



Bundesstelle für Seeunfalluntersuchung
Federal Bureau of Maritime Casualty Investigation
Federal Higher Authority subordinated to the Ministry of Transport
and Digital Infrastructure

Interim Investigation Report

pertaining to Investigation Report 408/17

Serious Marine Casualty

**Grounding of the bulk carrier
MV GLORY AMSTERDAM on
29 October 2017 about 1.6 nm
North of the North Sea Island of Langeoog**

29 October 2018

Pursuant to the second sentence of Article 28(1) of the Law to improve safety of shipping by investigating marine casualties and other incidents (Maritime Safety Investigation Law – SUG) in conjunction with Article 14(2) of Directive 2009/18/EC of the European Parliament and of the Council establishing the fundamental principles governing the investigation of accidents in the maritime transport sector, the Federal Bureau of Maritime Casualty Investigation publishes an interim report within a period of 12 months of a very serious or serious marine casualty if it is not possible to complete the corresponding investigation report within that period.

Issued by:
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1 FACTUAL INFORMATION

1.1 Photo of the bulk carrier GLORY AMSTERDAM



Figure 1: Photo of GLORY AMSTERDAM

1.2 Ship particulars: GLORY AMSTERDAM

Name of ship:	GLORY AMSTERDAM
Type of ship:	Bulk carrier
Nationality/Flag:	Panama
Port of registry:	Panama
IMO number:	9287182
Call sign:	3EEZ7
Vessels owner:	GLORY AMSTERDAM LTD, Singapur
Year built:	2006
Building yard:	Oshima Shipbuilding Co., Ltd./10386
Classification Society:	China Classification Society
Length overall:	225.00 m
Breadth overall:	32.26 m
Gross tonnage:	40,017
Deadweight:	77,171 t
Draught (max.)	12.20
Engine rating:	9326 kW
Main engine:	MITSUI MAN B&W 6S60MC
Speed (max)	15.4 kts
Hull material:	Steel
Manning:	22

1.3 Voyage particulars

Port of departure:	Hamburg
Port of call:	Rotterdam
Type of voyage:	Merchant shipping/international
Cargo:	In ballast
Draught at time of accident:	5.72 m
Manning:	22

1.4 Marine casualty information

Type of accident:	Serious marine casualty
Date/Time	29 October 2017, about 1800 ¹
Location:	North Sea, 1.6 nm north of Langeoog
Latitude/Longitude:	Approx. φ 53°47.2'N λ 007°35.9'E
Voyage segment:	Drifting from the anchorage although two anchors were dropped
Consequences:	Grounding; damages to the rudder; no injuries, no environmental pollution

¹ All times are, unless states otherwise, MEZ = UTC + 1 hour.

