



DUTCH  
SAFETY BOARD

# Collision between a guard vessel and fishing vessel on the North Sea



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*Source photo cover: Rederij Groen BV, Scheveningen*

## **Dutch Safety Board**

The aim in the Netherlands is to limit the risk of accidents and incidents as much as possible. If accidents or near accidents nevertheless occur, a thorough investigation into the causes, irrespective of who are to blame, may help to prevent similar problems from occurring in the future. It is important to ensure that the investigation is carried out independently from the parties involved. This is why the Dutch Safety Board itself selects the issues it wishes to investigate, mindful of citizens' position of independence with respect to authorities and businesses. In some cases the Dutch Safety Board is required by law to conduct an investigation.

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NB: 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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On 7 October 2013, at 01:14,<sup>1</sup> the fishing vessel *Vertrouwen* (TX68) collided with the guard ship *Maria* at about 21 nautical miles<sup>2</sup> south-west of Den Helder (52° 51.2'N, 004° 10.5'E). The *Maria* was heading north in its 'guard zone' at low speed (about 1 knot<sup>3</sup>). The *Vertrouwen* (TX68) was underway from Den Helder to its fishing area, and was heading west at a speed of 11 knots (about 21 km per hour).

The *Maria* was seriously damaged by the collision, and water flooded into the vessel through an opening in its hull on the starboard side. This caused the *Maria* to sink. Two of its crew jumped overboard and were rescued by the crew of the *Vertrouwen* (TX68). The other three crewmen were onboard when the vessel sank, and died. The victims were recovered later.

The *Vertrouwen* (TX68) had suffered slight damage to its bow and was ultimately able to sail under its own steam back to its home port, Oudeschild.

The incident took place on the North Sea. Both vessels sailed under the Dutch flag. This is a very serious accident as specified in the Casualty Investigation Code of the International Maritime Organisation (IMO) and EU Directive 2009/18/EC. Pursuant to the above, as the flag state the Netherlands has the duty to arrange for a safety investigation. This duty to investigate is also laid down in the *Besluit Onderzoeksraad voor Veiligheid* ('Dutch Safety Board Decree').

This investigation focuses on the cause of the collision that resulted in the sinking of the *Maria*. The *Maria* was salvaged on 29 September 2014.

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1 Local (Dutch) time = UTC + 2 hours

2 Nautical mile = 1852 metres

3 Knot = 1 nautical mile per hour

# 1 FACTS AND BACKGROUND INFORMATION

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## 1.1 Prior to the collision

The Ms. Maria left Stellendam on Thursday, 3 October 2013. The ship had previously lain in dry dock for an annual maintenance period. In the morning of Saturday 5 October, the Maria arrived at its destination near platform Q1-D close to the Traffic Separation Scheme (TSS) Off Texel. It then relieved Ms. Fortuna as the guard vessel that was guarding the position of a pipeline under construction on the seabed. The pipeline was not yet shown on the nautical charts and the vessel's duty was to ensure that the pipeline was not damaged by vessels wishing to anchor or fish in the area.

The Maria was operating a 6-hour watch system. Pursuant to this system, the crew on the bridge were on watch for six hours and then relieved from watch duties for six hours (6 hours on, 6 hours off). The first officer took the watch from 00:00 to 06:00 and from 12:00 to 18:00. The master took the watch on during the other hours, from 06:00 to 12:00 and from 18:00 to 24:00. During the night hours the other crewmen were in their sleeping accommodation.

During its guard duties the Maria remained in its zone by initially sailing against the current and then allowing itself to be going with the current.

The six-man crew of the Vertrouwen (TX68) boarded the vessel in the port of Oudeschild on the island of Texel at about 22:00 on the Sunday evening. The vessel sailed at about 22:30. The master was on the bridge for the first section of the journey. The watch was handed over to the next watchman near the Schulpengat buoy S2. The heading set by the master from a position between the Schulpengat buoys S2 and S4 was 260°, and the speed was about 11 knots. The watches on board the Vertrouwen (TX68) were divided by distance. The distance to the fishing grounds was about 45 nautical miles. This distance was divided so that the watchmen were each on watch for about 11.5 nautical miles (about 1 hour sailing).

After more than two hours sailing, around 01:00, the watch was once again to be handed over to the next watchman. The watchman then left the bridge to wake the relevant crewman. At the time the watch was handed over, the position of the Vertrouwen (TX68) was south of the Halfweg drilling platform. The area was known, as the Vertrouwen (TX68) and its crew sailed weekly in this area. Two fishingvessels were visible on board Vertrouwen (TX68) and heading in the same direction.



