DUTCH
SAFETY BOARD

Investigations

Within the shipping industry, the Dutch Safety Board has the legal obligation to investigate serious and very serious occurrences involving Dutch seagoing vessels. This obligation also extends to the investigation of serious and very serious occurrences involving or on board 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 and prevention of maritime accidents. 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 their consequences by determining lessons learned and formulating recommendations. Investigating who is to blame or liable is expressly not a part of the investigation by the Dutch Safety Board.

Shipping Occurrences Report

May - October 2020

In June 2015, the Dutch Safety Board published the first Shipping Occurrences Report. With the tenth edition you were given the opportunity to indicate what you think of the Shipping Occurrences Report. In this new edition you can see what the survey has yielded.

In the foreword of the first edition, the shipping branch was described as the silent motor of our economy, operating in the shadow of the public attention. This is the eleventh edition of the Shipping Occurrences Report. The shipping branch is still the silent motor of our economy, which, even in times of COVID-19, and despite the many limitations for crew members, is still running at full power.

How the shipping branch contributes to the economy became clear when a variety of consumables from containers lost by the MSC ZOE washed up on the beaches of the Dutch Wadden Islands in January 2019. The opening article therefore focuses on minimizing the risks of loss of containers.

Not only the risks of losing containers must be minimized. The accidents described and the statistics in this edition show that the number of occupational accidents is high. Greater insight into the nature of these accidents can assist in increased safety awareness among employers, employees and other parties in the maritime sector.

Jeroen Dijsselbloem, *chairman of the Dutch Safety Board*

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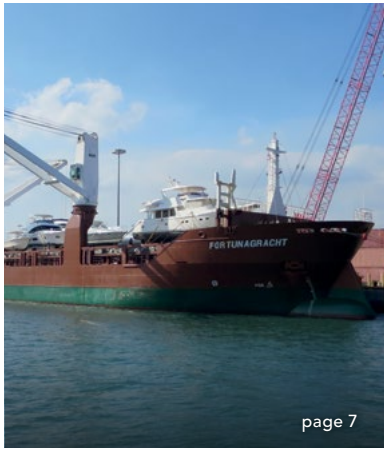

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Minimizing the loss of containers requires an integrated approach

On the night of 1 to 2 January 2019, the Panamanian flagged containership MSC ZOE (19224 TUE) lost 342 containers to the north of the Wadden Islands. This was not the first occasion that a ship had lost containers on that route, but the numbers made a deep impression. Never before had a ship lost so many containers at one time, on this route. The beaches of the Dutch and German Wadden Islands and the coast of Friesland and Groningen were awash with the contents of the containers. For months after the occurrence, the cargo of the MSC ZOE continued to wash ashore. The possible long-term damage to organisms can still not be fully assessed, but the pollution itself represents considerable harm to the natural value. Where in the past the losses of containers had been dealt with basically as a matter for insurers, the loss of the containers by the MSC ZOE was classified as a '*very serious*' marine casualty based on its environmental impact.

Top view MSC ZOE after losing 342 containers.

The number of containers lost by the MSC ZOE has sadly already been overtaken by even larger numbers lost. On 30 November 2020, the ONE Apus (14052 TEU) lost 1816 containers and on 16 January 2021, the Maersk Essen (13100 TEU) lost around 750 containers. The impact of these losses has to date only become clear on board. In both cases, not a single container has been retrieved; the containers and their contents still remain in the Pacific Ocean.

These recent occurrences have focused greater attention on determining how containers are lost overboard. It has for some time been known that weather conditions play an important role. Weather routing[1] has become a widely used term among operators of large container ships. Based on weather forecasts and other factors, the best potential route is calculated. For large container ships, avoiding bad weather areas is a key factor. Changing course to avoid bad weather is relatively easy on the open ocean, but on other routes, for example on the North Sea, such options are not available.

Whereas small container ships with limited stability only lose small numbers of containers, the recent losses of containers show that large, wide and stable (high GM[2]) container ships are apt to lose large numbers of containers. It is slowly becoming clear that large, wide and stable container ships represent new risks with regard to the loss of containers.

The loss of containers by the MSC ZOE north of the Wadden Islands lead to two investigation reports. First there is the report from the international joint investigation into the cause of the loss of containers by the MSC ZOE, the 'Joint Investigation Report MSC ZOE[3] [4]' (see the summary later in this report). This report was written in cooperation between the Flag state Panama and Coastal States Germany and the Netherlands. Second there is the report of the Dutch Safety Board 'Safe container transport north of the Wadden Islands[5]' (see the summary later in this report). This report arose in response to the question of what the Netherlands can do to prevent such accidents and, if they do occur, to limit their harmful consequences as much as possible. To harmonize the (interim) results and to determine follow-up steps of the two parallel investigations, joint meetings were organized. In addition, authoritative maritime experts of the Technical University of Hamburg, Deltares and MARIN have contributed to the investigations.

The investigations that lead to the reports mentioned above have for example revealed that for large, wide and stable container ships, there are route-specific risks on the shipping routes north of the Wadden Islands. Four hydrodynamic phenomena were measured and observed, which can individually and in combination introduce a risk of loss of containers. The four hydrodynamic phenomena are: extreme ship motions resulting in large accelerations and forces on lashing equipment and containers, contact with the seabed, green water and impulsive wave impacts (slamming) against the ship.

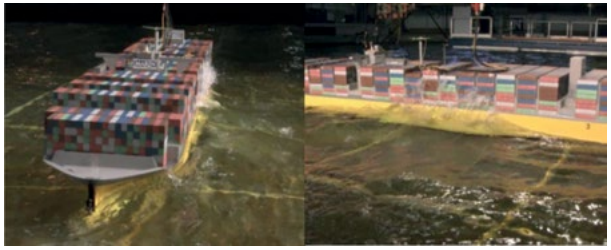
1 Weather routing is a commercial service provided by commercial companies to cargo vessels, to optimise their journey performance.

2 Metacentre height, an indicator of the stability of a ship

3 https://www.bsu-bund.de/EN/Publications/Unfallberichte/_functions/unfallberichte_table_2020.html?nn=1351146

4 https://www.onderzoeksraad.nl/nl/page/13223/veilig-containertransport-ten-noorden-van-de-waddeneilanden.-lessen

5 https://www.onderzoeksraad.nl/nl/page/13223/veilig-containertransport-ten-noorden-van-de-waddeneilanden.-lessen



Observation of green water during de basin tests by MARIN.

It has of course been known for many years that based on its water depth, the North Sea imposes restrictions on the draft of passing ships. The draft restrictions in combination with the direction of the traffic flow (full containers towards Europe) with imports from Asia and empty containers on the return journey) in practice means that the centre of gravity of the ship on this part of the route is relatively low, making the GM high. The higher the GM, the greater the stability. The greater the stability, the shorter the ship's own oscillation period. Research has shown that the development of these large, wide and stable container ships has meant that under specific circumstances, the vessel's own oscillation period can come close to the peak period of the waves on the North Sea. As a consequence, under these specific circumstances, these large, wide and stable container ships can easily start to roll.

The short oscillation period of the vessel means that once the ship starts to roll, it leads to high accelerations and forces on the containers, the lashing equipment and the deck of the container. The basic equipment and technology and the way they are employed in terms of securing containers have remained the same, irrespective of the ship's size. The investigation into the loss of containers by the MSC ZOE has shown that the forces and accelerations that occur closely approach the design limits of the lashing equipment.

Because the acting forces and accelerations on lashing equipment closely approach the design limits, the risk of losing containers will become even larger if the containers are not properly lashed. The subject lashing was recently the focus of a report by the Human Environment and Transport Inspectorate (ILT)[6] 'The lashing of containers on seagoing vessels'. The ILT investigated compliance with the regulations for the securing (lashing) and storage of containers on seagoing vessels. In 67% of the ships investigated, violations were observed in relation to the loading and securing of containers and the lashing equipment employed. Violations ranged from failure to have a complete Cargo Securing Manual (CSM) and failing to secure the cargo according to the CSM regulations through to exceeding the deck load. These are serious shortcomings in the way the work is done and they lead to a higher risk of losing containers. The investigation into the loss of containers by the MSC ZOE demonstrated that even without these shortcomings, the risk of losing containers in periods with heavy rolling is large, because the design limits of lashing equipment are exceeded. In the report 'Joint Investigation Report MSC ZOE', recommendations were made relating to the design requirements on lashing systems and containers, and obtaining a greater understanding of the oscillating movements and accelerations that occur on container ships.

Damaged lashing equipment after the loss of containers.

Following the recent incidents with large numbers of lost containers, it could easily be forgotten that relatively smaller ships also continue to lose containers. The OOCL RAUMA (1425 REU) lost seven containers in February 2020, 32 nm North of the Wadden Islands. And the English Marine Accident Investigation Branch for example launched an investigation in November 2020 into the loss of 33 containers in the Pentland Firth (see elsewhere in this Shipping Occurrences Report). The similarity with the previously described losses is that the containers were lost in bad weather and one or more of the previously described phenomena occurred.

Minimizing the risk of the loss of containers requires an integrated approach by the parties involved. The Panamanian, German and Dutch government have received the recommendation to submit a proposal to the International Maritime Organization to review the technical requirements imposed on container ships. The Dutch Minister of Infrastructure and Waterways has expressed her commitment to this.

Making changes in a sector demands dedication and patience. Proposals for changes via the International Maritime Organization (IMO) are lengthy processes but that does not mean that other options are not available in the meantime. The Dutch Ministry of Infrastructure and Water Management has now taken the first steps towards a follow-up investigation into the loss of containers by smaller ships and in other weather conditions. Other recommendations for the shipping routes above the Wadden Islands are aimed at introducing traffic control on the shipping routes and innovation in relation to the active notification of prevailing weather and wave conditions in the area.

