



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 2021 - December 2021



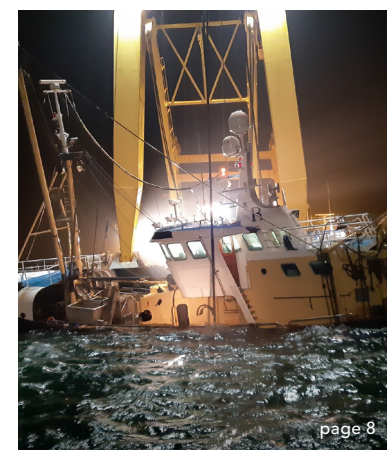
International advances are being made in sea shipping incident investigation. Increasingly, the field is focusing on maintaining safety. An essential element of safety is safety learning and an important development in safety learning is the combined analysis of previously published investigation results. Over the past year, the Dutch Safety Board has conducted precisely that kind of analysis. The results appear in the first chapter of this edition of the Shipping Occurrences Report.

Based on the principle of safety learning, in this Shipping Occurrences Report, the Dutch Safety Board has decided to include a number of relevant occurrences in inland shipping. After all, as well as differences, there are also similarities between inland shipping and sea shipping. The inland shipping sector can learn from occurrences in the sea shipping sector, and vice versa. For that reason, this Shipping Occurrences Report includes two initial investigations (phosphine and collisions with civil engineering structures) that have been conducted in this sector, as well as a series of occurrences that occur regularly in the sea shipping sector

Jeroen Dijsselbloem
Chairman of the Dutch Safety Board



page 8



page 8



page 24

Safety in motion

Working on board and close to ships is never without risks. Although crew members almost always disembark safely, occurrences do take place in the shipping industry. Working with heavy objects in a constantly changing environment with moving equipment means that there are regular reports of occurrences, sometimes with fatalities. Each year, the Dutch Safety Board investigates a number of these occurrences, with the aim of improving safety in shipping.

On an international scale, a number of relevant developments have taken place in respect of the methods for improving safety on and in sea shipping. A publication from the European Union-sponsored project SAFEMODE¹ reveals that in international sea shipping, incident investigation is becoming increasingly aimed at a shared focus on maintaining safety. This includes such concepts as just culture² and safety learning culture.

SAFEMODE argues for example that analysing a series of previously published accident reports is part of a world in which learning from accidents, near-accidents and unsafe situations is common practice (a safety learning culture). This kind of analysis reveals trends and recurring factors.

Overarching analysis of published Dutch Safety Board reports period 2010 - 2021 (serious and very serious occurrences in sea shipping)

The Dutch Safety Board recently conducted an analysis of this kind involving multiple incident investigations. The purpose of this analysis was to discover the common threads or recurring factors in shipping investigations by the Dutch Safety Board. The recently published reports described elsewhere in this report were also included. The (sub)conclusions and recommendations from 19 investigation reports into serious and very serious occurrences involving seagoing vessels from the period

2010-2021 were analysed. The absence, failure to comply with or ineffectiveness of safety management emerged as a common thread throughout these investigations. Safety management refers to all forms of written instructions and procedures related to promoting safety. In addition to compulsory safety management systems, these include Risk Inventories & Evaluations (RI&E), Bridge Resource Management Instructions and Standing Orders.

In order to gain greater control over the absence and non-compliance with and ineffectiveness of safety management, all the related conclusions, lessons learned and recommendations were classified and totalled in the following categories and subcategories and subsequently reproduced in table 1:

1. Safety procedures were in place, but were not or were not fully complied with because:
 - a. people with a safety task were required to perform multiple tasks simultaneously, according to the safety procedures (task overload);
 - b. there were insufficient crew members to be able to perform all safety procedures;
 - c. crew members were allocated safety tasks for which they were not or not sufficiently trained (consciously or unconsciously incompetent);
 - d. the crew on board was capable but did not perform the tasks;
2. There were safety procedures in place, but the procedures
 - a. were ineffective;
 - b. did not comply with legislation and regulations;
3. There were safety procedures in place, but crew members did not call each other to account for unsafe behaviour;
4. There were no safety procedures in place.

In the analysed reports, conclusions, lessons learned and recommendations in categories 1.d, 2, 3 and 4 were specifically mentioned. The same does not apply for the analysis results in categories 1.a, 1.b and 1.c. In the remainder of this theme article, this specific analysis result is discussed further.

¹ <https://safemodeproject.eu/>

² In this connection Just Culture refers to a culture in which unsafe situations, accidents and near-accidents can be reported without any negative effects for the reporter or the persons involved.

Table 1: Results analysis.

Category 1: Procedures in place but not or not fully complied with		
a	task overload person with safety tasks (Azoresborg, Clipper Champion, Hudsonborg, Alma, A2B future, RN Privodino, Damsterdijk)	7x
b	Insufficient crew members (numbers) to correctly perform the procedures (Hudsonborg, Alma, A2B Future, Damsterdijk (2x))	5x
c	Insufficiently qualified crew members to perform the procedures (training) (Marietje Andrea, A2B Future, Lady Ami (2x), Flinter Aland, FWN Rapide, Marja)	8x
d	Procedures were not (fully) complied with (Annelies Ilena, Lady Irina, Clipper Champion, Hudsonborg, Scelveringe, Pollux, Fortunagracht, Damsterdijk, Azoresborg (2x), Flinter Aland, Bow Jubail, FWN Rapide, Beauforce (2015))	14x
Category 2: Procedures were in place but:		
a	The procedures were ineffective (Annelies Ilena, Freya, Lady Irina, Clipper Champion, Hudsonborg, Marietje Andrea, Scelveringe, Fortunagracht, RN Privodino, Damsterdijk (2x), Azoresborg (2x), FWN Rapide)	14x
b	The procedures did not comply with legislation and regulations (Freya (2x), Annelies Ilena, Lady Irina, Marietje Andrea, Scelveringe, Pollux)	7x
Category 3: Procedures were in place but crew members did not call each other to account for unsafe behaviour (Clipper Champion, Hudsonborg, A2B future, FWN Rapide)		4x
Category 4: Procedures were not in place (Annelies Ilena, Hudsonborg, Alma, A2B Future, Scelveringe, Pollux, Lady Amy, RN Privodino (2x), Flinter Aland, Frisia)		11x

Safety in motion

Crew composition and safety management

Relatively often, it can be concluded from the investigations that the crew did not perform safety procedures as described, as a result of insufficient capacity to execute safety tasks. In certain cases the capacity was not available (number or position on board) or the available capacity was overdemanded (multiple tasks simultaneously, including safety tasks).

In international sea shipping, both the safety management system itself (SMS) and the crew composition are regulated and certified. In the Netherlands, crew regulations are designated as goal-based regulations, whereby the primary responsibility lies with the ship manager/operator.

According to a crew plan, the ship manager chooses the ideal crew composition to ensure safe vessel operation. The supervisor then approves or rejects the crew plan, and on the basis of an approved crew plan issues a manning certificate for the vessel.

A similar system applies for safety management. Occupational safety, pursuant to the Health and Safety at Work Act (also a target regulation) is a primary responsibility of the employer. The measures aimed at satisfying requirements eventually make their way into the SMS on board, often via the RI&E. On vessels larger than 500 GT, an SMS is compulsory, and is therefore surveyed and certified.

Safety on board benefits from a system in which at least sufficient crew members are on board to always be able to work fully in compliance with the SMS. The analysis revealed that capacity and safety management were regularly poorly matched. In interviews and from documentation, it emerged that the regulator only assesses crew plans in relation to a limited number of operational processes on board (including navigation, emergency procedures, mooring and unmooring, bunkering operations) and not in respect of all operational processes on board (maintenance, loading-unloading, administrative tasks during periods in port, etc.). At the same time, there are also indications that during the inspection of an SMS, the regulator does not assess whether the SMS can actually be performed with the (minimum) available crew.

Partial conclusion of analysis

On board seagoing vessels, the crew composition does not always match the safety management system or vice versa. In a number of cases, this played a role in the occurrence of incidents.

Ship managers (execution) and the government (evaluation) have a joint task and responsibility in ensuring a correct match. The analysis revealed that this match is not always guaranteed.

Other factors

The partial conclusion as referred to above does not apply to all the analysed occurrences. In the case of the accident on board the FWN Rapide, for example, although there are aspects related to training, those aspects cannot be derived to a mismatch between crew composition and safety management. The same applies for the occurrence on board the Marja. The occurrences on board the FWN Rapide and the Marja are discussed in more detail elsewhere in this Shipping Occurrences Report.



Entrance to enclosed space.



Loading and unloading on board a containervessel

Accident classification

In this Shipping Occurrences Report November 2020 to May 2021, the Dutch Safety Board registers the description of³ reported accidents on board ships sailing under the Dutch flag or accidents that have occurred within Dutch territorial waters and reports published during this period.

The figures and trends in this chapter relate only to seagoing vessels. This relates among others to a reporting obligation for occurrences in which seagoing vessels are involved. This obligation does not apply to inland shipping. As a result, the figures for inland shipping are substantially less reliable.

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.

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, multiyear overviews are also included.