Figure 1: Chart of the area between Den Helder, Schulpengat and TSS Off Texel with the courses sailed.  
 (Source: Netherlands Ministry of Defence WGS 84 INT 1418 1631 en Dutch Safety Board)

## 1.2 Time of the collision

A blow was felt on the Maria at about 01:15, which subsequently transpired to be the collision. No alarm was given. The first officer, who was on watch at the time, left the bridge and met a crewman. He asked him to call the master. The master then immediately went to the bridge. The survival suits were collected. One of the crew who entered the mess observed that water was entering through an opening in the hull. A second observation some minutes later revealed that the water was at knee level. These observations made clear that the vessel was in an emergency situation, which was then notified to the master. The master then made an emergency call, a MAYDAY call, via the radio at about 01:24. The master then gave the order to make the life-saving equipment ready, which he subsequently rescinded when it transpired that the Vertrouwen (TX68) was still close by. It was simpler to jump overboard and then be rescued by the crew of the fishing vessel. The crew had by now donned their survival suits. The Maria then began to sink faster, and two crewmen decided to jump overboard. They were taken onboard the Vertrouwen (TX68). The master was on the bridge and the two other crewmen were probably in the galley when the vessel sank. The time between the collision and the sinking of the Maria was about 20 minutes.





Figure 2: Damage to the starboard side of the Maria's seen during the first salvage attempt. (Source: Berex B.V., Zevenbergen)

A number of interviews with the crew revealed on the *Vertrouwen* (TX68) the collision felt as though the vessel had hit a buoy. The engine was stopped and set to astern. The crew of the *Vertrouwen* (TX68), who were now awake, saw the struck vessel to their starboard side. The watchman did not at that time realize that there had been a collision. The watch was then taken over by the master who was woken up by the collision. The booms were raised higher to make more room for the struck vessel and the deck lighting was turned on. Via VHF channel 16 contact was made with the struck vessel, which transpired to be the *Maria*. The *Maria* stated in English that it had been hit, and later stated that the *Vertrouwen* (TX68) could continue its way. This suggestion was not followed up, as the *Maria* was rapidly making water. A Mayday call from the *Maria* was then heard on the radio. The Coastguard had responded to this by requesting assistance from units in the vicinity. Two persons were seen on board the *Maria* who were donning survival suits and life jackets. A few minutes later the bow of the *Maria* sank deeper in the water. The crew on the *Vertrouwen* (TX68) shouted to the crewmen onboard the *Maria* that they were in danger and had to jump overboard. Two of the *Maria*'s crewmen jumped overboard and were picked up by the *Vertrouwen* (TX68). The *Maria* sank shortly afterwards. The vessel sank bow first. The *Maria* remained floating for a few seconds and then went down vertically.



### 1.3 Ms. Maria and its crew



Figure 3: The guard vessel Maria. (Source: Rederij Groen BV, Scheveningen)

Name of vessel	Maria
Call sign	PFTN
IMO Number	5205435
Flag	The Netherlands
Port of registry	Scheveningen
Type of vessel	Guard vessel
Registered owner	Rederij Groen BV
Built	1948, refurbished in 1984
Length overall (LOA)	32.28 m
Beam overall (BOA)	6.80 m
Max. draught	3.15 m
Gross tonnage	154
Engines:	1 diesel engine, Caterpillar 3408C, 313 kW
Propulsion system	fixed screw
Maximum speed	9 knots
Minimum number of crew required	4
Number of crew on board	5
Electronic (communication) equipment	Automatic Identification System (AIS)

The Maria is owned by Rederij Groen, in Scheveningen, and was hired by the Wintershall Holding GmbH company. This company is engaged in the exploration, extraction and transport of oil and gas. The Maria was hired to protect a pipeline, pending work that would be carried out there within the next few weeks. No special requirements were stipulated, other than that the vessel was to comply with the law. The Maria was a former fishing vessel that was converted into a sports fishing vessel (whereby paying passengers could fish at sea) in 1983. The vessel was later deployed as a guard vessel. The crew was comprised of five persons: two of Filipino nationality, two of Cape Verdean nationality and one of Indonesian nationality. All were in the possession of the correct navigation certificates and the working language on board was English. At the time of the collision only the Filipino first officer was on the bridge. A statement has been made that the Maria called the vessel TX94, which was sailing in the separation zone, at 23:50 to request the vessel to keep a distance from a nearby platform.