In addition to these developments, there is a clear role for the worldwide shipbuilding industry and shipping operators. Recent occurrences make it clear that the limits of the systems currently used are quickly approaching. It is time to critically examine the shelf life of the current systems in combination with the circumstances that occur in practice. The Dutch container and shipping industry can play a role - both as a binding force and a driving force - by taking the initiative in initiating improvements in the international world of container transport.

6 https://www.ilent.nl/onderwerpen/lading-op-zeeschepen/documenten/publicaties/2020/05/14/sjorren-van-containers-op-zeeschepen

Accident classification

In this Shipping Occurrences Report, the Dutch Safety Board registers the description of reported accidents on board ships sailing under the Dutch flag or accidents that have occurred within Dutch territorial waters and reports published between 1 May 2019 and 1 May 2020.

Each accident is classified according to 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 occurrences from the following categories: *very serious*, *serious* and *serious injury*. In addition to data about the reporting period, a multiyear overview is also included. This provides a greater insight into trends.

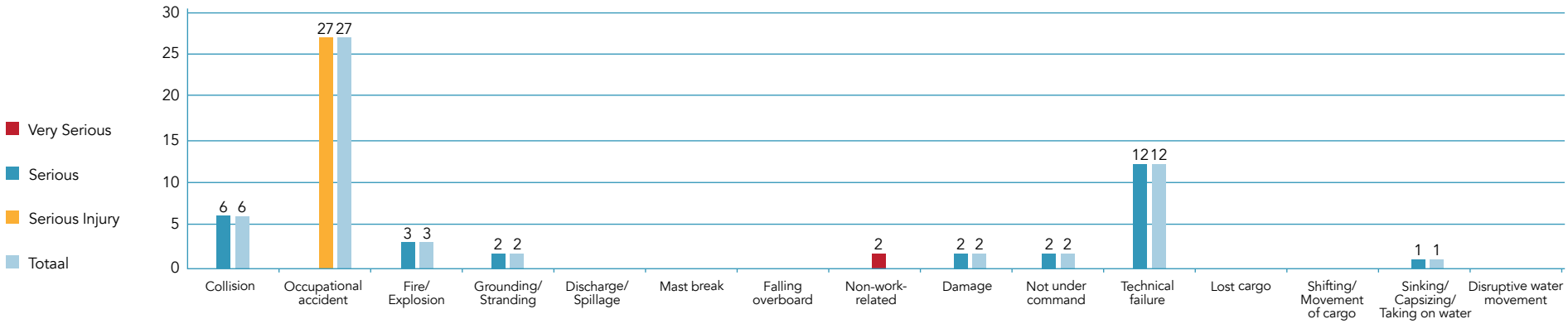


Figure 1: Serious and very serious accidents, shipping, period May 2020 to November 2020.

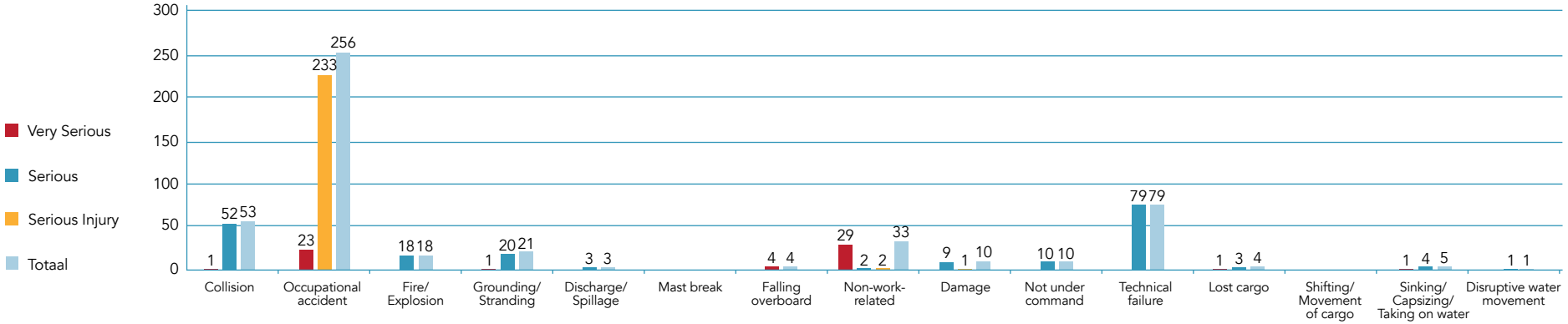


Figure 2: Serious and very serious accidents, shipping, period January 2016 to November 2020.

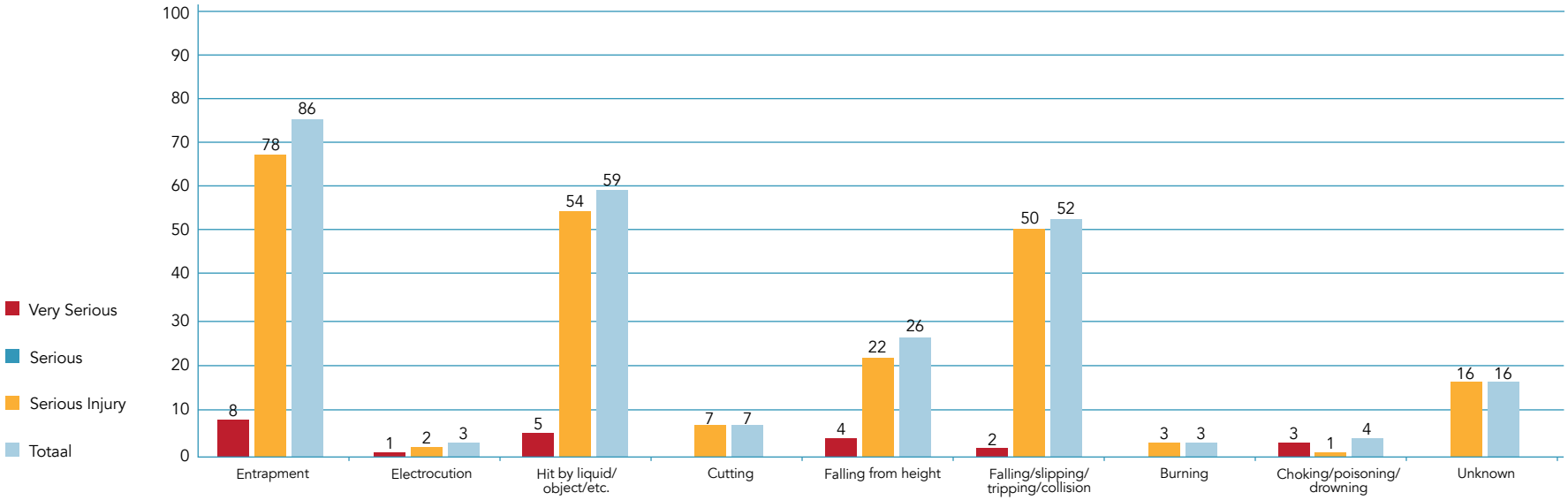


Figure 3: Occupational accidents linked to the cause of injury Shipping, period January 2016 to November 2020.

In the Figures 1 and 2, occupational accidents occupy a key 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 Organization (ILO). 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 3, occupational accidents are displayed on the basis of causes of injury.

It is noticeable that entrapment, impact by liquids, falling (from a height) are the most common types of occupational accidents.

Survey

The last edition of the Shipping Occurrences Report (May 2019 - May 2020) included an invitation to complete a survey. The Dutch Safety Board would like to thank everyone who completed the questionnaire. The number of questionnaires is sufficient to form a picture of the general opinion.

The readers' survey contained questions about elements of this Report you consider positive, and possible suggestions for improvements. Firstly, the Shipping Occurrences Report is seen as a valuable addition to the published investigation reports. The results of the survey show that you above all appreciate the theme section, while the chapter providing a description of incidents that have not been extensively investigated seems to offer the least added value.

You have become used to the Safety Board writing the full story in our report, from course of events and analysis through to conclusions and possibly recommendations. The chapter with Incidents that have not been extensively investigated contains nothing more than a brief description of the course of events, without further analysis or outcomes. Because these incidents have not been investigated by us. The reason for the Safety Board including these incidents in the Shipping Occurrences Report is that although they have not been further investigated, these incidents often provide valuable lessons for the sector.

In this new edition of the Shipping Occurrences Report, we have decided in the case of certain incidents to draw parallels with accidents that were previously investigated. In this way, previous investigations and recommendations can be linked to incidents that although not extensively investigated, do share similarities. In the chapter featuring incidents that have not been extensively investigated, between the various incidents, you will therefore find short texts referring to previously published reports. It will be examined per edition whether it is possible to make such a link. In this way, the Safety Board hopes to once again draw your attention to recommendations from previously published reports, for accidents that recur more often.

Published Reports

Fall from height, fatal accident on board Fortunagracht, Puerto de Sucre, Venezuela, 16 February 2018

On 16 February 2018, a deckhand fell from a height of 12 metres into the hold of the Dutch ship de Fortunagracht. He died later that day in hospital from injuries suffered as a consequence of the fall. At the time, the ship was anchored close to the port of Puerto de Sucre in Venezuela.

The deckhand fell because in the dark, he stepped through a door opening behind which there was no tweendeck. Shortly before the accident, the configuration of the deck had been altered, including the relocation of the tweendeck behind the door. There were no barriers to prevent someone stepping through the door opening. At the time of the accident, the deckhand was alone and in an unlit area, looking for lashing equipment.