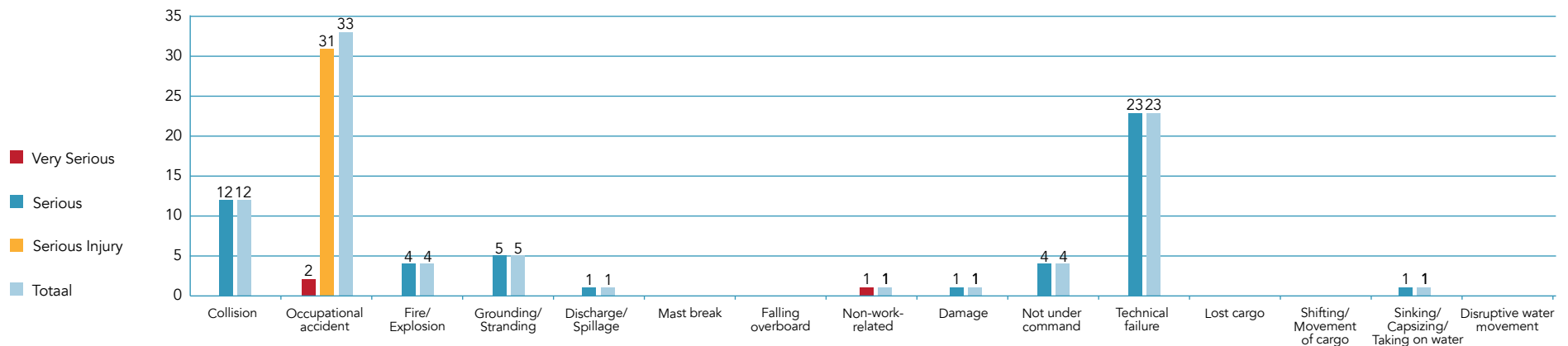


Figure 1: Serious and very serious accidents, sea shipping, period May 2021 through to December 2021.

³ All data relating to figures and trends relate exclusively to occurrences on and involving seagoing vessels reported to the Dutch Safety Board or brought to the attention of the Dutch Safety Board.

Accident classification

In Figures 1 and 2, occupational accidents occupy a key position. The prevention of occupational accidents is therefore a vital element in (international) rules. The international Maritime Labour Convention (MLC 2006), which contains these rules, is viewed alongside the SOLAS Treaty (safety at sea), the Marpol Treaty (environment) and the STCW Treaty (training, and watchkeeping) 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 of this report, occupational accidents are displayed on the basis of causes of injury. It is noticeable that entrapment, being hit by liquids/objects, falling/slipping/tripping/collision and falling from height are the most common types of occupational accident.

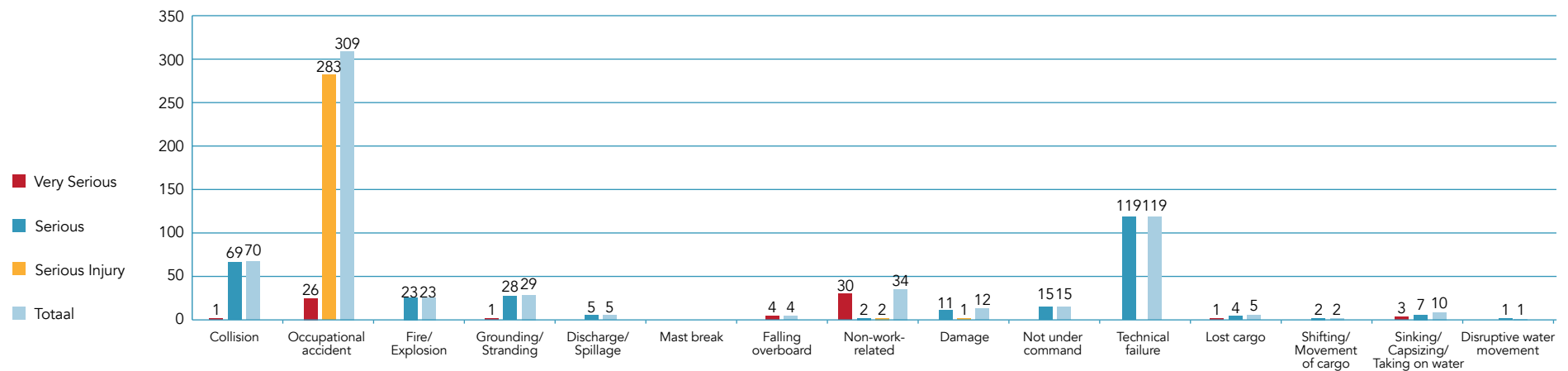


Figure 2: Serious and very serious accidents, sea shipping, period January 2016 through to December 2021.

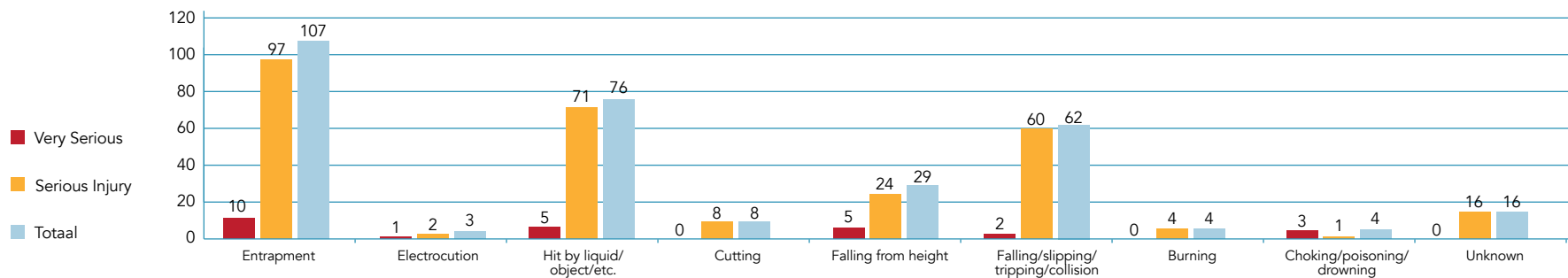


Figure 3: Occupational accidents linked to the cause of injury, sea shipping, period January 2016 to December 2021.

Figure 4: Multiyear trends collisions, technical failures and occupational accidents



Trends are reproduced below both for the most common occurrences (figure 4) and the most common causes of injuries in occupational accidents (figure 5). These trends are informative and are intended to give greater insight into multiyear developments.

Figure 5: Multiyear trends entrapments, hit by liquid/object, falling/slipping/tripping and falling from height



Published reports

Capsizing and sinking of beam trawler, UK-165 Lummetje, North Sea, 28 November 2019 and UK-171 Spes Salutis, North Sea, 9 December 2020

On 28 November 2019, the trawler UK-165 Lummetje capsized and sank in coastal waters near Texel. The occurrence cost the lives of the two crew members on board. On 9 December 2020, the UK-171 Spes Salutis also capsized. As a result of these two occurrences, the Dutch Safety Board launched an investigation.

Events leading up to the capsizing and sinking of the UK-165

In the early morning of 28 November 2019, the UK-165 was fishing for shrimp. The vessel was sailing on a northerly heading in coastal waters near Texel. At least one of the two nets became entangled in the wreck of the steamer Ruth.

The entanglement of the UK-165 with the wreck did not result immediately in the capsizing of the trawler. In accordance with fixed procedures, measures were taken on board. Firstly, the port outrigger boom was raised slightly, and the port gear was lifted up to the boom. The aim was to prevent the portside fishing net becoming entangled in the propeller. Eventually, the sudden breaking free of the starboard gear followed by the starboard outrigger boom swinging upwards generated the fatal heeling moment.

Events leading up to the capsizing and sinking of the UK-171

In the morning of 9 December 2020, the starboard fishing net of the fishing vessel UK-171 Spes Salutis jolted suddenly. The crew decided to cut power to the propeller and to pay out the nets. During attempts to retrieve both nets, the trawl wire on the starboard fishing gear shot over the afterdeck, and the starboard outrigger boom suddenly swung upwards. Eventually, the crew was forced to cut through the starboard trawl wire. The starboard outrigger boom then returned to a horizontal position.

The port gear was then retrieved from the seabed. This led to the same type of asymmetric loading condition as on the UK-165. The UK-171 capsized because both sets of gear were suspended from the port side outrigger boom, while there was no further weight at all on the starboard boom.



Salvage UK-171.



Salvage UK-165.

Asymmetric loading conditions

Both the UK-165 and the UK-171 were faced with undesirable events affecting one of the sets of gear, prior to capsizing. Nonetheless, these occurrences were not the direct cause of the capsizing.

This insight provided the Safety Board with grounds to further investigate the influence of asymmetric loading conditions on the stability of beam trawlers and the potential for response by the crew in the event of asymmetric loading conditions. The investigation was carried out on three beam trawlers with a length of less than 24 metres. In almost all asymmetric loading conditions investigated, the stability no longer satisfies the requirements applicable for this situation.

The report, including conclusions and recommendations, is published on the Internet page of the Dutch Safety Board:

<https://www.onderzoeksraad.nl/en/page/15703/kapseizen-en-zinken-viskotters---lessen-uit-de-voorvallen-met-de-uk>

Twendeck falls into hold with fatal outcome, FWN Rapide, Georgetown, Guyana, 3 September 2019

On 2 September 2019, two Filipino deckhands fell into the hold on board the Dutch cargo vessel FWN Rapide. One of the crew member died and the other was injured. The occurrence took place in the port of Georgetown, Guyana. The two victims stood on a tweendeck while it was being moved by the hatch crane.

During the occurrence, the tweendeck was being used to fill the gaps between the walls of the hold and a vertically installed transverse bulkhead, from top to bottom. One of the two hoisting cables on the hatch crane from which the tweendeck was suspended broke. As a result, the port side of the tweendeck fell approximately 5 metres, ending up in the bottom of the hold. As a result of the fall, the other hoisting cable also broke.

During the investigation, it was noted that hatch cranes on board ships are subject to a non-standard and less strict inspection, examination and testing regime. Because the hatch crane on board the FWN Rapide was subject to a strict inspection regime in practice, there is no relationship with the occurrence described in this report. Nonetheless, the Dutch Safety Board considers this observation crucial in relation to reducing the risk of occurrences in the shipping sector as a whole.



Baskets available for locking and sealing transverse bulkhead.

The analysis of the accident identified and described four missing or failing barriers. On that basis, conclusions were drawn and recommendations issued in the following areas:

- Specified maintenance;
- Expertise in the inspection of hoisting cables;
- Inventory and evaluation of risks when altering existing work processes;
- Availability of suitable fall protection equipment;
- Organization of safety tasks.

The complete can be consulted via <https://www.onderzoeksraad.nl/en/page/15304/tussendek-valt-in-ruim-met-fatale-afloop---lessen-uit-het-voorval-aan>

Published reports



Hatch cover wheel on board a sister ship Marja.

