to June 2019. (Source: Dutch Safety Board)



Occupational accidents linked to the cause of injury, shipping, period 2016 to June 2019. (Source: Dutch Safety Board)

Published Reports

Fatal accident during unloading, A2B Future, Moerdijk, 30 December 2016

On 30 December 2016, a crew member from the Dutch container vessel A2B Future fell overboard. At that moment, the vessel was moored in the central dock in Moerdijk. The crew member was in the process of releasing the containers so that they could be unloaded from the vessel. While carrying out this work, he fell overboard. The vessel's second mate did not see the deckhand fall overboard, but did observe a person in the water who was struggling to remain afloat. Shortly afterwards, the person no longer rose to the surface.

Immediately following the accident, a rescue operation was initiated with the assistance of various vessels and emergency services. The victim was found and removed from the water after around 50 minutes. He was taken to hospital, where he later died.

The crew member was working on one of the hatches. Due to the absence of permanent fixtures to limit the risk of falling (for example a railing) and the absence of personal protective equipment (for example a harness) to limit the consequences of falling from height, the victim entered the water. Eventually the low water temperature on the day of the accident and the fact that the crew member was not wearing a life jacket reduced the possibility of rescuing the victim in the water.

Loading and unloading operations in the port of Moerdijk involved cooperation between the crew and shore staff at the container terminal. It was determined in the investigation that there were no clear or consistent agreements on this cooperation. As a result, there was no overarching or unique supervision role in terms of responsibility. The investigation gave rise to doubts as to the safety awareness at management level. Due to the absence of supervision of the implementation of work on the shop floor, in effect, it was left to the shop floor to regulate any observed safety risks. The investigation revealed that this could result in the individual structuring of the work, without any effort to achieve a common safety perspective.

Classification: *Very Serious*

The report has been published on the website of the Dutch Safety Board on 29 January 2019.



A2B Future with indication of the fall height. (Source: Dutch Safety Board)

Collision with wind turbine, VOS STONE, Baltic Sea, 10 April 2018

On 10 April 2018, the Dutch flagged offshore supply vessel VOS STONE was involved in a collision with a wind turbine under construction. The collision occurred in the Baltic Sea at the AOWF offshore windfarm, approximately halfway between Sassnitz in Germany and the island of Bornholm.

Because the weather conditions worsened shortly before the collision, a number of construction workers were removed from the wind turbine. Shortly after departure from the wind turbine, the captain decided to test an emergency steering system. This resulted in a situation in which the vessel found itself out of control and in which it was pushed back towards the wind turbine by the effect of wind and waves. The first mate succeeded in regaining control over the vessel but not in time to avoid the collision.

The wind turbine suffered minimal damage, unlike the VOS STONE. The vessel had to be put into a shipyard for repairs. On board the VOS STONE, three crew members suffered minor injuries.

Classification: *Serious*

The accident was investigated by the German Bundesstelle für Seeunfalluntersuchung (BSU). The report is available [on the website](#) of BSU

Fatality following fall from height, SIMON STEVIN, Zeebrugge, 28 January 2019

On Monday 28 January 2019, the seagoing vessel SIMON STEVIN sailing under the Luxembourg flag was moored in the port of Zeebrugge. The vessel was a fall pipe and rock dumping vessel that had entered port for maintenance. The fall pipe system was tested on that date.

The process of returning sections of the fall pipe to the storage area was normally carried out automatically, but on the deck where the storage area was located, a railing had to be opened manually. The purpose of this railing was to prevent falling from the deck to the main deck, approximately 12 metres below.

During the test, the system failed. As a result, it was necessary to lower the section suspended from the crane into position, using the manual operation system. To switch the crane back to automatic, the crane first had to be returned to the so-called stand-by position. This position was located close to the open railing.

The Dutch crew member operating the crane, accompanied by a trainee, walked backwards alongside the crane to ensure that the crane could be correctly observed during travel. They failed to notice that they had reached the end of the deck. The result was a fall involving the Dutch crew member onto the deck located 12 metres below. He died as a result of his injuries.

The investigation was undertaken by investigators of the Federal Bureau for the Investigation of Maritime Accidents (FEBIMA) in Belgium. The investigation revealed a number of safety shortcomings. The report also lists measures taken by the shipping operator.

Classification: *Very Serious*

The report is available [on the website](#) of FOD Mobiliteit

Rectification and further supplement: Accident in the loading pipe, Scelveringhe, Esbjerg (Denmark), 17 March 2017

On 17 March 2017, a crew member was killed on board the Dutch trailing suction hopper dredger Scelveringhe, while the vessel was sailing from the port of Esbjerg in Denmark towards its loading area on the North Sea. When the water pump was started on the bridge to pump more seawater into the hold to reduce the ship's movement through the waves, a crew member who was carrying out welding work was washed into the hold together with the seawater. The victim eventually drowned in the hold. A second crew member, who was also working in the loading pipe, was able to maintain a handhold and survived the accident.

In edition 8 of the SOR, on page 8, attention was paid to the investigation report that was published by the Dutch Safety Board on 14 November 2018, following the fatal accident on board the Scelveringhe.

For reasons that did not become clear during the investigation, the victim was carrying out welding work in the loading pipe of the loading installation together with a second welder, while the crew on the bridge were not informed and had issued no instruction to carry out the work. This final fact was not included in the report in the previous SOR.

