



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



January 2022 - July 2022



As well as considering reports from sea shipping, this 14th edition of the Shipping Occurrences Report will be focusing attention on inland shipping, too. Increasingly, the Dutch Safety Board is placing occurrences on Dutch inland waterways on its agenda. Subjects such as incidents involving hazardous cargoes, the capsizing of vessels or line breaks affect both sea shipping and inland shipping, with some regularity. The Dutch Safety Board is not subject to any legal obligation to investigate inland shipping occurrences, but because these occurrences also reveal important opportunities for learning lessons and because both sectors can learn from each other, the Dutch Safety Board wishes to devote more attention to the inland shipping sector.

The Dutch Safety Board intends to pursue its chosen objective of paying more attention to the inland shipping sector by giving Dutch inland waterways and the inland shipping sector a prominent (or clear) place in the Shipping Occurrences Report. In the theme article, 'In each other's water, at the interface between sea shipping and inland shipping', the relationship between sea shipping and inland shipping is discussed in greater detail. A number of differences and similarities are outlined. The focus is on the importance of awareness of the safety risks at the interface between the two sectors, with the aim of learning from one another, thereby increasing safety.

Stavros Zouridis,  
*Board member of the Dutch Safety Board*



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# In each other's water

## At the interface between sea shipping and inland shipping

### Introduction

On the basis of a statutory obligation to conduct investigations, the Dutch Safety Board investigates very serious accidents on board Dutch seagoing vessels and foreign seagoing vessels in Dutch territorial waters. At the same time, the Safety Board is both able and wishes to take a broader view of the safety risks in shipping, in the Netherlands, in order to learn from incidents and unsafe situations. Both sea shipping and inland shipping are part of the overall shipping sector. Because there is not only a world of difference but also a wealth of similarities between the two sectors, it is possible for both to learn from each other. Both sectors, for example, are involved in the transport of hazardous cargoes, suffer mooring line breaks during mooring and are the scene of falls from height. To facilitate mutual learning, the Shipping Occurrences Report will from now on be expanded to include a discussion of incidents in inland shipping.

### In each other's water

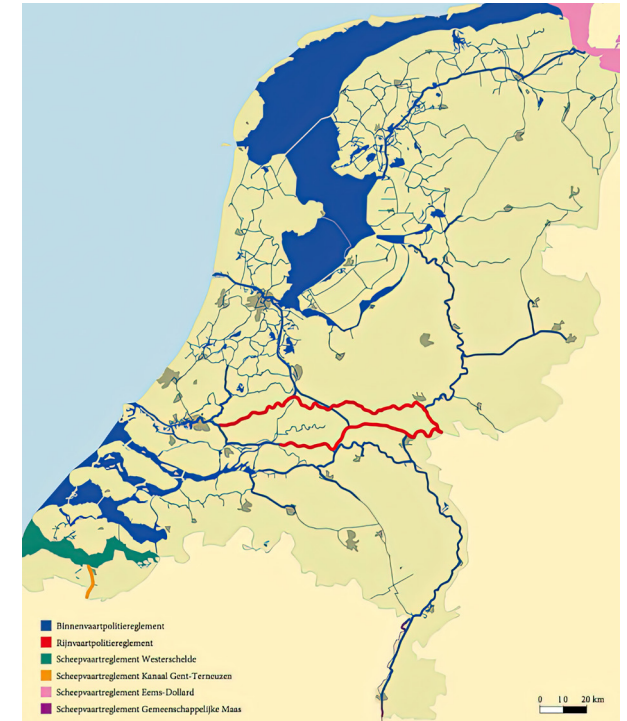
Sea shipping and inland shipping are inextricably linked. Through the transshipment of the cargo, during port assistance or by using the same shipping lanes, the two worlds come together, in major seaports like Rotterdam, Amsterdam and Vlissingen, and in waters like the Westerschelde, the Nieuwe Waterweg or the North Sea Canal. Every year, around 100,000 inland navigation vessels and around 28,000 seagoing vessels visit the port of Rotterdam. Despite sharing the same waterways, there are remarkable differences between the two sectors that can result in unsafe situations and even accidents. For example, inland shipping vessels are subject to other laws than seagoing vessels, and there are different sets of regulations on the various waterways. But what safety risks do these differences create? And what are the similarities, besides the shared waterways?



Seagoing and inland navigation on the Westerschelde. (Source: Ben Seelt)

### Differences in regulations

At the points where sea and inland waterways meet, different sets of regulations apply. The International Regulations for Preventing Collisions at Sea (COLREG) apply on the sea, inside and outside territorial waters and on all waters connected with the sea. For the majority of Dutch inland waterways, the traffic rules are laid down in the Inland Navigation Police Regulations (BPR) or the Rhine Navigation Police Regulations (RPR). In principle, all vessels on all public waters in the Netherlands are subject to the BPR, but a number of waters are exempted, in particular in areas where the Netherlands shares a border with other countries. The Westerschelde, for example, at the border with Belgium, has its own regulations, the Westerschelde Shipping Regulations, and the Eems-Dollard area on the border with Germany is subject to the Eems-Dollard Shipping Regulations.



Shipping Regulations in the Netherlands. (Source: vaarweginformatie.nl)

These differences in regulations demand extra attention both from inland shipping and sea shipping in preparing for their journeys, all the more so because, as well as, for example, obligations relating to working language, there are also differences in the right of way rules.

The BPR, for example includes the rule, 'small vessels give way to large vessels'. The COLREG, however, does not have this rule: in COLREG, large and small vessels have equal priority.

In the BPR, ferries, passenger vessels, tugboats and push boats and fishing vessels that are in operation have the rights of a large vessel, even if their overall length is less than 20 metres. This exception, however, does not apply on the Westerschelde.

In the Westerschelde regulations, a working fishing vessel is considered the same as an ordinary motor vessel, if its manoeuvrability is not restricted by its fishing method. The COLREG, on the other hand, does not recognize this difference, and refers to a vessel performing fishery activities.

In practice, we see that these differences in regulations can result in confusion, dangerous situations and even accidents. These are certainly not the only differences that can contribute to unsafe situations, in both sectors. Below we list a number of examples of differences between the sectors relating to working language and stability that have resulted in incident reports to the Dutch Safety Board.

#### Working language and communication

One well-known problem in inland shipping, that differs from sea shipping, is that there is not a single official working language for inland shipping. In sea shipping and for example also in aviation, English is considered the standard working language. In inland shipping, communication is in the language of the country through which the vessel is sailing. In the Netherlands, therefore, the working language is Dutch. From a historical viewpoint, however, in Dutch waters, German may also be used as the working language because the route from the Netherlands to Switzerland via Germany has traditionally been sailed by many vessels; this still continues to this day. Here too, there are exceptions. In the Schelde area, the use of Dutch or English is compulsory. In the Eems estuary, the regionally applicable Eemsmonding Shipping Regulations specify that the compulsory working language is German, with Dutch or English only being permitted on request. In the border area on the river Meuse, skippers consider the use of the French language as nothing unusual. It is therefore not uncommon in waterways suitable for both sectors, that different working languages may be used. This can prove an obstacle to mutual communication.

In 2017, a European Directive was drawn up, with which all Member States must comply from January 2022 onwards. This Directive aims to harmonize the requirements for inland shipping crews. The European Parliament wishes to impose further requirements on communication, as part of the compulsory practical examinations. The Parliament not only wishes to bring about harmonization in working language, but also considers the skills that are needed to guarantee sound communication as being of crucial importance for shipping safety. As part of this process, the use of standardized communication sentences is recommended, in situations involving potential communication problems. The Parliament also hopes to introduce a uniform working language, but this has not yet been officially structured.<sup>1</sup>

This historically established multiplicity of working languages can lead to confused communication and as a consequence to problems, as reflected by the occurrence involving the Viking Idun and the Chemical Marketer.

#### Viking Idun and Chemical Marketer<sup>2</sup>



Damage to the Chemical Marketer

One example in which problems with the working language played a role was the collision that took place on the Westerschelde between the river cruise ship Viking Idun and the Maltese-flagged chemical tanker Chemical Marketer in April 2019. At the time there were 137 passengers and 43 crew members on board the cruise ship. The chemical tanker was transporting a cargo of benzene, heptane and methanol. A number of passengers were slightly injured and the damage to both ships was considerable.

In its investigation into this accident, the Dutch Safety Board concluded that on paper at least, the majority of the crew on the Viking Idun satisfied the applicable rules and requirements, with the exception of the requirement on working language from the Westerschelde Shipping Regulations. However, in this case, qualification does not mean the same as competence. Only one crew member was both qualified and in possession of the necessary knowledge to be able to satisfy the working language requirement. However, at the time when the vessel was sailing on the Westerschelde, this crew member was not on duty.

<sup>1</sup> <https://eur-lex.europa.eu/legal-content/NL/TXT/PDF/?uri=CELEX:32017L2397&from=PL>

<sup>2</sup> <https://www.onderzoeksraad.nl/en/page/13985/collision-on-the-westerschelde-river-cruise-ship-viking-idun-and>



# In each other's water

## Stability and movement

Another, less well-known problem, is the difference in conditions and requirements for stability. It is understandable that the structural requirements on sea shipping differ from those on inland shipping. A seagoing vessel must be more resistant to heavy weather with high waves, while an inland navigation vessel is designed to sail in narrow, shallow waterways. The stability requirements and strength calculations in inland shipping are therefore less strict and as a rule, despite a number of occurrences, receive less attention than the standard approach in sea shipping. In sea shipping, following any alteration or new cargo, the stability of the vessel is recalculated.

In addition to the differences in respect of stability, the water movements that can be caused by often large seagoing vessels are sometimes more violent than expected for smaller inland navigation vessels. Moreover, on inland waterways with an open sea connection, such as the Nieuwe Waterweg and the Westerschelde, the entry of sea swell and current and wind can influence the waves. These influences can turn inland waterways into a more demanding environment than expected, at first glance.

The scale of the effects of water movements, also on inland waters, and how these movements can place inland navigation vessels in difficulties, are illustrated by the recent occurrence involving the Mar-Grethe. This occurrence makes it clear that stability is an important subject for any vessel, be it a seagoing vessel or an inland navigation vessel. The occurrence involving the Mar-Grethe is further discussed in the chapter of the Shipping Occurrences Report that deals with initial investigations.