Excerpt of chart No. 3015 (page 1) Federal Maritime and Hydrographic Agency²

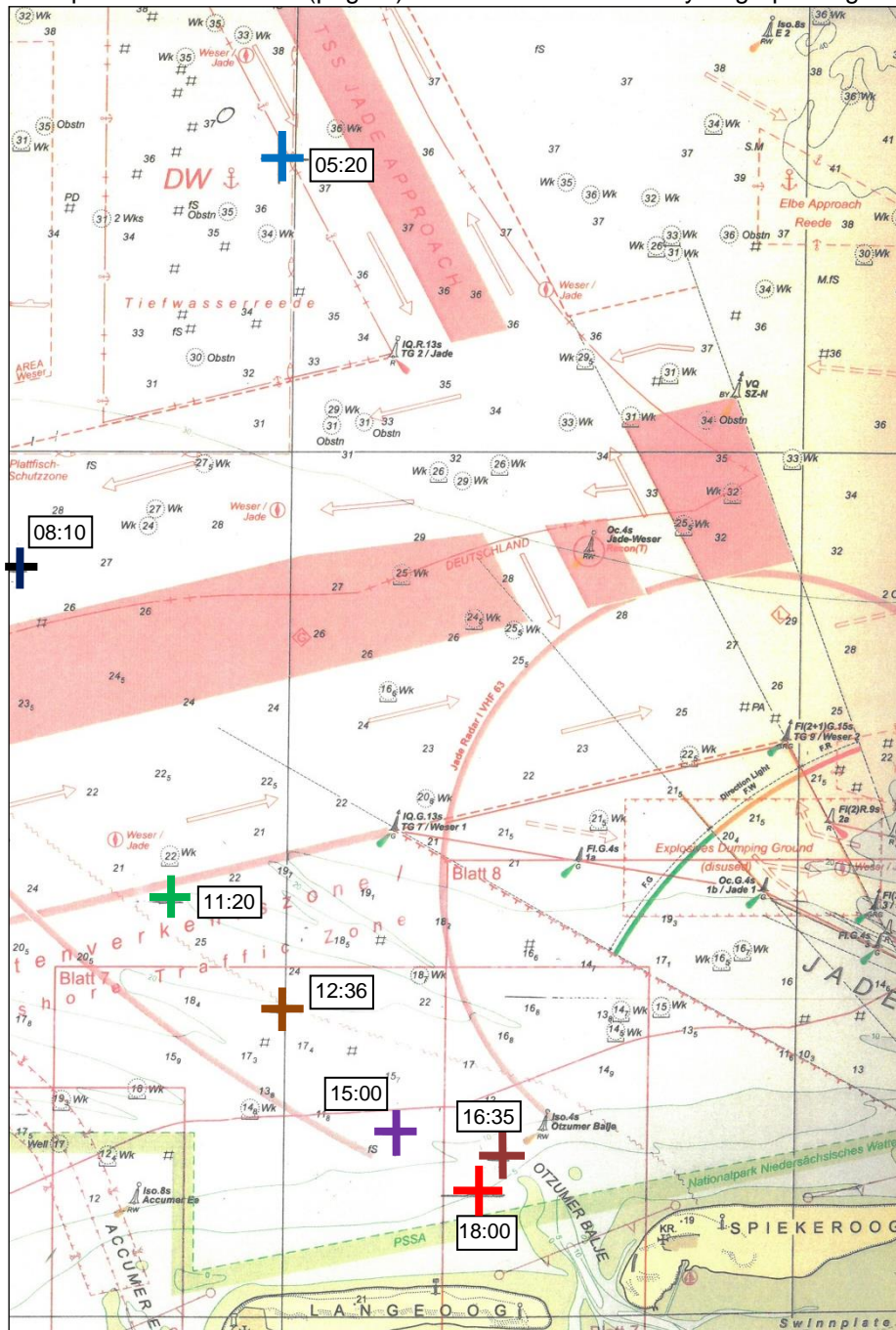


Figure 2: Scene of the accident

- 05:20** GLORY AMTERDAM starts to drift form her original anchoring position
- 08:10** Emergency tug NORDIC reaches the GLORY AMSTERDAM
- 11:20** Federal police helicopter begins first attempt (unsuccessful) to winch the boarding team off the NORDIC
- 12:36** NORDIC started her first attempt to establish a towing connection to the distressed vessel
- 15:00** Towing connection between NORDIC and distressed vessel established (parted at 15:46)
- 16:35** Federal police helicopter lowered boarding team Baltic Sea on the distressed vessel
- 18:00** Distressed vessel strands in the area of the 5-m-depth-line

² BSH = Federal Maritime and Hydrographic Agency.