The accident was classified as a very serious accident. In its report, the Safety Board concludes that on ships with the possibility of adapting the deck configuration, there must strict supervision to ensure that doors leading to the hold are fully closed and locked prior to the removal of the decks (pontoons). In addition, extra barriers must be present to prevent a person stepping through a door that leads to the hold. In its report, the Safety Board also issued recommendations about the safety culture and emergency medical treatment.

The report was published on the website of the Dutch Safety Board: https://www.onderzoeksraad.nl/en/page/17166/fall-from-height---fatal-accident-on-board-fortunagracht.

Published Reports

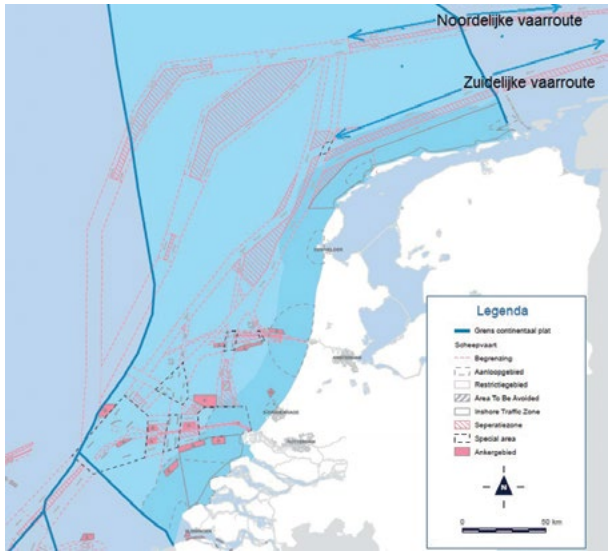
Loss of 342 containers, MSC ZOE, north of the Wadden Islands, 1-2 January 2019

On the night of 1 to 2 January 2019, the MSC ZOE lost 342 containers to the north of the Wadden Islands. In a storm-force northwesterly wind, the container ship was sailing toward the German port of Bremerhaven in the Terschelling-German Bight traffic separation scheme (the southern shipping route). The course of events of this very serious shipping accident was investigated by an international investigation team comprising the Panama Maritime Authority (PMA), the German Bundesstelle für Seeunfalluntersuchung (BSU) and the Dutch Safety Board. The report of this investigation considers the causes of the occurrence and the potential lessons learned. The occurrence led the Dutch Safety Board to also launch an additional investigation into the route-specific risks on the shipping routes north of the Wadden Islands, which could result in the loss of containers on ships like the MSC ZOE. The insights of the route-specific risks have been included in the facts report.

Both reports are available on the website of the Dutch Safety Board: https://www.onderzoeksraad.nl/en/page/13223/veilig-containertransport-ten-noorden-van-de-waddeneilanden.-lessen.

Safe container transport north of the Wadden Islands - Lessons learned following the loss of containers from MSC ZOE

The Safety Board called upon the knowledge and research institutes Deltares and MARIN to contribute to the investigation by the Dutch Safety Board, based on their own expertise, to gain a greater insight into the extent to which the environmental conditions on the shipping routes north of the Wadden Islands contribute to the risk of loss of containers by large ships. These highly stable vessels are in principle more difficult to remove from their steady state, but as a consequence also return to that steady state more quickly. The joint investigation provides new insights into the circumstances, ship movements and phenomena that occur in the area investigated.

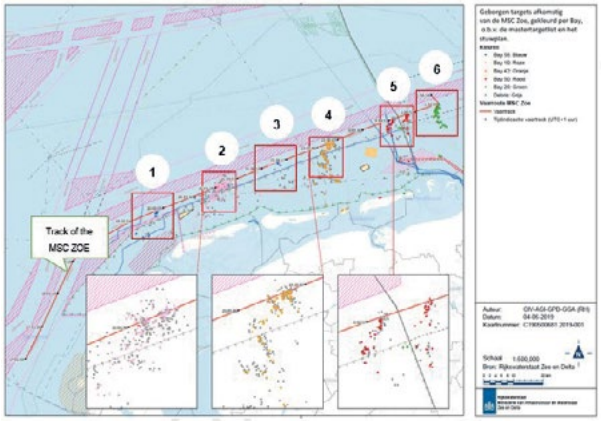


The investigation revealed that specific risks occur on both shipping routes north of the Wadden Islands. These risks are the consequence of high waves approaching abeam, the limited depth of the shipping route and the high stability of large, wide container ships. In basin tests, four hydrodynamic phenomena were measured and observed which individually and in combination can result in the loss of containers. It is concluded that both on the southern and northern shipping route, large, wide container ships like the MSC ZOE, in a stormy northwesterly wind, run the risk of failure of the lashing systems and containers, and as a result of that may lose containers. On both routes, the loss of containers will result in pollution of the North Sea and, depending on the wind and current direction, of the vulnerable Wadden area.

There are no specific guidelines, restrictions or requirements for container ships when using the northern or southern shipping routes above the Wadden Islands. Managing the risk of loss of containers in poor weather conditions, in the current situation, depends on the actions of the captain and crew. The authority to impose binding regulations on the use of these shipping routes or to change the location of the routs lies with the International Maritime Organization (IMO) and not with the Netherlands. Improvement measures via the IMO take years to achieve, and as a consequence will only have an effect on the risk management of loss of containers near the Wadden Sea, in the longer term.

Joint Investigation report, Loss of containers overboard from MSC ZOE, 1-2 January 2019

The main cause of the loss of containers by MSC ZOE was the high stability at which the ship was sailing in a beam sea scenario in shallow water conditions where it encountered combination of the four hydrodynamic phenomena. The encountered transversal accelerations were at the design limits, leading to failure of the container structure and/ or the lashing equipment and subsequent container loss. There were at least six moments at which the MSC ZOE lost containers. The first losses of containers were not noticed by the crew.



The MSC ZOE was sailing in a high stability condition. The high stability of large and wide Ultra Large Container Ships leads to shorter natural roll periods than smaller ships with lower stability. This brings the natural roll period closer to the wave periods that were present above the Wadden Islands during the accident, resulting in larger resonant roll motions in the beam seas. The shorter periods also result in higher accelerations. Container ships like the MSC ZOE have insufficient roll damping in situations with large stability. High stability is a safety risk that has not been recognized and formalized in the IMO Intact Stability Code and documents as the Stability Booklet. Current limits are only set for a minimum GM. The effects of high GM are underestimated.

The MSC ZOE is an ultra large container ship built in 2014 with a length of almost 400 m, beam of 59 m and a theoretical capacity of 19,224 TEU. In general, the capacity of individual container ships doubled over the last 15 years. The size of the container ships continue to increase, as well as the share of the large ships in the fleet. This investigation revealed that the concept of the lashing of containers on deck of these large and wide ships needs to be reviewed and international technical and operational standards to be amended or developed where necessary.

The Joint Investigation Report MSC ZOE is also available on the website of the BSU: https://www.bsu-bund.de/EN/Publications/Unfallberichte/_functions/unfallberichte_table_2020.html?nn=1351146.

Fire in engine room, DC Vlaanderen 3000, North Sea, 19 March 2020

On 19 March 2020, the DC Vlaanderen 3000 lost power as a result of a fire in the engine room. The fire was caused by a leak in the lubricating oil pipe. After fuel supply to the engine room was shut off, causing the main engine to shut down, the crew activated the solid CO2 extinguisher installation and put out the fire. The ship was able to return to Breskens using the bow thruster for auxiliary power. The next day, when the engine room was opened, it became clear that besides the leak from the lubricating oil pipe, there was no further damage in the engine room. There were no injuries as a result of the incident.

The incident was classified as 'serious'. The cause of the incident was a crack in a pressurized lubricating oil pipe close to the turbocharger. As the pipe cracked, lubricating oil was sprayed onto a hot surface on the main engine, causing it to ignite.

Despite the limited damage and the lack of victims, the Federal Bureau for the Investigation of Maritime Accidents (FOSO) in Belgium issued valuable lessons as a result of the incident.

The full report is available on the website of the FOD Mobility: https://mobilit.belgium.be/nl/resource/report_dc_vlaanderen_3000.

The damaged lubricant oil pipe. (Source: DC Vlaanderen 3000)

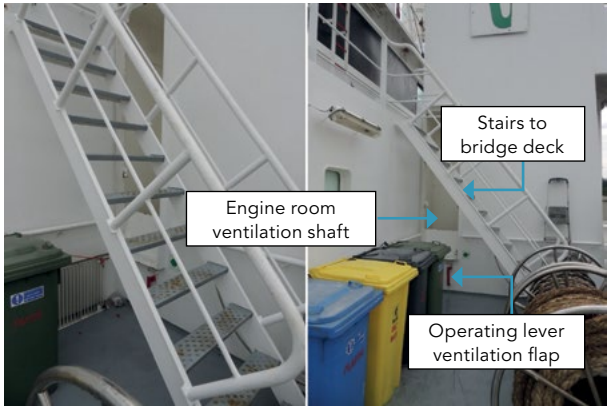
Completed investigations without report

Fire in engine room, Maas approaches, 26 June 2017

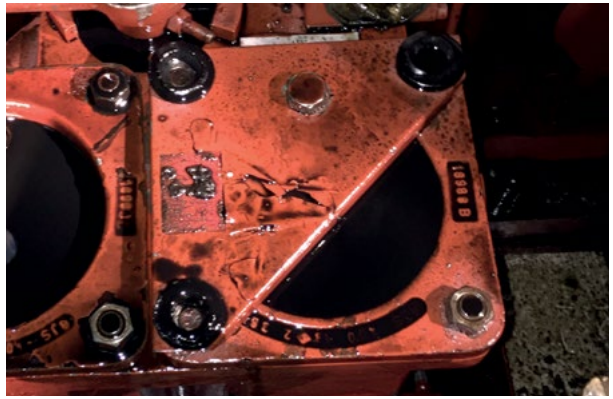
On 26 June 2017, a fire occurred in the engine room of a Dutch cargo vessel. The vessel was en route to Rotterdam, and was already in the approach to the port entrance. The crew succeeded in extinguishing the fire, and the ship was towed into Rotterdam. As a result of the fire, two crew members were injured, and the ship suffered serious damage. The almost 90 metre-long ship was in compliance with the requirements in the manning certificate with a captain, first officer, maritime officer and 2 ratings, on board. There were a further 3 trainees on board. The maritime officer had just graduated from school, and was making this first trip. He had been given responsibility for the engine room. The fire occurred when lubricating oil from the main engine escaped from a filter, under pressure. The lubricating oil formed a mist which filled the engine room, and ignited when it came into contact with hot parts of the main engine.