Mar-Grethe capsizes on Nieuwe Waterweg. (Source: GinoPress)

## Mar-Grethe

On Thursday 14 April 2022, the inland navigation vessel Mar-Grethe, with a cargo of 880 tonnes of aluminium rods, capsized. The vessel was sailing up the Nieuwe Waterweg when it was overtaken by two seagoing vessels. At the time of the occurrence, the skipper of the inland navigation vessel was in the wheelhouse, and the deckhand was in the vessel's accommodation section. The skipper was rescued from the water; the deckhand was found dead in the water, several days later.

The occurrences investigated by the Dutch Safety Board that led to the publication of the report 'Capsizing barges'<sup>3</sup> had already revealed that there was insufficient attention paid to the stability of inland shipping vessels on open water. The government policy implemented in the inland shipping sector is a so-called 'open standard', i.e., based on the individual responsibility of operators. Although current legislation and regulations specify that the stability of inland navigation vessels must be in compliance with the purpose for which the vessels are intended, this has never been translated into explicit requirements. In other words, in inland shipping regulations, reference is made to the fact that the loading method may never endanger the stability of the vessel. However, only in a limited number of cases is the skipper of an inland navigation vessel required to calculate this stability, for example with certain container cargoes.

## Safe side by side

In order to increase safety, in particular in heavily sailed areas in the transition between sea and inland waterways, various parties have introduced a series of management measures over the years. Seagoing vessels of a specified size, for example, must take pilot guidance, and in parts of these areas, traffic guidance is provided in the form of Vessel Traffic Services (VTS). VTS services are not compulsory but are informative. Nonetheless, they serve an important purpose. They maintain an overview of all shipping movements, and as such are able to regulate busy shipping traffic.

<sup>3</sup> [https://www.onderzoeksraad.nl/nl/media/attachment/2018/7/10/9bb2aa4e5f89summary\\_kapseizen\\_beunschepen\\_en.pdf](https://www.onderzoeksraad.nl/nl/media/attachment/2018/7/10/9bb2aa4e5f89summary_kapseizen_beunschepen_en.pdf)



Moreover, for anyone travelling on such busy waterways, it is not only important to have knowledge of the waterway and the behaviour of their own vessel, but also of the behaviour of other fellow waterway users. The importance of attention to these aspects is reflected not only by the occurrences that have taken place, but also by the steady growth of all branches of the shipping industry, and the accompanying increasing likelihood of risky situations.

Figures on the growing numbers of movements in, for example, the port of Rotterdam, where 2021 saw a rise in the number of ship visits by seagoing vessels of more than 700 as compared with the previous year, and a rise of 7000 inland navigation vessels, in the same year, show that it is becoming ever busier, with more and more vessels sharing the same water.

The consequences are, among others, reflected in the shipping accident figures from Rijkswaterstaat. These figures reveal that commercial shipping is in fact involved in a considerable number of accidents. The investigation by Intergo<sup>4</sup> also shows that the number of accidents involving inland shipping has on average risen annually.

#### Summary conclusion

The steady growth in the volume of both sea shipping and inland shipping and the inextricable relationship between the two engenders risks, and demands greater awareness. As well as the many differences, there are also many similarities between sea shipping and inland shipping, which allows for mutual learning. To this end, the Dutch Safety Board points out the lessons learned and recommendations from previous reports on subjects that affect both sectors. Examples are described in the reports mentioned above.

It is essential that both sea shipping and inland shipping become more aware of the safety risks facing both groups so that they can operate safely alongside each other, in particular in areas where both literally and figuratively, they are 'in each other's water'. The Dutch Safety Board hopes to contribute by allocating a clear position for the inland shipping sector in the Shipping Occurrences Report, and in that way offering both sectors an opportunity to learn more about and from each other.

	2015	2016	2017	2018	2019	2020	2021
(Very) serious shipping accidents	159	163	161	178	160	175	148
Other types of accidents	891	1166	973	1179	1119	1068	1077
Total number of accidents	1050	1329	1134	1357	1279	1243	1225

Table 1: Shipping accidents Dutch inland waterways. (Source: Rijkswaterstaat)

<sup>4</sup> [https://mcusercontent.com/9a6d55ece9db05ec49eeb87e0/files/be5d30d0-bfb4-42cb-a61f-a421c1d19f61/Studie\\_Menselijke\\_factoren\\_aan\\_de\\_basis\\_van\\_ongevallen\\_in\\_de\\_binnenvaart\\_Fase\\_1\\_data\\_en\\_expertanalyse.pdf](https://mcusercontent.com/9a6d55ece9db05ec49eeb87e0/files/be5d30d0-bfb4-42cb-a61f-a421c1d19f61/Studie_Menselijke_factoren_aan_de_basis_van_ongevallen_in_de_binnenvaart_Fase_1_data_en_expertanalyse.pdf)

# Accident classification

In this Shipping Occurrences Report, for the period January 2022 to July 2022, the Dutch Safety Board registers the description of accidents on board ships sailing under the Dutch flag or occurrences that have taken place within Dutch territorial waters and reports published during this period.

Each accident is classified according to seriousness. The categories correspond with EU Directive 2009/EC/18:

**Very serious:** accident with total loss of a vessel or where there have been fatalities or serious environmental damage.

**Serious:** accident involving a vessel which cannot be classified as 'very serious' and in which, for example, a fire, collision, grounding, etc. has occurred, preventing the vessel from continuing to sail or causing 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 endangered, or would endanger, the safety of the ship, a person on board or the environment if it had not been rectified.

**Serious injury:** injury suffered by a person, which incapacitates the person 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 for the reporting period, a multiyear overview is also included. This provides a greater insight into trends.

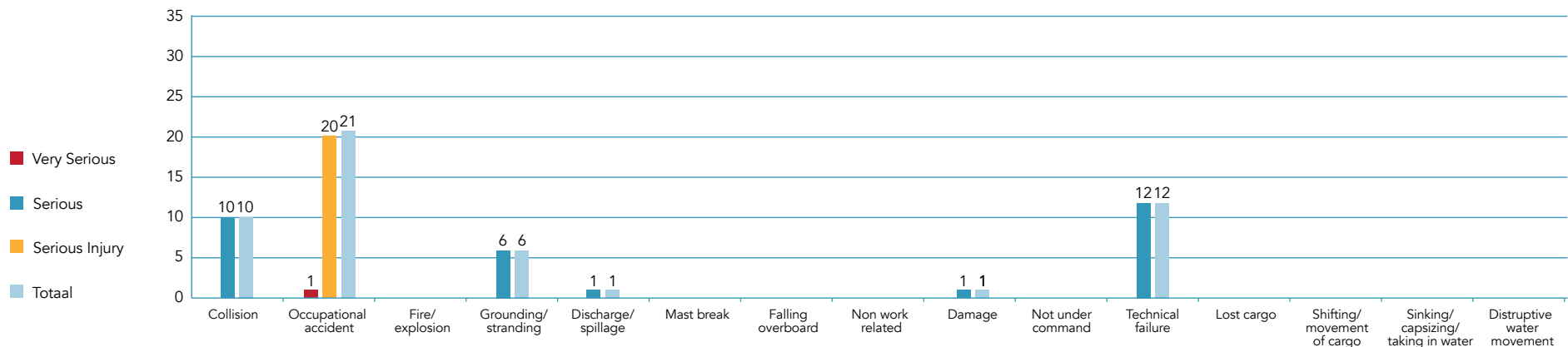


Figure 1: Serious and very serious accidents, sea shipping, period January 2022 to July 2022.

Occupational accidents take up a prominent place in figures 1 and 2. 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 considered the fourth pillar of maritime regulation applicable on board seagoing vessels, alongside the SOLAS Convention, the Marpol Convention and the STCW Convention. MLC 2006 was drawn up under the auspices of the International Labour Organization (ILO).

In addition, in the Netherlands, the Human Environment and Transport Inspectorate (ILT) has a supervisory role in the Dutch shipping sector. This role is focused on ensuring compliance with legislation and regulations on board ships.

Greater insight into the nature of these accidents can contribute in increased safety awareness among employers, employees and other parties in the maritime sector.

For that reason, in this report, occupational accidents are presented on the basis of the causes of injury. It is noticeable that entrapment, being hit by liquids/objects, falling/slipping/tripping and falling from heights are the most common types of occupational accidents.

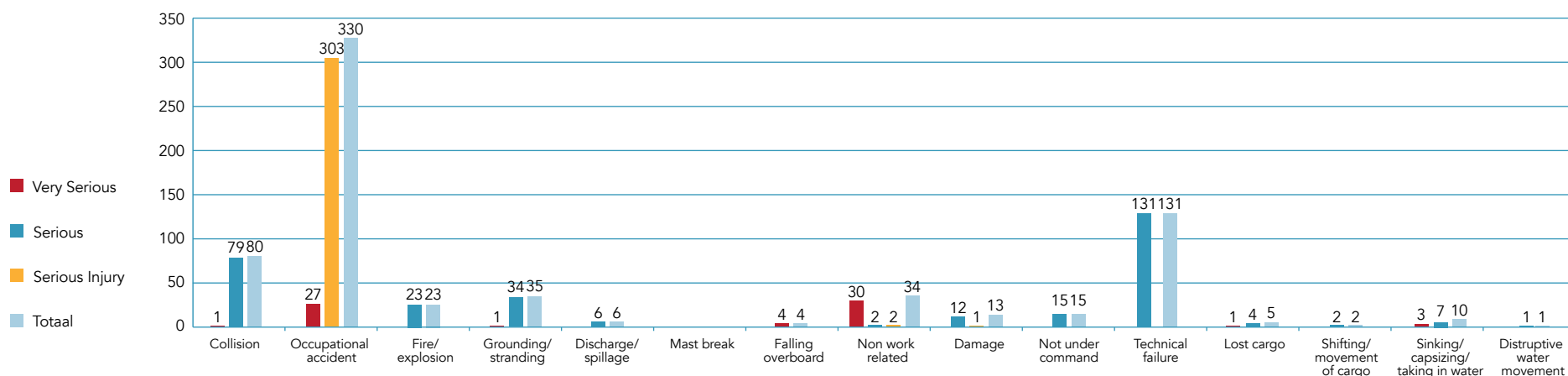


Figure 2: Serious and very serious accidents, sea shipping, period January 2016 to July 2022.