#### **1.4 Shipping company**

The shipping company is established in Scheveningen and is specialized in 'guarding' sea areas and seismic operations. The company was incorporated in 1973, with three vessels under its management for sport fishing in the North Sea. In 1980, it shifted its focus to the offshore industry. During the past years the shipping company has acquired experience with marine seismic operations.

The company has implemented a safety management system (SMS / ISM). Although it is not mandatory, Rederij Groen has also implemented the SMS on its smaller vessels (<500 GT).

The company has implemented a continual improvement cycle for Health, Safety and the Environment (HS&E) issues. For guard duties a separate procedure is included in the SMS.

## 1.5 Ms. Vertrouwen TX 68.



Figure 4. The Vertrouwen fishing vessel (fishing registration number TX68). (Source: [www.civdh.nl](http://www.civdh.nl))

Name of vessel	Vertrouwen
Fishing registration number	TX68
Call sign	PIFT
IMO Number	9065455
Flag	The Netherlands
Port of registry	Texel
Type of vessel	Fishing vessel
Registered owner	VOF Vertrouwen
Built	1992
Length overall (LOA)	41.15 m
Beam	8.50 m
Max. draught	5.30 m
Gross tonnage	438
Engines:	1 diesel engine, Caterpillar 3606 DI-TA, 1468 kW
Propulsion system	fixed screw
Minimum number of crew required	6
Number of crew on board	6
Electronic (communication) equipment	Automatic Identification System (AIS)

The private limited liability company Vertrouwen TX 68 B.V., owner of the vessel Vertrouwen, is active in the sea and coastal fishing sector and is established in Oosterend in the municipality of Texel.

The Vertrouwen (TX68) fishing cutter is a beam trawler.<sup>4</sup> The crew consisted of six persons, all of Dutch nationality. The master on board during the accident was the joint owner of the ship.

## 1.6 Legislation and regulations

The International Regulations for Preventing Collisions at Sea (COLREGS) are the international marine traffic rules. These regulations include give-way rules for vessels. These summarize the responsibility of every vessel, owner, master and crew thereof to comply with these rules.<sup>5</sup> Compliance with this rule is achieved by maintaining a proper watch. *“Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.”* (COLREGS, Rule 5).

Maintaining a proper watch can be supported by means including the use of equipment such as radar, AIS and a watch alarm. Good seamanship is also required on both vessels to avoid a collision, irrespective of which vessel is the stand-on vessel.

The Zeevaartbemanningwet (‘Ships’ Manning Act’) and Besluit zeevisvaartbemanning (‘Manning of Sea Going Fishing Vessels Decree’) impose the obligation on all seamen who keep independent watch on the bridge or in the engine room to be in the possession of a certificate of competency (CoC). The type of CoC that is issued depends on the length and engine power of a vessel (Annex 3). The CoC is valid when the seafarer also possesses a valid medical certificate. The master, cook/seaman and deckhand<sup>6</sup> on board the Vertrouwen (TX68) did not possess a valid medical certificate, as a result of which their CoC was not valid. The watchman on watch at the time of the collision, possessed an expired medical certificate and, as a result, did not possess a valid CoC.

All crewmen on board the Maria possessed a valid CoC.

## 1.7 (Weather) conditions

Visibility was good, and was estimated to be at least 12 nautical miles. There was little wind, with a force of 2-3 Beaufort. The current was running south at between 0.5 and 1 knots.

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<sup>4</sup> The beam trawl is a dragged net that is kept open by a beam: the beam is a metal pipe at the front of the net.

<sup>5</sup> See Annex 2, which lists rules 2a, 2b, 8, 13, 15, 16, 17 and 34 of the COLREGS

<sup>6</sup> Within this context, a person who works on deck and is responsible for the provisioning.

## **1.8 Equipment**

The Vertrouwen's fire alarm went off in the week before the collision. As this alarm could not be reset, the relay was switched off subsequently. The interviews revealed that it was not realized that this switched off the watch alarm also. However, it was observed that the watch alarm was not working properly in the week before the collision. Malfunctions are usually noted in the fishing logbook. However, no entry of the 'malfunctioning' watch alarm was written down in the logbook. The crew assumed that this problem had been resolved in the weekend.