Following the accident, the Safety Board launched an investigation. A number of interviews were held, and an investigation was carried out on board. Based on the facts observed, the course of events was determined:

- The lubricating oil spray occurred after the maritime officer removed a venting bolt from the filter, while the filter was still under pressure;
- The safety mechanism intended to prevent this action and that also issued a warning, was not recognized as such. The mechanism consisted for a triangular cover that held three of the four attachment bolts of the filter cover in place. The cover was attached by the venting bolt and was fitted with a milled duct along which oil was able to escape, if the bolt was slackened, while the filter was still under pressure;
- Before removing the venting bolt, the pressure on the filter should have been released by redirecting the lubricating oil to another filter, by means of an operating handle. However, the operating handle was incorrectly fitted, so that the indicator on the handle showed that the oil was being redirected via the other filter;
- Because the handle was incorrectly fitted, it could not be operated, so that the lubricating oil would be directed via the other filter, therefore halting the spray of escaping oil. The handle was blocked by pipework on the engine;
- The lubricating oil mist activated the fire alarm. After the oil mist had been identified as the cause of the fire alarm, the risk of fire or explosion was not recognized. Two crew members remained in the engine room to shut down the main engine manually. The emergency stop on the bridge could also have been used to shut to down the engine;
- Both crew members saw the fire start and were barely able to escape from the engine room, but they did suffer burns;
- Before the fire could be extinguished with CO2, all ventilation openings with fire valves first had to be closed. The fire valve below the outside stairs to the bridge was difficult to close, because the operating handle was difficult to reach as a result of smoke and heat.



Position of operating handle fire valve engine room ventilation. (Source: Dutch Safety Board)



Top of filter cover, including safety cover. (Source: Dutch Safety Board)

Inverted safety cover with venting bolt. (Source: Dutch Safety Board)

Grounding following steering problems, Hoek van Holland, 8 February 2020

An oil tanker sailing under the flag of the Marshall Islands ran aground on 8 February 2020 on the breakwater between the Caland Canal and the Nieuwe Waterweg following steering problems. The maritime authority of the Marshall Islands, *the Republic of the Marshall Islands Maritime Administrator*, carried out an investigation into the occurrence, and issued the following findings.

The grounding took place when the steering device failed while the ship was entering the Nieuwe Waterweg, from the sea. The vessel had two motors for the steering device. One of the 2 motors was not available because a number of components had to be replaced. There were insufficient spare parts on board to solve the problem.

The port authorities had given permission to enter the Nieuwe Waterweg, with just 1 motor available for the steering device. They did impose the condition that a tugboat be deployed to offer assistance if necessary, but this tug was delayed. In consultation with the pilot, the captain nonetheless decided to enter the Nieuwe Waterweg.

The causes identified relating to the management of the ship are as follows:

- The captain underestimated the risks of entering a port. The captain's concerns were focused on setting anchor, in combination with the weather forecast. He focused insufficiently on taking additional safety measures in connection with the fact that he had only 1 motor available for the steering device;
- Failure to halt the entry manoeuvre when it became clear that the tugboat that was due to offer assistance was delayed;
- A sensor from the hydraulic tank issued an error message, activating the low level alarm. The solenoid valve responded to the alarm, causing the rudder to become stuck, and no longer be responsive.

Actions taken by the ship manager to prevent recurrence include:

- Revision of the procedures for applicable preventive maintenance;
- Evaluation/review of the critical stock of spare parts;
- Consultation with the manufacturer of the steering device about the failure of the sensor;
- The issuing of a safety bulletin to the fleet containing the lessons learned from this incident, and a prohibition on entering port with just 1 motor available for the steering device; and
- Training for the captain.

Started investigations

During the period covered by this Shipping Occurrences Report, the Dutch Safety Board has started no new shipping investigations.

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

Crew members of chemical tanker injured in lock by broken mooring line, Terneuzen, 1 May 2020

On 1 May 2020, two crew members of a Maltese chemical tanker were injured while mooring in the Western Lock in Terneuzen when the forward spring broke. The ship was en route to the port of Ghent and was accompanied by a pilot. The two crew members were both on the ship's forecastle. A boatswain suffered an arm injury, and was able to remain on board. A deckhand suffered serious head injuries and was taken to hospital in Ghent, for treatment.

The Maltese *Marine Safety Investigation Unit (MSIU)* has launched an investigation.

Classification: *Serious injury*

Damage following collision with lock gate, Kiel Canal, Germany, 17 May 2020

While entering the Brunsbuttel lock in the Kiel Canal in Germany, a Dutch cargo vessel experienced engine failure on 17 May 2020. As a consequence, the vessel collided with the lock gates, causing serious damage both to the vessel and the lock gates.

The German *Bundesstelle für Seeunfalluntersuchung (BSU)* has launched an investigation.

Classification: *Less serious*

Grounding following engine failure, Vlieland, 12 October 2020

Vlieland following engine failure. The vessel had set sail from Harlingen, during the night. At around 4 a.m., the boat experienced problems with its reversing gear coupling. The boat became unmanoeuvrable, and was forced by wind and current out of the navigation channel and onto the beach, where the ship remained high and dry, upright, without any risk to the persons on board.

That morning, a salvager attempted to pull the ship clear, but there was insufficient water depth. In the afternoon, the vessel was pulled clear, and sailed to Harlingen under its own power.

The Belgian *Federal Bureau for the Investigation of Maritime Accidents (FEBIMA)* has launched an investigation.

Classification: *Serious*

Containers lost, Pentland Firth, United Kingdom, 31 October 2020

On the afternoon of Saturday 31 October 2020, a Dutch cargo vessel lost 33 containers after entering the North Sea via the Pentland Firth, north of Scotland. The vessel was travelling from Straumsvik (Iceland) to Rotterdam. Of the 33 containers, 1 contained consumer goods, and the rest were empty. Wind was blowing at force 8 with gusts up to force 9. The vessel was sailing almost directly into the wind and waves.

The captain had seen the weather forecasts. The forecasts suggested that weather on the North Sea would be more favourable than in the Atlantic. However, the opposite was the case. When the vessel entered the North Sea, it experienced waves of between 4 and 5 metres in height. The vessel started to react more violently and at one point a large wave crashed into the ship, and the containers fell overboard. The duty officer saw it happen.

The Marine Accident Investigation Branch (MAIB) of the United Kingdom has launched an investigation, with the Netherlands as a Substantially Interested State. The Dutch Safety Board is involved in the investigation and when the vessel arrived in Rotterdam, carried out an investigation on board, and shared the information with the MAIB.

The English *Marine Accident Investigation Branch* (MAIB) has launched an investigation, but this has not yet been completed

Classification: *Serious*

Incidents that have not been extensively investigated

Collisions

Collision between coaster and river ferry, Kiel Canal, Germany, 8 May 2020

Following a collision between the Dutch coaster Scheldebank and the Hochdonn ferry on the Kiel Canal, on Friday 8 May, the ferry suffered serious damage.

The accident occurred shortly before 8.00 hours in the morning, in poor visibility of between 50 and 100 metres. Shortly before the railway bridge, the Scheldebank had reduced speed in connection with diving work from a barge, in the canal. Shortly afterwards, the crew on the bridge (pilot, captain and first officer) saw a vague object on the port side. About two seconds later, the collision took place between the Hochdonn ferry, which was formally required to give way, and the Scheldebank. The stern part of the ferry was hit and suffered severe damage.

The Scheldebank was instructed to moor at Fisherhutte, where the crew made an initial inspection of the damage. Here they received notice that although the ferry had suffered serious damage, the passengers on board suffered no injuries. The damage to the Scheldebank was limited to a few scratches on the ship's starboard side.

The ship was travelling to Inkoo in Finland, and following further inspection at the yard in Kiel was permitted to continue its journey. Another ferry was deployed to maintain the ferry link.

Classification: *Serious*

Collision with dockside, Moerdijk, 23 May 2020

Upon entering the Northern harbour basin in Moerdijk, on 23 May 2020, the cargo vessel Kalkvik sailing under the flag of the Faroe Islands collided with the dockside. There was a pilot on board, but the captain was in control of the ship. An unexpectedly strong current drove the ship against the dockside. The dockside suffered damage, as did the ship, to the ship's skin. There was no spillage.