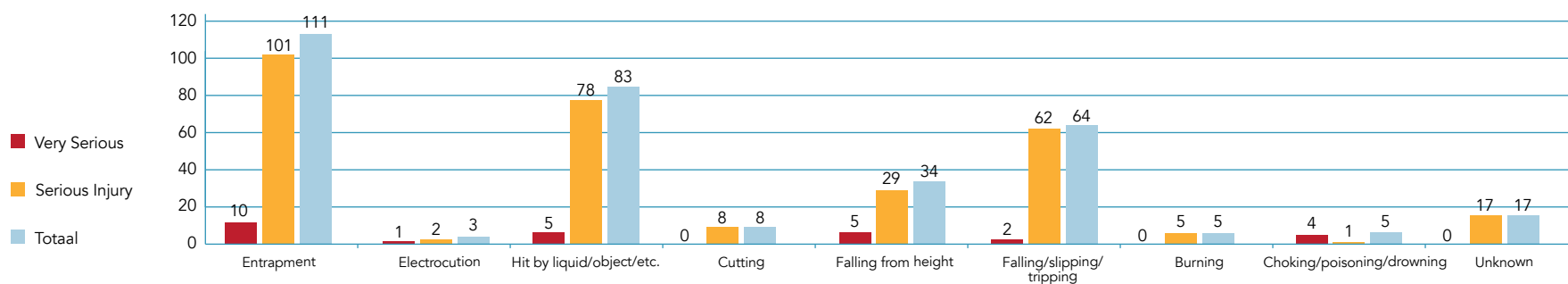


Figure 3: Occupational accidents linked to the cause of injury, sea shipping, period January 2016 to July 2022.



# Accident classification

Trends in the period from 2016 through 2021 are presented below for the most common occurrences: Collisions, occupational accidents and technical breakdowns (figure 4). There is a clearly observable increase in both collisions and technical breakdowns. Under the heading of occupational accidents, the category serious injury has shown a slight downturn, but an increase in more serious accidents.

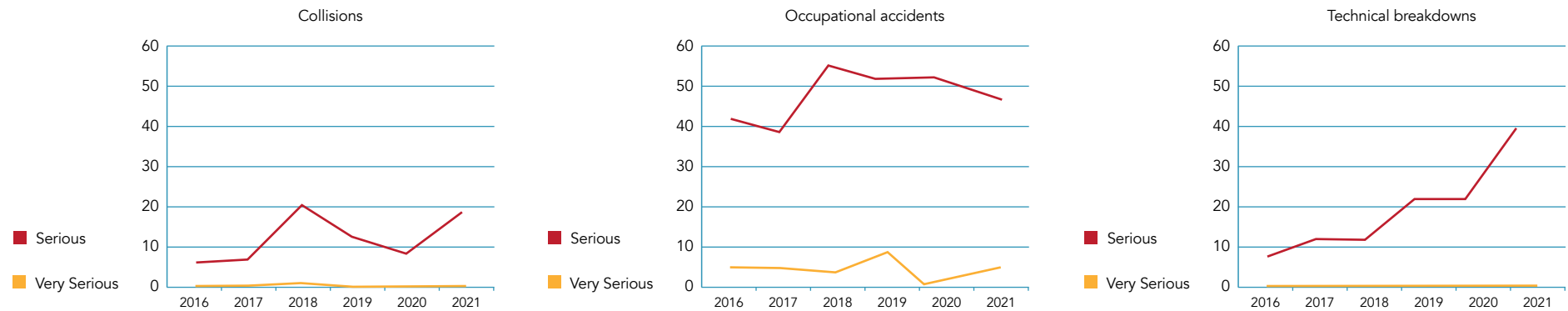


Figure 4: Trends in the most common occurrences, sea shipping, 2016 through 2021.

Accidents on inland waterways are subject to a different classification system due to differences in international agreements, but broadly speaking are comparable with the classification mentioned above. The shipping accidents in figure 5 show the trends in accidents on inland waterways. Within this classification, (very) serious accidents are taken to mean: accidents whereby a vessel is no longer able or permitted to sail as a consequence of the shipping accident or if there is serious damage to the cargo, infrastructure or the environment, resulting in disruption of the navigation channel, or if there are fatalities or serious injuries. Other types of shipping accidents are all other shipping accidents that cannot be classified under the category of (very) serious shipping accidents. These trends are informative and are intended to give greater insight into multiyear developments.

For the sake of readability, in this Shipping Occurrences Report, all occurrences both in sea shipping and inland shipping are categorized and classified in the same way, whereby for further clarification, inland shipping occurrences are marked as such.

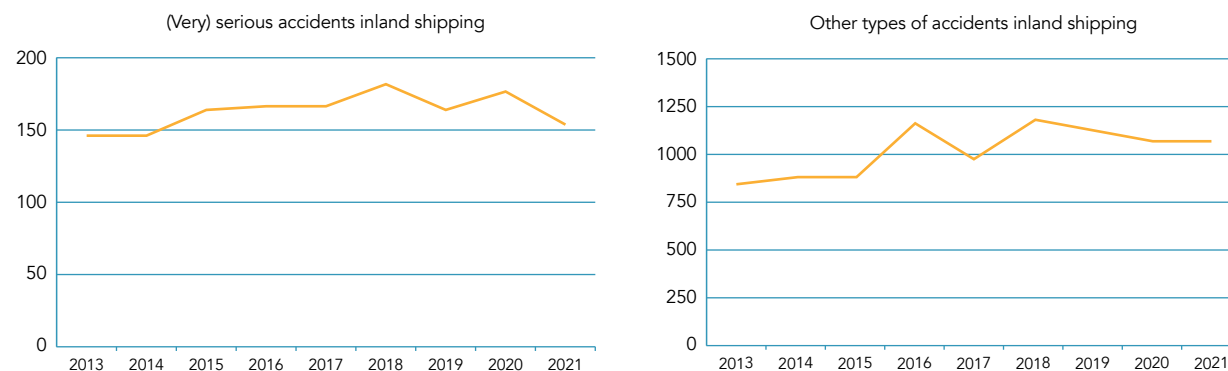


Figure 5: Trends in occurrences on inland waterways. (Source: Rijkswaterstaat)

# Published reports

## Fall from height - Fatal accident on board the Zealand Rotterdam, Mumbai Anchorage, India, 23 November 2019

On Saturday 23 November 2019 at 16.40 hours, local time, a deckhand fell from a grab on one of the ship's cranes on board the Dutch bulk carrier Zealand Rotterdam. The deckhand fell onto a platform below, suffering fatal injuries. The accident took place at a sea anchorage near Mumbai (India).

While preparing to unload the cargo, the victim climbed onto a grab of one of the ship's cranes. When the deckhand on the grab was still working to release the lashings on the grab, the lifting block on the crane made a sudden swinging motion, colliding with the deckhand. The deckhand fell over backwards and landed on the deck below, on his head. During the investigation, it was not possible to determine with certainty the cause of the sudden swinging of the lifting block.

The investigation into the fatal accident on board the Zealand Rotterdam revealed that the ship manager in question made a number of choices that had a negative impact on safety on board the vessel. Due to these choices made, the safety of the crew on board the vessel was endangered. In practice, choices of this kind often have a favourable outcome. In this case, indirectly, they led to a fatal accident.

The accident was a consequence of a number of causes. Binding agreements from the ship's safety management system (SMS) were not complied with in all cases. The basic rule on board any ship is that all personal protective equipment must be worn or used if specified, and that all tasks must be discussed in advance in a so-called toolbox meeting or a Last Minute Risk Assessment. These rules were not complied with on board the vessel in question. Pressure of time may never be allowed to play a role with regard to these basic agreements.

A non-standard procedure was employed for attaching the grab to the crane. In assembling the crew, it should also have been clear that a common language was insufficiently represented. Finally, it became clear that by replacing part of the old crew with a new crew, there was insufficient ship-specific experience to ensure safe completion of the journey from Singapore to Mumbai, and the related work tasks.

Based on the investigation into this occurrence involving the Zealand Rotterdam, the Dutch Safety Board has issued a series of recommendations to the ship's manager.

The full report is available in English at:  
<https://www.onderzoeksraad.nl/en/page/17533/val-van-hoogte---dodelijk-ongeval-aan-boord-van-zealand-rotterdam>

**Classification:** Very serious



*Zealand Rotterdam. (Source: Q-Shipping)*



## Loss of fishing vessel due to failure of bilge pumping system, UK-160 Riemda, French coast, 23 December 2020

On 23 December 2020, the Dutch fishing vessel UK-160 Riemda sank off the French coast. All crew members were rescued and survived the accident without serious injury.

While hauling in one of the fishing nets, the vessel suddenly heeled over to starboard. When checking the fish processing deck, a crew member noticed that on the starboard side, the deck was one and a half metres under water, and the starboard bilge pump was not working. The pump turned out to be jammed by a piece of rope. Efforts to restart the bilge pump were unsuccessful.

Despite their efforts, the crew was unable to retrim the vessel. The vessel heeled ever further to starboard, at which point a fish waste discharge chute started to take on water. At a later stage, the hatch of this chute was closed. Despite these measures, the vessel continued to list ever further to starboard. When the angle of list to starboard reached more than 50 degrees, the engine room air inlet came under water, causing the stern part of the vessel to fill completely with water.

The crew members abandoned the vessel, with the vessel laying in the water at an angle of list of 90 degrees.

The investigation revealed that the direct cause of the loss of the UK-160 Riemda could not be attributed to a single cause. It is certain that the initial cause was a considerable volume of excess water on the fish processing deck, which must have gradually accumulated. The investigation revealed no unequivocal cause for the way in which this volume of water found its way onto the fish processing deck, but in and of itself, this fact should never result in the loss of a vessel. The fact that the vessel was eventually lost was the result of a combination of multiple failing barriers.

Specifically, the following should be mentioned:

1. A failing bilge pump and the fact that a backup bilge pump system was not continuously available;
2. Failure of the general high-water sensor (fish processing deck);
3. The leaving open of a closable fish waste discharge chute;
4. The insufficient watertight integrity of the vessel.

A general conclusion is that the crew used every possibility available to prevent the loss of the vessel. However, it became clear that within the timeframe available, the situation gradually worsened, and that at a given moment, the situation became unsalvageable without external assistance.