The radar was working properly, as visual observations from the vessel matched with the radar images. Statements have revealed that the Vertrouwen (TX68) was not observed on the Automatic Identification System (AIS) of vessels navigating in the vicinity of the Coastguard Centre in Den Helder.

Various vessels navigating in the vicinity observed the Maria visually, on the radar and on the AIS.

### 2.1 General

The incident analysis and conclusions are based on the fishbone (Ishikawa) and timeline method. The fishbone diagram identifies many possible causes for an effect, or 'barriers'. These failing barriers are analysed with respect to the immediate causes, circumstances and underlying factors of the failure in the organisation.

For the purposes of the analysis, data from a Voyage Data Recorder (VDR) from a vessel navigating in the vicinity were used to plot the positions of the Maria and Vertrouwen (TX68) shortly before, at the time of and shortly after the collision. Vessels transmit an AIS signal to other vessels which provides information about the position, speed and other information about a vessel. The analysis also made use of Global Positioning System (GPS) data from the electronic nautical chart system of the Vertrouwen (TX68), information from vessels in the area and the Netherlands Coastguard. No GPS data from the Maria was available as this was lost with the vessel. The GPS data of the Vertrouwen (TX68) begins at 22:11:40. The GPS data from the Vertrouwen (TX68) during the collision was available. The various statements from the crewmen were also used to reconstruct the facts.

According to the interviews, the collision occurred at about 01:14. AIS data of the Maria is available from 00:32:52. AIS data of the Vertrouwen (TX68) is available from 01:23:37. Also AIS data of the Maria at the time of the collision is available.



## 2.2 Situation prior to the collision

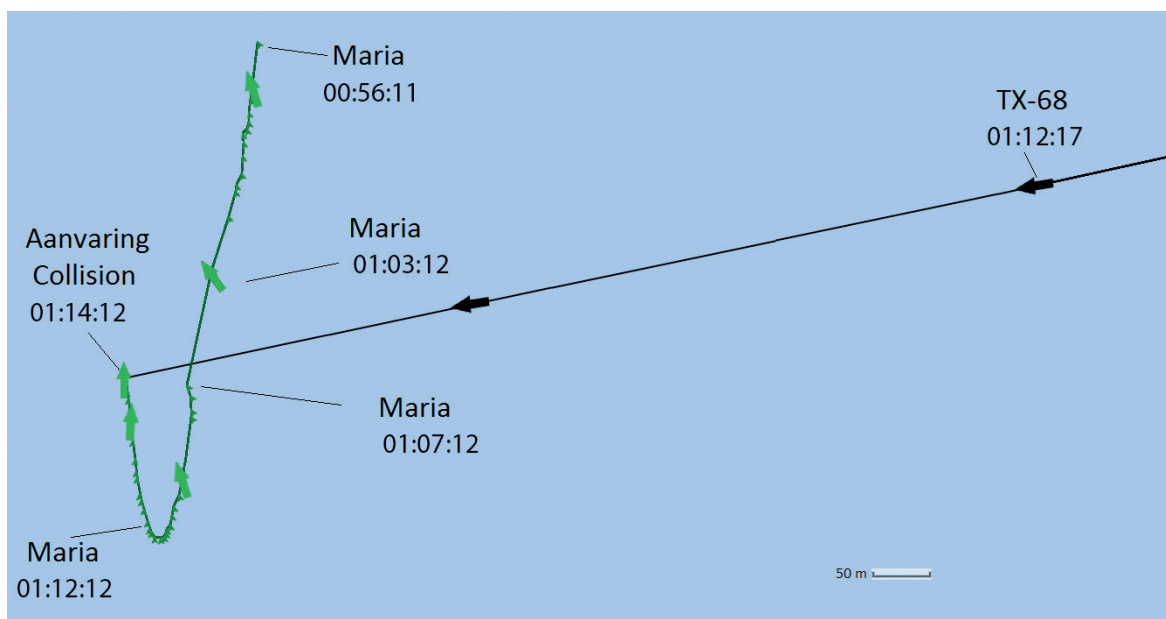


Figure 5: The tracks of the Vertrouwen (TX68) and Maria before and at the time of the collision. (Source: Dutch Safety Board)

From 23:47:59, the Vertrouwen (TX68) sailed a virtually straight course on a heading of about 260 degrees at a speed of about 10.9 knots. The investigation revealed that the Vertrouwen (TX68) maintained this heading until the time of the collision. A sudden change in the heading was observable between 01:12:17 and 01:18:18. This would appear to indicate that a collision occurred between these two times. The AIS data from the Vertrouwen (TX68) begin at 01:23:37 and do not contain any information prior to or at the time of the collision.