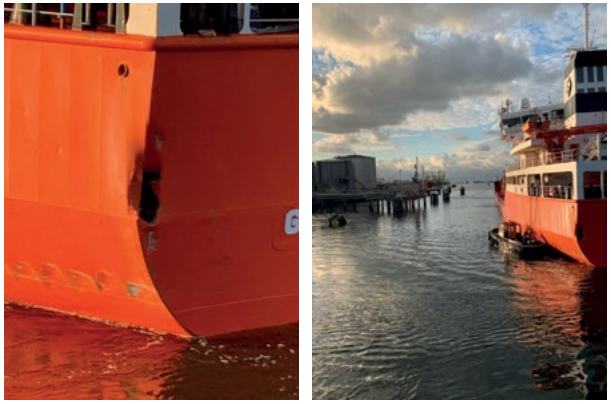
Classification: *Serious*

Collision with mooring post, 7e Petroleumhaven, Rotterdam, 6 September 2020

While mooring at the Vopak jetty in the Caland Canal near the 7e Petroleumhaven at Rotterdam's Europoort, the Portuguese chemical tanker Gisela Essberger collided with a mooring post on 6 September 2020. As a result of the collision, the vessel was punctured about two metres above the waterline, at the location of a drinking water tank. A hole with a diameter of 30 centimetres was punched in the ship

The pilot had come aboard at sea at around 17.00 hours, and piloted the vessel into the Caland Canal. The captain took over control on reaching the 7e Petroleumhaven. The ship made a turn to starboard before making a parallel reverse landfall. After building up speed, the captain decided to transfer control of the ship from the central console on the bridge to the console on the port bridge wing. At this point, the pilot pointed out the post behind the ship, to the captain, and recommended that the captain move the ship forward. The captain attempted to comply with this recommendation, but the adjustable propeller failed to respond to the controls, as a result of which instead of slowing down, the ship collided with the post. After switching back to the central console, and from there once again back to the port bridge wing, the operation of the propeller was once again possible.

Classification: *Serious*



Damage to the stern part of the Gisela Essberger. (Source: Rotterdam Harbour Police)

Movable tweendecks

Crew members on a ship are faced with different heights that are regularly subject to change. Crew members must always think carefully about where they can and cannot walk, and the height of the floor beneath them. This situation represents a potential for fatal accidents. This was the case in the fatal accident on the Fortunagracht, whereby a deckhand walked through a door opening behind which the floor was no longer present.

In this Shipping Occurrences Report, one occurrence is listed involving the injury of the first officer of the Dutch cargo vessel Poolgracht, because he fell from a tweendeck (see below). This occurrence demonstrates clear similarities with the occurrence on the Fortunagracht about which a report was published in 2020 (see page 7):

Fall from height, fatal accident on board Fortunagracht, Puerto de Sucre, Venezuela, 16 February 2018[7].

Fall from tweendeck, Beaumont Texas, United States, 18 August 2020

The first officer on board the Dutch cargo vessel Poolgracht was badly injured on 18 August 2020. The first officer was walking on a movable tweendeck in the hold, to check the cargo, and to instruct the fire watch in connection with hot work that was to be carried out. This tweendeck had been placed on the first level in the hold. In the process, he tripped or missed his footing, and fell from the tweendeck. He was able to grasp a handhold and so avoided falling all the way. He was then able to climb back onto the tweendeck. Because of severe pain, he was taken to hospital, where he underwent an operation and was repatriated.

Classification: *Serious injury*

Leg injury during work, Delfzijl, 16 May 2020

On 16 May 2020, the Dutch cargo vessel Alecto was moored in the port of Delfzijl. Maintenance work was being carried out in the hold. The first officer suffered serious leg injuries. The injuries required treatment on shore, so the victim was taken to hospital.

Classification: *Serious injury*

Injury to upper right leg caused by slip with grinder, Harlingen, 26 May 2020

The seagoing yacht Seawolf was moored by the dock in Harlingen on 26 May 2020, for maintenance work. While cutting metal, a hand grinder slipped, hitting a British crew member. The grinding disc came into contact with his leg. The crew member spent 1 night in hospital, before being flown home.

Classification: *Serious injury*

7 https://www.onderzoeksraad.nl/nl/page/17166/val-van-hoogte---dodelijk-ongeval-aan-boord-fortunagracht

Incidents that have not been extensively investigated

Broken leg, on the Elbe, Germany, 28 May 2020

An accident took place on board the Dutch workboat Torsten, on 28 May 2020, resulting in a deckhand breaking his lower leg. The accident took place while bringing on board a buoy that was used to mark the anchor line. The anchor line is used to hold a floating pipeline in position (for sand suppletion) when not connected to a dredging vessel. The accident happened after the buoy had been brought on board, in preparation for disconnecting the pipeline from the anchor, and connecting it to a dredger.

After the deckhand signalled that the buoy should be lifted, the winch operator started to lift the buoy. Shortly after the buoy had been brought on board and placed on deck, the sudden tension on the anchor line caused the winch cable and buoy to shift to starboard. The deckhand was standing midships on the starboard side, guiding the winch cable with a short boat hook. The winch cable came into contact with the victim's lower right leg, throwing him to starboard; it eventually turned out his leg was broken. The German water police came on board following the accident.

Classification: *Serious injury*

Fingers trapped in fishing net, North Sea above Terschelling, 3 June 2020

On 3 June 2020, an occupational accident took place on board the Dutch fishing boat ZK10 Vijko Sr. The boat was fishing on the North Sea above Terschelling, when a crew member's hand became entangled in the fishing nets. As a result, the deckhand lost two fingertips. The injured crew member was disembarked by a KNRM lifeboat, and subsequently treated in hospital.

Classification: *Serious injury*

Broken arm during work on deck, German Bight, 11 June 2020

While securing material on deck of the UK149 Stella Maris, in preparation for a homeward journey from the German Bight, the upper arm of a crew member became trapped following an unexpected movement by the vessel. The crew member's upper arm was broken in the accident, and he had to be disembarked by medical evacuation and transported to a Danish hospital.

Classification: *Serious injury*

Broken leg, Scotland, United Kingdom, 15 June 2020

On board the Dutch stern trawler SCH123 Zeeland, sailing at sea off the coast of Scotland, on 15 June 2020, while changing the otter boards, one otter board collided with the leg of the boatswain, breaking his leg. The victim was evacuated by helicopter, and transported to hospital near Inverness. From there, the victim was eventually transported to the Netherlands, where he underwent an operation.

Classification: *Serious injury*

Lost finger phalanx, English Channel, United Kingdom, 24 June 2020

In the afternoon of 24 June 2020, a crew member of the tugboat Teddy trapped his finger, and as a result lost the tip of this right index finger. The victim was carrying out towing work on deck, which required him to connect the towing cable to the connector. During this process, the stretcher of the towing line slipped, trapping the victim's hand between the stretcher and the plate. The victim underwent treatment in hospital.

Classification: *Serious injury*

Foot broken by entrapment, Rotterdam, 02 July 2020

On 2 July 2020, on board the Dinteldijk, moored in the port of Rotterdam a crew member's foot became trapped between the bulkhead and the ship while relocating a bulkhead. The bulkhead shifted suddenly while the crew member was attempting to disconnect it. He was taken to hospital, where a bone fracture was diagnosed.

Classification: *Serious injury*

Leg between fishing cables, Shetland Islands, United Kingdom, 7 July 2020

In the afternoon of 7 July 2020, a deckhand on the fishing vessel SCH302 Willem van der Zwan trapped his leg between the fishing cables he was guiding. While hauling in the cables around the drums, the cables became entangled behind the victim, causing his leg to be trapped. As a result, he was pulled up against the guide frame, leading to a broken ankle and fibula. The victim required hospital treatment, and was evacuated by helicopter.

In response to the occurrence, the operating position for the drums was examined. Before the accident, the only available drum operating position was on the starboard side. To ensure a clearer overview of the activity, a control panel will also be mounted on the port side. Depending on the situation, the drums can then be operated either from the port or starboard side.

Reconstruction photograph of the accident. On the left, the position of the victim. (Source: Van der Zwan)

Classification: *Serious injury*

Incidents that have not been extensively investigated

Crew member suffers serious injuries during mooring, Rocky Point, Jamaica, 19 July 2020

On 19 July 2020, a deckhand on board the Dutch cargo vessel Hanze Goteborg was hit in the chest by a mooring line while mooring in Rocky Point Jamaica. While approaching the dockside, the mooring line in question was paid out. At a certain point, the line became caught around the drum. The deckhand attempted to release the line, but because the ship was still moving, the line came under increasing tension. When the mooring line eventually broke free, it hit the deckhand in the chest. The deckhand suffered serious injuries. The victim was hospitalized in Jamaica, for observation. The ship subsequently left for Rotterdam, leaving the deckhand behind.

Fatigue may have been a contributing factor in the accident; due to COVID restrictions, it was not possible to change the crew members after completing the normal contract period; he had been on board since 31 May 2019.

Classification: *Serious injury*

Crew member breaks finger, anchorage Scheveningen, 20 July 2020

A crew member on board the Dutch passenger ship the Nieuw Statendam was carrying out an inspection of the sprinklers midships on deck A on 20 July 2020. While attempting to stop a fire-retardant door from closing, his finger became trapped between the door and the hinge. He suffered an open fracture to his right middle finger. The crew member received treatment for his injury from the ship's medical team in the hospital on board the passenger ship. At that time, the Nieuw Statendam had been anchored in the North Sea, off Scheveningen, for several months, as a result of the forced shutdown of cruise operations due to the COVID-19 outbreak. In connection with COVID-19 restrictions, the crew member in question had been on board since December 2019.