Based on the investigation into this occurrence with the UK-160 Riemda, the Dutch Safety Board has issued a series of recommendations to the owner, the Minister of Infrastructure and Water Management, the Fisheries Sector Council, and a number of international branch organizations.

The full report is available in English at:  
<https://www.onderzoeksraad.nl/en/page/18285/viskotter-zinkt-door-falend-lenspompstelsel>

**Classification:** Very serious



UK-160 Riemda. (Source: Bram Pronk)

# Preliminary investigations

In this chapter, the Dutch Safety Board describes one occurrence that led to the launching of a preliminary investigation.

## Inland navigation vessel Mar-Grethe capsizes, Nieuwe Waterweg, 14 April 2022

On the afternoon of Thursday 14 April at 17.45 hours, the Dutch inland navigation vessel Mar-Grethe capsized on the Nieuwe Waterweg just in front of (to the west of) the Maeslant Barrier, at the location of buoy NW 25. The vessel was sailing upstream and shortly before capsizing had been overtaken by two seagoing vessels, the Lithuanian Tulipa Seaways, travelling at a speed of approximately 16 knots and the Cyprus-flagged WEC Van Rijn travelling at a speed of approximately 10 knots. The Mar-Grethe was travelling at a speed of approximately six knots. The two seagoing vessels were travelling under pilot guidance.

The capsizing occurred within seconds, and it is believed to have taken place to port. There were two crew members on board, the skipper and a mate. The skipper was located in the wheelhouse and was able to escape the vessel following the capsizing. He was able to grab hold of a lifeboat, which came loose from the vessel. The mate was in the vessel's accommodation section and was not found during the rescue and recovery operations. His body was discovered several weeks later, downstream, near Rozenburg.

The Mar-Grethe was carrying a cargo of 880 tonnes of anodes (363 bundles, 1,254 units) on pallets, stacked three layers high in the hold, with a number of bundles on a fourth layer in front of the wheelhouse. The vessel was travelling from the loading location Rhenus Deep Sea Terminal on the Maasvlakte, to the Waalhaven in Rotterdam. The vessel was travelling with the hold open, with no hatch covers.

The vessel capsized almost immediately, without first listing. This suggests a lack of stability. An initial stability calculation revealed that as a result of the cargo the vessel was transporting, and the way in which the cargo had been placed in the hold, the vessel's centre of gravity was too high. Because the centre of gravity of a bundle of anode blocks is located almost precisely in the centre of the cargo, the eventual combined centre of gravity of the cargo was high. This made the centre of gravity of the vessel as a whole too high, leaving the vessel without any righting moment. The vessel subsequently capsized due to external factors. It is possible that the stern waves of the passing seagoing vessels or the suction effect between the Mar-Grethe and the seagoing vessels alongside the Mar-Grethe contributed to the occurrence. The investigation by a loss adjustment agency revealed the presence of water in an empty hold in the front of the vessel. Whether this fact contributed to the capsizing of the Mar-Grethe could not be determined. The occurrence shows similarities with the capsizing of the fishing vessels UK-165 Lummetje and UK-171 Spes Salutis.<sup>5</sup>

<sup>5</sup> <https://www.onderzoeksraad.nl/en/page/15703/capsizing-and-sinking-of-fishing-vessels---lessons-learned-from-the>

Stability risks in inland shipping have been known for some time. In 2016, the Dutch Safety Board published the report *Capsizing barges* in response to the capsizing of two barges Rick and Willem.<sup>6</sup> In 2004, the then Transport Safety Board published a report on the stability risks of inland shipping vessels and floating equipment.<sup>7</sup> Both investigations revealed that there were stability risks in inland shipping but that they were not recognized. Both investigations resulted in lessons and recommendations to the sector and the current Ministry of Infrastructure and Water Management (IenW), none of which seem to have actually been followed up on.

The greatest stability-related risks occur on push and tugboats, barges and floating pontoons, due to the nature of the work carried out by these vessels, but also as a result of conversions. When vessels are converted, almost no account is taken of stability. Following the investigations referred to above, the Dutch Safety Board recommended initiating a process whereby whenever inland navigation vessels are altered or converted, the inspectorate should check for the stability and strength of the vessels.

The stability requirements in legislation and regulations are minimal for inland cargo vessels. There are stricter stability requirements for container ships. As a result of the investigation in 2004, a recommendation was made to the then Minister of Transport and Water Management to undertake international initiatives for the development and implementation of uniform stability standards under all operating conditions for all types of inland navigation vessels. The Minister at the time ignored this recommendation, because skippers are already under the obligation to ensure a stable vessel. Moreover, government policy is aimed at entrusting responsibility for safety to the appropriate sector.

The way in which crew members deal with stability also plays a role in accidents. In the training course for skipper, little attention is paid to stability and the sector receives little or no encouragement to consider safety risks. An open standard in the law, such as the requirement that the stability of inland navigation vessels must be in accordance with the purpose for which they are intended, does not seem to be working in this sector.

**Classification:** Very serious

<sup>6</sup> <https://www.onderzoeksraad.nl/en/page/3801/capsizing-barges>

<sup>7</sup> [https://www.onderzoeksraad.nl/nl/media/attachment/2018/7/10/092\\_sv\\_stabiliteitsrisicos\\_binnenschepen\\_en\\_drijv\\_werktuigen.pdf](https://www.onderzoeksraad.nl/nl/media/attachment/2018/7/10/092_sv_stabiliteitsrisicos_binnenschepen_en_drijv_werktuigen.pdf)



# Investigations launched

## Fatal accident and serious injury on board an oil/chemical tanker, North Sea, 20 April 2022

On 20 April 2022, a serious accident took place on board a Saudi Arabian oil/chemical tanker within the anchorage of IJmuiden, on the North Sea. One crew member died and another suffered serious injuries.

The Dutch Safety Board launched an investigation following this occurrence.

**Classification:** *Very serious*



*The oil/chemical tanker.*

## Increased traffic volume on the North Sea, collision in wind farm, 31 January 2022

On 31 January 2022 at around 11.30 hours, a collision took place during storm Corrie between a bulk carrier and a tanker. Both vessels are Maltese flagged and were moored in the anchorage of IJmuiden in the North Sea, around 20 miles off the coast. The anchor of the bulk carrier failed to hold and started to drag. As a consequence, the bulk carrier collided with the tanker. The tanker remained stable, and subsequently arrived in the port of Amsterdam without problems. The bulk carrier, that was sailing without cargo, suffered a large hole in the hull near the engine room, through which water was able to enter. Partly as a consequence, the vessel became rudderless, due to lack of propulsion.



*Hole in hull. (Source: zeilen.nl)*

At the request of the crew members, the Coastguard initiated an evacuation process and removed all persons from the bulk carrier. The vessel remained adrift, heading for the Dutch coast and the Hollandse Kust Zuid offshore wind farm still under construction. As a precautionary measure, the oil and gas production company evacuated all personnel from platform Q13a-A. The bulk carrier passed close to platform Q13a-A, and subsequently collided with the foundation of a wind turbine under construction, before hitting the structure on which a transformer platform was later due to be installed. At the end of the afternoon, two sea tugboats arrived on the scene, one Belgian and one Dutch. Due to the poor weather conditions, they had previously been unable to rig a tow connection. Eventually, the bulk carrier was towed to Rotterdam.



*Rudderless vessel passing the platform. (Source: KNRM)*

This occurrence is not an isolated case. On 18 February 2022, two vessels experienced problems off the Belgian coast due to stormy weather. An oil tanker and a general cargo vessel both found themselves drifting, out of control. The oil tanker had insufficient power to withstand the stormy conditions, but did succeed in casting two anchors, thereby preventing the vessel from drifting into a wind farm. The only option available to the general cargo vessel was to sail through the wind farm. The vessel passed through both the Dutch and Belgian sections of the wind farm, but fortunately did not collide with any of the wind turbines.

In response to these occurrences, the Dutch Safety Board has launched an investigation into the possible safety risks of an increasingly busy North Sea.

The collision between the Maltese-flagged tanker and bulk carrier that took place at the anchorage outside the Dutch territorial zone is to be investigated by the Marine Safety Investigation Unit (MSIU).

The accident on board the Belgian-flagged sea tug during towing assistance to the bulk carrier will be investigated by the Belgian Federal Bureau for the Investigation of Maritime Accidents (FEBIMA).



*Reproduction of the layout of the North Sea showing existing wind farms, wind farms under construction, nature conservation areas and current shipping routes. (Source: Noordzeeloket.nl)*

# Investigations launched by foreign authority with the Netherlands as a state with substantial interest

## Serious injury following fall from ladder, Vlissingen, 17 January 2022

On Monday 17 January 2022, a Marshall Islands-flagged bulk carrier was moored in the Kaloothaven in Vlissingen, for loading and unloading. Some of the work was carried out using the ship's own crane. The crane was operated by one of the crew members. When entering the ship's crane, the deckhand slipped and fell from a height of eight metres from the crane ladder. The accident took place around 21.10 hours local time. As a result of the fall from height, the deckhand suffered serious injuries. He was transferred to a hospital in Rotterdam.

The safety investigation agency of the Marshall Islands has announced its intention to conduct an investigation into the accident.

**Classification:** *Serious injury*

## Damage to rudder, Celtic Sea, 11 March 2022

A Dutch cargo vessel sailing on the Celtic Sea (UK) suffered damage to its rudder on 11 March 2022 at around 11.00 hours local time. The cause of the damage is uncertain but was probably the result of an external impact. As a result of the damage, the vessel was unable to continue its journey, and was towed to port for repair.

The English Marine Accident Investigation Branch (MAIB) is due to launch a preliminary investigation.

**Classification:** *Serious*

## Crew member injured following fall, Rotterdam, 26 May 2022

On 26 May 2022, while a Maltese-flagged Ro-Ro vessel was moored in the port of Rotterdam, two crew members were cleaning the deck with a high-pressure hose. To carry out this work, one crew member was standing in a basket on a forklift truck, to be able to spray the deck from above. After completing the work, the crew member in the basket leaned over the edge, causing the basket to slip from the forklift truck's forks. The crew member fell a distance of three metres, injuring his wrist and face so severely that he had to be taken to a hospital.