The analysis of the AIS data from the Maria reveal that between 00:32:52 and 01:11:01 the Maria was allowing itself to be carried sternwards by the current on a heading of about 185 degrees and a speed of 0.9 knots. This matches with the information about the current.

Between 01:03:12 and 01:07:12, the Maria crossed ahead of the Vertrouwen (TX68) at a distance of between 2800 metres and 3800 metres.<sup>7</sup> For the Vertrouwen (TX68), the Maria came from the starboard side. As the Maria was moving sternwards with the current the Vertrouwen (TX68) also came from its starboard side. The interviews revealed that this was not observed onboard the Vertrouwen (TX68).

After 01:11:01, the Maria changed its heading to about 335 degrees. As a result of this change in course, the Maria's course crossed the course of the Vertrouwen (TX68) again. A further change in heading to 279 degrees was observable between 01:14:01 and 01:14:28, whilst the direction in which the Maria was pointing changed from 002 degrees

<sup>7</sup> These two distances are the extreme minimum and maximum passing distances. These have been calculated by taking account of the inaccuracy of the GPS time of plus or minus 1 minute on the TX68 and the two AIS signals transmitted by the Maria whilst it was crossing ahead.

to 333 degrees. This would appear to be equivalent to a collision on the starboard side. For the *Vertrouwen* (TX68), the *Maria* came from the port side. The AIS data of the *Maria* reveal that the collision occurred between 01:14:01 and 01:14:28.<sup>8</sup>

## 2.3 Equipment

### *Watch alarm*

The watch alarm is an electronic system that sounds a general ship alarm to warn the crew onboard when the watchman has failed to respond adequately to a series of increasingly urgent alarms. The watch alarm is activated with a key-operated switch. The operator can set a time of a maximum of 12 minutes. Once activated the time begins to run and the watchman must reset the watch alarm in time. If he does not do so and the 'orange time zone' is reached then an alarm will sound on the bridge. When the watch alarm still has not been reset and the 'red time zone' is reached then the general ship alarm sounds. The watch alarm can now be reset solely by using the key-operated switch to switch it off and on again.

The watch alarm on the *Vertrouwen* was not working properly in the week before the collision. At the time this malfunction was observed it was assumed that the previous watchman would also have observed the malfunction and would have reported it to the master. According to the statements, the key used to switch the watch alarm on or off is actually always left in the key-operated switch. When the vessel sailed from Oudeschild on Sunday 6 October 2013 not everyone knew whether the watch alarm had been repaired or not. When the vessel sailed the master was not aware that the watch alarm was not working properly.

### *Radar*

Statements revealed that the radar onboard the *Vertrouwen* (TX68) displayed the same situation as observed visually outside the vessel. It can be concluded that the radar was working properly.

### *AIS*

An AIS is mandatory on fishing vessels of a length of more than 15 metres.<sup>9</sup> The fishing vessel's AIS must be operational at all times, other than exceptional circumstances in which the master is of the opinion that this would pose risks to the safety or security of the fishing vessel.

There were doubts whether the AIS onboard the *Vertrouwen* (TX 68) was working correctly. The statements revealed that the AIS 'occasionally' transmitted poor signals. It was also stated that the AIS was occasionally switched off to avoid the competition becoming 'any the wiser' about the vessel's location.

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8 The inaccuracy in the time of the GPS data from the TX68 (plus or minus 1 minute) has no influence on the conclusion.

9 Regeling Vissersvaartuigen ('Fishing Vessels Regulation') and Directive 2009/17/EC.

The AIS was subjected to an annual inspection. This inspection was carried out by a radio inspection agency authorized by the Inspectie Leefomgeving en Transport (ILT, Human Environment and Transport Inspectorate) and took place at the same time as the annual radio inspection. An inspection agency of this nature issued an AIS test report for the *Vertrouwen* in Den Helder on 31 May 2013. This stated that the AIS was working properly.

An examination has also revealed that none of the data in the system had been deleted. However, it is conceivable that the AIS had been set so that it would not transmit but would receive signals. As a result, other vessels could not observe the *Vertrouwen* (TX68) but AIS data from other vessels could be received on board of the *Vertrouwen* (TX68).