Classification: *Serious injury*

Lost fingertip, Lerwick, United Kingdom, 9 August 2020

On 9 August 2020, a crew member on board the Dutch stern trawler SCH81 Carolien lost a fingertip. The accident took place when the crew member attempted to remove a hook from one of the otter boards, while hauling in the fishing gear. The hook had become stuck in the otter board while shooting the gear. After contact with the Radio Medical Service, the crew member was transported to hospital, before being repatriated.

Classification: *Serious injury*

Broken ankle, Ipswich, United Kingdom, 10 August 2020

On 10 August 2020, the Dutch cargo vessel Reggedijk was moored in the port of Ipswich. While moving supplies that had just been brought on board, the ship's cook slipped while moving a box of fresh vegetables. He broke his ankle. After visiting the local hospital, he was repatriated for an operation.

Classification: *Serious injury*

Facial injury from broken mooring line, anchorage Konta, Guinea, 15 August 2020

On 15 August 2020, a crew member of the Dutch cargo vessel Alecto lost a number of teeth and suffered injuries to his face, tongue and palate. The accident took place during a manoeuvre whereby the vessel was mooring against a crane ship. The two ships separated during the manoeuvre because of the 1.5 to 2 metre-high swell. As a result, the mooring line which had already been paid out suddenly came under severe tension. The mooring line hit the crew member in the face, causing the loss of some teeth. The victim was disembarked and taken to hospital. Following treatment, he was able to recover further, at home.

Classification: *Serious injury*

Cut knee from badly placed angle grinder, North Pacific, 21 August 2020

On 21 August 2020, the Dutch cargo vessel Merwedegracht was sailing off Mexico, in the northern Pacific. A deckhand was working in the hold with an angle grinder. While setting the angle grinder to one side, it came into contact with his knee. Although the machine was switched off automatically when it was released, the disc was still rotating fast enough to cause a serious cut in the deckhand's knee. On the advice of a doctor from the Radio Medical Service, the wound was stitched on board. The victim was able to remain on board, and after about one week was able to fully return to work on board.

Classification: *Serious injury*

Facial injury, Western Coast of Taiwan, 21 August 2020

On 21 August 2020, a medical evacuation was carried out from the Dutch ship Seahorse, when the ship was sailing close to Taiwan's western coast. A crew member suffered facial injuries due to accident and was transported to hospital by the Taiwanese coastguard.

The accident took place while he was raising a beacon for measuring instruments on board, for measuring instruments. The cable on the hauling winch he was using became trapped around the railing. As he attempted to disconnect the beacon, he was hit in the face by the cable. He received first aid on board, and on the advice of the Dutch Radio Medical Service doctor was then transported to hospital, where he underwent an operation.

Classification: *Serious injury*

Incidents that have not been extensively investigated

Hatch cranes

Incidents involving hatch cranes occur regularly. On 5 September 2020, a further accident took place. The second mate of the Zaanborg was injured, when he became trapped between the hatch cranes and the railing (see below). Working with hatch cranes was previously the subject of two reports from the Dutch Safety Board, in which both cases led to a fatal outcome. These are the accidents on the Lady Christina (published on 9 May 2018[8]) and on the Beauforce (published on 19 April 2016[9] and the second fatal accident in 2018 is now under investigation).

A hatch crane travels over holds or stacked hatches, such that the operator of the hatch crane has no clear view of everything taking place around the hatch crane. Because these are regularly recurring accidents, the Dutch Safety Board once again draws attention to safe working with hatch cranes. In the investigations involving the Lady Christina and Beauforce, recommendations were made about working with hatch cranes, and whenever working with hatch cranes, it is recommended to know the investigations.

Trapped by hatch crane, St. Petersburg, Russia, 5 September 2020

On 5 September, 2020, the second mate on board the Dutch cargo vessel Zaanborg was injured, while the ship was moored in the port of St. Petersburg, Russia. Also in this case, the second mate became trapped between the moving hatch crane and the railing of the ship.

At the location of the front hatch, the gangway (waist) dips lower than elsewhere on board. For this reason, above this section of gangway, a platform has been created from which the hatch combing can be reached. For example for cleaning the hatch combing and for clearing the hatch crane runway. The platform can only be reached if the hatches are closed, or by climbing along the railing.

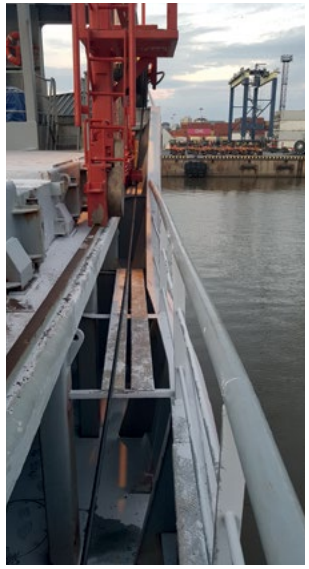
The second mate was on this platform, without the hatch crane operator knowing, when the hatch crane was also being used to retrieve the next hatch from the stack, to place it further back over the hold. The crew present on board had assumed that the second mate was in the waist and not on the platform. In hindsight, the second mate was positioned almost immediately below the crane operator, but out of his field of vision. In the previous minutes, he had allowed the hatch crane to pass the gangway on several occasions, at different locations, although there is very little space between the hatches and the railing, over the length of the ship. Both the duty officer and the operator on the hatch crane were in possession of a walkie-talkie.

8 https://www.onderzoeksraad.nl/en/page/4879/aanrijding-door-kraan-aan-boord-lady-christina-15-november-2017

9 https://www.onderzoeksraad.nl/en/page/3990/beknelling-luikenwagen-9-juni-2015

While the crane operator was focused on picking up the hatch, the overall of the second mate apparently became caught on part of the hatch crane. The second mate called out 'hold' which was heard by the crane operator. He thought the cry related to the fact that the hooks on the hatch had not been correctly hitched, which was indeed the case at that time. Following a correction, he assumed that he was free to continue. However, the second mate had not yet succeeded in freeing himself, and from that position was unable to reach the emergency stop. As the crane started moving, the second mate became trapped. He screamed in pain, at which point the crane was halted immediately, and assistance was provided, without delay.

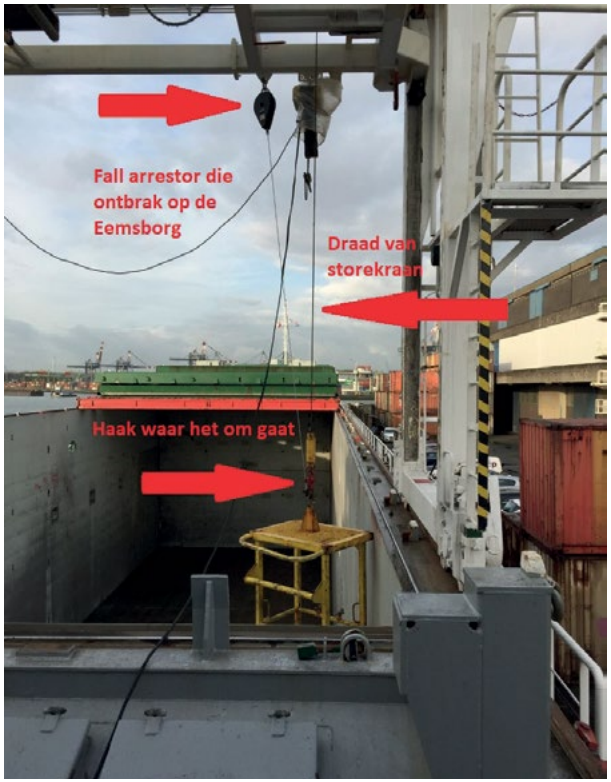
Classification: *Serious injury*



Fall from height with man basket, St. Petersburg, Russia, 15 September 2020

On 15 September 2020, the boatswain of the Eemsborg fell into the hold, from a considerable height. Bulkheads had previously been installed, in preparation for loading in St. Petersburg. To repair a section of the seal that had broken free, use was made of a man basket suspended from the store crane of the hatch crane. While carrying out this work, the man basket containing the boatswain was dropped from a height of 9 metres. According to the procedures on board, the man basket should have been secured with a fall arrester, but this was not carried out in this instance. The man basket slipped out of the hook on the store crane. The pin for the hook probably failed to close, leaving the hook open. It is uncertain how the man basket slipped out the hook. The boatswain was taken to hospital in St. Petersburg, with serious injuries.

Classification: *Serious injury*



Incidents that have not been extensively investigated

Trapped between mooring lines, Vlissingen, 15 September 2020

During the mooring process in the Kaloothaven in Vlissingen on 15 September 2020, a crew member of the Maltese cargo vessel Wilson Borg became trapped between mooring lines that were pulled taut. He suffered an open fracture to the leg. At the moment of the accident, the springs and bow lines had already been paid out, and the stern lines were being taken ashore by the boatmen on their flatboat. For unknown reasons, the victim on the forecastle became entangled in the bow lines. The victim was disembarked by the fire brigade, and taken to hospital.

Classification: *Serious injury*

Injury to thumb, west of Scotland, United Kingdom, 25 September 2020

In the early morning of 26 September 2020, a crew member of the Dutch cargo vessel Stadiongracht was evacuated by helicopter, after seriously injuring his thumb.

On the previous day, the crew member had been working in the engine room replacing the exhaust valve in a cylinder head. The crew member needed both hands to replace the exhaust valve, and had to crouch to see what he was doing. At precisely that moment, the ship made a rolling motion, causing the crew member to lose his balance. He dropped the exhaust valve, which fell onto his thumb.

