



INSPECTION & INVESTIGATION DIVISION

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**INDEPENDENT INVESTIGATION REPORT
INTO THE VERY SERIOUS MARINE
CASUALTY
OF
MV “GERHARD G.”
AT Rotterdam
ON 12 November 2014**

Flag: Antigua and Barbuda W.I.

IMO No.: 9534286 / Official No.: 4796 / Call sign: V2FD5



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OBJECTIVE

Maritime Safety Committee MSC.255(84)

CODE OF THE INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES FOR A SAFETY INVESTIGATION INTO A MARINE CASUALTY OR MARINE INCIDENT

This code recognizes that under IMO conventions each flag State has a duty to conduct an investigation into any casualty occurring to any of its ships when it judges that such an investigation may assist in determining what changes in the present regulations may be desirable or if such casualty has produced a major deleterious effect upon the environment (SOLAS, chapter I, part C, regulation 21).

The Government of Antigua and Barbuda W.I. is signatory to the major international shipping conventions. The Antigua and Barbuda Department of Marine Services and Merchant shipping (ADOMS) constitutes the flag State Administration together with the Inspection and Investigation Division (ADOMS IID), which is the marine safety investigation Authority, with the chief casualty investigator (CCI).

DISCLAIMER

This report is not written with liability in mind and should not be used in court for the purpose of litigation. It endeavours to identify and analyse the relevant safety issues pertaining to the specific accident, and to make recommendations aimed for preventing reoccurrence of similar accidents in the future.

At all times the ADOMS IID chief casualty investigator strives to balance the use of material that could imply adverse comments with the need to properly explain what happened, and why, in a fair and unbiased manner.

PART A – THE OCCURRENCE

1. Executive summary

The MV "GERHARD G." experienced a fatal accident on board during bulkhead shifting by hatch gantry crane in the port of Rotterdam on the 12 November 2014. To release the securing pins of the bulkhead, a person's basket/cage attached to the hatch gantry with an electric chain hoist with a single point fix, was used. The swivel hook of the electric chain hoist broke at the connection point, letting the person basket fall about 5 m to the bottom of the hatch causing the death of the inside crew member.



Hatch gantry view from aft and stacked hatch covers

Photo taken by on scene investigator



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2. The aftermath

After the able seaman had fallen into the cargo hold, the pilot, who was still on board, immediately called an ambulance. All efforts by the crew prior to the arrival remained without effect, and the doctor was only able to pronounce the sailor's death.

2.1 Fatalities and injuries

The able seaman was fatally injured and died directly after falling into the hold. He had sustained serious injuries to his head. No other staff was injured or further involved.

2.2 Impact on the surrounding environment

N/A

2.3 Extent of the damage

The only damage was to the electrical hoist/chain block and attached person basket that was deformed due to the fall into the hold.



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PART B – GENERAL

1. Regulatory requirements

The hatch gantry and the attachable hoists (1 on each side) are not considered as lifting appliance as they are part of the hatch cover (moving) system and not to lift cargo or any other gear. This may mean that during the mandatory survey of lifting appliances through the classification society, the equipment in question would not be included and thus could cause a lack of maintenance supervision and control. The requirements given are the manufacturer's maintenance requirements and the ILO work safety regulations. These give clear guidance on the one hand, how to maintain the chain hoists, and on the other what is expected in the sense of overall safety during usage of such gear.

It is clear from the manual provided by the chain hoist manufacturer that it is not to be used for the lifting of persons, except, if some sort of safety device is installed that prevents the person basket from falling (fall arrest or preventer).

2. Assessment of the occurrence

Unfortunately this casualty was not the first of its kind for the Antigua & Barbuda registry. A similar accident occurred on another vessel in December 2011 in a port in Finland. Also here the connection holding the person basket to the hatch gantry crane parted and caused the serious injury of a crew member (please see Finnish safety Investigation Report on MV "ALWIS" in the port of Pori, Finland). The similar recurrence a week after the "GERHARD G." on a further vessel clearly showed the importance of taking up this matter with all involved parties in order to assist in preventing reoccurrence.