Initiated investigations

Fatality following accident during tendering, Cook Islands coast, 07 November 2018

On 7 November 2018, a passenger died on board a Dutch passenger vessel after falling when disembarking from the tender. The passenger became trapped between the tender and the platform and fell into the water. The crew were able to quickly pull the passenger back onto the platform, at which moment the passenger was still conscious. Shortly afterwards the passenger lost consciousness, and the medical response team (which had already been notified) started resuscitation. However, the resuscitation efforts were unsuccessful and the passenger died shortly afterwards.

In accordance with international agreements, the investigation is being undertaken in collaboration with the United States Coast Guard and the maritime investigation organization of the Cook Islands.

Classification: Very Serious

Loss of containers, North Sea, off Terschelling, 01 January 2019

In the late evening of 1 January 2019 and early morning of 2 January 2019, a container vessel sailing under the Panamanian flag lost approximately 340 of its containers, while sailing towards the German port of Bremerhaven. At that moment, the vessel was in the 'Terschelling-German Bight' traffic control system, located to the north of the Dutch and German Wadden Islands.

The vessel continued its journey to Bremerhaven, where it unloaded a large proportion of the remaining cargo. The vessel unloaded the final containers in Gdansk (Poland) and returned to a yard in Northwestern Europe for damage repair work.

The loss of the containers had a huge impact on the Wadden Islands. Much of the cargo from the containers ended up on the islands and in fishing nets.

In accordance with the international agreements, the investigation is being carried out in collaboration with the maritime investigation organizations of Panama and Germany.

Classification: Very Serious



Containers hanging overboard. (Source: Dutch Safety Board)



Fallen containers on board. (Source: Dutch Safety Board)



Contents of containers on the beach. (Source: ANP/Remco de Waal)



Man overboard in the Baltic Sea. (Source: Shipping operator)

Man overboard in Baltic Sea, Liepaja, 01 February 2019

In the afternoon of 1 February 2019, shortly following departure from the port of Liepaja (Latvia), a crew member from a Dutch registered general cargo vessel fell overboard.

The Dutch general cargo vessel had unloaded cargo in the port of Liepaja and had set sail for a short journey to Klaipeda in Lithuania. Shortly after the pilot had disembarked, and after passing the harbour entrance, a scream was heard and a person was observed in the water. After the alarm was sounded, a turn was immediately initiated to retrieve the crew member, and with the assistance of a pilot boat and two other vessels an search and rescue operation was initiated. The search proved unsuccessfull, and as the sun set, the search operation was halted. Partly as a result of the very low water temperature at around 3 degrees Celsius, the chances of survival were very small. The vessel subsequently returned to the port of Liepaja.

The Dutch Safety Board has launched an investigation.

Classification: Very Serious

Started investigations

Collision Westerschelde, near Terneuzen, 01 April 2019

On 1 April 2019, shortly after midnight, a Swiss river cruise ship collided with a Maltese chemical tanker on the Westerschelde, near the Put van Terneuzen. There were 137 passengers and 43 crew members on board the passenger ship. The chemical tanker was loaded with benzene, heptane and methanol. A number of passengers were slightly injured and the damage to both ships was considerable. Both ships were able to moor independently, following the collision.

The Dutch Safety Board has launched an investigation.



Damage to the river cruise ship. (Source: Dutch Safety Board)

Classification: Serious



Damage to the chemical tanker. (Source: Dutch Safety Board)

Investigation started by foreign authority with the Netherlands as a state with substantial interest

Collision on the Ghent Terneuzen Canal, Sluiskil, 30 April 2019

On 30 April 2019, at around 00:15, a severe collision took place on the Ghent Terneuzen Canal between a general cargo vessel sailing under Maltese flag and a bulk carrier sailing under Singapore flag. A tugboat was also involved. The collision took place on Dutch territory.

The bulk carrier was travelling towards Terneuzen and was about to pass the bridge between Sluiskil and Terneuzen. The general cargo vessel was travelling to Ghent and had just passed the opened bridge. The bulk carrier rammed the general cargo vessel in the midship section after the general cargo vessel had turned sideways onto the navigation channel. The bulbous bow of the bulk carrier caused serious damage, including a hole in the hold of the general cargo vessel. The hold filled with water, and part of the cargo of linseed was washed into the canal. After the vessels had been disentangled, the general cargo vessel was able to moor in Sluiskil under its own power, at which point the vessel could be stabilized with the assistance of a salvager.

Cracks were also observed on both sides of the bulk carrier, but the vessel could be anchored in Terneuzen without further problems.

At the time of the accident, the bulk carrier was being assisted by a tugboat sailing under Belgian flag, at the front. This tugboat was able to avoid becoming trapped between the general cargo vessel and the bulk carrier, but drifted into the bank and suffered damage. A minimal quantity of hydraulic oil escaped as a result.

The accident is under investigation by the Marine Safety Investigation Unit of Malta. The maritime investigation organizations of Singapore, Belgium and the Netherlands are involved in the investigation as 'states with a substantial interest'.

Classification: *Serious*

Incidents that have not been extensively investigated

Collision followed by grounding, Westerschelde, near the Nauw van Bath, 20 September 2017

On Wednesday 20 September 2017, the seagoing vessels Seatrout (German, oil tanker) and Usolie (Liberian, bulk carrier) were sailing from the port of Antwerp (B) via the Schelde / Westerschelde towards the North Sea. A Dutch pilot was present on board the Seatrout, and a Flemish pilot on board the Usolie.

The Seatrout was unladen and was travelling at far higher speed than the Usolie. As a result, the German captain immediately made it clear to the pilot that he wished to pass the Usolie as quickly as possible. The pilot sent a message in Dutch to the pilot on board the Usolie via the ship's radio, which was confirmed. The pilot estimated that the vessels would pass close to the Nauw van Bath, and predicted no problems involving the vessels sailing upstream.