1.5 Shore authority involvement and emergency response

Agencies involved:	Vessel Traffic Services German Bight Wilhelmshaven (VTS GBT); Central Command for Maritime Emergencies Cuxhaven (CCME), Federal Police flying squadron Fuhlendorf; DGzRS ³ (German Maritime Search and Rescue Association); Waterways Police Lower Saxony; Salvage company SMIT Salvage
Resources used to prevent grounding:	Emergency towing vessel (ETV) NORDIC; water protection ship MELLUM; 1 Federal Police helicopter type Super Puma; 1 Federal Police helicopter type H 155; Boarding team (BT) Baltic Sea; tug Bugsier 9; tug Bugsier 10; tug JADE ⁴
Resources used after stranding and in connection with the salvage activities:	ETV NORDIC, water protection ship MELLUM ⁵ ; rescue cruiser HERMANN MARWEDE ⁶ ; harmful substances monitoring airplane DO 228; salvage team SMIT; salvage tug FAIRMOUNT SUMMIT; salvage tug UNION MANTA; tug JADE; tug BUGSIER 11; tug MULTRATUG 4; Water police boat W3
Actions taken to prevent stranding:	Deploying NORDIC to proceed to the distressed vessel in order to establish an emergency towing connection; assuming of the overall leadership by the CCME; several attempts by NORDIC to establish an emergency towing connection; request and operation of a Federal Police helicopter for the purpose of transferring a boarding team from NORDIC towards GLORY AMSTERDAM; request and operation of a Federal Police helicopter for the purpose of transporting the boarding team Baltic Sea from Rostock; lowering the boarding team Baltic Sea on the distressed vessel
Actions taken in order to minimize the accident impact and salvaging the distressed vessel:	Continuous monitoring of the distressed vessel; assigning the salvage company by the vessels owner of the distressed vessel; preparing of a salvage conception by the salvage company and reviewing the conception by the CCME with the assistance of an external expert; Lighten the distressed vessel by pumping out 16,000 t ballast water; towing clear with the help of two salvage tugs; towing the distressed vessel to Wilhelmshaven
Results achieved:	Stranding of distressed vessel could not be prevented; no injuries or environmental pollution as a consequence of the grounding; successful salvage of the distressed vessel.

³ Deutsche Gesellschaft zur Rettung Schiffsbrüchiger (DGzRS).

⁴ The tugs requested by the CME, BUGSIER 9 and 10 and JADE as well reached the distressed vessel not on time so as to intervene before the grounding.

⁵ Some sources speak of the MELLUM as a multi-purpose-vessel as well.

⁶ The rescue cruiser HERMANN MARWEDE was ordered to proceed to the distressed vessel as a precaution by the CME, however, she took no action.

2 Summary of the accident event

At 1800 on 29 October 2017, the Panama-registered bulk carrier GLORY AMSTERDAM ran aground about 1.6 nm north of the German North Sea island of Langeoog.

The ship was sailing in ballast and despite two anchors dropped had drifted in a southerly direction from her anchor position (which was 18.5 nm from the subsequent scene of the accident) in hurricane force winds since early in the morning on the day of the accident (from about **0520** onwards). The GLORY AMSTERDAM was waiting there for the next cargo order.

The master notified the vessel traffic service (VTS) responsible for the area, German Bight Traffic (GBT), about his problems at **0618**. He had already phoned the German agency that had supported his ship in Hamburg to request tug assistance. Since the VTS had doubts with regard to the short-term availability of a suitable vessel, as the further course of events confirmed were justified, it took the precautionary measure of ordering the emergency towing vessel (ETV) NORDIC, which was some 10 nm away from the GLORY AMSTERDAM, to proceed to the distressed vessel⁷ by phone at **0713**. The tug arrived at the GLORY AMSTERDAM at about **0810**. The master of the NORDIC then repeatedly tried to explain to the master of the GLORY AMSTERDAM on VHF radio (ultimately unsuccessfully due to considerable communication problems) that the NORDIC is not the tug assistance requested by the GLORY AMSTERDAM but an ETV, whose task is merely to establish a temporary towing connection to hold the distressed vessel in her position (emergency tow) in an emergency.

Not least because of the considerable problems the NORDIC and the VTS experienced while discussing the measures needed to manage the emergency situation with the GLORY AMSTERDAM's master in English, the Cuxhaven-based CCME⁸, which had assumed overall command of the operation at **0923**, decided to transfer the boarding team (BT) stationed on the NORDIC (BT NORDIC) especially for such tasks to the distressed vessel to assist with communication and provide technical support during the necessary emergency towing operation.

Given the wind and sea conditions, a helicopter represented the only feasible means of transfer. Therefore, at about **0940** the CCME contacted the Federal Police Air Wing at Fuhlendorf, requesting a helicopter stationed there, which was on call and equipped for maritime emergencies. The helicopter arrived at the area of operation at

⁷ The NORDIC is an ETV chartered by the Federal Ministry of Transport and Digital Infrastructure (BMVI), whose task is merely to assist vessels not under command (NUC) or otherwise in distress. The ETV should establish a towing connection to the distressed vessel and hold her in position.