Hatch cover wheel breaks free, fatal accident on board the Marja, Venice, Italy, 9 February 2018.

On 8 February 2018, the Dutch general cargo vessel Marja moored in the port of Mestre (Venice, Italy). During the opening of one of the hatches, a deckhand discovered a problem with a hatch cover wheel. The chief engineer attempted to hammer the wheel back into position using a sledge hammer. During the process, the wheel suddenly broke free from the axle and fell onto the chest of the chief engineer. After 20 minutes of resuscitation attempts, on 9 February shortly after midnight, the emergency services on location declared that the chief engineer had died as a result of his injuries.

Two crucial moments led to the breaking free of the hatch cover wheel and subsequently the death of the chief engineer on the Marja. The first moment was when the wheel had partially run free from the axle; the fact that the bearings were no longer functioning correctly was a contributory element. The second moment was the decision to hit the wheel with a sledge hammer. There was an operational problem that had to be solved in order to be able to continue with the unloading. The persons involved wanted to solve the problem as quickly as possible.

In situations of this kind, introducing an instrument for risk analysis encourages the persons involved to examine the unusual situation from a professional distance with all parties involved. The aim of the analysis is to ensure that the risks and consequences are analysed and consideration is given as to how these risks and consequences can be mitigated or removed, before taking action. The ship manager can assist the crew by introducing a standard working method that can be employed whenever an operational problem arises that needs to be solved, and offering support in practice.

The full report is available at:
<https://www.onderzoeksraad.nl/en/page/18280/loskomen-van-luikenwiel-dodelijk-ongeval-aan-boord-marja>

Collision, Stavfjord – R223 Buster, Skagen, Denmark, 16 May 2021

On Sunday 16 May 2021, the Dutch cargo vessel Stavfjord collided with the Danish fishing vessel R223 Buster, off Skagen, in Denmark. As a result of the collision, the fishing boat started making water. The Danish coastguard installed additional bilge pumps on board, which enabled the fishing boat to independently sail to a nearby port, for repairs. The cargo vessel suffered only cosmetic damage. No one was injured and there was no harm to the environment.

The Danish Maritime Accident Investigation Board (DMAIB) launched an investigation and published a report in October 2021. This report is available on the website of the DMAIB:

<https://dmaib.com/media/10310/buster-stavfjord-collision-on-16-may-2021.pdf>

Classification: Serious

Completed (initial) investigations without report

This chapter lists occurrences in inland shipping that led the Dutch Safety Board to conduct an (initial) investigation:

Phosphine occurrences inland shipping, 27 July 2021

On Tuesday 27 July 2021 at around 20.00 hours, the Dutch Safety Board received a report that inland shipping vessels had been discovered at three different locations in the Netherlands, with a seriously raised level of phosphine. The three vessels had all been loaded with wheat, earlier that day. Phosphine is used during transport to protect the cargo against vermin. Before transferring the cargo, the hold must first be degassed. Phosphine gas is very harmful to humans.

The first inland shipping vessel on which dangerous levels of phosphine gas were observed was the Dutch inland shipping vessel Coby, that had to be unloaded at a location in Utrecht. The vessel and the location were evacuated. The origin of the cargo was rapidly identified, to a transshipment company in Oss, where the cargo of wheat had arrived by train, from Poland. It rapidly also became clear that the same cargo had been transhipped onto the Dutch inland shipping vessels Imatra and Semper-Spera. These vessels were also immediately halted in Zwolle and Veghel respectively. Dangerously high phosphine levels were also discovered on these vessels, and both were evacuated.

It was several weeks before the Coby, Imatra and Semper-Spera were unloaded and made safe for their crew. The affected local and provincial authorities responded with great caution, which meant it was a long time before the gas was removed from the vessels. This long period was one of the reasons this occurrence was repeatedly reported in the national media.

The Dutch Safety Board conducted an initial investigation into these occurrences. This investigation made it clear that the transshipment company in Oss was not aware that a pest control agent based on phosphine had been added to the cargo of wheat transported from Poland, by train. The compulsory warning labels were not present on the train. The Human Environment and Transport Inspectorate (ILT) contacted the Polish authorities about this shortcoming.

Similar previous occurrences and the subsequent actions taken were also examined. In particular the occurrence involving the inland shipping vessel Fox in 2019, whereby the couple who operated the vessel suffered serious injuries, was considered. Here, the transshipment of cargo had taken place from a seagoing vessel. Following this occurrence, protocols in the port regulations for the ports of Amsterdam and Rotterdam were revised, to prevent a recurrence.

In the initial investigation, it also became clear that there is no binding set of regulations for the safe (international) transport of bulk cargoes by ship, under gas. At the same time, it was also determined that the occurrences such as those described here can in fact only occur if cargoes under gas are imported into the Netherlands. In Dutch regulations relating to the use of crop protection agents, the transshipment of gassed cargoes is permitted, but these agents may not be added to the cargo, in the Netherlands.

Discussions with the policy department at the Ministry of Infrastructure and Water Management (I&W) revealed that initiatives are being taken in the field of international regulations. The European Safety Committee ADN for example has introduced a proposal for Germany, and I&W itself has issued recommendations to the IMO aimed at encouraging the use of bags containing phosphine tablets (instead of loose tablets). In addition, with regard to the phosphine problem, a chain analysis has been initiated, which will include representatives from the various departments and the Human Environment and Transport Inspectorate (ILT), the Netherlands Food and Consumer Product Safety Authority (NVWA) and the Netherlands Labour Inspectorate.

In summary, it can be concluded that above all the crew run risks if the presence of phosphine is unknown or if the phosphine has not been entirely removed from the cargo prior to transshipment, without that fact being known. In both cases, regulations (since then revised) are in place which, also based on the alertness of the regulator, should make a substantial contribution to preventing similar occurrences. Based on this conclusion, the Dutch Safety Board decided to not launch a follow-up investigation.

Completed (initial) investigations without report

Collisions with civil engineering structures on inland waterways

Collisions with civil engineering structures (bridges, locks, etc.) on Dutch inland waterways by seagoing vessels, inland shipping vessels and recreational craft occur frequently. Generally speaking, the consequences are limited to material damage, but the consequences for the environment can also be considerable. Eye-catching examples are the collision with the weir at Grave in 2017 and the collision with the Gerrit Krolbrug in Groningen on 15 May 2021, which caused traffic nuisance for days. In response to these collisions, the Dutch Safety Board started an initial investigation with the aim of determining whether to start a full investigation on the theme 'collisions with civil engineering structures'.

Figures

An analysis of the data from the Shipping Accidents Database (SOS database)⁴ revealed that in the period 2015 - 2020, the number of (very) serious accidents on inland waterways remained relatively stable. On average around one third of all accidents involved a collision with infrastructure (Figure 6, yellow parts of the diagrams).

A further analysis of the data revealed that between 2006 and 2016, on the Main Lemmer Delfzijl Waterway (HLD) alone, 300 collisions occurred between ships and bridges, guidance structures and the banks.

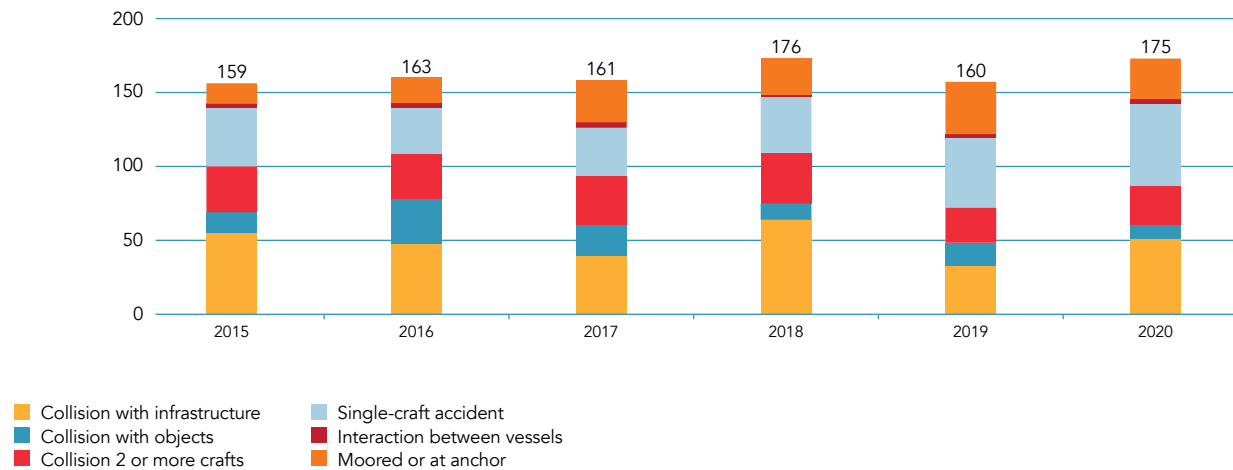


Figure 6 Breakdown into (very) serious shipping accidents on Dutch inland waterways, source RWS national Shipping Accident database (SOS database).

⁴ Rijkswaterstaat manages the national Shipping Accident Database (SOS database). This database contains details of shipping accidents and other water-related occurrences, that have taken place within the management area of the Netherlands.

Main Lemmer Delfzijl Waterway considered in greater detail

The Main Lemmer Delfzijl Waterway (HLD) is a difficult waterway to navigate. The different construction periods in which bridges and locks were built mean they are different in character (passage height and width, location of the passage opening) and as a consequence require a different approach, despite the fact that given their similarities, they are not easy to distinguish between. As a consequence, the skipper must at all times be alert to the height of his own vessel, must request operation, must sufficiently ballast his vessel, or must lower the wheelhouse in order to pass below the fixed bridges and lifting bridges.

For years, transport by water has been growing steadily, and also within inland shipping, economies of scale are constantly advancing. A large number of civil engineering structures were built in the nineteen fifties for vessels with a length of 85 metres, whereas today, vessels with a length of up to 135 metres are no longer exceptional. The average capacity of a vessel on the HLD has risen during this time period from 1200 tonnes to 1900 tonnes.

