DANISH MARITIME AUTHORITY

MARINE ACCIDENT REPORT
DIVISION FOR INVESTIGATION OF MARITIME ACCIDENTS

MARTIN N / OW COPENHAGEN
Fall overboard on 1 February 2010

Division for Investigation of Maritime Accidents, Danish Maritime Authority,
Vermundsgade 38 C, DK 2100 Copenhagen
Phone: +45 39 17 44 00, Fax: +45 39 17 44 16 CVR-no.: 29 83 16 10

The casualty report has been issued on 3 August 2010.

Case: 201001469

The casualty report is available on our homepage: www.dma.dk.

The Division for Investigation of Maritime Accidents

The Division for Investigation of Maritime Accidents is responsible for investigating accidents and serious occupational accidents on Danish merchant and fishing vessels. The Division also investigates accidents at sea on foreign vessels in Danish waters.

Purpose

The purpose of the investigation is to clarify the actual sequence of events leading to the accident. With this information in hand, others can take measures to prevent similar accidents in the future.

The aim of the investigation is not to establish legal or economic liability.

The Division's work is separated from other functions and activities of the Danish Maritime Authority.

Reporting obligation

When a Danish merchant or fishing vessel has been involved in a serious accident at sea, the Division for Investigation of Maritime Accidents must be informed immediately.

Phone: +45 39 17 44 00
Fax: +45 39 17 44 16
E-mail: oke@dma.dk
Cell phone: +45 23 34 23 01

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1 Summary

On 1 February 2010 at approximately 1700 hours, the launch MARTIN N was engaged to transfer a chief engineer who had been on leave from shore to the oil and chemical tanker OW COPENHAGEN that was at anchor on Copenhagen roads.

The chief engineer refused to don a lifejacket when urged to so by the launch skipper and later on also by two crewmembers on the tanker who were ready at the pilot ladder to receive and assist the chief engineer.

When shifting from the launch to the tanker, the chief engineer suddenly lost his grip on the pilot ladder and fell into the water without a sound.

The launch was manned by the skipper only, and he managed to fetch the chief engineer. But due to the cold he could hold him for 5 -10 minutes only.

The MOB boat from OW COPENHAGEN was launched, and a search and rescue operation was initiated with the participation of several vessels, another MOB boat from a ro-ro passenger ship and a rescue helicopter.

The chief engineer was recovered after approximately 50 minutes and showed no signs of life and soon after, when taken to hospital by helicopter, he was declared dead.

2 Conclusion

The Investigation Division finds the following factors causal or contributory to the falling over board of the crewmember and to his subsequent unsuccessful recovery:

2.1 Unsafe actions

The chief engineer's attempt to shift from the launch to the ship in a heavily intoxicated condition was a contributory factor to the accident (6.1).

It was a contributory factor to the death of the chief engineer that he had not donned a lifejacket and an immersion suit (6.1).

A strobe-light fixed onto the chief engineer and the use of a safety line might have contributed to an earlier locating and recovery of him (6.1).

2.2 Unsafe surroundings/conditions

The low air and seawater temperatures contributed to the unsuccessful attempt of the skipper of MARTIN N to recover the chief engineer (6.2).

The one-man operation of the launch was a causal factor for the skipper's inability to recover the chief engineer from the water (6.2).

2.3 Persons

The chief engineer lost his grip of the pilot ladder and fell into the water as if he suddenly fainted and was indisposed (6.3).

The chief engineer's constitution, heart disease and severe intoxication combined with the physical effort in shifting from the launch to the tanker via a pilot ladder at open sea in cold weather may have caused sudden fainting and indisposition (6.3).

2.4 The safety systems

That the policy on drug and alcohol abuse for OW COPENHAGEN was not effective on preventing the chief engineer's attempt of joining the ship in an intoxicated condition (6.4).

The lack of effective precautions against crewmembers impaired by alcohol joining the ship and the lack of a proper alcohol policy for the launch company were factors that contributed to the chief engineer not being refused admittance in his heavily intoxicated condition (6.4).

The Investigation Division finds the lack of a safety system at the launch company concerning the transfer of personnel by launch was a causal factor for the chief engineer not wearing a lifejacket and/or other personal protective equipment (6.4).

The lack of a safety procedure for MARTIN N and an effective one for OW COPENHAGEN were causal factors for the chief engineer being transferred from shore to ship without having to don a lifejacket and/or other personal equipment (6.4).

2.5 Safety culture

The transfer of the chief engineer from shore to ship was not planned and organized so as to ensure safety and health (6.5).

The background and sequence of the accident indicate an insufficient safety culture in MARTIN N not promoting safety in transferring personnel between shore and ship (6.5).

The insufficient safety culture in MARTIN N implied that the chief engineer did not use any personal protective equipment such as a lifejacket, an immersion suit or a safety line (6.5).

3 Initiatives and recommendations

Initiatives taken by the ISM responsible owner/operator

The ISM responsible owner/operator of OW COPENHAGEN has drawn up a new and more rigid alcohol policy covering all personnel on board vessels in the company's management and included it as a chapter of the ship's SMS manual to enter into force on 5 June 2010.

The ISM responsible owner/operator has entered into an agreement with another launch company on the transferring of personnel. According to that agreement, 12 immersion suits have been purchased and placed in three major relevant ports in Denmark. It is now a company demand that all persons being transferred by launch must don an immersion suit and a lifejacket. If this is being refused, the person(s) in question must be refused to admit and the ISM responsible owner/operator is to be informed.