⁸ Central Command for Maritime Emergencies (CCME) joint institution of the Federal Republic of Germany government and the North German States. The CCME bundles the responsibilities for planning, preparing and conducting the actions for the medical care of the injured, pollution control, firefighting, providing assistance, averting of danger, salvage during complex damage situations in the German Coastal sea and in the German EEC.

about **1120** and made several attempts to adopt the hover position necessary for winching up members of the BT waiting on the NORDIC's working deck. Every attempt to position the helicopter vertically over the winch area of the NORDIC for the period necessary failed due to the heavy movements of the tug in the stormy sea, however. Due to the excessive risk to life and limb of the people waiting to be winched up, the helicopter operation was abandoned at about **1145**. Instead, the CCME contacted the Federal Police Air Wing at Fuhlendorf, requesting a second helicopter, which was tasked with collecting the BT primarily responsible for emergency towing operations in and around the Baltic Sea stationed in Rostock, for a mission on the GLORY AMSTERDAM.

In the meantime, the NORDIC remained with the distressed vessel and, as far as language barriers allowed, coordinated the measures necessary for establishing a towing connection with her on VHF.

At about **1236**, the NORDIC started to approach the GLORY AMSTERDAM to pass over the line without the support of a BT. The ensuing attempts to establish a towing connection failed at different stages several times due to the ongoing severe communication problems between the master of the NORDIC and ship's command of the GLORY AMSTERDAM. In particular, the distressed vessel's deck crew had enormous difficulty carrying out the work needed to establish a line connection.

They finally managed to establish a towing connection between the NORDIC and the GLORY AMSTERDAM, which continued to drift toward shallow water at a speed over ground of 2-3 kts, at about **1500**. However, this parted at about **1546** because the towing cable had been improperly fastened on the distressed vessel.

Since the risk of the GLORY AMSTERDAM running aground was increasing all the time, the VTS ordered the distressed vessel to slip her anchors and move to deeper water under her own steam at **1548**. At **1606**, the VTS asked whether the two anchors had been slipped. The master of the GLORY AMSTERDAM then pointed out for the first time that he reportedly had problems with his rudder and would therefore need his anchors.

The Federal Police helicopter reached the distressed vessel with the Baltic Sea boarding team (BT Baltic Sea) on board at about **1626** and lowered it onto the main deck. Following a situation analysis on board and an exchange of information with the NORDIC, the BT started to prepare for the establishment of the towing connection on the aft deck of the distressed vessel. However, it became clear shortly after in radio calls between the BT and the NORDIC that the GLORY AMSTERDAM had now drifted so far into shallow water that it would be almost impossible for the NORDIC to move close enough to the distressed vessel to establish a line connection safely because of her draught.

The first, initially only sporadic indications of grounding were felt on board the GLORY AMSTERDAM at about **1730**, causing, inter alia, the stern of the distressed vessel to occasionally settle on the sea floor. This resulted in mechanical damage to the rudder blade and its support system, meaning the GLORY AMSTERDAM had to be classified as completely not under command (NUC) from this point at the latest.

Since the distressed vessel was drifting into ever shallower water, it was no longer possible for the NORDIC to approach her without running the risk of damaging her underwater hull or grounding.

The GLORY AMSTERDAM finally grounded at **1800** in the area of the 5 m depth contour north of the island of Langeoog. Immediately arranged inspections on board revealed that the grounding had apparently not damaged the shell plating. At no time was water ingress or escaped pollutants detected.

During the night leading up to **30 October**, the CCME consulted on possible options for salvaging the distressed vessel. For its part, the owner of the GLORY AMSTERDAM contacted the Dutch salvage company SMIT, with which it concluded a salvage contract.

While liaising on the salvage strategy, the CCME and salvage company concluded that partially unloading the heavy fuel oil (HFO) tanks in the surf zone prior to towing the ship clear would pose too great a risk. Instead, an agreement was made to promptly establish a line connection between the GLORY AMSTERDAM and two seagoing tugs (UNION MANTA and FAIRMOUNT SUMMIT) to prevent the distressed vessel from drifting closer to the coast during the controlled draining of ballast water.

The vessels referred to arrive at the GLORY AMSTERDAM on the evening of **1 November**. It was possible to establish line connections from the two tugs. Following that, they started to drain the ballast water, as planned.