In its role as waterway manager, Rijkswaterstaat analysed the figures regarding the HLD, in the report published in 2018 entitled 'Improve safety of the Lemmer-Delfzijl waterway' in which the following conclusions were drawn:

- Infrastructure not appropriate to user requirements.
- Suboptimum operation of infrastructure.
- Undesirable shipping behaviour professional shipping.
- Undesirable shipping behaviour recreational shipping.

Developments at Rijkswaterstaat

In response to the large number of collisions with civil engineering structures on the HLD, Rijkswaterstaat has announced the start of a programme aimed at altering the infrastructure, including bridges and locks.⁵

In addition, a project proposal is being prepared for an in-depth investigation into a number of specific high-risk bridges. This measure ties in with the recommendation issued by the Dutch Safety Board following the collision with the weir in Grave: For bridges, locks and weirs, prepare an analysis of the collision risk, including an explicit and integrated consideration of available measures for mitigating the risk of collision.⁶

No investigation but monitoring

On the basis of the developments initiated by Rijkswaterstaat, the Dutch Safety Board has decided to not yet launch an investigation. We will however continue to monitor more closely any incidents and accidents relating to collisions with civil engineering structures on Dutch inland waterways over the next two years. This will allow us to monitor the development of the trends and the effect of measures to be undertaken over the coming years.

⁵ <https://hld.rws.nl/home/default.aspx>

⁶ <https://www.onderzoeksraad.nl/en/page/4634/stuwaanvaring-door-benzeentanker-bij-grave>

Started investigations

Fatal accident during port assistance, Moerdijk, 25 August 2021

A fatal accident occurred at around 23.00 hours on Wednesday 25 August 2021 on board a Dutch tugboat. The occurrence took place while the tugboat was assisting a bulk carrier sailing under the flag of the Marshall Islands. During an activity regularly undertaken during port assistance work, whereby the towing line is shifted from the rear central bollard to the front bollard, two crew members became trapped between the towing line and the accommodation unit on the tugboat. One crew member suffered fatal injuries. The other crew member suffered injuries to his ribs and was briefly hospitalized.

The Dutch Safety Board has launched an investigation.

Classification: Very serious



Passageway between bulwark and accommodation

Tank explosion during unloading, Rotterdam, 15 December 2021

On 15 December 2021 at around 07:45 hours local time, an Italian chemical tanker experienced an explosion in starboard cargo tank 5, which led to the tank tearing open. At the moment of the occurrence, the vessel was moored at the Euro Tank Terminal (ETT) in the port of Rotterdam, to unload a cargo of heptane. Heptane is a highly flammable chemical liquid. The occurrence took place during the vessel unloading operation.



Damage inside cargo tank



Displaced deck and manifold after the tank explosion

The vessel suffered serious damage. A number of cargo tanks and ballast tanks were displaced including the deck and cargo manifold. The Dutch Safety Board has launched an investigation.

Classification: Serious

Collision in North Sea traffic separation scheme, North Sea, 23 December 2021

In the night of 23 December 2021, a Dutch general cargo ship was hit from behind by a Belgian fishing vessel. The collision took place on the North Sea in the southwestern channel of the traffic separation scheme near Texel. The damage in particular to the general cargo ship was considerable.

The Dutch Safety Board has launched an investigation together with the Belgian maritime investigation body FEBIMA.

Classification: Serious



Damage to the stern after the collision

Investigations started by foreign authority with the Netherlands as a State with substantial interest

Fall from height with fatal outcome, Anchorage 4 West, Rotterdam, 20 July 2021

A crew member of a Marshall Islands flagged bulk carrier fell from a height of more than 8 metres. Two crew members were removing rust from the lifeboat access platform. The subsequent victim was not involved, but nonetheless fell from the platform. At the time of the accident, the vessel was anchored outside Rotterdam, and the crew member was transferred to hospital in Rotterdam by helicopter.

The Marshall Islands, as flag state of the vessel, is investigating the occurrence.

Classification: Very serious

Grounding, Bornholm, Denmark, 18 October 2021

A Dutch cargo vessel ran aground on a rock on the western side of the Danish island of Bornholm, at a speed of 10 knots. The vessel was en route to Tallinn (Estonia). The initial investigation revealed that the bridge had been left unmanned for a number of hours. There were no injuries and there was no pollution.

The Danish Maritime Accident Investigation Board (DMAIB) visited the location and has launched an investigation.

Classification: Serious

Incidents that have not been extensively investigated



Damage Mazarine. (Source: Crew)

Collisions

Collision during mooring, Rotterdam, 9 May 2021

While mooring in one of the Rotterdam docks, the Maltese Ro-Ro cargo vessel Mazarine suffered damage. While manoeuvring, the vessel reduced speed insufficiently and was no longer able to avoid a collision with the mooring jetty. Both the vessel and the jetty were damaged. The vessel in question was exempted from pilot assistance.

Classification: Serious



Damage outside hull Mazarine. (Source: Crew)

Hull damage due to collision, Oude Maas (Barendrecht), 11 May 2021

During the course of the evening, the seagoing vessel Nordersand collided with the inland shipping motor tanker Bacchus. The cause was a steering gear failure which left the rudder turned to 20° starboard. Following the collision, the Nordersand came to a standstill against the northern bank of the Oude Maas. The incident caused serious damage to the bow of the inland shipping vessel Bacchus. The Nordersand suffered a six metre-wide horizontal tear one and half metres above the waterline. There were no injuries and no environmental damage. The Nordersand sails under the flag of Gibraltar.

Classification: Serious

Collision with dockside wall, Bremerhaven, Germany, 28 June 2021

The Emma collided with a dockside in Bremerhaven while manoeuvring. The vessel suffered damage to the fore part. There were holes and deformations in the skin and bulkheads. The damage had to be repaired before the vessel could leave Bremerhaven.

Classification: Serious

Incidents that have not been extensively investigated

Damage to hull, IJmuiden, 30 August 2021

A tear was observed above the waterline at the corner of the port stern part of the Bahamian-flagged vessel Ramform Sovereign. The damage occurred while the vessel was moored in IJmuiden. An examination of CCTV images on board was unable to identify the direct cause. The vessel was only able to continue its journey following permission from the classification society. Repairs were carried out in situ. The vessel may have been hit by a tugboat or bunker boat.

Classification: Serious

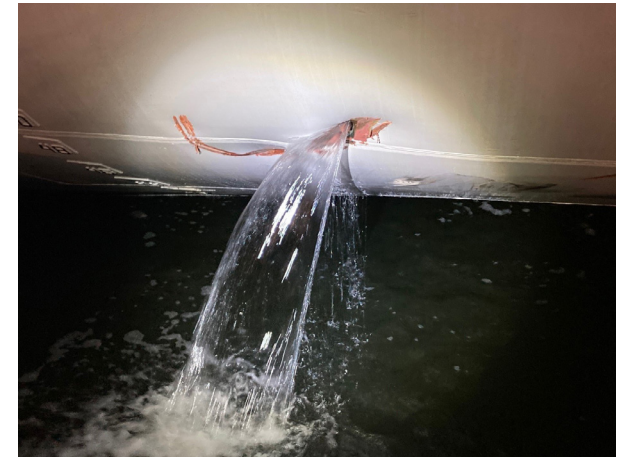


Damage Ramform Sovereign

Damage following collision with quayside, Sluiskil, 08 September 2021

The Norwegian gas tanker Helle collided with a hinge point on the dockside fender while manoeuvring, in Sluiskil. The vessel suffered damage to its stern part at the position of the steering engine room and a ballast tank. The damage had to be repaired before the vessel was allowed to depart.

Classification: Serious



Holed ballasttank Helle

Collision with quay wall, Kiel (Germany), 10 September 2021

The Dutch vessel Arklow Breeze collided with the quay wall in the Kiel Canal. The vessel suffered serious damage to the forepeak tank which had to be repaired. The vessel was travelling to Marín (Spain) with a cargo of flour.

Classification: Serious

Collision with bridge, Kornwerderzand, 28 November 2021

At around 12.30 hours on Sunday afternoon, the Sea Hunter collided with the bridge at Kornwerderzand (eastern passage). The vessel broke off its mast during the collision. The mast protruded around five metres beyond the side of the vessel and did not enter the water. Around 17.35 hours, the Sea Hunter was moved, and took up a mooring against the professional shipping jetty on the IJsselmeer side. The vessel was not permitted to continue sailing in connection with the missing top light, as a result of the broken mast.

The Lorentz complex of bridge and locks was closed from 13.23 hours onwards. The through passage light of the bridge had broken free as a result of the collision, causing the bridge signals to become stuck on double red, while the bridge for professional shipping and recreational shipping was only operated on request.

Classification: Serious

Collision with lock fenders, Tilbury (Great Britain), 13 October 2021

The Dutch Ro-Ro vessel Kraftca collided with the lock fenders upon approaching the lock in Tilbury. The bow was shifted to starboard by the current. Because the bow thruster was unable to deliver sufficient power to counter this effect, tugboat assistance was required to shift the ship's stem to port. Due to communication problems between the pilot and the tugboat, the tugboat was not in a suitable location to offer assistance. The stem shifted further to starboard and collided with the quayside. As a result, the vessel's hull suffered a tear around seven metres long, above the waterline. Following mooring, the damage was inspected by a classification society before measures were taken to repair the vessel.

Classification: Serious

Collision with pier head, Bayonne (France), 1 December 2021

Entering port, the Arklow Valley collided with the Northern pier head. Due to a combination of wind and waves, the vessel manoeuvred more slowly than normal. When the pilot attempted to change course to avoid the pier head, the manoeuvre was initiated too late, which placed the ship in shallow water. The vessel moored independently in the port. Following inspection, it emerged that the hull had suffered damage at the level of the ballast water tanks. The Arklow Valley sails under Dutch flag.