Subsequently, at around 5:40 LT, the Seatrout passed the Usolie, whereby the Usolie was located on the starboard side of the Seatrout. At the moment of passage, the Usolie turned to port, and collided with the side of the Seatrout. The Seatrout took avoiding action, but was unable to prevent the collision. As a result of the collision and the manoeuvre, the Seatrout left the navigation channel and ran aground in the Nauw van Bath. There was no injury or spillages. The damage to both vessels was limited.

A combined investigation of the facts was carried out by the Dutch Safety Board and the maritime investigation organizations of Germany and Belgium. After the findings of the initial investigation had been discussed by the various investigation bodies, contrary to the original intention, the decision was taken to not carry out an extensive investigation.

Classification: *Serious*

Collision with Oosterschelde storm surge barrier, Oosterschelde, 05 November 2018

In the early morning of Monday 5 November 2018, the Dutch seagoing vessel Eemshorn collided with a pillar of the Oosterschelde storm surge barrier on the Oosterschelde.

The vessel, a trailing suction hopper dredger, was travelling from its homeport Yerseke out to sea, via the Roompot locks on the island Neeltje Jans. The vessel was unladen and in ballast.

At the position of buoy R12-AV in the Oosterschelde, the vessel sailed through the ball line and collided with the pillar. The vessel's front mast became entangled in a high-voltage cable and the vessel heeled slightly to port. During and prior to the collision, the ship's mate was alone on the bridge.

The road traffic was temporarily halted and the crew was evacuated, with the exception of the captain. Eventually the vessel broke free of her own accord and sailed to the dock at Neeltje Jans. The vessel suffered severe damage. No one was injured and there was no environmental pollution. The accident was investigated by the police.

Classification: *Serious*

Damage during mooring, Szczecin (Poland), 09 November 2018

In the morning of 9 November 2018, during mooring in the port of Szczecin (Poland), the Dutch general cargo vessel Lady Alexandra suffered damage due to a collision. The Lady Alexandra was under pilot supervision and the vessel was travelling towards a mooring. The weather conditions were calm, with variable wind force 2 Beaufort. In the run-up to the mooring, the speed was reduced to 4 knots and control was switched from autopilot to manual. Following the switch to manual control, it was noted that the vessel was not responding to rudder commands. The captain took over the wheel from the pilot and attempted to keep the vessel clear of the quayside on the port side,

using the vessel's bow thruster. However, the vessel continued to turn to port despite maximum steering to starboard. It proved impossible to keep the vessel clear of the quayside, as a result of which the vessel eventually collided with the quayside on several occasions and scraped alongside a moored ship.

Following the incident, the vessel travelled to the yard for damage repair and to identify the source of the steering problems. Technical investigation revealed that all systems were operating correctly and it was not possible to determine the cause of the incident.

Classification: Serious



Damage following collision with the quayside. (Source: Ship operator)

Collision at sea, German Bight, 15 November 2018

In the evening of Thursday 15 November 2018, a collision took place between the laden Dutch seagoing vessel Eems Cobalt and the unladen Turkish seagoing vessel Paksoy 1. The accident took place during the hours of darkness just less than 12 NM to the Northwest of Borkum, in German waters

The Eems Cobalt, which had set sail from Delfzijl that afternoon, was travelling in a northerly direction and intended to cross the east going shipping lane in the traffic control system at right angles, before sailing in the west going shipping lane towards Spain. The Paksoy 1 was sailing in the east going lane and passed in front of the Eems Cobalt, but suddenly made a sharp 180-degree turn to starboard, whereupon she rammed the Eems Cobalt full in the starboard midship section. As a result, the bulbous bow of the Paksoy 1 became firmly fixed in the Eems Cobalt.

No one was injured, and there was no leakage of environmentally harmful substances.

Both vessels suffered serious damage, but were eventually able to reach port safely.

Together with the German maritime investigation organization, the decision was taken to not launch an investigation.

Classification: Serious



Damage to the bulbous bow of the Paksoy 1. (Source: Dutch Safety Board)



Damage in the hold of the Eems Cobalt. (Source: Dutch Safety Board)

Incidents that have not been extensively investigated

Collision in convoy, Gulf of Bothnia, 22 January 2019

At around 10.00 LT on 22 January 2019 in the Gulf of Bothnia, the Dutch general cargo vessel FWN Solide was involved in a collision with the Finnish icebreaker Kontio. The Dutch vessel was travelling a short distance behind the Finnish icebreaker. As a result of miscommunication, the icebreaker made an unexpected manoeuvre, and it was not possible to avoid the collision. The Dutch vessel suffered damage to its bulbous bow, through which ballast water escaped. The FWN Solide was subsequently docked in Oulo for repairs. The Finnish icebreaker suffered no damage and was able to continue sailing.

Classification: *Serious*

Collision with quayside, Alesund (Norway), 23 February 2019

On 23 February 2019, the Dutch flagged seagoing vessel Egbert Wagenborg experienced a hard collision with the quayside in Alesund, Norway. On the day before the accident, the vessel had been required to give up her mooring in the port for another vessel, but as a result of storm and sea conditions she was unable to depart to sea. The vessel therefore set anchor just outside the harbour. The weather became so bad that on the next day the anchor began to drag. Following the failure of a further attempt to fix the anchor securely, in consultation with the port authorities, the decision was taken to offer the vessel a new mooring in the port. Wind in the port was not as hard as outside but at a critical moment during the mooring procedure, gusts of wind caused the captain to lose control over the vessel. He was just able to avoid colliding with another moored vessel, but then hit the quayside hard. The result was substantial damage 2 metres above the waterline.