The GLORY AMSTERDAM refloated at high tide on the morning of **2 November** after some 16,000 t of ballast water had been pumped out of her. The ship was then towed to Wilhelmshaven, where she made fast on the evening of that same day.

The GLORY AMSTERDAM was able to leave her berth there for the repair yard after a three-week stay.

3 The course of the Investigation of the BSU

The BSU's on-call service received a preliminary report from WSP Wilhelmshaven that the GLORY AMSTERDAM was drifting from the deepwater roadstead in the German Bight toward Langeoog despite having two anchors dropped and full use of the engine late in the morning of the day of the accident. Over the next few hours, the person on call obtained information about the further course of events by regularly calling up the ship's AIS data⁹ on the MarineTraffic website and during phone calls with the WSP. In the following days until the arrival of the ship at Wilhelmshaven, the BSU used the situation reports issued by the CCME as its primary source of information.

A team of BSU investigators boarded the distressed vessel on the morning of **3 November 2017** in Wilhelmshaven, which had moored there on the previous evening. Interviews were conducted on the ship, various documents were sighted, the ship was inspected and photographs were taken. In addition to his written report, the GLORY AMSTERDAM's master also handed over the original storage medium of the VDR to the team from the BSU upon request. The BSU was able to analyse the data recorded without any problems after receiving brief technical assistance from the service company (Alphatron Marine Deutschland GmbH).

Other important sources of information during the BSU's investigation into the marine casualty and its attendant factors were the CCME's incident log and the operation logs of the ETV NORDIC and GS MELLUM. The BSU was also able to refer to a report from the master of the NORDIC, as well as an operation report from the leader of BT Baltic Sea. VTS GBT provided audio recordings of the VHF radio traffic, as well as a situation and progress log. Germany's National Meteorological Service (DWD) produced a detailed report on the wind and sea conditions for the BSU.

On **10 January 2018**, the investigating team visited the ETV NORDIC at her berth in Cuxhaven to gain information on events on the day of the accident and the technical conditions on the tug in a meeting with the master and during a survey of the vessel.

On **6 February 2018**, a meeting was held with the leader of BT Baltic Sea, in which he gave a detailed account of his personal impression of events on the day of the accident.

On **13 April 2018**, the investigating team met with the helicopter crews deployed on the day of the accident at the base of the Federal Police Air Wing in Fuhlendorf and inspected the helicopter types used by the crews. Following the meeting, which lasted several hours, the head of the Air Wing sent more information and answered a package of written question sent by the BSU.

⁹ AIS: Automatic identification system. All ships equipped with this system transmit GPS-based data, including position, course, speed, as well as possibly other information, at a standardised interval on VHF. These data can be displayed by the receiver on a monitor or superimposed on an electronic chart system or possibly a radar image, for example. In addition, special portals provide the opportunity to access parts of or all the data in question in real time on the Internet.

Another investigative step taken by the BSU was to send a written request to the agency that the distressed vessel's master had contacted with a view to ordering tug assistance early in the morning of the day of the accident. After the BSU's letter initially went unanswered, the agency provided information on the communication between the ship and the agent in response to a request sent from the BSU by email.

It became apparent from the very beginning of the BSU's enquiries that a major focus of the investigation would be the Cuxhaven-based CCME's emergency management process. The BSU therefore considered the aforementioned sources very carefully from this point of view, in particular. Once all the information available in writing or obtained through other investigative activities of the BSU had been sighted, the BSU asked the CCME for a face-to-face meeting with a view to a final discussion of the issues involved. This meeting was held on **2 July 2018** in Cuxhaven. The CCME was represented by its director and his deputy, by the director of the CCME's MERAC, as well as by the two operational commanders acting for the CCME in the CMT after it had assumed overall command of the operation. The questions which had arisen for the BSU after it had sighted the above information were discussed with great openness during the meeting. During the meeting, the multi-purpose vessel NEUWERK, which is operated by the WSV, was surveyed to gain a more detailed picture of the technical aspects of emergency towing. In addition to other statutory duties, the NEUWERK is also used as an ETV in the North Sea as part of the emergency towing strategy for the German coast but was not available at the time of the accident due to an extended stay at a shipyard. The NEUWERK's master attended the survey of the vessel by the representatives of the CCME and the BSU, explained her technical capabilities and reported on his experiences arising from various emergency towing operations. After the meeting in Cuxhaven, the BSU had several other questions for the CCME. These were made in writing and answered by the CCME.