3. Instructions

Basis for the investigation into this very serious marine casualty are stipulated in the Antigua & Barbuda Merchant Shipping Act 2006 (as amended).

Nils Beyersdorff located with ADOMS Inspection and Investigation Division (ADOMS IID) in Bremerhaven, Germany, vested with the powers as per the Antigua and Barbuda Shipping Act 2006 (as amended) Part II 6.2 is the Chief Casualty Investigator (CCI) of the flag State marine safety investigation



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authority. In this commission he initiated a full and separate investigation into this very serious marine casualty. Relevant notifications as per Chapters 5 and 20 of the Casualty Code have been distributed accordingly. An on scene investigator, vested with the rights of a Power of Attorney, commenced investigations at the earliest practical opportunity as from 12 November 2014. While being in process of acquiring evidence, efforts were successfully applied to liaise with all interested parties involved.

4. Cooperation with the shore state and vessel managers

The cooperation between the different stakeholders in this case can be described as good. Especially the Dutch Safety Board from the beginning supported the investigation on scene and during the time thereafter.

PART C – FACTUAL INFORMATION

1. The M.V. “GERHARD G.”



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1.1 Ship particulars

Name of Vessel	GERHARD G.
Company (ISM Code 1.2)	Gerdes Bereederungs und Verwaltungs GmbH
Flag State	Antigua & Barbuda
Port of Registry	St. John's
IMO Number	9534286
Type of Vessel	General Cargo
Classification Society	Lloyd's Register
Year built	2011
Ship Yard	Jiangsu Yangzi Changbo Shipbuilding
Loa (Length over all)	114.40 m
Boa (Breadth over all)	14.0 m
Deadweight	6050 t
Summer Draft	6.3 m
Gross Tonnage	4255
Net Tonnage	2341
Main Engine	2.970 kW / MAK 9M25
Engine Power /Speed	13 kts
Crew as per MSM Doc.	9
Crew Actual	9
Document of Compliance (Date of Issue)	01.08.2012
Safety Management Cert. (Date of Issue)	26.09.2011
Trading Area	International voyages
Last PSC Inspection	04.06.2014 in Parnu, Estonia
Any deficiencies noted?	yes, 2
Any detentions noted?	no



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1.2 Crew particulars

The crew of MV “GERHARD G.” consisted of officers of Ukrainian nationality and ratings from the Philippines. The master, chief officer, second officer and engineer made up the officers. The rating compliment was made up of two able seamen, one ordinary seaman, one oiler and the cook. This was in compliance with the Minimum Safe Manning Document issued by the flag State. All crew held the required qualifications in relation to their job descriptions and were, as documented on board, fully familiarized with the vessel and their duties.

1.3 The voyage pattern

The “GERHARD G.” was on a tramp trade and not on a fixed line charter. Ports of call were mainly in European waters as the vessel was allowed to trade internationally. Former port state control inspections were sighted with no serious deficiencies listed as was also the case in relation to class or flag State inspections.

1.4 The cargo

At the time of the incident, the “GERHARD G.” was in ballast intending to load in the port where the accident occurred. The intended cargo was the reason for the necessity to shift the movable bulkhead.

2. The environmental condition

The weather was calm and the vessel even though not alongside, but in waiting for the berth to free up, had very little to no movement. As the cargo operations were to commence in the afternoon, a timely preparation was required to not cause unnecessary delay at berth.



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PART D – NARRATIVE

1. GERHARD G. – Arrival in Rotterdam, The Netherlands

The Gerhard G. was on a routine call to the port of Rotterdam in the Netherlands. The port of Rotterdam was not a port of call on a fixed schedule as the GERHARD G. was on a tramp trade.