Classification: Serious



Damage to hull Arklow Valley. (Source: Arklow Shipping)

Inland shipping – Collision with anchored motor tanker, Oud-Beijerland, 23 August 2021

On 23 August 2021, the German motor tanker Ursala Valentin (heading downstream with a cargo of bitumen) collided on the Oude Maas with the anchored Dutch motor tanker Vacando (with a cargo of biodiesel). This head-on collision took place near the junction with the Spui. No one was injured during the incident. Both tankers suffered serious damage to their fore part. The leaks from the front engine rooms and forepeak tank were rapidly sealed. The cargo zones of both vessels remained undamaged. The pollution that followed was successfully contained. As a result of the occurrence, the Oude Maas was temporarily closed.

Inland shipping Head-on collision, Kessel, 13 October 2021

The Dutch motor tanker Istar, with a cargo of sulphuric acid, suffered a head-on collision on 13 October 2021 with the Dutch inland shipping vessel Enterprise (with a cargo of steel coils). The Enterprise suffered a dented bow, but retained her watertight integrity. The Istar suffered a hole in the bow, but there were no spillages. The Maas river was locally closed to shipping until the vessels could be safely moved to the side of the river where the cargo could be pumped out.

Several minutes before the incident, the Enterprise, sailing upstream, took the inside bend. The vessel called the Istar, to request more room to pass, but the call went unanswered. 200 metres before the two vessels passed each other, the Istar suddenly diverted to starboard, at which point the collision occurred. One person suffered minor injuries in the occurrence.

Incidents that have not been extensively investigated

Inland shipping – Inland shipping vessel sails over recreational fishing boat, Dinteloord, 14 November 2021

An inland shipping vessel sailing on the Dintel ran over a five metre-long motorboat in use by a sports fisherman. The motorboat was moored under a bridge. The fisherman saw the inland shipping vessel approaching and was able to climb onto the bridge pillar, on time. The fishing boat was hit, and lost its outboard motor. No one was injured during the collision.

Occupational accidents

Twisted knee, Mexico, 1 May 2021

On 1 May 2021, the second engineer suffered a knee injury on board the Dutch passenger vessel Koningsdam. During a planned fire exercise in La Paz, Mexico, the engineer jumped from a stage, landing awkwardly and twisting his knee. The engineer was taken to the ship's doctor. Following consultation with a doctor on shore, the engineer was evacuated and taken to hospital.

Classification: Serious injury

Trapped finger, North Sea, 5 May 2021

On board the Dutch container vessel A2B Ambition, a crew member suffered an injury to his finger and had to be evacuated. The vessel was located 16 miles off the coast of Cromer (UK) on the North Sea.

The crew member was moving from the control room to the engine room. The door of the engine room closed faster than the crew member had expected. The crew member trapped his right index finger in the door. In consultation with the captain, the Radio Medical Service advised evacuating the crew member. It became clear in the hospital that the crew member's fingertip could be saved.

The door closer on the door between the engine room and the control room was inspected and adjusted. All other door closers were also checked and adjusted, and where necessary replaced, at the same time.

Classification: Serious injury

Hit by wave, Bay of Biscay, 25 May 2021

The Dutch freighter Arklow Valour was travelling from Bayonne (France) to Sas van Gent. Shortly following departure, a deckhand was working on the foredeck fixing the anchor, when he was hit by an unexpectedly high wave, that washed over the foredeck. He fell and suffered injuries to his knee and back. The deckhand was eventually evacuated by helicopter.

Classification: Serious injury

Broken toe, Esbjerg, Denmark, 28 May 2021

The second engineer of the Dutch-flagged Rotra Mare was hit on the foot by a manhole cover during maintenance work. When opening the manhole cover into a side tank, he lost his hold on the cover which fell onto his foot. This happened despite the fact that the cover was fitted with handles. The crew member was wearing safety shoes but the cover landed just behind the steel toecap causing his big toe to break. The engineer was repatriated.

The accident was discussed on board during a safety committee meeting. As a preventive measure, all crew members have been instructed to open manhole covers in side tanks only when working in pairs. In this way, one person can hold the cover while the other removes all the bolts. The cover can then be safely removed by the two working together.

Classification: Serious injury

Unwell during Rescue exercise at height, North Sea, 1 June 2021

On the Dutch Platform Supply Ship Vos Pace, the captain became unwell during an exercise 'rescue at height'. For the purposes of the exercise, he was wearing a safety harness, which he had attached several tens of centimetres above the deck, before asking the crew to rescue him. The captain lost consciousness.

Because the captain became unwell during an exercise, the other crew members at first were uncertain whether he was play acting or whether he actually was unwell. The English Coastguard evacuated the captain. The vessel sailed to Great Yarmouth to take another captain on board. The possibility of 'Harness Suspension Trauma' is being investigated.

It is not entirely clear whether this incident was caused by participating in the exercise or whether there was no direct relationship. Subsequent medical examination gave no clear conclusion as to why the captain became unwell.

By way of prevention, the operator issued an information bulletin about the incident, the suspicion of 'Harness Suspension Trauma' and its prevention, across the fleet and offshore industry organizations (MSF, IMCA). Work procedures and training have also been adjusted, and 'Suspension Relief Straps' have been added to the working at height equipment on all vessels.

Classification: *Serious injury*

Broken arm due to moving winch component, Pori (Finland), 10 June 2021

On board the Missouriborg, an experienced deckhand broke his arm when releasing the lines. There was slight play on the winch coupling. When releasing the brake, the handle made a small movement, breaking the deckhand's arm. The Missouriborg sails under Dutch flag.

Classification: *Serious injury*

Fall from ladder, Italy, 15 June 2021

On 15 June, a crew member on board the Dutch vessel Floragracht suffered a broken bone. He was subsequently evacuated from the vessel. The portable ladder the crew member was standing on slipped. As a result, he fell a distance of approximately 1.5 metres.

Classification: *Serious injury*

Fisherman injured by swinging hook, North Sea, 17 June 2021

While fishing on the North Sea, a crew member of the Dutch fishing vessel UK148 Lunar was hit on the head by a hook. The fisherman was briefly unconscious and suffered a head injury. The crew was carrying out hoisting work in the net hold when the accident occurred. Other crew members performed first aid, and contacted the RMD doctor. No medical evacuation was considered necessary but the vessel did sail immediately for Harlingen, where the victim was removed for treatment by a GP.

Classification: *Serious injury*

Medical evacuation following tripping incident, North Sea, 26 June 2021

On board the Panamanian flagged crane vessel Sleipnir, an accident occurred in which a crew member suffered a broken shin and ankle. The accident took place when a heavy load was being lifted from the work deck. The crew member tripped while attempting to keep hold of a control line attached to the load. The control line came under considerable force.

The injured crew member was evacuated to hospital in Alkmaar, by helicopter. The vessel was anchored approximately 11 NM off the coast of Scheveningen, within Dutch territorial waters.

Classification: *Serious injury*

Incidents that have not been extensively investigated

Tripping over step results in broken wrist, Rotterdam, 11 July 2021

On board the Dutch lift vessel MPI Resolution, the chief engineer tripped over a marked step when entering the engine room. He attempted to arrest his fall by extending his right arm, but broke his right wrist as a result. The vessel was moored in the port of Rotterdam.

Classification: Serious injury



Accident Location MPI Resolution (Source: Van Oord)

Table on foot, Venice, 31 July 2021

While equipping an area on deck 9 of the Dutch passenger vessel Rotterdam, a crew member dropped a heavy tabletop onto his left foot. He broke two toes. At the time, the crew member was not wearing safety shoes.

The vessel was moored at a yard near Venice.

Classification: Serious injury

Fall from stairs, Antwerp, 9 August 2021

On 9 August 2021 at around 13.30 hours, while the Dutch chemical tanker Dutch Aquamarine was travelling towards Antwerp, the ship's first officer fell from stairs and broke his leg. The first officer was evacuated by helicopter and taken to hospital in Antwerp.

Classification: Serious injury

Amputated foot, Amsterdam, 21 August 2021

An occupational accident occurred on board the Lysvik Seaways at around 15.15 hours. When the first officer stepped onto the transporter with his left foot, his foot became trapped and subsequently almost completely amputated by the transporter. After receiving first aid, the injured man was taken to hospital by ambulance where his condition stabilized.

Classification: Serious injury

Deckhand injured by mooring line recoil, Rotterdam, 27 August 2021

At around 14.45 hours in the afternoon, a deckhand was injured by a suddenly recoiling mooring line. The accident took place during unmooring from the RW terminal. The line was paid out in order to be thrown back aboard but as a result of sudden gust of wind, the line was suddenly pulled taut. The recoiling line hit the deckhand's arm. The deckhand was taken off the vessel by ambulance and transported by to the Dirksland hospital with a broken wrist. The vessel continued its transfer to the ECT terminal.

Classification: Serious injury

Medical evacuation, Bilbao, Spain, 27 August 2021

Following an occupational accident on board the Dutch vessel Arklow Dawn, the chief engineer (HWTK) had to be evacuated from the anchorage to the hospital in Bilbao, Spain. The HWTK had suffered a serious cut in his leg, when a grinder disc slipped off the pipe the HWTK was cutting. The life of the HWTK was initially saved by another crew member who quickly applied a tourniquet made from cleaning cloths and a screwdriver. In hospital, the blood vessels of the HWTK at the site of the injury were found to be damaged, requiring an surgery.

Classification: Serious injury

Fall from height in the gangway, Antwerp, 3 September 2021

In the port of Antwerp, a trainee on board the Sydborg fell into the gangway. The crew performed first aid before the trainee was taken to hospital by ambulance. He suffered a head injury and had to remain in hospital for several days.

Classification: Serious injury

Hand injury following entrapment on deck, Wadden Sea, 4 September 2021

A crew member of the Dutch vessel Yed Prior was evacuated by the KNRM lifeboat with a hand injury and taken to hospital via the port of Harlingen. His finger had become trapped on deck when replacing a guide roller for one of the transport conveyors. In hospital, his finger was stitched before the crew member returned to the vessel. The crew member was exempted from work until he went on leave, three days later.