In addition to the issue of emergency towing/crisis management, the BSU's investigation also covered the issue of why the distressed vessel had not succeeded in preventing the drift despite having two anchors dropped and the fact that her main engine had been operational throughout the day on the day of the accident. For the most part, the ship's steering gear had also operated without any problems until late in the afternoon. On the basis of its own expertise, of the professional experience of the team charged with the investigation, as well as of the technical and other information available, the BSU was initially only able to gain a preliminary picture of these issues of a navigational and, in particular, of a technical nature.

To substantiate the relevant findings and conclusions scientifically, the investigating team contacted the internationally recognised shipbuilding expert who immediately agreed to look at the facts from the viewpoint of shipbuilding. To this end, the BSU provided the expert with various items of background information (e.g. VDR recording, wind and sea reports, ship and manoeuvre data). Since the technical questions to be clarified concerned the main engine, steering gear and anchor gear in addition to shipbuilding aspects, the BSU consulted a ships engine expert.

Meanwhile, the investigation carried out by the BSU was concluded. The general deadline of one year in publishing the investigation report, which is currently in the

stage of being finished, cannot be satisfied due to the complexity and the special characteristics of the accident event. Therefore an interim report is being published as prescribed by law.

The investigation in question deals, contrary to the normal case of an investigation, not with a singular event but instead with a brief sequence of events (such as is the case with a collision or an occupational accident on board). Rather, a chain of events and line of actions running parallel or overlapping and occurring over a period of more than 12 hours and their character was not only imprinted by the actions of the distressed vessel but in significant by divers activities of further vessels and institutions on shore.

All aspects having contributed to the accident event and having not been able to prevent the accident event had to be included in the investigation and recognized. In so doing, a large number of persons involved had to be questioned and their contribution to the accident event had to be taken into consideration. In addition to the distressed vessel GLORY AMSTERDAM, particularly the emergency tug NORDIC, the multipurpose ship MELLUM, Federal Police helicopters, the VTS, the boarding team airlifted from Rostock and lowered onto the GLORY AMSTERDAM and the Central Command of Maritime Emergency were part of the BSU investigation. Other aspects, such as the heavy weather and shipbuilding aspects were essential parts of the investigation as well.

Ultimately, it is to be emphasized that issues were revealed within an in depth revision that could not be recognised initially. It was especially of great importance to prepare and represent these issues thoroughly since they could serve the purpose of rectify the speculations of several sides, partly published as well, with respect to the cause of the accident and the consequences.

4 Preliminary-Safety Recommendation

4.1 Preliminary notes

In accordance with § 29 article 2 Seesicherheits-Untersuchungs-Gesetz (SUG), the BSU is obliged to issue safety recommendations irrespective of the state of the investigation, if the BSU realizes that there is a need of urgency to prevent similar accidents occurring for the same reason. Under the terms of § 29 article 1, safety recommendations ought to be addressed to the institutions which are able to implement them in a proper way.

The BSU exercises its aforementioned authority for the following reason:

The investigation revealed with a probability bordering on certainty that the GLORY AMSTERDAM would not have stranded if a Boarding Team had timely arranged for a clear and unambiguous communication between the vessels command on the one hand and the emergency tug NORDIC, the CCME and the VTS on the other hand. Above all and in exercise of its tasks assigned within the scope of the emergency towing conception the Boarding Team could have supported the deck crew in carrying out the necessary hand movements to establish a proper towing connection. In all likelihood, they could also have prevented the fateful and completely wrong fastening point of the towing line on board the GLORY AMSTERDAM.

The fact that a boarding team for the Baltic Sea was only lowered on board the distressed vessel in the afternoon and therefore far too late, in order to fulfil their tasks mentioned above was due to the fact that it could not be managed to lower the Boarding Team on board the NORDIC, which was the team for the area of the North Sea from the tug on the distressed vessel.