The recollection of events before the casualty occurred showed nothing out of the normal prior to arrival up to the moment where MV “GERHARD G.” approached its designated berth in the port of Rotterdam. As the berth was occupied by inland barges, MV “GERHARD G.” positioned itself in vicinity of the intended berth to not have to shift at a later stage and pay further dues. The master in consequence decided due to the safe port basin and calm weather to hold the vessel in position for the anticipated one hour and commence preparing the cargo operations to save time when alongside. This decision was in the scope of the master’s competence as the intended bulkhead shift can be called a very routine operation for the crew of MV “GERHARD G.”. In consequence the deck crew was summoned and the work commenced as ordered by the master. A generic permit to work for working at heights was filled out and signed by the officer in charge and the able seaman executing the task at hand.

The later deceased AB was put in charge of preparing the hatch gantry, the electrical tackle and the person basket. All parts of the setup were checked by sight and found superficially in order and, in accordance with the issued work permit for working in height, the operation commenced.

In order to detach the movable bulkhead from the cargo hold sides the able seaman lowered himself down by cable remote control in order to be able to reach the bulkhead locking pins to release these and move the bulkhead. This is when the hook holding the electric tackle and person basket on to the hatch gantry parted and caused the whole setup including the able seaman to crash into the hold. The able seaman was hit hard on the forepart of his head by the person basket, breaking the skull and causing instant death. The fellow crew on site were tragically not able to assist as the fall and collision with the person basket were too hard to let any chance of survival remain.

The port pilot who was still on board of MV “GERHARD G.” directly called the local emergency response and the ship proceeded alongside immediately to allow quick boarding and assistance.

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Person basket and tackle on closed hatch

Photo taken by on scene investigator



Point the hook is attached to

Photo taken by on scene investigator

PART E – ANALYSIS AND COMMENTS

1. The aim

The aim of the investigation conducted is to raise awareness of the shipping community in regard to the safety issues of electrical tackles used for the lifting of persons as intended by the hatch gantry manufacturer without a fall preventer or arrest and the importance of maintenance and testing of this equipment even though it is often not part of the official lifting appliances but falls under ILO convention 152, work safety. Thus the administration of Antigua & Barbuda flag State issued safety alerts to all companies known to have similar equipment installed, even if not in use. This was achieved through an exchange of information acquired by the Dutch flag State from the hatch gantry manufacturer.

This list of vessels was worked through and all A&B vessels companies and managers were informed of the risks at hand and asked to report on measures taken to minimize the chance of such an accident reoccurring. All companies took the matter seriously and responded in the expected fashion. This was further followed up by the A&B inspection regime where the vessels equipped with the gear in question were checked up on during the compulsory annual flag State inspection with positive results reported back.

2. Causal factor

The conducted investigation showed a discrepancy between the national certification (Swiss) and set limitations (no lifting of persons allowed without a fall prevention device installed) of the electrical tackle installed by the Dutch hatch gantry maker and the Dutch certification/testing of the hatch gantry and person basket combination. This led to a single point fixed hoisting device to be used to lift persons without a fall preventing device attached.

The meagre maintenance documentation and found state of the hook and tackle imply that the maintenance was (annual inspection by sight) not sufficient to prevent the casualty. The superficial check prior to setting up was not able to include the part of the hook that parted (swivel) as it is difficult to see the inner part without disassembling it. Thus, the first impression is that the maintenance was the primary causal factor.