Via the Dutch Coastguard, the captain contacted the Radio Medical Service. After speaking to the duty doctor, the information was passed on to MRCC Stornoway. The decision was eventually taken to evacuate the victim. Because the ship was sailing around 600Nm west of Scotland at the time, MRCC Stornoway deployed a helicopter to retrieve the victim.

Classification: *Serious injury*

Thumb in door, Ionian Sea, 3 October 2020

On 3 October, while closing a watertight door on the Dutch cargo vessel Bothnia, a crew member's thumb was trapped in the door. After First Aid on board and contact with the Radio Medical Service, a helicopter was deployed for a medevac. At the time, the ship was sailing on the Ionian Sea.

Classification: *Serious injury*

Working without experience

Last year, it once again became clear that obtaining a certificate on the basis of the provisions in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) is not enough to ensure safe working practice on board, because practical experience is an equally essential element. This applies for example to inexperienced crew members such as the trainee who fell three metres, and broke both his arms. The captain had issued instructions on use of the mobile ladder, but these instructions were not correctly followed (see below). On board a ship there are constantly potential hazards and knowledge and experience determine how those hazards are dealt with, and how the situation ends up. If someone has never done something before, and sees someone else carrying out a task that appears simple, the idea can soon take root that the task is indeed simple. This in turn can lead to overconfidence in a person's ability; that person may assume he has certain skills, which he does not in fact have, at all. Next to that, a trainee receives, on any given day, a great deal of new information, and cannot be expected to immediately correctly process and comply with all that information.

In the Shipping Occurrences Report of November 2017 - April 2018[10], attention was focused on this subject. It was suggested in that edition of the SOR that consideration must also be given on board to who is capable of determining each individual's learning needs and ensuring that trainees are able to make mistakes in a safe environment, and that those mistakes are discussed. People should not be set to work independently too quickly, for their own safety.

When discussing this subject, thoughts quickly turn to deckhands who have just completed training, but it can apply to any position on board, when a crew member is given new tasks and responsibilities. Take for example a maritime officer who had just left school, and who was immediately made responsible for the engine room. As a consequence, he took certain actions, due to his lack of experience, which went wrong, and caused a fire This investigation is dealt with in the chapter Accidents investigated without report (see page 10) and is titled:

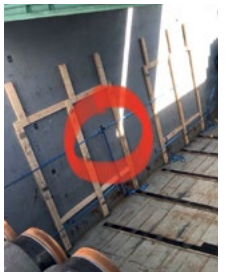
Fire in engine room, Maas approaches, 26 June 2017

10 https://www.onderzoeksraad.nl/en/

Trainee falls from ladder and breaks both arms, Mukran, Germany, 13 October 2020

On 13 October 2020, the Dutch cargo vessel Hestia was moored in the German port of Mukran. After unloading a cargo of steel pipes, the crew was instructed to clean the hold and prepare it for the next cargo. The crew included a trainee. He was working under the captain's supervision. The trainee was working with a mobile ladder. Shortly before starting the work, he was instructed by the captain on the use of this ladder. The way the trainee eventually placed the ladder was not in compliance with the instructions. The captain saw this happen, and despite a shouted warning by the captain, the trainee and ladder fell approximately 3 metres. The trainee broke both arms, and had to be taken to hospital.

Classification: *Serious injury*



Incidents that have not been extensively investigated

Ship's cook suffers burns, Bay of Biscay, 28 October 2020

On 28 October 2020, the ship's cook on board the Dutch cargo vessel Arklow Breeze suffered serious burns to his hand. While frying fish, the cook knocked into the frying pan, causing it to tip over and thereby spilling hot oil on the cook's hand. The movements of the ship due to severe weather were a contributing factor. Following arrival in the port of Bordeaux, the cook was taken to hospital to have the burns treated.

Classification: *Serious injury*

Fire on board

Fire due to heat generation in cargo of scrap metal, Waalhaven, Rotterdam, 04 July 2020

Fire broke out on board the bulk carrier Dimitri S sailing under Liberian flag, while in the Waalhaven. The fire was caused by heat generation in the cargo of scrap metal that had previously been taken on board in Dordrecht. One crew member was taken to hospital with breathing problems, having inhaled smoke. A number of crew members were temporarily disembarked and accommodated elsewhere. The other crew members remained on board to assist the fire brigade. Putting out this complex fire took 12 hours during which time large volumes of smoke were generated, which caused considerable nuisance in the environment. Several NL-alert messages were transmitted in response.

Classification: *Serious*

Chimney fire, Killingholme, United Kingdom, 04-07-2020

On the evening of Saturday 4 July 2020, a chimney fire broke out on board the Stena Transit. This fire was caused by an overflow from the day tank for fuel. The fire was rapidly brought under control, and the damage was limited to electrical parts. As a consequence, the scrubber (exhaust gas filter) and second generator were put out of action. The classification society completed an inspection on board, after which the vessel was returned to service.

Classification: *Serious*

Fire in engine room, Vlissingen, 6 July 2020

On 6 July 2020, fire broke out in the engine room of the Danish-flagged Wilson Arctic. Shortly before, the offshore supply boat had set sail from the Sloehaven in Vlissingen. The vessel was travelling without cargo, with 49 people on board, in the vicinity of the Steenbank pilot station. The fire was soon brought under control. There were no injuries and no environmental pollution. One of the main engines was still operable, and the pilot, who was still on board at the time, informed the authorities that the propulsion generated by a single engine was sufficient for the vessel to continue sailing. The vessel returned to the Sloehaven, under its own power.

Classification: *Serious*

Fire during welding work, Kiel, Germany, 20 September 2020

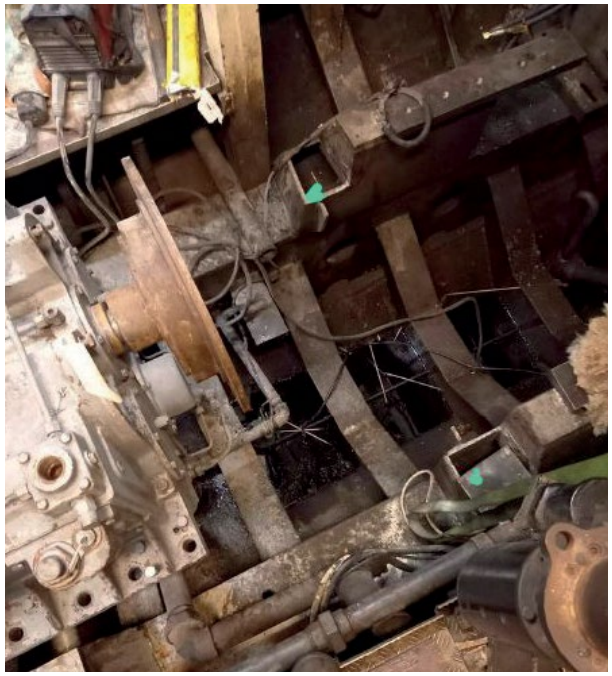
On 20 September 2020, fire broke out in the engine room of the Dutch sailing ship Regina Maris. Two persons on board suffered injuries. At the moment of the accident, the ship was moored in the port of Kiel, and there were no passengers on board.

Together with a welder, the captain was carrying out maintenance work in the engine room. After cleaning the reversing gear coupling with brake cleaner, the welder moved to the other side of the engine room to start welding the engine bracket. As he started welding there was an explosive combustion and fire broke out.

The captain first attempted to extinguish the fire himself, but was forced to abandon his efforts due to lack of oxygen. The fire was later put out by another crew member. The welder evacuated the engine room immediately following the explosion. He suffered burns to his arms and was taken to hospital in Lübeck by emergency helicopter. The captain was admitted to Kiel hospital, where he remained overnight for observation, with minor injuries.

Due to the absence of other flammable materials in the engine room and the risk of flammable gases in enclosed spaces, the likely cause is that the propellant gases from the brake cleaner had become trapped in the bilge, and were ignited by the welding sparks.

Classification: *Serious injury*



Incidents that have not been extensively investigated

Groundings

Grounding due to fishing net in propellor, Scheveningen Coast, 14 May 2020

On 14 May 2020, while fishing on the North Sea off the coast of Scheveningen, a fishing net became entangled in the propeller of the Dutch trawler WR181 Gerritje. As a result, the trawler lost control of its steering. Towing assistance was initially provided by the Dutch trawler SL2 Arentje. In the approach to the port of Scheveningen, assistance was requested from the Dutch lifeboat service KNRM, via the Coastguard Centre. A KNRM lifeboat took over the towing and towed the trawler into the port of Scheveningen.

Classification: *Serious*

Grounding following blackout, Nieuwe Maas, 25 May 2020

On 25 May 2020, the Cypriot container ship Elbfeeder ran aground on the northern bank of the Nieuwe Maas just above the Koggehaven, as a result of a blackout. This was caused by the failure of the main engine due to a problem in the alarm system. The crew attempted to avoid running aground by dropping anchor, but without success. The ship was refloated with the assistance of a tugboat, and assisted by two tugs continued its journey to the Eemhaven. There were no leaks or spills.

Classification: *Serious*

Stranded on the Danish Coast, Denmark, 20 July 2020

On Monday 20 July 2020, the Dutch fishing boat UK172 Sursum Corda suffered engine failure while fishing off the Danish coast. An initial inspection revealed a seized-up cylinder in the main engine. In addition, there was no more lubricating oil in the engine block. This was clearly a problem that could not be repaired at sea, and it immediately became clear that tugboat assistance was required.