The BSU believes that the failure of the efforts taken by the helicopter of the Federal Police deployed to the NORDIC is unequivocally and exclusively can be attributed to the heavy sea in combination with the special structural features of the tug NORDIC. NORDIC's heavy movements in the heavy sea and the resulting difficulties in lowering the winch hook above the access area of the deck crew very much limited (cf. below the yellow marking in the **figures 3 ff.**), the special risk of throwing a person suspended at the winch hook against structural components of the NORDIC heavily pitching and rolling when winching up, before it reached a height uncritical above the vessel.



Figure 3: Emergency tug NORDIC at the day of the accident (winch area marked yellow)

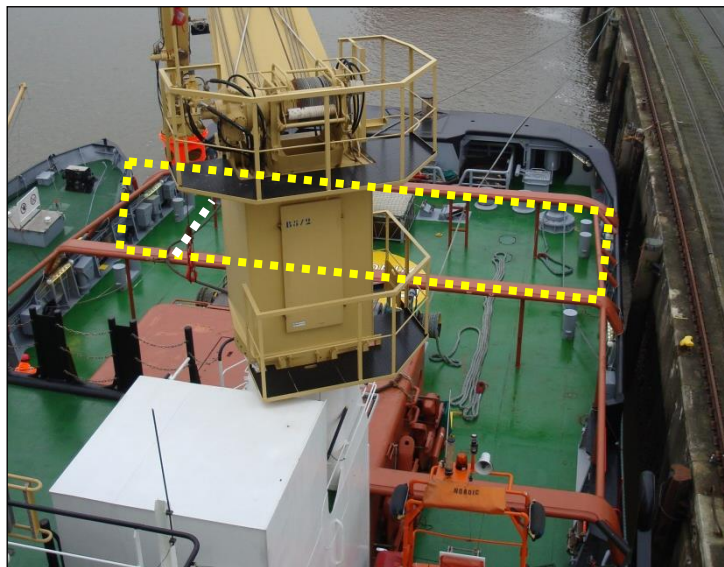


Figure 4: Lateral view on the winch area (restricted by steel cross braces)



Figure 5: Restriction of the winch area by steel cross braces (partial view)

An effective conversion of the structural conditions on board the NORDIC, if possible at all from a shipbuilding perspective, might not be possible at short notice. And even if possible, it would not be guaranteed, that winching the Boarding Team in heavy weather would be successful in any event. However, the accident event revealed explicitly the great importance of the fastest availability of a Boarding Team on board a distressed vessel. As a consequence, a Boarding Team for the North Sea should be stationed on shore, best in the area of the Federal Police helicopter base for the maritime emergency precaution in Fuhlendorf. From there the Boarding Team could be transferred to the distressed vessel without delay.

A further aspect which was revealed in the course of the BSU investigation and which shaped the course of events on the day of the accident is the fact that the vessels command of GLORY AMSTERDAM did not comprehend without doubt which (limited) task had been assigned to the NORDIC and the legal foundation she acted on at the scene, despite all efforts made by the VTS and NORDIC's vessels command, even at the time the Boarding Team arrived at the scene in the later afternoon, was revealed in the course of the investigation of the BSU and significantly shaped the events at the day of the accident. GLORY AMSTERDAM's master supposed on the merits of the case that the NORDIC was the assistant tug requested by him in the early morning and at the same time suspected that the NORDIC wanted to act as a commercial salvage tug. The fact that the NORDIC acted on behalf of the Federal government and aimed at limiting her actions to the emergency towing at the scene, was inexplicable for the master of GLORY AMSTERDAM despite all attempts to explain this to him. Therefore, the BSU considers it necessary that the tugs acting on behalf of the Federal government are visible as such. The Federal government which charters the emergency tug from private owners should check whether identification within the applicable law and resolutions is viable.

4.2 Preliminary Safety Recommendation addressed to the BMVI

As a result of the investigation of the serious marine casualty, the BSU believes that there is need for action to prevent such accidents or similar accidents occurring because of the same reason. Therefore, the BSU recommends that the Federal Ministry of Transport and Digital Infrastructure (BMVI) as Ministry professional responsible in the Federal Republic of Germany for the tasks of the implementation of the maritime safety conception "German coast" and the emergency towing conception included in this,

Permanently deploys a Boarding Team on shore for the area of the North Sea, best in the area of the Federal Police flying squadron in Fuhlendorf, at short notice.