Classification: Serious injury

Caustic soda in the face, Hook of Holland, 10 September 2021

On board the Dutch passenger vessel Stena Hollandica, two crew members were hit in the face and eyes with caustic soda. The occurrence took place on the 10th of September 2021 in the engine room, when replacing a pump in the exhaust scrubber. At the time, the vessel was moored in the port of Hook of Holland. When opening a flange, the pipe proved unexpectedly to be pressurized, resulting in a spray of water and caustic soda. The crew members were taken to hospital where their burns were treated.

Classification: Serious injury

Incidents that have not been extensively investigated

Fingers trapped in door, North Sea, 15 September 2021

On 15 September 2021, on board the Dutch fishing vessel SCH18 Boeier, a crew member's fingers became trapped when a door slammed closed. At the time, the vessel was sailing on the North Sea. The injuries to his fingertips were such that he had to be evacuated to shore. He was subsequently taken to hospital.

Classification: Serious injury

Face burned by flame jet, Vlissingen, 23 September 2021

When working in the engine room of the Maltese container vessel CMA CGM Amber, a short circuit took place in the switchbox. This short circuit generated a flame jet which resulted in first and second degree burns to the face of the chief engineer. At the time of the accident, the vessel was moored in the Bijleveldhaven in Vlissingen. Following the incident, the still conscious injured engineer was transported to the nearest hospital.

Classification: Serious injury

Breaking free of fishing net leads to foot injury, Norwegian Sea, 13 October 2021

On the Dutch fishing trawler SCH302 Willem van der Zwan, a crew member suffered a foot injury. While fishing in the Norwegian Sea, the nets had to be cleaned. One of the nets fell from a power block. The net landed precisely on one of the crew members, leading to a foot injury. Following return to shore, a doctor determined that the foot was broken.

Classification: Serious injury



Fishing trawler entering port

Fall from height, Rotterdam, 15 October 2021

In the engine room of the chemical tanker Stolt Integrity, a crew member fell a depth of seven metres, through an open hatch. Because work was being carried out on the turboblower, the hatch had been left open. The fourth engineer, who was on duty as safety watch, called out to the crew member to stop but as a result of his ear defenders, the victim did not hear the warning call. Following his fall, the victim did not lose consciousness. He stated that he had heard no warning and could not remember having stepped over the chain that had been erected to mark off the safety perimeter. The crew member was transferred to hospital.

Classification: Serious injury

Trapped under stack of steel sheets, Cherbourg (France), 19 October 2021

On board the Flevogracht, five steel sheets fell onto the right upper leg of the boatswain. The steel sheets had been lashed to the railing. The occurrence took place while releasing the sheets. After a number of desperate attempts, the crew succeeded in freeing the crew member. The Radio Medical Service was consulted and the crew member received a morphine injection. He was then taken to hospital. The leg was not broken but circulation was still compromised after several days.

Classification: Serious injury

Injuries to hand following entrapment during mooring procedure, North Sea, 25 October 2021

On board the Dutch-flagged workboat Baloe, an accident took place on 25 October 2021. The incident occurred while mooring the vessel at sea alongside the barge Medusa 3. During the mooring procedure, the vessel made a pitching movement on a passing wave, whereupon the victim's left hand became briefly trapped between the line and the bollard. As a result, the fingertips of the victim's index finger and middle finger were amputated. The victim was taken to hospital, where he was declared unfit for work for several weeks.

Classification: *Serious injury*

Fall from stairs resulting in loss of consciousness and necessary Medevac, Baltic Sea, 17 November 2021

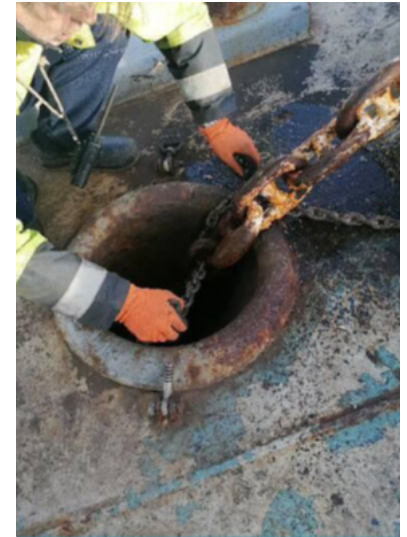
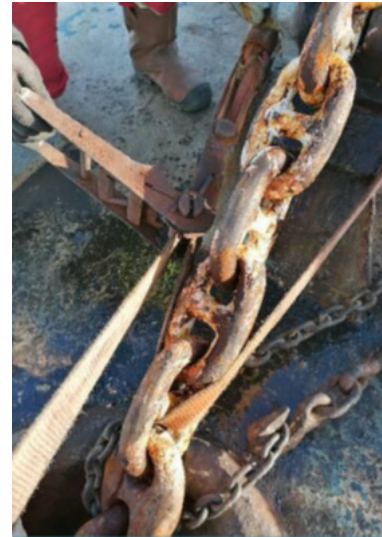
On 17 November 2021, the AB/cook was discovered unconscious with a head injury, at the bottom of the stairs, on board the Lady Adele. Beside him were food remains and a bucket of soapy water. He had probably fallen from the stairs as a result of bad weather when attempting to descend with his hands full. No one saw the incident occur. Initially, with the assistance of the Coastguard Radio Medical Service, the crew monitored the condition of the AB/cook. At around 05.00 hours, when his condition started to worsen, the victim was evacuated to the hospital in Denmark, by helicopter.

Classification: *Serious injury*

Injury to face as a result of bolt breaking free while securing anchor, Humber, 17 November 2021

After setting sail from Goole, UK, while fastening the anchors on the fore part of the Dutch vessel Ashley, a steel bolt broke free. At the time, the vessel was sailing on the river Humber. Because the tensioning chain was too long, the crew had inserted an additional bolt, to allow the chain to be made tight. While a deckhand was fastening the tensioning chain, a lashing strip was attached on the other side, and tautened, releasing the tension from the chain. As a result, the bolt broke free and was launched into the face of the deckhand, like a projectile. He suffered facial injuries.

Classification: *Serious injury*



Accident Ashley. (Source: Crew)

Incidents that have not been extensively investigated

Deckhand hit by hatch crane, Las Palmas, 25 November 2021

The first officer and deckhand of the Meerdijk were moving the hatch covers. The officer operated the hatch crane and the deckhand was instructed to check the electricity cable while the crane was moving, and to supervise the stacking of the deck hatches. The deckhand stood on the port side close to the bulwark, in a narrow section of the gangway, when he was hit squarely in the back, by the hatch crane. Following an initial check, he was taken to the afterdeck of the Dutch-flagged vessel, and medical assistance was called in. The deckhand broke his hip and ribs.

Classification: *Serious injury*

Trapped thumb, Atlantic Ocean, 26 November 2021

A crew member on board the Dutch fishing vessel SCH24 Afrika trapped his thumb between the door and doorpost, while intending to enter the workshop. The door slammed shut when the vessel rolled. During this occurrence, the crew member lost his fingertip. He was transported to the nearest hospital. His recovery took several weeks.

Classification: *Serious injury*

Broken wrist, Barbados, 6 December 2021

A crew member of the passenger vessel Rotterdam collided against a fixed table, with his wrist. He broke his wrist and was disembarked, for medical reasons.

Classification: *Serious injury*

Crew member becomes trapped between stack of deck hatches and hatch crane, Rotterdam, 17 December 2021

On board the Bandura, a crew member trapped his leg between the stacked deck hatches and the hatch crane. The leg was broken.

The accident took place during the loading and unloading operation on the Dutch flagged vessel. The hatch crane was being used to move the hatch covers. The victim was in the process of hooking up the hatches and as he did so, stepped onto the middle platform on the hatch crane. As they passed the stack of hatch covers, his leg was caught and became trapped. To release the victim, the hatch crane had to be reversed. The victim was removed from the vessel by the fire brigade, and taken to hospital, where he underwent a surgery.

Classification: *Serious injury*

Inland shipping – Broken mooring line, Reimerswaal, 9 May 2021

While the motor anchor vessel Aquaship was passing through the Kreekrak lock (Scheldt-Rhine Canal), a mooring line broke, injuring the arm of a deckhand. The crew member suffered an open bone fracture, and was transported to hospital, by ambulance.

Inland shipping – Trapped leg, Farmsum, 19 September 2021

On board the Dutch inland shipping vessel Allegonda, an accident took place while passing the Zeesluis Farmsum lock (Eemskanaal). At around twelve o'clock, a crew member trapped his leg between a mooring line and the vessel. The crew member was taken to hospital, with serious injuries.

Fire on board

Fire due to overheating, Rotterdam, 8 September 2021

On Wednesday afternoon, a fire broke out in the hold of the Chinese bulk carrier An Chang. The An Chang was carrying a cargo of scrap, which began to overheat. The fire started in hold 1 and later crossed to hold 2. It was very difficult to locate the seat of the fire among the cargo of scrap, and it took several days before the fire could be put out. During extinguishing, the fire developed a large volume of smoke and the fire was reported throughout the area, with the instruction to keep windows closed. Beyond the heavy smoke development, there was no risk to local residents or other shipping traffic.

Classification: Serious

Fire when working with flame cutter, Moerdijk, 10 September 2021

As a result of hot work, fire broke out in one of the holds on the Panamanian freighter Loa Fortune, at 09.00 hours. The hot work had to be carried out to release the lashing points for a project cargo that was fixed on top of the hatch in the hold. The hold was filled with plywood panels. While working with the flame cutter, the plywood panels in the hold caught fire.

The crew of the vessel pumped CO2 into the hold in an attempt to extinguish the fire. Later in the afternoon, the decision was taken to put out the fire with foam and water. Because of the size of the vessel and the complexity of the incident, the emergency services escalated the incident. It was difficult to spray between the plywood panels with the extinguishing water.

After the fire had been put out, the vessel was placed in preventive detention. A classification society first had to inspect the vessel and the extinguishing water had to be discharged.

Classification: Serious

Fire in engine room, St. Eustatius, 13 December 2021
As the Maltese-flagged vessel Curacao Trader approached the anchorage of St. Eustatius, the crew saw black smoke and flames escaping from the engine room. The fire alarm was also sounded. At the time, the second engineer and fitter were working on the lower deck of the engine room. The engine room was evacuated and the permanent CO2 extinguishing system was activated to put out the fire. As a result, the vessel suffered a blackout and set anchor just outside the anchorage. The operator and the accident investigators from Malta have launched an investigation into the cause.