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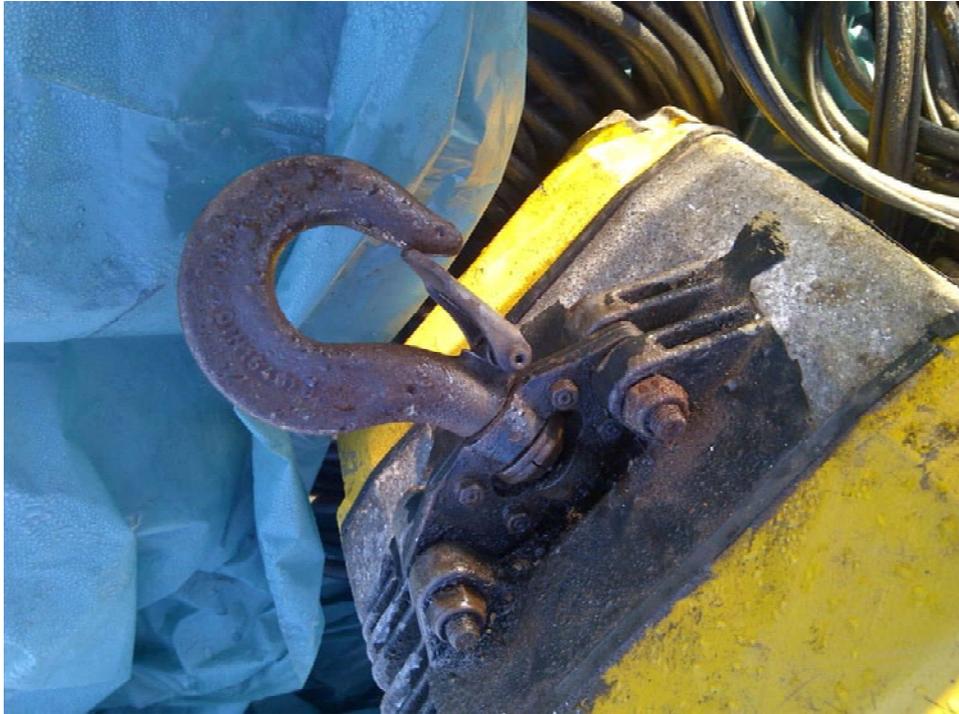


Parted hook

Photo taken by on scene investigator

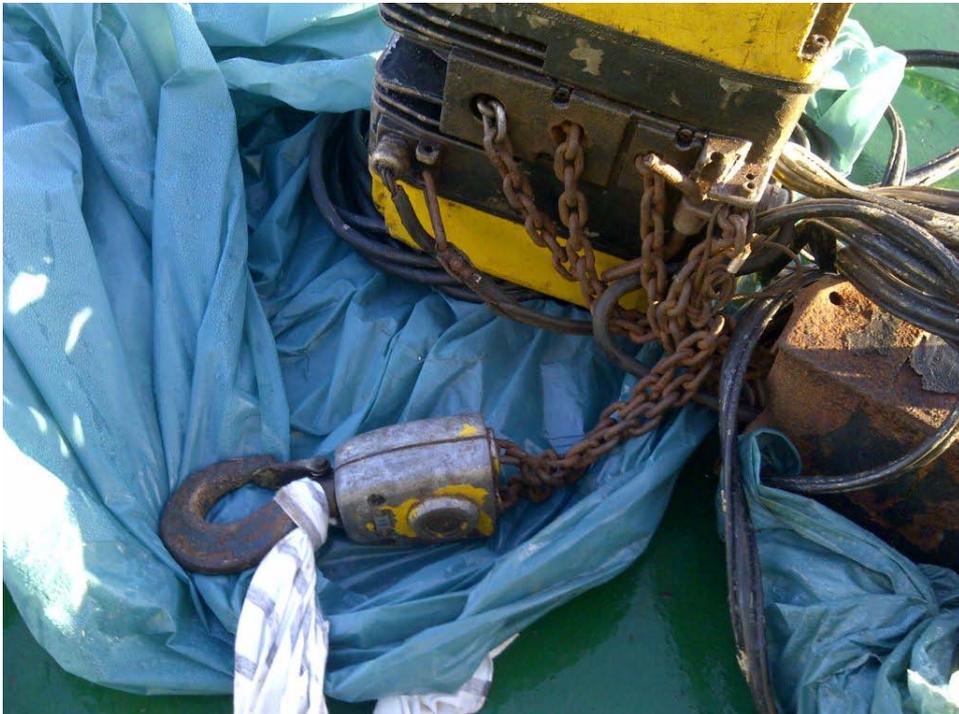
Looking further than the vessel itself it can be said that the found different certification and consequent usage of the tackle to lift and lower persons in a basket made this very serious casualty possible more than once. During discussions with the hatch gantry crane manufacturer at their facilities, a possible solution (fall arrest that can be fitted to existing systems) was presented. This device was at the time still in the certification phase (see next page).