Classification: *Serious*

Collision with fishing boat, North Sea near IJmuiden, 22 March 2019

On the afternoon of Friday 22 March, the general cargo vessel Celina, sailing under the flag of Antigua & Barbuda, was involved in a collision with the Dutch sport fishing boat Jyden. There were 15 people on board the fishing boat. The collision took place in thick fog 10-15 NM off the coast of IJmuiden, in the North Sea. The Celina was travelling to IJmuiden for further transit to Amsterdam Westhaven. The fishing boat was fishing off the coast, when thick fog came up fairly suddenly. The damage to the fishing boat was considerable. With the assistance of a pilot boat, the fishing boat was able to safely reach the port of IJmuiden. None of the crew members or passengers suffered injuries.

Classification: *Serious*

Injury caused by sudden release of splicing pin, English coast, 30 October 2018

On 30 October 2018, an accident took place on board the fishing vessel SCH6-Alida, travelling in the Channel off the English coast. Three crew members were repairing the net on the afdeck. Sometimes during net repair work, the length on deck is insufficient to make the repairs. Shortly before the accident, the net had been fixed in such a way that the repair could be carried out successfully. The line fixing the net in place broke, however, as a result of which the splicing horn that was being used to make the repairs injured the hands of two crew members. After carrying out first aid, the ship set sail for Boulogne (F) for medical treatment for the victims. The line used to fix the net for repair work has now been replaced by a dynema line, which has a greater breaking strength.

Classification: *Serious Injury*

Fall during rehearsal for show, Southern Atlantic Ocean, 04 November 2018

On 4 November 2018, a dancer on board the Dutch passenger ship Zaandam was rehearsing for a show on the main stage. The sea conditions affecting the ship were discussed in advance and it was agreed that the jumps in the show would be kept to a minimum. While the dancer made a small jump towards the end of the rehearsal, the ship made a sudden unexpected movement, as a result of which the dancer returned to the stage sooner than expected. She made an unfortunate landing on her right foot, as a result of which she broke a metatarsal.

Classification: *Serious Injury*

Deckhand suffers arterial bleed, Takoradi (Ghana), 15 November 2018

On 15 November 2018, the Dutch-flagged general cargo vessel FWN Ruby was moored in the roads off Takoradi in Ghana. The area is well-known for piracy. For that reason, to protect the ship and crew, the standard measures had been taken, such as installing razor wire around the deck. Because fuel had to be bunkered, a deckhand was ordered to remove part of the razor wire. To carry out this work, the deckhand was wearing overalls, work gloves, a helmet, a face mask and safety shoes. When the deckhand cut through a cable attaching the razor wire to the ship, the razor wire sprung back towards his arm, causing an injury and arterial bleeding. The ship subsequently put into port, where the deckhand was treated by a doctor. As a result of his injuries, the deckhand had to be repatriated.

Classification: *Serious Injury*

Misstep on hatch cover, 04 December 2018

On 4 December 2018, the third mate of the Dutch general cargo vessel Siegedijk stumbled on the hatch. He suffered a broken toe. At that time, the vessel was in port in Libya.

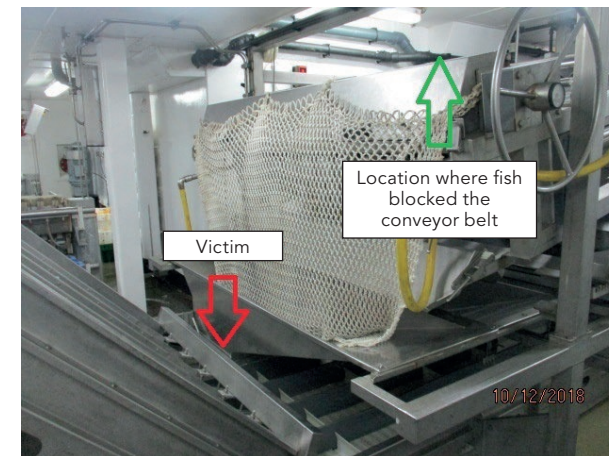
Classification: *Serious Injury*

Broken leg, Atlantic Ocean (Mauretania), 08 December 2018

On Saturday 8 December 2018, while sailing close to Mauretania, a crew member on board the SCH81-Carolien became trapped on the fish processing deck and as a result broke his leg. On the processing deck, the crew member intended to remove something from the sorting machine because fish had become stuck. He climbed onto the machine, whereupon his foot slipped. The crew member became trapped between the bar and the conveyor belt.

The ship set course for Nouadhibou, a destination with a sailing time of around 4 hours. Following arrival near Nouadhibou, the victim was taken ashore in a small boat and driven to hospital by a waiting ambulance. The victim was then transported to Las Palmas, where he underwent an operation in hospital. During the course of the week the victim returned home.

Classification: *Serious Injury*



Location of the accident on board SCH81. (Source: Ship operator)

Incidents that have not been extensively investigated

Fall from height, Rotterdam, 11 December 2018

On Tuesday 11 December, a crew member suffered an injury on board the Maltese-flagged tanker Seaqueen, when he fell from the ship onto the bunker boat that was moored alongside. Shortly before the accident, the bunker boat had pulled alongside, and it was still in the process of tying up. A hawser and spring were already attached on the foreship. On the stern, a crew member was standing ready to pay out the hawser.