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

**Classification:** *Serious injury*



# Incidents that have not been extensively investigated

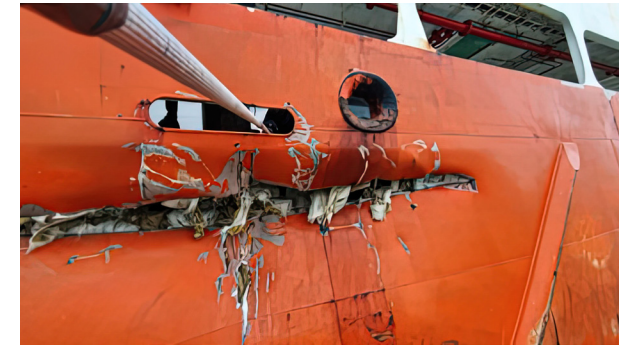
## Collisions

### Damage following collision with fishing vessel, East China Sea, 10 January 2022

At 12.08 hours local time, a Chinese fishing vessel collided with the rear of the Dutch tanker Coral Acropora. At the time the tanker was moored in the Majishan anchorage in China. The tanker's second and first mate saw the fishing vessel approaching the Coral Acropora from a distance of 0.5 nautical miles, and attempted to warn her off. Despite the actions of the crew of the Coral Acropora, no response was received from the fishing vessel. The fishing vessel subsequently collided with the Coral Acropora at the location of the vessel's accommodation section, approximately five metres above the waterline.

As a result, a hole approximately five metres long was punched in the hull of the Coral Acropora, 40 centimetres below the poop deck. This is the location of the vessel's storeroom. There were no injuries on board, and the vessel was able to sail safely to a shipyard. The bottom photo is an older photograph indicating the location of the damage.

**Classification:** Serious



Hole in hull approximately five metres long. (Source: Anthony Veder)

## Incidents that have not been extensively investigated

### Damage following collision with ice breaker, Gulf of Bothnia, 15 January 2022

The Dutch cargo vessel *Missouriborg* set sail from Kemi (Finland) assisted by the ice breaker *Atle*. At around 23.30 hours local time, the *Missouriborg* became trapped in the ice, at which point the captain requested assistance from the *Atle*. While manoeuvring to approach the *Missouriborg*, the bow of the ice breaker *Atle* collided with the *Missouriborg*, on the port side, above the poop deck. A section of bulwark approximately nine metres long was bent; the housing of the port raft was broken; the switchbox on the port winch was bent; and ventilation ducts and a gooseneck suffered damage.

**Classification:** Serious

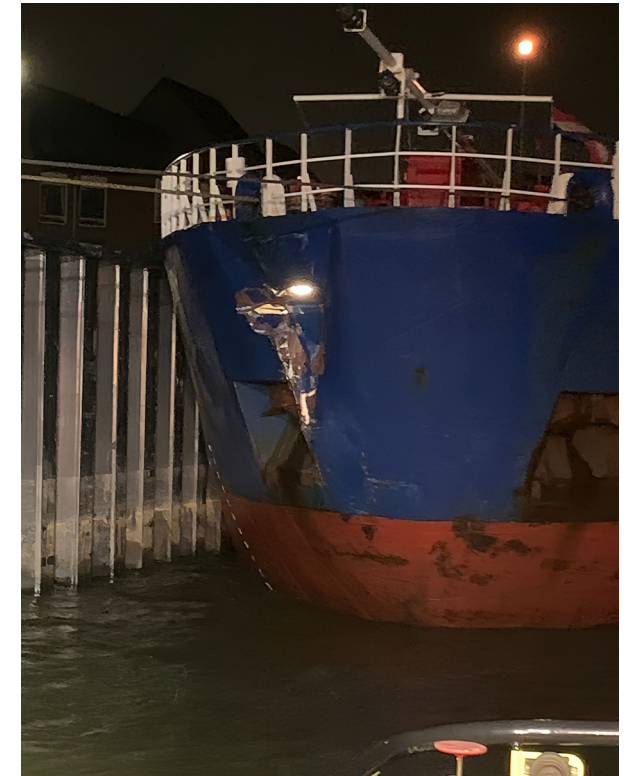


Damage following the collision. (Source: Wagenborg)

### Collision between seagoing vessel and inland navigation vessel, Waal, 4 February 2022

Just after midnight, the Dutch cargo vessel *H&S Bravery* collided with the Dutch inland navigation cargo vessel *Den Bosch Max Groen*, from the rear, on the river Waal. The *H&S Bravery* was in the process of overtaking the *Den Bosch Max Groen*. The statement by the crew revealed that they had not seen the approaching vessel, until too late. The *H&S Bravery* suffered a tear in the bow section, about three to four metres above the waterline. The vessel subsequently travelled to Dordrecht for repairs.

**Classification:** Serious



Damage to *H&S Bravery*. (Source: ILT)

### Mooring lines broken by storm, Dordrecht, 18 February 2022

The vessel Amstelborg was moored in the port of Dordrecht. Due to strong winds, nine mooring lines broke and one bollard on the quayside failed. The vessel suffered damage at multiple points, including a tear in the forepeak. The damage was caused by a collision with another vessel and with the quay wall. The Amstelborg was given tugboat assistance until the next morning, to remain in position alongside the quay wall, until the storm died down. Classification society and damage assessment experts were brought on board and a plan was drawn up to transport the vessel to Rotterdam for repair.

**Classification:** Serious



Bollard ripped from the quay. (Source: Wagenborg)

### Collision, Wesel-Datteln Canal, Germany, 25 February 2022

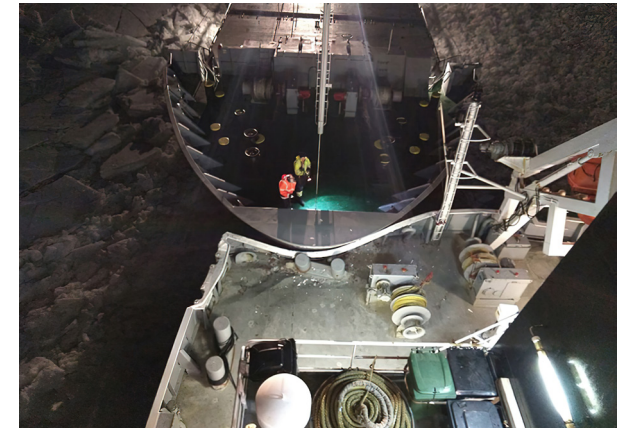
Upon setting sail on the Wesel-Datteln Canal in Germany, the Dutch coaster Ashley collided amidships with the Dutch inland navigation vessel Triscula. In connection with the current, the Ashley had reached agreements with the Triscula on a manoeuvre whereby the two vessels would pass each other starboard to starboard, on the wrong side of the river. However, when the Ashley entered the current, the bow refused to steer to port and continued to travel ahead, at low speed. Although the Ashley applied full port bow thruster, and full reverse, she was no longer able to avoid the Triscula. The front bow section of the Ashley collided with the centre of the Triscula. The Triscula suffered damage, including a twisted deck section. The vessel was given permission to sail to a shipyard in Geertruidenberg, for repairs. The cargo of liquid sulphur had been discharged. The Ashley received permission to sail to Rotterdam for repair to the twisted panelling and trusses.

**Classification:** Serious

### Collision during ice convoy with serious damage, Baltic Sea, 19 March 2022

Accompanied by the ice breaker Nordica, the Dutch-flagged vessels Cathy Jo and Delfborg were travelling in convoy formation, at night. At around 02.00 hours local time, the Cathy Jo became stuck in the ice. The vessel's speed reduced to one knot, and following instructions from the bridge of the ice breaker, the main engine was shut down. The Delfborg subsequently collided with the Cathy Jo, from behind. The Delfborg suffered minimal damage to the fore part. The damage to the Cathy Jo was considerable, but the vessel took on no water, and there were no injuries.

**Classification:** Serious



Collision during ice convoy. (Source: Corribshipping)



# Incidents that have not been extensively investigated

## Collision between cargo vessel and dredger, during crossing, Westerschelde, 11 April 2022

At the end of the afternoon, in the roads of Vlissingen, a collision between the Maltese-flagged cargo vessel Celestine and the Dutch dredger Ruyter took place between buoy W8 and W10. Both vessels suffered damage. There were no injuries. The Ruyter was travelling from Breskens and was crossing to the North; the Celestine was travelling from the Sloehaven in a westerly direction. The Ruyter collided with the bow of the Celestine, to one side. A traffic agreement had been reached in advance. Both vessels were sailing without pilot guidance. The Celestine suffered a tear approximately 40 cm long. There was no spillage. The Ruyter suffered more severe damage to the bow section. Following the collision, the Ruyter returned to Breskens and the Celestine sailed on to the Wielinge-Noord anchorage, to assess the damage.

**Classification:** Serious

## Collision following engine failure, Albert Canal, Belgium, 30 May 2022

At around 20.30 hours, the Dutch cargo vessel Amadeus Silver collided with a moored inland navigation vessel on the Albert Canal near Ham (Belgium), following engine failure. As a result of the engine failure, the Amadeus Silver had become rudderless. The damage to the Amadeus Silver consisted of two holes in the bow, above the waterline. The engine failure was caused by a faulty regulator in the main engine.

**Classification:** Serious

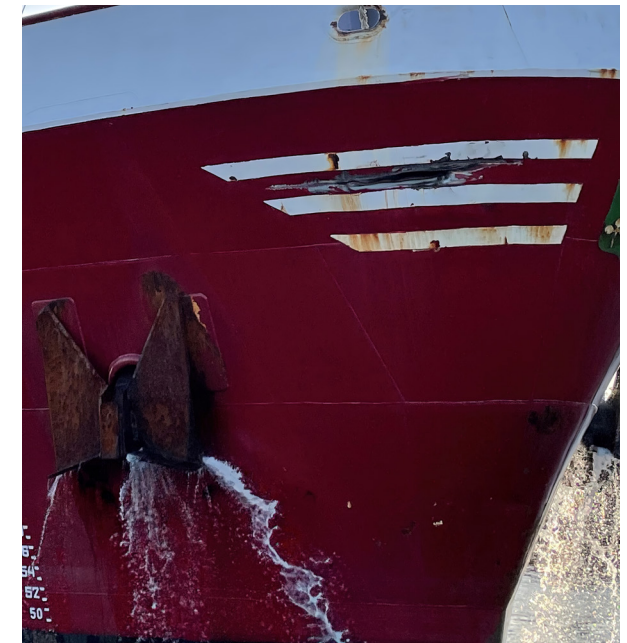


Damage to Amadeus Silver. (Source: De Bock Maritiem)

## Collision with mooring post, Schiedam, 19 June 2022

During manoeuvres to bring the Dutch seagoing vessel Priscilla alongside, at a critical point in the manoeuvring process, the rudder was unexpectedly found to be turned to 'full starboard' instead of 'full port'. As a consequence, the bow of the vessel collided forcibly with a mooring post. A tear approximately 1.40 metres long was made in the starboard side, just below the forecastle deck, well above the waterline. The damage first had to be repaired before the vessel was able to set sail once again.