In the meantime, the boat had been driven closer towards the Danish coast, and after the nets were hauled on board, the drift accelerated. The anchor was deployed, but failed to take hold, and started dragging. By this time, towing assistance in the form of fellow fishing boats was en route, but they did not arrive on time to prevent the UK172 running aground.

Over the course of the days following the grounding, several attempts were made to refloat the fishing boat, involving a number of other fishing boats from Urk. All these attempts failed, partly as a result of the poor weather. As a consequence, the UK172 became more deeply embedded on the shore.

A salvage company was eventually called in, which arrived on the morning of Sunday 26 July, with a salvage vessel and a tug. After a channel was dug by a contracted Danish dredger, the UK172 was successfully refloated on the evening of Monday 27 July, more than a week after the initial grounding.

The UK172 was towed to Thyboron in Denmark to unload its fish and to inspect the boat. The boat was then towed to IJmuiden for repairs. The vessel suffered damage to its keel and superstructure as a result of the grounding and recovery. The engine will also have to be overhauled/ replaced.

Classification: *Serious*

Stranding due to failure of steering gear, Westerschelde, 7 September 2020

At 20.25 hours on 7 September 2020, an electrical wire in the steering gear on board the bulk carrier Antero, sailing under the flag of the Marshall Islands, broke, causing the steering gear to fail. As a result, the vessel made a turn to starboard. Despite immediately activating the emergency steering system, the vessel crossed the northern line of buoys, and ran aground on the Westerschelde, near Terneuzen.

As the water level was falling, the vessel could no longer be dragged clear and other shipping traffic was informed by the traffic control centre in Terneuzen to pass with caution. At around 01.45 hours, with the incoming tide, the ship rose clear and was towed to the roads of Vlissingen by tugboat, to wait for a mooring in the port. The steering gear was repaired in Vlissingen, and the vessel was inspected for damage, before continuing on its journey.

Classification: *Serious*

Grounding outside the buoy line, Limfjord Denmark, 6 October 2020

On 6 October 2020, the Dutch cargo vessel Daan was travelling from Aalborg towards Logstor, under pilot guidance. The pilot had instructed the vessel to continue sailing tight along the red side of the channel, to allow another ship to overtake. At this point, the navigation channel is narrow, and the green and red channel markings appear to line up with one another, due to the bend. The Daan passed a green marker buoy on the eastern side, outside the channel, and subsequently ran aground. The Daan was successfully refloated with the assistance of a nearby pilot boat and was able to continue its journey. An inspection revealed that the vessel had suffered no damage as result of the grounding.

Classification: *Serious*

Grounding following incorrect assessment of a buoy, Randers Fjord, Denmark, 24 October 2020

On 24 October 2020, the Dutch cargo vessel Eems Sky ran aground in the Randers Fjord in Denmark. When it ran aground, the vessel was sailing without pilot assistance. The cause of the grounding was the wrong assessment of a buoy by the bridge team. On Monday 26 October, the ship was refloated and continued its journey to Randers. An underwater inspection was carried out, revealing no damage.

Classification: *Serious*

Incidents that have not been extensively investigated

Damage

Broken hawser damages lifeboat, Vlaardingen, 26 August 2020

On 26 August, at around 07.40 hours, the Lithuanian RoRo cargo vessel Gardenia Seaways was attempting to enter the Vulkaanhaven in Vlaardingen. Due to poor weather, the vessel was assisted by two tugs. One of the hawsers broke, causing severe damage to the lifeboat of the Gardenia Seaways. The vessel subsequently entered the port, without further problems.

Classification: *Serious*

Fishing net in propeller, north of Vlieland, 17 September 2020

On 17 September 2020, while fishing, a fishing net became entangled in the propellor of the Dutch fishing boat WL39 Monte Senior causing the fishing boat to lose all power. The net in question was not the boat's own fishing net, but a net that was floating in the sea. The fishing vessel was towed to Lauwersoog by a fellow fishing boat, where it was placed on the slipway, to remove the net. No further damage to the fishing boat was observed.

Classification: *Serious*

Broken free from dockside, Zeebrugge, Belgium, 25 September 2020

In the early morning of 25 September 2020, the Dutch gas tanker Coral Monactis broke free from the dockside in Zeebrugge. At the time, a storm was traversing western Belgium and the southwestern Netherlands. After breaking free, the vessel was pushed back to the dockside by a tugboat, so that new mooring lines could be laid. The ship suffered damage to its portside, but was not punctured. Following inspection, the vessel visited a shipyard for repairs.

Classification: *Serious*

Damage to mast due to collision with container crane, Rotterdam, 4 October 2020

At 06.30 hours on 4 October 2020, the Liberian container ship Nordic Luebeck hit a container crane with its main mast during a mooring manoeuvre at the ECT terminal. As a result, the mast was knocked completely out of alignment and had to be repaired before the ship could continue its journey. The ship was sailing under pilot supervision and was instructed to moor at the designated location on the dockside, beneath the crane. During the manoeuvre, it became clear that there was insufficient space beneath the crane for the height of the ship, but there was no more time to break off the manoeuvre. The crane beneath which the ship was moored was mistaken for a different, higher crane.

Classification: *Serious*

Collision with post, Eemshaven, 5 October 2020

In the early morning of 5 October 2020, at around 02.45 hours, the Dutch fishing boat Noorderhaaks UK 195 collided with a post when leaving the Beatrixhaven in Eemshaven. The collision was caused by a loss of steering when a large ship passed by.

According to the skipper, the fishing boat suffered a tear, 2 metres above the waterline. The boat will remain moored until an inspection has been carried out to identify the damage so the emergency repairs can be carried out.

Classification: *Serious*

Incidents that have not been extensively investigated

Damage while manoeuvring, IJmuiden, 28 October 2020

The 110 m-long Portuguese cargo vessel Manisa Floyen was damaged while manoeuvring in the port of IJmuiden, on 28 October 2020. While moving to a different berth, the vessel was caught by a gust of wind, which forced the vessel against the corner of a platform, puncturing a hole in the hull, above the waterline. The ship was able to continue mooring without further difficulty, and the crew carried out provisional repairs before continuing the journey. Because the class regulations specify an inspection and repair, the vessel was recalled to port.

Classification: *Serious*

Technical failures

Ship loses steering and requires tugboat assistance, North Sea in the vicinity of Vlieland, 5 June 2020

On 5 June 2020, during a journey from Tilbury in the United Kingdom to Klaipeda in Lithuania, the cargo vessel Geise suffered a complete blackout at around 13.30 hours, while on the North Sea, in the vicinity of Vlieland. The vessel was towed to the port of Rotterdam, by tugboat.

Classification: *Serious*

Towed into port following engine failure, North Sea, 23 June 2020

In the night of 22 to 23 June 2020, the fishing boat Anna Tatjana WR222 experienced problems at sea with the cooling water system in its main engine. As a result, the fishing boat was unable to continue sailing, and had to be towed into the port of Den Helder.

Classification: *Serious*

Failure of steering gear, Westerschelde, 7 July 2020

On 7 July 2020, the Dutch sand dredger DC Brugge suffered a failure of its steering gear. The vessel first anchored to allow the crew to carry out temporary repairs. The vessel then entered the port of Breskens under its own power. Definitive repairs were carried out in Breskens.

Classification: *Serious*

Problems with the cooling system, Shoreham, United Kingdom, 24 August 2020

On 24 August 2020, the Dutch cargo vessel Reggedijk was en route from Shoreham in the United Kingdom to Portugal. Shortly after leaving the port of Shoreham, the vessel suffered engine problems. The cooling water pressure in the engine became unstable due to air in the cooling system. The Reggedijk set its anchor, but the repair was beyond the capability of the crew. The vessel was towed to Le Havre, France, for repairs.

Classification: *Serious*

Engine failure, Anticoste Island, Canada, 27 August 2020

On Thursday 27 August, the Dutch cargo vessel Amurborg suffered an engine failure, 18 miles southwest of Anticoste Island, Canada. It quickly became clear that the problems could not be solved easily, and the vessel was towed into the port of Sept-Iles in Canada.

When the engine was inspected, piston no. 6 was found to have seized. The probable cause was serious damage to the cylinder lining, by the piston pin.

Classification: *Serious*

Engine failure, Karlshamn, Sweden, 24 October 2020

On 24 October 2020, the Dutch cargo vessel Lady Astrid was travelling from Karlshamn in Sweden to Chatham in the United Kingdom with a cargo of timber, when it suffered a main engine failure in international waters on the North Sea, off the coast of Noord-Holland. The main engine was shut down and investigation revealed that cooling water has flooded part of the main engine. This situation could not be corrected at sea. Tug assistance was required, and the Lady Astrid was towed into IJmuiden.

Classification: *Serious*

Sinking, capsizing, taking on water

Water leak due to cracked GRP pipe, Atlantic Ocean, 5 October 2020

On 5 October 2020, the Dutch heavy cargo vessel Yacht Express took on a large quantity of seawater. This happened when the vessel was sailing on the Atlantic Ocean. The cause was failure of part of a Glassfiber Reinforced Plastic (GRP) pipe in a pump room. The crew decided to close the watertight doors, and switched on the bilge pump. The decision was also taken to set course for the nearest safe haven, Freeport on the Bahamas. En route to Freeport, it became clear that the capacity of the bilge pump was insufficient. Therefore it was decided to transport additional pump capacity to the vessel. Thanks to this additional pump capacity, the pump room was successfully pumped dry, allowing the crew to close the shut-off valves.

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 occurences 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 occurences in the construction sector and healthcare, for example, as wel 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 extensivve 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.

March 2021

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

Source photos frontpage:
Photo 1: The Netherlands Coastguard
Photo 3: Crew Nordic Luebeck