The subsequent victim had passed the hauling line through a hawsehole before walking forward along the railing, from the stern. While walking forward, the victim passed the (secured) gangway. At the point where the gangway ends and the railing begins, the joint is not seamless. The hauling line became caught and the victim attempted to release the line. In the process, he leant forward and as the hauling line came free, the victim fell onto the foredeck of the bunker boat, approximately 9 metres below.

First aid was carried out immediately by the crew of the bunker boat. The emergency services were notified immediately and the victim was transported to hospital, by emergency helicopter. At the time, the victim could still be addressed. Subsequent questioning revealed that the victim had suffered a broken leg and was repatriated.

Classification: *Serious Injury*

Broken foot, Caribbean Sea, 23 December 2018

On 23 December 2018, an occupational accident took place on board the Dutch passenger ship Volendam. During rehearsals on the main stage, an American dancer landed badly and broke the 5th metatarsal of her left foot. The accident took place while the ship was sailing in rough seas, off the coast of Colombia.

Classification: *Serious Injury*

Crew member suffers hand injury, North Sea, 07 January 2019

During the early evening of 7 January 2019, a fisherman on board the Dutch fishing boat ARM7-Jan Senior suffered a hand injury while fishing. The boat was fishing on the North Sea, midway between England and Belgium. The injury was reported to the Belgian MRCC Oostende. They initiated medical evacuation by helicopter. The injured fisherman was transferred to hospital in Bruges (B).

Classification: *Serious Injury*

Injured hand, South Chinese Sea, 14 January 2019

On Monday 14 January 2019, the third engineer of the Dutch passenger ship *Westerdam* was working to check the condition of a fan. He had disconnected the fan from the power supply and the fan was rotating at low speed. The engineer intended to check the lubrication of the fan, which emerged to be working correctly. Following the inspection, the engineer started to reattach the protective cover, but was unable to immediately reposition it correctly. His hand slipped and entered the still slowly rotating fan. He was able to withdraw his hand himself and visit the ship's doctor. During the accident, the tip of the engineer's left index finger was amputated and he broke his left index finger and middle finger.

Classification: *Serious Injury*

Entrapment beneath fishing gear, Stellendam, 25 January 2019

On 25 January 2019, the owner of the Dutch seagoing fishing vessel *GO48-Cornelis Senior* reported that a crew member had been injured on board. The crew member had become trapped between the gear and the front of the bin. He suffered a fractured pelvis and was transferred to hospital in Dirksland. At the moment of the accident, the *GO48* was moored by the jetty in Stellendam.

The accident took place when the crew was placing the fishing gear on deck.

The skipper of the *GO48* was operating the fishing winch at the moment of the accident.

Classification: *Serious Injury*

Entrapment of arm, Stellendam, 25 January 2019

A crew member on board the Dutch fishing vessel *SCH6-Alida* intended to return to his workplace. He decided to climb across a running conveyor belt, rather than walking around it. At the end of the conveyor belt was a roller belt. The forearm of the crew member became trapped between the conveyor belt and the roller belt, while the conveyor belt continued to run. The crew member suffered serious burns.

The accident took place on 25 January 2019. Following the accident, the operator has taken measures so it is no longer possible to become trapped between the conveyor belt and the roller belt.

Classification: *Serious Injury*



Reconstruction of accident on board the SCH6. (Source: Ship operator)

Torn ankle ligament, Puerto Limon (Costa Rica), 25 January 2019

A crew member of the Dutch-flagged passenger ship *Zuiderdam* was in the process of carrying out safety tests. He tripped at the bottom of a stairway on an uneven floor panel or grid, resulting in a torn ankle ligament. As a result, he was unable to work for three to six weeks.

Classification: *Serious Injury*

Boatswain injured following fall from height, Breskens, 28 January 2019

On 28 January 2019, on board the Dutch trailing suction hopper dredger *Rio*, an accident resulting in injury took place in the port of Breskens. The boatswain was changing the position of the front hopper pinger on the starboard side from the loading to the unloading position; normally a routine task. To change the position of the sensor, he was required to work on the edge of the hold. He was working alone, without wearing a safety harness. The boatswain slipped on the edge and fell onto the deck, banging his head on the way down. He fell a height of approximately 3 metres. Following his fall, he was able to call the captain for assistance, via his walkie-talkie. Because of a minor head injury, a concussion was initially suspected. The boatswain was taken to hospital for further examination. Here, internal injuries were discovered. The boatswain was unable to return to work for at least two weeks.

Classification: *Serious Injury*

Incidents that have not been extensively investigated

Ankle fracture, Atlantic Ocean, 31 January 2019

On 31 January 2019, an accident took place on board of the Dutch passenger ship Oosterdam. An employee was carrying five racks filled with empty plastic cups to the dishwasher. In the process, he banged his ankle against a steel pallet, as a result of which he suffered a simple ankle fracture. He was unable to work for three to six weeks.

Classification: *Serious Injury*

Arm fracture following entrapment in door, Pacific Ocean, 11 February 2019

On Monday 11 February 2019, a member of housekeeping staff on board the Dutch-flagged passenger vessel Veendam suffered a fracture in his right hand. At the time, he was holding a fire door open with his leg, while carrying a bag of laundry to the laundry room. When he removed his leg, the door closed sooner than he expected, and trapped his arm. At the time, the ship was sailing on the Pacific Ocean.