#### *Communication equipment*

The communication equipment was working properly. This conclusion is based on the statements which revealed that other vessels heard the communications between the two vessels.

## **2.4 Navigation conduct**

It has transpired that the watchman on the *Vertrouwen* (TX68) did not visually observe the guard vessel *Maria*. The *Maria* must have been clearly visible. In addition, the watchman did not observe the *Maria* crossing ahead at a distance of between 2800 and 3800 metres. On the basis of this information and the interviews the possibility cannot be excluded that the watchman on the *Vertrouwen* (TX68) was unsatisfactorily attentive to the need to avoid a collision.

It is not known why the helmsman on the *Maria* failed to observe the fishing cutter and did not take adequate action to avoid a collision.

A large amount of (international) research carried out in recent years has examined the effect of a '6 hours on, 6 hours off' watch system on the cognitive performance of the watchman. Personal performance can be influenced by (long-term) six hour watches in part due to the low workload.<sup>10</sup>

## **2.5 Safety management system (ISM)**

Both the shipping company Groen and the *Maria* had (voluntarily) been granted an ISM certification. A risk assessment is required for every activity. The overall responsibility is assigned to the shipping company's director. The safety assurance is vested in the line of responsibility. The company for which the *Maria* has been hired had not concluded a contract with supplementary requirements with the shipping company. The guard duty was performed in accordance with the internal procedure. Pursuant to this procedure, a

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<sup>10</sup> A TNO report (TM-03-C053) reveals that persons including shore radar operators sometimes find it difficult to concentrate (for example, at night time) (low workload).

guard vessel must be clearly recognizable as such from both sides. This was not the case with the Maria. In addition, the first officer on the Maria was required to contact vessels sailing in the area. This did not take place either when the vessel first crossed the fishing vessel's course or (shortly) before the collision. Nor did the Maria, although this is required by the procedure, transmit a "sécurité message" (a safety message used for communications via a radio link).

The Vertrouwen (TX68) had not implemented a safety management system. This is not a statutory requirement. Consequently, it is not unequivocally clear how information is exchanged onboard the Vertrouwen (TX68) between the masters, who are onboard in alternate weeks, or between the watchmen on board. Nor is it clear which risks have been identified when there is a single person on watch and which circumstances give cause to the need for an extra look-out on the bridge. Moreover, it is surprising that a watchman with an invalid certificate of competency was accepted as a crewman.

## 3 CONCLUSIONS

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### General

To the fact that the Maria and three of her crewmembers sank, information was lost. Based on the available data, it is not clear why the collision between the Maria and the Vertrouwen (TX68) took place. Neither the watchman on the Vertrouwen (TX68) nor the helmsman on the Maria took any initiatives to avoid the collision because the reconstruction shows no course changes just before the collision.

During the investigations shortcomings have been identified which from a safety perspective the Board would like to address.

### Vertrouwen (TX68)

- One watchman, with an invalid certificate of competency, was on the bridge of the Vertrouwen (TX68) during the night hours. There was reasonable doubt about the functioning of the watch alarm, and the correct functioning of the AIS.
- No notification was given about any malfunctions of the equipment, where relevant, on the transfer of the watch or in the logbooks, as a result of which the crew (on watch) were not aware of possible malfunctions of equipment that can hamper safe navigation.
- A number of crewmen did have a certificate of competency that was not valid.

The Vertrouwen (TX68) had not implemented a SMS. Guidelines and 'checklists' should, in the first instance, be adequate. Nevertheless, the possession of valid certificates constitutes the minimum requirement that must be met at all times. The master needs to supervise compliance.

### Maria

A number of shortcomings have been identified in the performance of the procedure for a guard vessel onboard the vessel:

- The vessel was not recognizable as a guard vessel.
- The Vertrouwen (TX 68) was not contacted, nor the first or second time.
- No 'sécurité message' was transmitted.

### Contract

In addition to internal procedures, clients can lay down agreements in contracts on (supplementary) safety procedures to limit risks and review safety. This did not take place in this instance.

## REVIEW DRAFT REPORT

In accordance with the Dutch Safety Board Act, a draft version of this report was presented to the parties involved. These parties were requested to check the report for factual errors and ambiguities. The draft version of this report was submitted to:

- Rederij Groen
- The master of the Vertrouwen (TX68)
- The Nautilus International trade union

The comments received were adopted by the Board (where relevant). These comments have not been separately listed.