Classification: Serious



Damage after fire on board Curacao Trader. (Source: Crew)

Inland shipping – Fire, IJsselmeer, 26 August 2021

Fire broke out in the engine room of the Dutch inland shipping vessel Octopoda. At the time, the vessel was sailing on the IJsselmeer between Lelystad and Urk. The KNRM lifeboat service and the fire brigade were both called out. The crew members were evacuated and the fire brigade soon had the fire under control. When the vessel was no longer on fire, it was towed to Urk.

Incidents that have not been extensively investigated

Groundings

Run aground, Groote Keeten, 6 May 2021

The Dutch shrimper HK81 Hannah ran aground on the beach at Groote Keeten (Noord-Holland) late in the evening. The vessel became stuck on a breakwater. The KNRM lifeboat attached a tow line to the vessel, before pulling it free and towing it to Den Helder for investigation and repair.

Classification: Serious

Grounding, Koping approach, Sweden, 14 May 2021

While approaching the port of Koping, the Dutch seagoing vessel Skagenbank was carried into shallow water, by the current. The pilot unilaterally attempted to switch from the automatic pilot to manual controls, but failed to consult with the watch officer. As a result, the automatic pilot suffered a breakdown. As a consequence, the watch officer could not be informed quickly enough of the situation by the pilot, which meant it was no longer possible to intervene.

Several hours later, the vessel was pulled clear by a tugboat, after which the Skagenbank was able to sail into port, under its own power. The vessel suffered no damage and there were no injuries.

Grounding following main engine failure, Gustavsvik (Sweden), 24 June 2021

On 24 June 2021, the Dutch vessel Koningsborg ran aground on a beach by the Ångermanälven river, in Sweden. The incident occurred at the point when the vessel attempted to sail into narrows, by completing a slow turn. At that moment, the main engine failed, and the turn could no longer be halted.

The vessel was pulled free with the assistance of a tugboat and subsequently moored. An examination by a classification society discovered no damage. The failure of the engine was caused by a faulty sensor in the alarm system.

Classification: Serious

Grounding, approach to Nakskov, Denmark, 25 September 2021

Shortly after setting sail from Nakskov, the Dutch vessel Marfaam ran aground northwest of Langoe, at low speed, while under pilot guidance. The shipping channel is marked with buoys, but as a result of current and wind, the sailing depth was reduced. A tugboat pulled the Marfaam back into deeper waters, where the vessel was able to sail to Kalundborg, under its own power. After an inspection of the hull, the vessel was able to continue its journey. The grounding caused no damage.

Classification: Serious

Run aground while under pilot supervision causing the forepeak to fill with water, Breviksfjorden (Norway), 18 November 2021

On 18 November 2021, the Dutch cargo vessel Njord ran aground in the Breviksfjorden in Norway, when it suddenly found itself surrounded by fog. There was a pilot on board. The vessel was able to free itself under its own power, and was subsequently moored in Brevik, without tugboat assistance. As a result of the grounding, the forepeak tank filled with water. A dive inspection by the classification society revealed that the vessel needed to undergo repairs in the next port.

Classification: Serious

Inland shipping – Grounding, Bruinisse, 30 May 2021

The Dutch motorized tanker Reimerswaal ran aground near the Krammersluizen locks in Zeeland. Prior to the grounding, the vessel was forced to take action to avoid leisure fishing boats that were present in the outer approach to the lock. As a result of the evasive manoeuvre, the vessel ran aground. Following inspection, the vessel was able to continue its journey, without further delay.

Technical failures

Engine problems with tug assistance, North Sea, 19 May 2021

The Dutch fishing vessel WL4 Henderika was fishing in the North Sea when she suffered engine problems. These problems could not be solved at sea. Towing assistance was necessary, which was provided by the KNRM lifeboat from IJmuiden. The fishing vessel was towed to IJmuiden for repairs.

Classification: Serious

Stranding following failure of vessel systems, North Sea, 27 May 2021

The Dutch fishing vessel WR129 Jacob Marcel suffered a total blackout. As a result, the vessel became stuck on the beach at Egmond aan Zee. Initially, another Dutch fishing boat transferred a towing line but this rescue attempt failed when the fishing gear of the WR129 became entangled in the propeller of the other fishing boat.

After a towing line had been established between the WR129 and a KNRM vessel, the KNRM vessel tried to pull the WR129 free. However, the towing line broke. The WR129 was then pulled from the beach by a third fishing boat, and towed to port.

Classification: Serious

Adrift following engine problems, Atlantic Ocean, 28 May 2021

En route from Norway to Curaçao, the Dutch cargo vessel Bothnia experienced problems due to leaky fuel pumps in the main engine. The vessel stopped to exchange the fuel pumps, and to repair the leak. When the engines were restarted, the crew heard a loud bang in cylinder 3. Upon examination of the engine, they discovered that one of the piston rods in cylinder 3 was bent. Attempts were then made on board to once again make the main engine (partially) operational, by shutting down cylinder 3 and removing the cylinder head, but these attempts were unsuccessful. The shipping company sent a tugboat to tow the vessel to Curaçao.

Classification: Serious

Tug assistance following engine failure, Atlantic Ocean, 1 June 2021

The Dutch cargo vessel Calypso suffered engine problems on 1 June. Following further investigation, the valves and injector of cylinder 1 were found to be seriously damaged. The vessel was unable to continue under its own power, and was towed to the port of Lisbon.

Classification: Serious

Incidents that have not been extensively investigated

Total blackout ship systems, North Sea, 22 June 2021

The Dutch fishing vessel UK179 Onderneming suffered a total blackout of all ship systems on the North Sea. It turned out that a wire on the auxiliary engine alternator had come free. The battery had then fully discharged and the auxiliary engine could no longer be started. The spare battery on board was not sufficiently powerful to restart the auxiliary engine. A battery that was transferred from a coastguard vessel was also insufficiently powerful. The boat was subsequently towed into Den Helder by the UK94 Jan van Cees. The problem was then rapidly solved using a battery charger, so the ship's operating systems could be restarted. The vessel then continued its fishery activities.

Classification: Serious

Towed into port, Lauwersoog, 30 June 2021

The Dutch-flagged fishing vessel WR67 Maartje was taken in tow 70 miles off the coast by the NG10, after the engine on the boat had failed due to a short circuit in a switchbox. The boats arrived one day later in Lauwersoog, where the switchbox and engine were examined and repaired.

Classification: Serious

Engine problems with smoke development, Atlantic Ocean, 3 July 2021

Halfway between the United States and Europe, the fire alarm in the engine room sounded on the Dutch cargo vessel Bothnia. There was considerable smoke development around the main engine. The crew shut down the main engine and went in search of the cause. The captain informed the operator while the chief engineer investigated whether the engine could be repaired in situ. An investigation by the shipping company revealed that the lubricating oil was contaminated with fuel. This could not be repaired in situ. The vessel was towed to Las Palmas where the main engine was repaired.

Classification: Serious

Tugboat assistance following net in propellor, Huibertgat (Netherlands), 15 July 2021

While fishing on the Groninger Wad, the nets of the Dutch trawler UK16 Orion became entangled in the propellor. Assistance was needed, that was provided by the KNRM lifeboat service and the Water Police. The fishing boat was towed into Eemshaven.

Classification: Serious

Blackout, Rotterdam, 6 August 2021

The Portuguese cargo vessel Spanaco Progress suffered a blackout when departing from the port of Rotterdam. It is believed that two generators that could not be operated in parallel were switched on simultaneously, resulting in the blackout. The vessel was towed back into port for repairs.

Classification: Serious

Blackout, Dordrecht, 16 August 2021

Following departure from the port, the Antigua Barbuda-flagged cargo vessel Lumen suffered a blackout off Zwijndrecht. The vessel set anchor on the Oude Maas and two tugboats towed the vessel to the Handelskade. Following inspection, the fuel turned out to be contaminated with water.

Classification: Serious

Engine problems, Scheveningen, 17 August 2021

Just outside the pier heads, the Dutch fishing boat SCH10 Drie Gebroeders experienced main engine problems. The anchor was lowered to avoid being driven into the pier heads by the current. The Coastguard called in the ocean tug Sentosa to tow the fishing vessel into the Eerste Binnenhaven, assisted by the tender Zeezwaluw.

Classification: Serious

Taken in tow following damage to main engine, Baltic Sea, 29 August 2021

On Sunday 29 August, on board the Dutch cargo vessel Heyn, a fire alarm sounded in the engine room, before the main engine shut down. The vessel immediately set anchor. An investigation of the engine room first revealed a mist of oil droplets. It then became clear that the main engine had suffered serious damage in cylinder 8. Parts of the piston and piston rod had broken off and caused damage to the engine block and sump covers. The vessel was towed from the Baltic Sea to Delfzijl.

Classification: Serious

Collision with canal side, Kiel Canal, 10 September 2021

Following departure from Kiel on 10 September 2021, the Dutch cargo vessel Hekla experienced problems with its steering gear, in the Kiel Canal. As a result, all steering systems failed, including the emergency steering, and the vessel collided with the canal side. Because the cause of the problem could not be immediately identified, the vessel was towed back to Kiel, with tugboat assistance. An inspection was carried out in Kiel, which revealed a broken seal on the steering gear.

Classification: Serious

Engine failure, North Sea, 18 September 2021

While transiting the Vlieland Traffic Separation Scheme (TSS), the Marshall Islands-flagged bulk carrier Pacific South suffered engine failure. The vessel started to drift, before setting anchor. An inspection of the main engine revealed two broken gaskets as the cause of the engine failure. Despite multiple attempts, the crew was unable to solve the engine problems. With assistance from the coastguard tugboat Guardian, the vessel was towed to the anchorage off the coast of IJmuiden on Thursday 23 September, until a section of quayside became free to allow engineers to come on board.