Classification: *Serious Injury*

Injured by falling object, Gibraltar, 20 February 2019

On 20 February 2019, the Dutch-flagged trailing suction hopper dredger Volvox Atalanta was moored at a shipyard in the port of Gibraltar. Two gaskets of the sea inlet valve were being replaced in the pump room. The old gaskets had to be lifted out of the pump room, using the dockside crane. During the lowering of the crane hook, holding a 9.5-tonne D-ring, the bolt from the D-ring, which had not been correctly tightened, slipped and fell from a height of approximately nine metres. The bolt weighed approximately 1 kilogram.

The bolt hit a crew member on the front of his helmet. As a result of the blow, he fell over backwards and banged his head against a flange. He suffered a fractured skull and two cuts to his head.

Classification: *Serious Injury*

Crew member suffers thumb injury, North Sea, 26 February 2019

On the Dutch trawler TX65-Monte Sr., a crew member suffered an injury to his thumb during fishing. The injury was so serious that the crew member had to be evacuated for medical treatment. The trawler was fishing on the North Sea, above Rottumerplaat.

Classification: *Serious Injury*

Broken leg following misstep, Missouriiborg, Stettin (Poland), 12 March 2019

On 12 March 2019, the first mate of the Missouriiborg suffered a leg injury. The vessel had taken on board a cargo of woodchips and rolls of paper in the port of Sunila (Finland) and was en route for Spain.

The first mate was checking the lashing of the rolls of paper. As he made his way across the rolls of paper, his foot slipped into a gap between the rolls of paper, resulting in a broken lower leg.

The ship turned around and entered the port of Valko (Finland). On arrival, the first mate was transferred to hospital by ambulance.

Classification: *Serious Injury*

Crew member suffers serious eye injury, Straits of Gibraltar, 17 March 2019

On Sunday 17 March 2019, the chief engineer on board the Dutch-flagged LPG Tanker Coral Leaf suffered serious face and eye injuries. The accident took place while blowing clean a gasket with air, during the pressure testing of a cooler for the freshwater generator. Parts of the gasket hit him in the face. At that time, the tanker was sailing close to Gibraltar, en route from Antwerp to Jubail (UAE). The chief engineer required hospitalisation.

Classification: *Serious Injury*

Second mate suffers serious injury after being hit by pendulum of the MOB crane, Santander (Spain), 21 March 2019

On Thursday 21 March 2019, a serious accident took place on board the Dutch general cargo vessel Frisian Lady. The vessel was moored in the port of Santander (Spain) when the ship's Filipino second mate was hit in the face by the pendulum of the MOB crane during lifting work. The victim was immediately transferred to a local hospital. Serious facial injuries were diagnosed, including multiple fractures. The suspected cause of the accident was the deliberate removal of a protection device on the crane by the victim. The purpose of the protection device was to prevent the crane pendulum rotating.

Classification: *Serious Injury*

Broken leg, Kiel (Germany), 25 March 2019

During departure from the lock at Kiel on 25 March 2019, a hawser on board the Dutch seagoing vessel Symphony Sea broke due to unknown causes. The hawser came into contact with the leg of the boatswain. He was removed from the ship with a broken leg and taken to hospital.

Classification: *Serious Injury*

Broken wrist during mooring in the lock, Antwerp, 27 March 2019

On 27 March 2019, during mooring in the Boudewijn lock in Antwerp, the first mate on board the Dutch-flagged general cargo vessel Steenbank suffered a broken wrist. After passing out and belaying the front spring, the mate wished to apply a fifth turn around the bollard. Just as he went to take hold of the hawser, the hawser escaped from the bollard and collided with his arm.

Classification: *Serious Injury*

Injured hand, Pacific Ocean, 09 April 2019

On Tuesday 9 April 2019, an employee of the laundry on board the Dutch-flagged passenger ship Eurodam lost the tip of his left index finger while operating the washing machine. While removing the spring-operated locking devices, the drum of the washing machine suddenly started to rotate, thereby amputating the tip of the employee's finger. The brake which normally holds the drum in place had malfunctioned. The operator has now further investigated the washing machine and made repairs, as well as inspecting and where necessary replacing parts on the other washing machines.

Classification: *Serious Injury*

Fall with gas bottle, Port of Rotterdam, 23 April 2019

On 23 April 2019, on board the Cypriot-flagged ship Nordserena, a crew member fell and was taken to hospital. At the time, he was lifting a gas bottle and while walking backwards tripped over the threshold of a door. He suffered bruising to his back and was required to rest for several days.

Classification: *Serious Injury*

Incidents that have not been extensively investigated

Fire following engine problems, The Channel, 05 November 2018

In the early evening of 5 November 2018, the crew of the Dutch general cargo vessel Lady Amalia registered a reduction in engine speed. At the same time, the exhaust temperature rose and thick smoke emerged from the exhaust. The crew immediately reduced engine speed to a minimum. When smoke also started to emerge from the starboard air intake, the crew switched off the engine. Shortly afterwards they saw flames escaping from the air intake on the starboard side. The emergency valves and fuel supply were shut off and ventilation to the engine room was shut down. A crew member then extinguished the small fire with one powder extinguisher.

The captain contacted Jobourg VTS and Solent Coastguard about the situation. Around one hour later, it was decided that the engine room could be entered safely, and an investigation was started. The sleeve on the starboard turbo housing had cracked; the turbo shaft was broken and the turbo housing was burned. In consultation with the operator's technical department, the decision was taken to have the vessel towed to a port for further investigation and repair.