**Classification:** Serious



Damage to the bow of the Priscilla. (Source: Port of Rotterdam)



### Inland shipping: Collision motor tanker with bridge, Starkenborghkanaal, 3 January 2022

At around 19.30 hours, the motor tanker Curaçao, with a cargo of petroleum distillates (UN1268) collided with the Dorkwerd bridge. The wheelhouse of the vessel came into contact with the bridge and the roof of the wheelhouse ended up in the water. No water was taken on and there were no spillages and no injuries.

**Classification:** Serious

### Inland shipping: Collision between two inland navigation vessels, Westerschelde, 12 March 2022

A collision took place between two inland navigation vessels, the Reimerswaal and the Eiltank 26, on the Westerschelde, in the entrance to the port of Hansweert. The unladen double-walled tanker Reimerswaal ran aground and became stuck on the eastern end of port entrance. The vessel suffered a minor tear which had to be repaired at the shipyard. The laden double-walled tanker Eiltank 26 suffered no damage and was able to moor near the locks at Hansweert, following the collision.

**Classification:** Serious

### Inland shipping: Collision push combination with Moerdijkbrug, Hollands Diep, 30 April 2022

In the night of 30 April, the German-flagged push boat Hercules II collided with the central pillar of the Moerdijkbrug (a road bridge). The vessel was transporting four push barges, each loaded with 2400 tonnes of ore. There were no injuries.

One push barge was punctured. The fire brigade was able to keep the barge afloat with pumps. The other three barges floated free. The push barges were secured and the leak plugged. The vessel was taken to a shipyard. The channel was closed to shipping until around 02.40 hours. The bridge did not have to be closed to road traffic. However, a speed limit was imposed on the traffic crossing the bridge.



Push boat collided with the central pillar. (Source: Rijkswaterstaat, @VLW\_Rolph)

**Classification:** Serious

### Inland shipping: Motorboat run over, Beneden Merwede, 22 May 2022

At around 14.40 hours on Sunday afternoon, a small motorboat with two occupants was run over by an inland navigation vessel on the Beneden Merwede. Both occupants were forced into the water, but were quickly rescued by another vessel. One of the occupants, a woman, was taken to hospital for further examination. The skipper of the inland navigation vessel did not notice the collision, and was only informed of the occurrence later.

**Classification:** Serious

### Inland shipping: Collision with bridge, Rotterdam, 17 June 2022

In the afternoon of 17 June 2022, the Reinod 1 collided with the Beukelsbrug bridge in Rotterdam, losing its wheelhouse. The vessel was travelling to a location at the Rijnmond Waste Incineration Plant (AVR). The skipper had to be examined in the ambulance. The fire brigade and police deployed with heavy equipment. A passing barge briefly took the vessel alongside, since it had become rudderless.



Reinod without wheelhouse. (Source: ANP / Video Duivestein VOF inzake MediaTV)

**Classification:** Serious

## Incidents that have not been extensively investigated

### Inland shipping: Head-on collision, Nieuwe Merwede, 23 June 2022

Two inland navigation vessels were involved in a head-on collision. The vessel Sincerity was laden with the hazardous substance Aniline (2 blue barrels) and suffered a puncture in the head, above the waterline. The vessel sailed under its own power to Werkendam. The vessel Inversa was laden with tree trunks. The vessel suffered a tear in the bow and started to take on water.

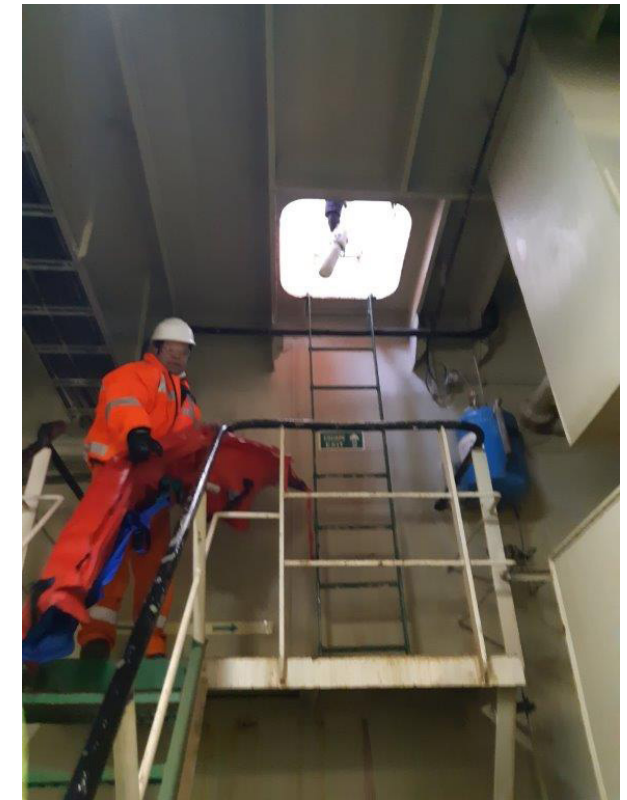
Emergency services and Rijkswaterstaat were in attendance. Another vessel drew up alongside the Inversa, and a fire brigade vessel was deployed. The Inversa was kept afloat using pumps. Connected to another vessel, the Inversa was subsequently taken to Moerdijk. There were no injuries and no spillage.

**Classification:** Serious

### Occupational accidents

#### Injured following fall from twelve metres, Rotterdam, 12 February 2022

A crew member of the Russian-flagged crane vessel Oceanic 5000 fell almost twelve metres into the thruster room while the vessel was moored in the port of Rotterdam. The occurrence took place when two crew members were descending into the thruster room to carry out maintenance work on a broken electric motor. The victim was the first to make the descent, during which he fell. He initially fell three metres onto a railing and then fell a further nine metres into a stairwell. He himself started climbing back up the stairs before his colleagues instructed him to lie down. The ship's doctor stabilized him. He was subsequently taken to hospital by ambulance, assisted by the fire brigade.



Entry thrusterroom. (Source: ILT)

**Classification:** Serious injury

### Injury to fingers during mooring, Dordrecht, 13 February 2022

While mooring at their normal mooring point in Dordrecht, a crew member of the Dutch tugboat En Avant 20 suffered an injury to his fingers. After the mooring was completed, the crew member independently made his way up the jetty, and was taken to hospital by ambulance, where he immediately underwent an operation. The vessel had arrived alongside the mooring pontoon. One crew member stepped onto the pontoon via the opening in the railing, where he picked up a mooring line and passed it to a crew member on deck. He took hold of the mooring line on the inside, and tied it around a bollard, trapping his hand. Because the mooring line slackened briefly, he was able to withdraw his trapped hand. On the monitor, the captain saw nothing unusual and ensured that the vessel was tightly moored, so that the front mooring line could be made fast. Only when the injured crew member made his way to the bridge did the captain see that the crew member was injured. The regular mooring of the En Avant 20 is a mooring pontoon in Mallegat-Zuid in Dordrecht. From his manoeuvring position, the captain had no direct view of the crew members standing on deck in the bow and stern, during mooring. Because of its lower position, he also had no permanent view of the pontoon. During mooring he uses cameras, to determine when the stern line is tied around the ship's bollard, also so that he is aware of when the ship can be drawn tight to the pontoon, to tie off the bow line. The captain has carried out this operation many times, and the procedure was also well known to the victim.

**Classification:** Serious injury

### Deckhand suffers burns while working on boiler, Rotterdam, 15 February 2022

While working on a boiler on board the Libyan tanker Al Agaila, a crew member suffered serious burns. The valve of the boiler suffered a leak, causing steam to escape over the entire body of the victim. Initially, the crew member was treated on board with burn ointment. When his condition worsened later that day, he was taken to hospital for further care.

**Classification:** Serious injury

### Crew members injured while disconnecting hose, Maasvlakte, Rotterdam, 22 February 2022

During routine maintenance work on the hydraulic pipe system on the Maltese-flagged crane vessel Pioneering Spirit on the Maasvlakte, three crew members suffered injuries. The lead-up to the occurrence was the fact that while disconnecting the hose, a pressure valve was still closed. As a consequence, not all pressure had been released from the system, before disconnecting the hose. One victim was taken to hospital with serious injuries. The two others suffered minor injuries.

**Classification:** Serious injury

### Hand trapped during lifting work, Dordrecht, 17 March 2022

The Dutch workboat Multirasalvor 3 was moored alongside the crane barge Medusa 2 at a shipyard in Dordrecht. When lifting and transferring equipment from the deck of the Multirasalvor 3 to the deck of the Medusa 2, the mate's left hand became trapped. The crane of the Medusa 2 was used for the lifting procedure. In hospital, it became clear that the mate had broken two metacarpals.

**Classification:** Serious injury

### Deckhand injured following fall from hatch into hold, Harlingen, 19 March 2022

At around 15.50 hours, a deckhand on board the Dutch vessel Lady Anneke fell into the hold, from a hatch. The victim was a deckhand who was carrying out maintenance work on the hatch. An ambulance quickly arrived at the scene. The conscious victim was taken to hospital in Leeuwarden. The deckhand suffered a broken arm, broken leg and a number of other injuries.

**Classification:** Serious injury

## Incidents that have not been extensively investigated

### Injury to face from falling material, Belgian Coast, North Sea, 4 April 2022

While fishing in high seas on the Belgian section of the North Sea, a crew member was hit in the head by falling material, resulting in a fractured eye socket. The skipper informed the coastguard. Due to the heavy seas, it was not possible to deploy a lifeboat, and the rescue helicopter was unavailable. The skipper decided to sail to Ostend for the evacuation of the crew member. The crew member was conscious, but was suffering from a swollen eye socket and reduced vision.