Classification: Serious

Grounding due to propulsion problems, Texel, 23 September 2021

The Dutch coastal fishing boat HK86 Markerwaard ran aground at Koog, on Texel, due to propulsion problems. The vessel was pulled clear by two lifeboats and subsequently towed to Den Helder by another fishing vessel.

Classification: Serious

Propulsion failure, Dover Strait, 1 October 2021

The Dutch cargo vessel Beaumagic suffered a blackout on 1 October 2021, while passing through the Dover Strait. As a result, the vessel became "not under command". Following further inspection by the crew, it was discovered that the connection between the flywheel on the main engine and the gearbox was so damaged that it could not be repaired by the crew. The vessel was towed to Rotterdam. Inspection by the crew revealed that the damage was caused by driftwood becoming entangled with the propeller.

Classification: Serious

Incidents that have not been extensively investigated

Engine failure, Taiwan, 3 October 2021

Shortly after departing from the port of Kaohsiung in Taiwan, a high-temperature alarm on the main engine was activated, on board the Arneborg. To investigate the problem, power was reduced, and an auxiliary engine was switched on to provide electricity on board. No problems were found. After the temperatures had returned to normal, power was slowly raised to 70%. Shortly afterwards, a thumping noise was heard in cylinder 1, and the decision was taken to sail to calmer waters and to set anchor. Shortly afterwards a loud bang was heard, and the engine was shut down. The vessel drifted to a safe position where the anchor was set. In this location, the vessel waited for tugboat assistance.

The main engine was seriously damaged. The piston rod in cylinder 1 and the balance weight on the crankshaft at cylinder 1 were shattered and blasted into the engine room, through the sump cover. The cylinder lining was damaged as was the main engine block, at cylinder 1.

Classification: *Serious*

Towed into port following steering gear problems, North Sea, 23 November 2021

The Dutch vessel Fortuna was providing standby support for underwater work, at sea, when the steering gear pump broke down. The vessel had to be towed back to Scheveningen. The tugboat Anteos towed the Fortuna into Scheveningen. Following an examination, it was decided to replace the RF45X Rudder Feedback on the steering gear. The Fortuna experienced no further problems with its steering gear.

Classification: *Serious*

Unmanoeuvrable due to failure of speed governor, North Sea, 23 November 2021

The German cargo vessel Andre W suffered problems with its speed governor at around midday, which rendered the vessel unmanoeuvrable. Because the governor could not be repaired in situ, the vessel was towed to Delfzijl by the tugboat Waterstroom.

Classification: Serious

Engine problems, Finland, 30 November 2021

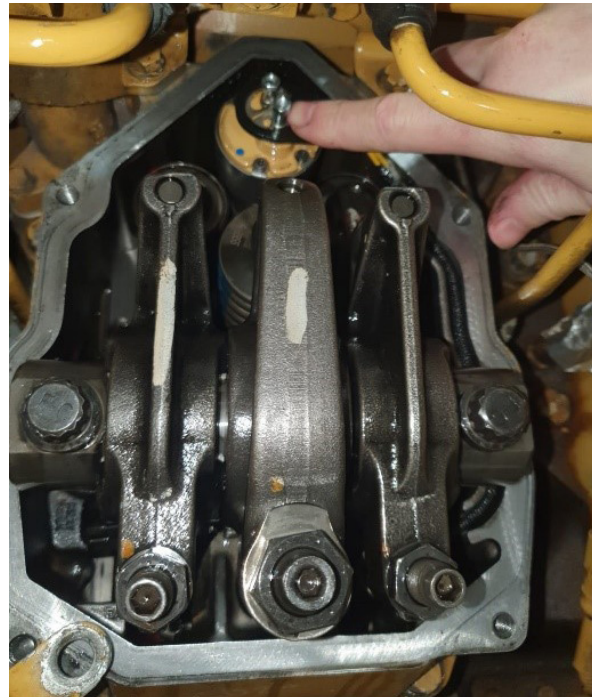
While approaching the port of Kokkola (Finland), the engine of the Dutch-flagged Victoriaborg suffered a breakdown. To prevent damage, the decision was taken to shut down the main engine at which point the vessel began to drift. The vessel lowered both anchors to prevent further drifting. Two tugs towed the vessel into port. After mooring at the quayside, the chief engineer succeeded in restarting the main engine without problems. Inspection revealed that a bolt on the main engine had worked loose due to vibration, which adversely affected the mechanical throttle handle.

Classification: Serious

Engine problems, Bilbao, Spain, 2 December 2021

On 1 December 2021, the Dutch-flagged Lady Adele was anchored off the coast of Spain. At around midnight, the main engine was started in order to enter the port of Bilbao. After starting, the engine made a tapping noise and an inspection revealed that one of the injectors had worked loose, creating a hole in the valve cover. Because sailing in this condition was impossible, and the pilot was already on board, tugs were ordered to tow the vessel into port. Once moored, repairs were carried out by external engineers.

Classification: Serious



Cylinder Head Lady Adele. (Source: Wijnne Barends)

Engine problems, Baltic Sea, 30 December 2021

On 30 December 2021, while sailing in the Baltic Sea, the Dutch cargo vessel Lady Ariane suffered problems with her main engine. The vessel was en route with a cargo of peat from Roomassaare (Estonia) to Amsterdam. The cause was a leak in the cooling water pump, which could not be repaired at sea. The vessel anchored up while waiting for tugboat assistance. The tug arrived one day later. The vessel was towed into the port of Kalmar (Sweden) for repairs, entering the port on 1 January 2022.

Classification: Serious

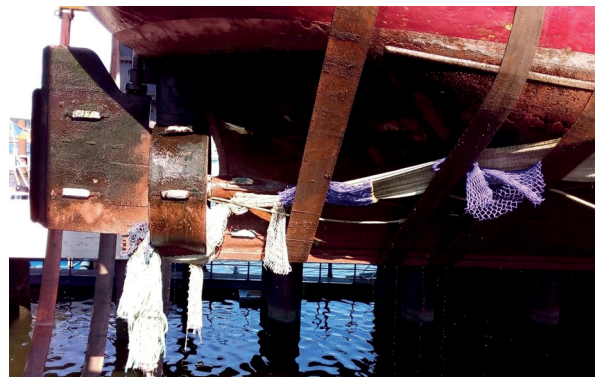
Incidents that have not been extensively investigated

Not under command

Tugboat assistance following net in propeller, North Sea, 18 May 2021

While fishing around Schiermonnikoog in the North Sea, the net of the Dutch shrimper ZK37 Aldert van Thijs became entangled in the propeller. The vessel was towed into Lauwersoog with the assistance of the ZK17 Johannes Dirk. The net was removed from the propeller in the dock.

Classification: Serious



Fishing net entangled in propeller ZK37. (Source: Owner)

Tugboat assistance following net in propeller, Huibertgat (Netherlands), 15 July 2021

While fishing on the Groninger Wad, the nets of the Dutch trawler UK16 Orion became entangled in the propeller. Assistance was needed, that was provided by the KNRM lifeboat service and the Water Police. The fishing boat was towed into Eemshaven.

Classification: Serious

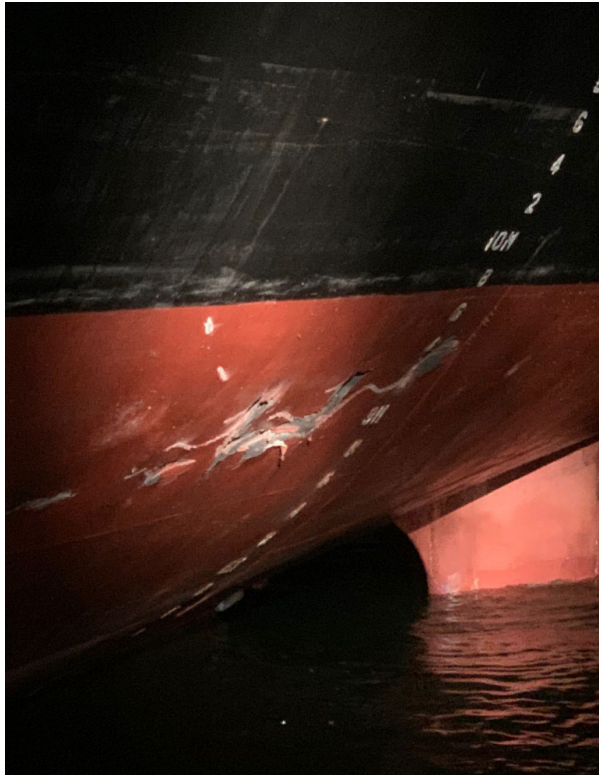
Rope in propeller, North Sea, 23 November 2021

During the night of 23 November, a rope became entangled in the propeller of the Swedish fishing boat Ahlma. The Ahlma was unable to reach port under its own power. The Ahlma was towed into Den Helder by the tugboat Anteos.

Classification: Serious

Inland shipping – drifting push barge collides with seagoing vessel, Rotterdam, 3 November 2021

A drifting push barge collided with the seagoing vessel Melina in the port of Rotterdam. The barge hit the port stern section of the moored seagoing vessel. No one was injured, and no pollution was observed. The seagoing vessel suffered a number of scratches.



Damage to hull Melina. (Source: Zeehavenpolitie Rotterdam)

Making water

Hole in hull, Den Oever, 1 November 2021

The Dutch fishing boat WR19 Espada was moored off Den Oever, when the vessel suffered a leak in the engine room, which filled up with water. The fire brigade arrived on the scene, to pump the water from the vessel, and to clean up the minor oil pollution that occurred in the port, as a consequence.

Classification: Serious

Inland shipping – Historical tugboat sinks, Antwerp (Belgium), 6 August 2021

In the Hansadok area of the Port of Antwerp, the Dutch tugboat Odin sank while towing the dredging vessel Naseem. During the towing operation, tugboat Odin was run into from behind by the towed vessel, which caused the tugboat to capsize. The two crew members of the tugboat were rescued from the water. The tugboat was salvaged the next day.

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

Colophon

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.

June 2022

Photos

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