Classification: Serious

Fire in main switchboard, Bay of Gdansk (Poland), 11 January 2019

On Friday 11 January 2019, the Dutch trailing suction hopper dredger DC Orisant was travelling from Gdansk out to sea. At 02.56, the vessel had passed the buoy at Hel, and at 03.08, the vessel suddenly suffered a blackout. At that moment, no alarm had been activated on the bridge. The chief engineer went to the control room where various alarms had been activated, and observed a fire in the main switchboard. The general alarm was then sounded and the crew prepared to fight the fire. The duty officer remained on the bridge and maintained close contact with the traffic control centre. At 05.00, the fire was brought under control. By this time, contact had been sought with the relevant parties and a tugboat was sent out to the ship. A tow was attached at 10.15. The vessel was then towed back to the port of Gdansk. The fire was restricted to the main switchboard but caused considerable damage.

Classification: Serious



Damage following fire in engine room. (Source: Ship operator)



Damage following fire in engine room. (Source: Ship operator)



Damage following fire in engine room. (Source: Ship operator)

Fire in engine room, Stavanger (Norway), 12 March 2019

On Tuesday 12 March 2019, the fire alarm on board the Dutch general cargo vessel Peak Bergen was sounded in the engine room early in the morning. At that time, the vessel was moored in the port of Stavanger. The crew investigated and when the door to the engine room on the afterdeck was opened, a cloud of thick, black smoke escaped. The crew immediately closed the door. The ventilation system was shut down and the fire valves were closed. The CO2 installation in the engine room was then activated, and the local fire brigade were called out. The local fire brigade cut a hole in the deck and applied a water spray. After the fire brigade had examined the hold, the fire was declared under control.

The fire occurred following work on the afterdeck above the engine room entrance/workshop. The deck is a continuous deck with hatches that seal off the hold. The vessel was being prepared to take on board a deck cargo. To allow this, lashing eyes from the previous cargo had to be removed with a flame cutter. When removing a lashing eye, a hole was accidentally burned in the deck. Hot particles fell below and ended up on a shelf containing engine room supplies. These supplies included rubber gaskets, which started to smoulder from the hot particles. These eventually burst into flames, thereby activating the fire alarm.

There was considerable smoke damage, but no damage to vital parts. The damage remained confined to the workshop and the entrance from the workshop to the engine room.

Classification: Serious

Serious injury following inhalation of smoke in the engine room, Balticborg, Baltic Sea, 19 March 2019

On Tuesday 19 March 2019, smoke was seen escaping from the main switchboard on the Dutch-flagged RoRo vessel Balticborg. At that time, the vessel was sailing in Swedish waters on the Baltic Sea between the Swedish ports of Sodertalje and Haraholmen, near Umeå. The smoke started in the main switchboard in the engine control room. The chief engineer lost consciousness due to smoke inhalation. Following first aid on board, the chief engineer was evacuated by helicopter to hospital in Umeå in serious condition.

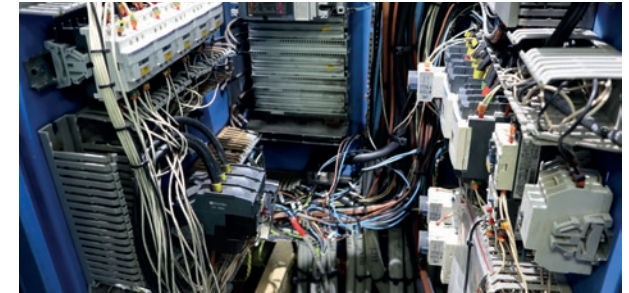
To prevent ice forming in the exhaust gas cleaning installation, a mobile electric heater with an output of 9 kW was put into use. This heater was connected to a fixed mounted connection, intended for the electrical winch in the engine room. This connection had a maximum permitted load of 0.9 kW and was electrically protected up to that load level.

As soon as the heater was switched on, an explosion occurred in the switchboard in the engine control room, at the point where the connection was made to the main electricity distribution network on the ship via a protection relay. Shortly after the explosion, dense toxic smoke was generated by the melting of the cable insulation and (plastic) parts of various components in the switchboard.

The explosion also caused a short circuit and total electrical blackout on the vessel, which was partly compensated for by the emergency power supply. Immediately afterwards, the ship's engineers set to work in the engine control room to isolate the short circuit and to restore the ship's electrical power supply. The chief engineer also entered the engine control room. Upon opening the door, he was exposed to thick smoke.

Following the accident, the Dutch Safety Board launched an initial investigation in collaboration with the Swedish maritime investigation organization, which included an investigation on board the ship. The Dutch Safety Board then decided not to carry out a full investigation.

Classification: Serious Injury



Main switchboard on the Balticborg. (Source: Dutch Safety Board)



0.9 Kw connection used for the electrical winch. (Source: Dutch Safety Board)



9 Kw electric heater. (Source: Dutch Safety Board)

Incidents that have not been extensively investigated

Grounding, Wismar (Germany), 04 December 2018

In the morning of 4 December 2018, the Dutch dredging vessel Hegemann III ran aground in the Wismarbucht close to Wismar in Germany. The vessel suffered two leaks in the pump room, which on board the Hegemann III was located closely behind the engine room. The propeller also suffered damage. Following a dive inspection, a number of emergency repairs and a series of additional measures, subject to strict conditions, the vessel was given permission to complete a single trip to Emden for further repairs.