**Classification:** Serious injury

### Crew member loses balance and suffers injuries, Boulogne Sur Mer, France, 9 April 2022

In the night of Friday to Saturday, an accident took place on the UK112 Wilhelmina, during cleaning work. While cleaning the windows of the wheelhouse, a crew member lost his balance, and fell backwards onto a railing. First aid was provided but due to breathing problems, the emergency services were immediately called in. Ambulance personnel took the crew member to hospital, where he was admitted for further treatment.

**Classification:** Serious injury

### Hand injury following entrapment beneath steel beam, North Sea, 9 April 2022

On board the Dutch Construction Support Vessel Acta Orion, the ship's second mate suffered an injury to his hand, when it became trapped under a steel beam. The crew was in the process of moving a snack dispensing machine from outside on deck to the indoor accommodation area. The snack dispensing machine was transported laying down, on a wooden pallet. As the snack dispensing machine was taken inside, it had to be lifted slightly over a hatch before it reached the accommodation entrance. To lift the machine, the crew made use of a steel beam with a chain hoist. The steel beam was placed loose on the trusses above the accommodation entrance. While pushing the snack dispensing machine inside through the entrance door to the accommodation area, the steel beam with the chain hoist slipped and ended up on the hand of the second mate, thereby amputating two fingertips. The injured second mate was medevacked and taken to hospital. He underwent an operation on his hand. Following recovery, the second mate returned to work on board the Acta Orion.

**Classification:** Serious injury



Beam with chain hoist. (Source: Acta Marine)

### Medical evacuation, North Sea west of Denmark, 18 April 2022

A medical evacuation took place on the North Sea, on Monday evening 18 April 2022, on the Dutch fishing vessel ARM7 Jan Senior. A bar on the beam trawl had to be replaced because part of it had become bent. During the work, the bar made an unexpected movement, and a crew member became trapped between the bar and the ship's bulwark. The bar hit the crew member on the upper leg. By adjusting the angle of the vessel by lifting the other fishing gear higher, the crew member was released. The crew member was transported by helicopter to hospital in Aalborg.

**Classification:** Serious injury

### Crew member hit by sling with hook, North Sea, 28 April 2022

The Coastguard centre was contacted by the Dutch fishing vessel UK-150 Polar, for radio medical advice. The crew was advised to take an injured crew member ashore, in Vlissingen, and then take him to the hospital A&E department. While preparing to fish, two lines on board had to be passed from the port winch to the starboard winch. A fixed sling with a hook was used to make the transfer. This fixed sling became wrapped around the line, which was pulled taut. The crew first had to untangle the line and sling. This probably took place too quickly, and the fixed sling with hook became wrapped around the starboard rope winch and broke as a result of the high forces applied. The people on deck ran away as soon as the line began to break, but nonetheless, the crew member in question was hit in the leg. He suffered such serious injuries that he had to be taken to hospital.

**Classification:** Serious injury

### Crew member suffers severe injuries, Atlantic Ocean, 5 May 2022

The Dutch bulk carrier Stornes was sailing off the coast of Portugal in the Atlantic Ocean. The vessel was en route from Norway to Malta. A series of maintenance tasks were being carried out at sea. During this work, at around 11.45 hours, an electrician became trapped between a vertically opening door and the adjacent floor section. The electrician suffered serious injuries, and had to be transported by helicopter to hospital in Lisbon. The electrician and a colleague were adjusting the end switches of starboard door number 5. Earlier, during testing, problems had arisen which they were attempting to rectify. The doors are operated by hydraulic cylinders controlled via a PLC programme. To disconnect door number 5 from the hydraulic system, the necessary ball valve had been closed. Despite the closure of the valve, the door was still able to open and close. Following the incident, the system was subjected to further testing, and still functioned in the same way. The vertical door was activated by the work on the end switch, which caused the door to open despite the closed ball valve.

**Classification:** Serious injury

### Crew member hit by ammonia, Vlissingen-Oost, 17 May 2022

An accident occurred on board the Bahamian-flagged seagoing vessel Hood Island. The freezer and refrigeration engineer on board was working on the valves and shut-off valves to the refrigeration and freezing system in the holds. When one valve was opened, a quantity of ammonia was released, under high pressure, despite the pressure gauges indicating that the system had been depressurized. The engineer suffered burns to his arms, face and chest. He was transferred to hospital, where he was treated in a quarantine area due to the release of hazardous vapours.

**Classification:** Serious injury

### Injured in lifting accident, Gulf of St. Lawrence, Canada, 19 May 2022

On board the Dutch passenger ship Zaandam, a crew member went to collect a tray of fruit from the walk-in fridge, to be served in the restaurant. In doing so, he sprained his shoulder. It was discovered that before coming on board he had suffered an injury to the same shoulder. He was unable to work for eight days, and was therefore disembarked on medical grounds.

**Classification:** Serious injury



# Incidents that have not been extensively investigated

## Injured by bucket chain on bucket dredger, Grenaa, Denmark, 20 May 2022

On board the Dutch-flagged bucket dredger Frigg R., a deckhand broke his lower leg in several places, while removing a bucket from the bucket dredge. During removal, the chain to which the bucket was attached recoiled slightly, hitting the deckhand in the lower leg. The deckhand was transported to hospital. The occurrence took place in the port of Grenaa, Denmark.

**Classification:** Serious injury

## Broken finger, Piraeus, Greece, 13 June 2022

An experienced crew member on board the Dutch passenger vessel Oosterdam was carrying out routine maintenance on deck equipment for fastening the lifeboats, whereby the safety harness was attached. While carrying out this work, he attempted to remove the buckle by hitting a metal rod with a hammer. As he hit the metal rod, the hammer slipped and hit his finger. He broke his finger as a result.

**Classification:** Serious injury

## Broken ankle following fall, Scheveningen, 14 June 2022

One evening, after working hours, a crew member was giving a guided tour to crew members from another vessel on board the Dutch fishing vessel WIRON 1, which was moored in Scheveningen. While descending a vertical steel ladder into the hold, he slipped and fell from the ladder, breaking his ankle. The accident occurred because the crew member was not wearing safety shoes and the steel ladder into the refrigerated hold was slightly frozen.

**Classification:** Serious injury

## Hit by steam, North Sea, 18 June 2022

The third engineer on board the Dutch passenger ship Rotterdam opened a valve to the air conditioning reheating system. The steam pressure in the system had risen to 3 bar (maximum working pressure 5 bar), at which point an expansion piece in the pipe system failed. The third engineer was hit by steam and suffered first and second-degree burns to his left arm and upper body. He was disembarked and taken to hospital.

**Classification:** Serious injury

## Inland shipping: Fatality and injuries due to slipping of the boom, Terschelling, 27 May 2022

In the morning of 27 May, the Dutch historical sailing ship Wilhelmina (charter vessel) left the port of Terschelling en route for Ameland, with 19 passengers and 2 crew members on board. Approximately 2 miles out of port, the boom slipped and fell, hitting two passengers. One passenger was killed and the other was transported to hospital, with serious injuries.

**Classification:** Very serious



## Fire

### Inland shipping: Fire in the engine room, Biesbosch, 14 June 2022

In the afternoon of 14 June 2022, the inland shipping passenger vessel Zilvermeeuw 2 carrying 225 passengers on board caught fire in the engine room when traveling through the Biesbosch. The fire was restricted to the engine room where a generator and insulation material had caught fire. The mainly elderly passengers were evacuated, without further problems. Support was provided by the fire brigade, Rijkswaterstaat, the KNRM lifeboat service and the Zilvermeeuw 5, among others. The fire brigade put out the fire.

**Classification:** Serious

## Groundings

### Grounding, North Sea, 28 January 2022

During the approach to Stellendam, beam trawler SL42 Jan Cornelis 3 ran aground. The vessel was pulled free with the assistance of another fishing vessel, and was able to continue its journey independently. No technical problems were identified.



Pulling SL42. (Source: C. Hameeteman)

**Classification:** Serious

### Run aground, Kiel Canal, Germany, 1 February 2022

Travelling from Brunsbüttel to Kiel, the vessel the Rijnborg ran aground on the starboard bank due to an excessive course correction. Two ballast water tanks were emptied for inspection, and the bow thruster hold was checked for leaks. No leaks were found. The vessel was refloated under its own power, and sailed further to Oldenburg, midway along the Kiel Canal. From here the vessel received tugboat assistance for the remainder of the journey to Kiel.

**Classification:** Serious

### Stranded on the dyke, North Sea Canal, 17 February 2022

On 17 February 2022, the Viking Sea left the Noordersluis lock in IJmuiden. After the two tugboats that had offered assistance during the lock passage had disengaged, the Viking Sea ran aground on the southern bank of the North Sea Canal at 14.44 hours local time. The cause was the failure of the ship's propulsion system, allowing the wind (storm Dudley) get hold of the vessel. At around 15.00 hours, with tugboat assistance and under its own power, the vessel was refloated and continued its journey to Westhaven. The vessel suffered minimal damage.

**Classification:** Serious



Viking Sea run aground. (Source: Ko van Leeuwen)

### Run aground, Thyborøn Canal, Denmark, 25 May 2022

The Dutch fishing vessel ARM18 Joris Senior ran aground at 10.22 hours local time in the Danish Thyborøn Canal. The vessel needed tugboat assistance to be refloated. Following the grounding, the Danish Maritime Authority retained the vessel for inspection. Following inspection, the vessel was able to continue her journey, without damage, and returned to the fishing grounds.

**Classification:** Serious

# Incidents that have not been extensively investigated

## Grounding due to steering error, Baltic Sea, Germany, 30 May 2022

The Dutch barkentine Atlantis was travelling from Lauterbach to Sassnitz (both in Germany). In the narrow navigation channel that heads east from Lauterbach, there is a sharp turn to the southeast, with a shallow area that extends into the channel. The crew was too late in carrying out a rudder adjustment, causing the sailing ship to run aground sideways when making the turn. This made it impossible to manoeuvre the vessel backwards into deeper water, despite repeated attempts by the crew. The Atlantis ran aground near the German island of Vilm, to the south of Rügen, in the Baltic Sea. There were twelve people on board. Two German lifeboats refloated the Atlantis. When the vessel had been refloated, the crew checked all bilges for damage and water leakage, and found no evidence of any damage.

**Classification:** Serious

## Loss of rudder control, into the bank, Ghent-Terneuzen Canal, 19 June 2022

The Antigua Barbuda-flagged freighter Onego Traveller passed a large seagoing vessel in the Ghent-Terneuzen Canal. Possibly as a result of the suction caused by the passage, the Onego Traveller lost rudder control. The vessel sailed into the bank, blocking the canal for seagoing vessels. The vessel had run so firmly aground that she required tugboat assistance to be refloated.