The representative of the master and chief officer of the Maria requested the Board to be more specific about events before the collision. In consultation with the representative the Board explained that these specifications would not add value to the report.



## **INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA**

These regulations lay down a number of rules that are of importance during this investigation. These are included for completeness.

### *Rule 2: Responsibility*

- a. Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.
- b. In construing and complying with these Rules due regard shall be had to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels involved, which may make a departure from these Rules necessary to avoid immediate danger.

### *Rule 8: Action to avoid collision*

- a. Any action to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.
- b. Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.
- c. If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.
- d. Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.
- e. If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.
  - i. A vessel which, by any of these rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, take early action to allow sufficient sea room for the safe passage of the other vessel.
  - ii. A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by the rules of this part.

- iii. A vessel the passage of which is not to be impeded remains fully obliged to comply with the rules of this part when the two vessels are approaching one another so as to involve risk of collision.

*Rule 13: Overtaking*

- a. Notwithstanding anything contained in the Rules of Part B, Sections I en II any vessel overtaking any other shall keep out of the way of the vessel being overtaken.
- b. A vessel shall be deemed to be overtaking when coming up with another vessel from a direction more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the sternlight of that vessel but neither of her sidelights;
- c. When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly;
- d. Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

*Rule 15: Crossing Situation*

When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

*Rule 16: Action by give-way vessel*

Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

*Rule 17: Action by "stand-on" vessel*

- a. Where one of two vessels is to keep out of the way the other shall keep her course and speed.
- b. The latter vessel may however take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.
- c. When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the giving-way vessel alone, she shall take such action as will best aid to avoid collision.
- d. A power-driven vessel which takes action in a crossing situation in accordance with sub-paragraph (a) (ii) of this Rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.
- e. This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

*Rule 34: Manoeuvring and warning signals*

- a. When vessels are in sight of one another, a power-driven vessel underway, when manoeuvring as authorized or required by these Rules, shall indicate that manoeuvre by the following signals on her whistle:
  - one short blast to mean: "I am altering my course to starboard";
  - two short blasts to mean: "I am altering my course to port";
  - three short blasts to mean: "I am operating astern propulsion".
  
- b. Any vessel may supplement the whistle signals prescribed in paragraph (a) of this Rule by light signals, repeated as appropriate, whilst the manoeuvre is being carried out:
  - i. these light signals shall have the following significance:
    - one flash to mean: "I am altering my course to starboard";
    - two flashes to mean: "I am altering my course to port";
    - three flashes to mean: "I am operating astern propulsion";
  - ii. the duration of each flash shall be about one second, the interval between flashes shall be about one second, and the interval between successive signals shall be not less than ten seconds;
  - iii. the light used for this signal shall, if fitted, be an allround white light, visible at a minimum range of 5 miles, and shall comply with the provisions of Annex I to these Regulations.
  
- c. When in sight of one another in a narrow channel or fairway:
  - i. a vessel intending to overtake another shall in compliance with Rule 9 (e) (i) indicate her intention by the following signals on her whistle:
    - two prolonged blasts followed by one short blast to mean: "I intend to overtake you on your starboard side";
    - two prolonged blasts followed by two short blasts to mean: "I intend to overtake you on your port side";
  - ii. the vessel about to be overtaken when acting in accordance with Rule 9 (e) (i) shall indicate her agreement by the following signal on her whistle:
    - one prolonged, one short, one prolonged and one short blast, in that order.
  
- d. When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.
  
- e. A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. Such signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.
  
- f. If whistles are fitted on a vessel at a distance apart of more than 100 metres, one whistle only shall be used for giving manoeuvring and warning signals.

## **ISSUE OF A CERTIFICATE OF COMPETENCY.**

This annex contains a brief explanation of the issue of a certificate of competency.

The type of certificate of competency that is issued depends on the length and engine power of a vessel. The CoC also states the trading area in which it is valid.

The length of vessels is classified into four categories:

- Up to 24 metres.
- Between 24 metres and 45 metres.
- Between 45 metres and 60 metres.
- Longer than 60 metres.

The engine power of vessels is classified into four categories:

- Up to 750 kilowatt (about 1020 h.p.).
- Between 750 KW and 1125 KW (about 1020 h.p. and 1530 h.p.).
- Between 1125 KW and 3000 KW (about 1530 h.p. and 4080 h.p.).
- More than 3000 KW (more than 4080 h.p.).

The trading area are classified into ten categories. A list of these is not relevant for this investigation.

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