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Intact 2nd electric tackle

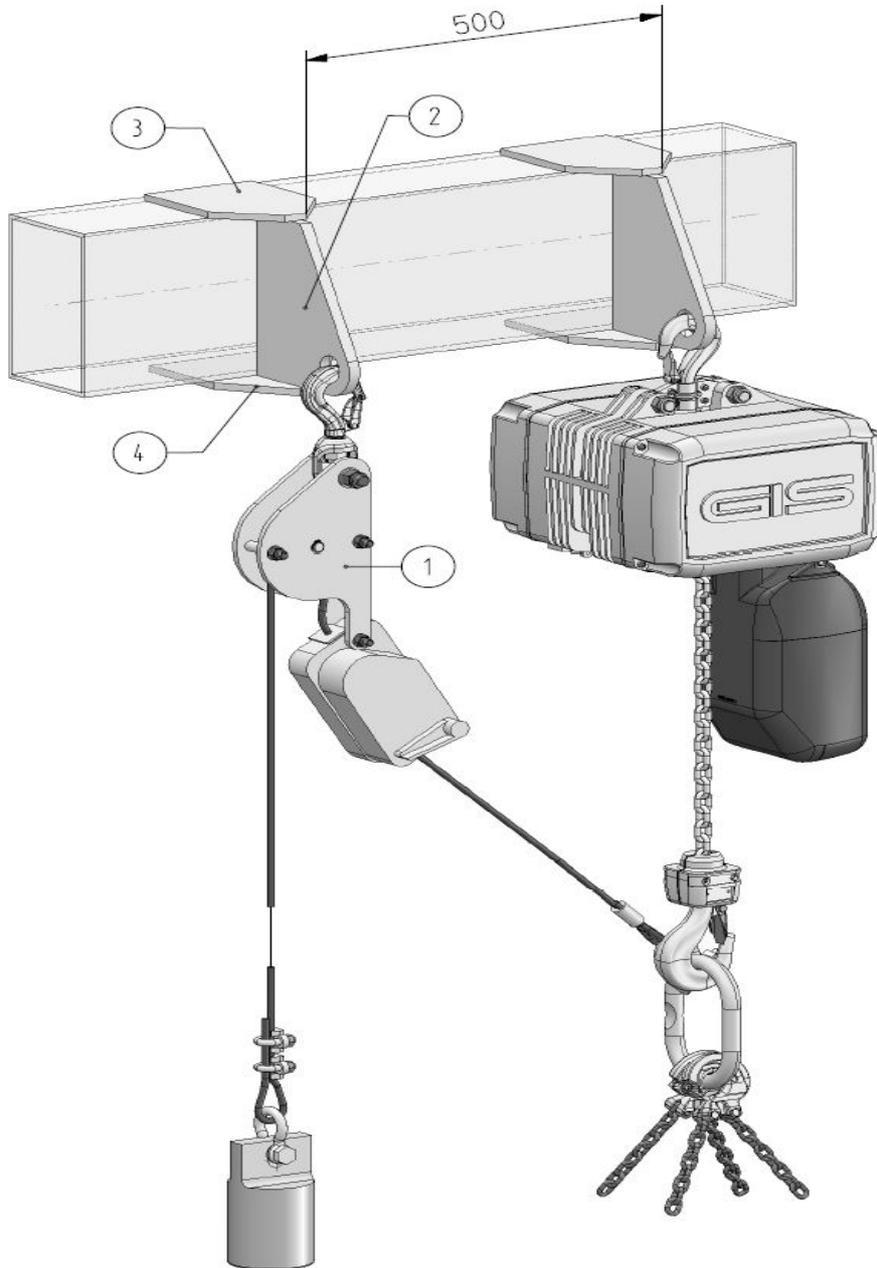
Photo taken by on scene investigator



Intact lower part of tackle with working chain & hook

Photo taken by on scene investigator

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Fall arrest design drawing, Coops & Nieborg