**Classification:** Serious

## Inland shipping: Run aground on the dyke, Markermeer, 20 February 2022

On 20 February 2022, the twin-masted clipper Succes experienced difficulties and ran aground on the dyke near Hoorn. The storm-force wind meant the anchor was no longer able to hold the vessel, and due to engine failure she drifted onto the lee shore. Lifeboats from Hoorn, Enkhuizen and Warder offered assistance. The sixteen passengers were evacuated; the captain and a deckhand remained on board. There were no injuries. The vessel was refloated from the rocks with tugboat assistance, and towed into port.

**Classification:** Serious



Clipper Succes on the rocks. (Source: Reddingsbrigade Notwin Hoorn)

## Man overboard (MOB)

### Inland shipping: Man overboard and trapped, Volkeraksluis lock, 10 March 2022

A deckhand on the inland navigation vessel Rijntrans lost his life in a fatal accident in the morning of Thursday 10 March 2022. While installing fenders ahead of mooring in the Volkeraksluis lock, he fell between the ship and the shore, where he was crushed to death.

**Classification:** Very Serious

## Technical failures

### Rudderless after engine failure, Atlantic Ocean, 11 December 2021

During the night of 11 December 2021, the Suomigracht experienced problems with the main engine, while travelling on the Atlantic Ocean. The lubricating oil alarm was sounded due to low pressure, followed by the alarm for the oil vapour detector. The main engine shut down automatically. The crew carried out a series of checks to identify the cause. The crew eventually discovered that the bearing in the lubricating oil pump was broken. The bearing was replaced and the main engine was restarted. After a few minutes, the alarm on the oil vapour detector was once again activated and the main engine automatically shut down again. After a series of further checks, the crew restarted the main engine, but recognized that the turbocharger was not operating. The turbocharger had become stuck. The vessel started to drift around 500 NM east of the Bermudas. There were no risks to navigation for surrounding vessels and the weather forecast was favourable. The vessel was towed into Bermuda with tugboat assistance for further examination and repairs.

**Classification:** Serious

### Tugboat assistance following main engine problems, Rotterdam Anchorage, 5 January 2022

The tanker Amanda suffered main engine problems. With a dragging anchor, she was located just south of anchorage 4 east, when she requested emergency towing assistance. The wind was northwesterly 30kts (8Bft), with wave heights of 3.0-3.5 metres and visibility in excess of 10 km. The vessel was in ballast condition. The position with dragging anchor remained relatively stable. Via the ship's agent, tugboat assistance was organized, and the vessel was towed into the port of Rotterdam.

**Classification:** Serious

### Engine problems, Gulf of Bothnia, 8 January 2022

While travelling in the Gulf of Bothnia, the Dutch cargo vessel Schippersgracht experienced engine problems northeast of Harnosand (Sweden). An inspection revealed that the crankshaft bearing in cylinder 2 had failed. The damage could not be repaired on board, and tugboat assistance was requested by the owner. The vessel was towed into the port of Husum in Sweden, where repairs were carried out.

**Classification:** Serious

### Engine failure due to broken connection, Bay of Biscay, 9 January 2022

On 9 January 2022, the Dutch chemical tanker Star Curaçao was travelling from Rotterdam to Bayonne (France) with a cargo of palm oil. During the course of the morning, 24 miles off the coast in the Bay of Biscay, the vessel suffered engine problems. The problems could not be resolved at sea. Tugboat assistance was requested via the French authorities. The Star Curaçao was towed into Brest by a French SAR vessel, where she arrived during the course of the evening. The cause was a broken connection on the air pipe to the main engine regulator.

**Classification:** Serious

### Loss of control due to problems with steering gear, North Sea, 29 January 2022

One and a half miles from IJmuiden, the Vanuatu-flagged guard vessel Walvis suffered a loss of control due to problems with the steering gear. A tugboat towed the ship into the port of IJmuiden for repairs. The Walvis set sail the next morning, without further problems.

**Classification:** Serious

### Engine problems and dragging anchor, North Sea, 18 February 2022

The tanker Wisby Teak was anchored in the North Sea, off Rotterdam. Increasing wind speeds (storm Eunice) caused the anchor to drag, at which point the crew started the main engine to maintain the vessel's position. However, a faulty turbocharger caused the main engine to shut down. Because of the dragging anchor and since the engine could no longer be used, the vessel was towed into the port of Rotterdam by a tugboat.

**Classification:** Serious

# Incidents that have not been extensively investigated

## Broken winch and lost anchor, North Sea, 18 February 2022

During a storm, the vessel Dintelborg lost her starboard anchor, in combination with a burned-out electric motor, on the port winch. As a result, the motor could no longer be used. Investigation revealed that the electric motor had broken due to heavy storm sea conditions. This meant that although the vessel could in theory still use the port anchor, due to the broken winch, actual use was no longer possible. To prevent the blockage of the Ghent-Terneuzen Canal in an emergency situation, a tugboat was dispatched to accompany the Dintelborg to her mooring in the Axelse Vlakte.

**Classification:** *Serious*

## Loss of control due to faulty main engine, followed by sickness due to inhalation of exhaust gases, Rotterdam, 19 March 2022

The gasket on the exhaust from cylinder 4 on the main engine failed at around 22.20 hours on board the Hong Kong-flagged vessel Nightingale Island. As a result, the engine room filled with exhaust gases. The vessel had just set sail, and was exiting between the piers at Hook of Holland. As a result of the damage, the vessel became rudderless and had to be towed back into port by tugboats. A loud bang was heard during the incident. Two engineers entered the engine room to investigate. One of the two ship's engineers inhaled exhaust gases. Once on deck, in the fresh air, he became ill and was evacuated from the ship by helicopter and taken to a hospital. The injuries suffered by the engineer were not serious. He was quickly able to return to the vessel.

**Classification:** *Serious*

## Collision following propulsion system defect, Terneuzen, 6 April 2022

The Dutch cargo vessel Bothniaborg was travelling from Sheerness in England to Terneuzen. Once in the Vlissingen roads, the river pilot came on board at 16.30 hours. When entering the Westsluis lock in Terneuzen, the captain, first mate and pilot were present on the bridge.

There were three other vessels in the lock at the time, including the Norwegian cargo vessel Embla. As the vessel entered the lock very slowly, at around 17.50 hours, with the front mooring line already ashore, the propulsion unexpectedly and unintentionally switched to 100% full ahead in around five seconds. At the time, the Embla was moored approximately 30 metres ahead of the Bothniaborg. In that distance, the Bothniaborg achieved a speed of around five knots, the front mooring line broke and the Bothniaborg collided with the Embla on the starboard stern section. The Embla in turn shot forwards and hit the lock gate. Both the Embla and the lock gate suffered serious damage.

**Classification:** *Serious*

## Disruption and damage to main engine, English Channel, 26 April 2022

While travelling in the English Channel, to the south of Portsmouth, the Dutch cargo vessel Eems Spirit suffered engine problems with its main engine. After feeling severe vibration and seeing smoke escape from the engine room, the main engine was immediately shut down. It later emerged that the main engine had suffered serious damage to cylinder 1. The sump cover had been blown off, and both the cylinder lining and the piston rod were broken. The vessel was subsequently towed to the port of Rotterdam by a tugboat, for further investigation and repairs.

**Classification:** *Serious*

### Loss of propulsion following breakdown, Mediterranean Sea, 3 May 2022

During a passage of the Mediterranean Sea, the Dutch cargo vessel Eems Dover suffered problems with her starboard Azimuth thruster. The vessel was travelling from Turkey to Spain, with 800 tonnes of cargo. When the breakdown occurred, the thruster shut down automatically. The vessel was located 50 NM above Tunisia. The defect could not be repaired at sea, and the vessel was towed to Malta by a tugboat for repairs. The inspection in Malta revealed that the incoming axle on the top gearbox had broken. The front bearing cover of the main engine had come loose and the attachment bolts for the air cooler on the electrical motor were also loose or broken. All repairs were carried out on site, and the vessel was able to continue its journey to the Netherlands.

**Classification:** Serious

### Engine failure, North Sea, 30 May 2022

The Cypriot-flagged cargo vessel AAL Gladstone experienced a blackout during the outward journey from Rotterdam, while passing Het Scheur, slightly below Maassluis. After setting anchor, tugboat assistance proved necessary.

**Classification:** Serious

### Discharges and spillages

#### Tweendeck breaks free and punches hole in fuel tank, Newfoundland, Canada, 9 February 2022

While sailing south of Newfoundland, the bilge alarm in hold two was activated on the Dutch cargo vessel Alaskaborg. The suspected cause was melted snow or water seepage. Due to the violent motions of the vessel, the crew was unable to enter the hold to carry out an inspection, but instead started the pump, assuming that the cause was water in the hold. When it became clear that the fuel level (heavy fuel oil) in the bunker tank was falling, the captain shut down the bilge pump.

The crew then inspected the hold and discovered a 4x2 cm hole in a fuel tank, 2.14 metres above the top of the tank. The hole in the fuel tank was caused when a secured tweendeck broke free, fell from the lashings and hit the side of the fuel tank. As a result, around 50 m<sup>3</sup> of fuel had leaked into the hold. At the time, it was suspected that some of this fuel had been pumped overboard when the bilge alarm had sounded. The bilge pump was inspected and indeed contained traces of heavy fuel oil. This fuel oil had partially been 'absorbed' by the cargo in the hold. The initial estimate of the volume of fuel oil pumped overboard was not more than 30 m<sup>3</sup>. However, further investigation revealed that almost all the fuel oil had been absorbed into the cargo, and that only a very small quantity had probably been pumped overboard. The overboard pipe from the bilge system was immediately sealed, to prevent any further risk of pollution. The hole in the bunker tank was plugged with wood, and the remaining fuel was transferred to another bunker tank.

The Canadian authorities carried out an aerial survey of the pollution on land. No damage was observed along the coastline.

**Classification:** Serious



Contaminated cargo Alaskaborg. (Source: Wagenborg)



# 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. 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](http://www.safetyboard.nl).



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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.

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### Photos

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

Source photos frontpage:

1. GinoPress
2. Port of Rotterdam
3. C. Hameeteman