Classification: Serious



Temporary repair to ship's skin. (Source: Ship operator)



Damage to propeller blade. (Source: Ship operator)

Grounding, Drogheda (Ireland), 13 December 2018

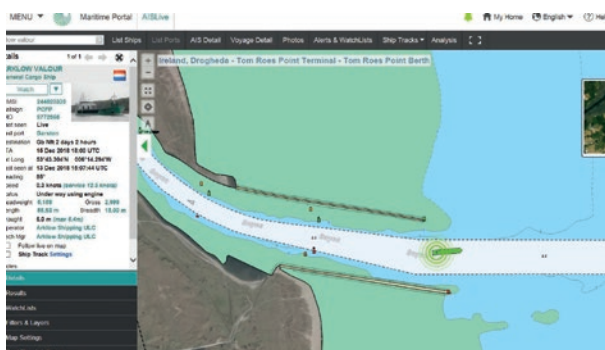
On Thursday 13 December 2018, the Dutch general cargo vessel Arklow Valour ran aground while departing from the port of Drogheda in Ireland.

During loading, the captain had received instructions to load the ship to a maximum draught of 6 metres. As the vessel set off, the draught at the bow measured 5.98 metres and at the stern 6.00 metres. At the moment of departure, the wind was blowing from the southeast with a force of 6 Bft. Due to the swell caused by the southeasterly wind, the captain received advice from the pilot to remain close to the southern breakwater. At that moment, the vessel was travelling at a speed of 4.5 knots.

At 15.30, after passing the breakwater, the vessel ran aground. At that time, the vessel was travelling in the navigation channel. The vessel attempted without success to work itself free. The captain issued the order to drop anchor to at least keep the ship clear of the breakwater. To fix the ship in position the crew attempted to take on board ballast water. This failed when the ballast water treatment unit became blocked with sand and mud. As the tide went out, the ship became increasingly firmly aground. Upon inspecting the tanks, the crew observed a number of leaks.

Several attempts were made to refloat the ship at high tide, assisted by tugs. These attempts eventually proved successful one day later. The leaks in the tanks were kept under control using the ship's own pumps, and the vessel was subsequently sailed to Dublin. Once there, the cargo of cement was transferred from the Arklow Valour to another ship of the same operator.

Classification: Serious



Screenshot of the Ecdis Arklow Valour. (Source: Ship operator)

Loss of control following water strike on bridge, The Channel, 07 February 2019

On 7 February 2019, the Dutch general cargo vessel Peak Bilbao suffered a water strike on the bridge during a severe storm in The Channel close to the Casquets Traffic Separation Scheme (France). The ship was en route from Rotterdam to Bilbao. The water strike resulted in the failure of multiple systems, which in turn led to loss of control over the ship. A rescue operation was initially coordinated by the English Coastguard but was subsequently taken over by the French Coastguard. With tug assistance, the vessel was towed to Cherbourg (France), where she entered port on 8 February. In the following weeks, the ship was towed to Poland to repair the considerable damage.

Classification: Serious

Main engine failure, North Sea, 27 November 2018

On 27 November 2018, the Dutch general cargo vessel Beautrader experienced main engine failure. The ship was en route from Ipswich to Georgetown. After a day moored at anchor, the ship was towed to Amsterdam for repairs.

Classification: Serious

Towed into port after engine failure, Algeria, 21 January 2019

On 21 January 2019, while sailing off the coast of Algeria, the main engine of the Dutch-flagged ship Manisa Kristin was shut down following a 'low lubricating oil pressure' alarm. In the ten hours following the breakdown, the engine room staff searched for the cause, but were unable to find the reason for the alarm. Eventually, the sensor for the lubricating oil pressure was bypassed once the presence of lubricating oil pressure was confirmed. The lubricating oil pumps were then switched to 'manual' and the engine was restarted. Several minutes after being restarted, the temperature alarms for the piston rod bearings and crankshaft bearings and the oil mist warning caused the crew to immediately shut the main engine back down.

Following closer inspection, the engine proved to be so severely damaged that it could no longer be used. On 22 January 2019, the vessel was towed into the port of Annaba, Algeria, with the assistance of two tugboats.

Classification: Serious

The Dutch Safety Board in three questions

1

What does the Dutch Safety Board do?

Living safely, working safely, safety. It seems obvious, but safety cannot be guaranteed. Despite all knowledge and technology, serious accidents happen and disasters sometimes occur. By carrying out investigations and drawing lessons from them, safety can be improved.

In the Netherlands the Dutch Safety Board investigates incidents, safety issues and unsafe situations which develop gradually. The objective of these investigations is to improve safety, to learn and to issue recommendations to parties involved.

2

What is the Dutch Safety Board?

The Dutch Safety Board is independent of the Dutch government and other parties and decides for itself which occurrences and topics will be investigated.

The Dutch Safety Board is entitled to carry out investigations in virtually all areas. In addition to incidents in aviation, on the railways, in shipping and in the (petro-)chemical industry, the Board also investigates occurrences in the construction sector and healthcare, for example, as well as military incidents involving the armed forces.

3

Who works at the Dutch Safety Board?

The Board consists of three permanent board members under the chairmanship of Jeroen Dijsselbloem. The board members are the public face of the Dutch Safety Board. They have extensive knowledge of safety issues. They also have extensive administrative and social experience in various roles. The Safety Board's bureau has around 70 staff, two-thirds of whom are investigators.

Visit the website for more information www.safetyboard.nl.



DUTCH
SAFETY BOARD

Colofon

This is a publication of the Dutch Safety Board. This report is published in the Dutch and English languages. If there is a difference in interpretation between the Dutch and English versions, the Dutch text will prevail.

October 2019

Photos

Photos in this edition, not provided with a source, are owned by the Dutch Safety Board.