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PART F – FINDINGS

1. Safety issues

The primary safety issue found is the combination of different types of equipment, having different maintenance and operational instructions, delivered as one system. The tackle was seen as part of the hatch gantry by the crew and the apparently followed manufacturer maintenance instructions (annual inspection by sight) were not sufficient to prevent the investigated casualty. The setup was not questioned by the found risk assessments neither was the out of the normal situation of drifting in port considered on board the GERHARD G.

It also appears that the hatch gantry is seen as part of a hatch system setup and not as a lifting appliance as per ILO 152. This means, tests under supervision of the class society including all functions and hatch gantry parts, were not performed as would have been the case with a standard lifting appliance.

If the electrical tackles manufacturer's (GIS Switzerland) instruction/certification would have been followed by the hatch gantry manufacturer and the GERHARD G. managing company, no persons would have been lowered and lifted without a fall arrest/preventer. This very important factor was either ignored or not noticed as full Dutch certification was achieved and the system sold to many clients.

The administration of Antigua & Barbuda accepts the certification by the Netherlands as it should meet the EC standards. ADOMS also takes part in the IMO working group on lifting appliances to ensure that the equipment and appliances in question are seen and thus treated as any other lifting appliance.

All A&B flagged vessels with the system in question fitted were made aware of the dangers and asked to specify the risk mitigation actions taken in order to prevent further accidents. Not all measures can be said to be clearly safer options (ladders, hooks and ropes). This was again followed up and the seriousness of the investigated casualty stressed to motivate a real improvement.



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2. Lesson to learn

Personal safety is a personal responsibility even if the equipment has been certified and installed during the build phase of a vessel. The competent person who checks the gear prior to its use should be trained in safety awareness and the requirements as per definition in ILO 152. This includes supervision of storage and maintenance and especially the diligent check before setting up and commencing operation. Last but just as important the persons involved in the direct operation of the equipment, in this case the person basket and attached electrical tackle hanging from the hatch gantry on one single point, must also assess the involved risks and maybe even question the given setup.

3. Recommendations

Recommendations in regard to the awareness and reoccurrence prevention were already made during the first six months after the casualty. Ships companies with a setup similar to the setup on GERHARD G. were individually contacted and made aware of the risks at hand and consequent injuries and fatality. All contacted offices were asked to specify the actions taken after reassessing the risks of their individual vessels (in regard to cargo hatch size, design and followed procedures) and making sure that the Safety Management System includes all safety significant operations on board.

It was found that the majority of companies contacted the hatch gantry manufacturer and inquired about the possible technical measures that could be taken (i.e. fall preventer or arrest). Others informed that the person basket and the electrical tackle arrangement had been taken off the vessel on delivery as it was not deemed suitable and other methods were applied (i.e. remote hydraulic bulkhead securing pin control, ladders secured from above and as last resort no shifting of bulkheads).

ADOMS IID recommends that the testing and certifying authorities categorize the hatch gantry system, including the electrical tackle and person basket, as a lifting appliance when lifting by gantry or other crane takes place in order to assure the correct testing and maintenance including documentation or certification thereof.

Bremerhaven, 20.04.2016

Nils Beyersdorff
Chief Casualty Investigator



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Addresses and contacts

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Investigation report into the serious accident on board M/V ALWIS,
Reference: D8/2011M, www.turvallisuustutkinta.fi/en
[M/V ALWIS - Casualty Report](#)