The ISM responsible owner/operator is about to introduce a safety kit for office-based personnel travelling to the company's ships. This kit will contain an immersion suit, a lifejacket and the necessary personal protection equipment.

The ISM responsible owner/operator will implement a procedure for shifting crewmembers offshore, based on the results from the internal investigation, the risk assessments and the recommendations from the Danish Maritime Authority.

The ISM responsible owner/operator is carrying out an internal investigation of the efforts done with the ship's MOB boat the intention of which if to improve the chances of a successful outcome in similar future situations.

Initiatives taken by the launch company

The launch company has made out a procedure for transferring personnel on Copenhagen roads.

Initiatives taken by the Danish Maritime Authority

Immediately after the accident, the Danish Maritime Authority published on its homepage a Safety Alert (list of measures to consider when transferring persons at sea). This list is shown as an enclosure to this report.

Recommendations

The Investigation Division recommends the Danish Maritime Authority to review its Safety Alert in view of the findings in this report, and further to consider introducing the identified safety principles to a wider group of administrations and end users.

The Investigation Division recommends the launch company to consult Seahealth Denmark and draw up and implement a safety policy of which a work place assessment and procedure for transfer of personnel will form a part.

4 The investigation

The Investigation Division has received a report, extracts from log books and relevant documents from the master of OW COPENHAGEN.

The Investigation Division has received the extract of the SMS manual for OW COPENHAGEN on drug and alcohol policy from the ISM responsible owner/operator.

The Investigation Division has interviewed the skipper of MARTIN N.

The Investigation Division has examined MARTIN N in the port of Copenhagen.

The Investigation Division has received the search and rescue report from the Admiral Danish Fleet.

The Investigation Division has received the certificate for the medico-legal post-mortem of the deceased chief engineer that was carried out on 3 February 2010.

The Investigation Division has received reports from the Danish police.

The Investigation Division has received the search and rescue report from the master of CROWN OF SCANDINAVIA.

5 Factual Information

5.1 Accident data

Type of accident (the incident in details)	Accident to seafarer, fall over board
Time and date of the accident	1 February 2010, 1713 hours
Position of the accident	55°43,9' N – 012°39,1E
Area of accident	Copenhagen roads
Injured persons	One person perished
IMO casualty class	Very serious marine casualty

5.2 Navigation data

OW COPENHAGEN

Stage of navigation	At anchor

MARTIN N

Stage of navigation	Alongside OW COPENHAGEN

5.3 Weather data

Wind – direction and speed	Northwesterly, 8-10 m/sec.
Sea	Swell/wave height 0.5 metre, SSE-bound
Current	0.5-1 knot, S-bound
Visibility	Good
Light/dark	Twilight/dark
Air temperature	-5 ℃
Seawater temperature	1 ℃

5.4 Ship data

Name	OW COPENHAGEN	MARTIN N
Home port	Aalborg	Copenhagen
Call sign	OUOH2	OU 4068
IMO no.	9327487	
Owners	Barbera Shipping Co. Ltd. Nassau, Bahamas	Frihavnens Færgefolk
ISM responsible owner/operator	O.W. Tankers A/S	
Register	Danish International Register of Shipping	Royal Danish Register of Shipping
Flag State	Denmark	Denmark
Construction year	2006	1986
Type of ship	Oil and chemical tanker	Cargo ship (launch)
Tonnage	3021 GT	8.7 GT
Classification society	Germanischer Lloyd	Unclassed
Length overall	90.50 metres	10.30 metres
Engine power	1920 kW	140 kW
Area served	Worldwide trade within GMDSS sea areas A1, A2 and A3	Copenhagen roads

5.5 The crew

OW COPENHAGEN

Number of crewmembers	11
Minimum Safe Manning	7
Occupation on board the ship at the time of the accident (crewmembers relevant to the accident)	Age, Certificate of Competency, other certificates, training, sailing time
Master	43 years of age, certified as a master mariner on ships of 3000 GT or more, employed by this company for 15 years
Chief officer	30 years of age, certified as a chief mate, employed by this company for 1½ years
Chief engineer (perished person)	50 years of age, certified as a ship's engineer 1st class, employed by this company for 4½ years

MARTIN N

Number of crewmembers	1
Minimum Safe Manning	2*
Occupation on board the ship at the time of the accident (crewmembers relevant to the accident)	Age, Certificate of Competency, other certificates, training, sailing time
Skipper	64 years of age, holder of a certificate of proficiency in sailing (pleasure crafts), not employed by the owners but assisting occasionally, experienced in sailing pleasure crafts since childhood

* According to notice no. 12130/BSF 1, dated 10 August 2001, the crew of MARTIN N must consist of two persons: A skipper holding a certificate of proficiency in sailing (merchant ships), and another person of age holding a health certificate with no limitations and being instructed in the use of the vessel's fire-fighting and life-saving equipment and manoeuvring the vessel.

*One person must hold a certificate of proficiency in motor operation.

The skipper of MARTIN N did not hold a certificate of proficiency for merchant ships as prescribed to be in command of the vessel.

MARTIN N was not duly manned.

5.6 Narratives

This part is based on the report from the master of OW COPENHAGEN:

On 1 February 2010 at 1520 hours, the oil and chemical tanker OW COPENHAGEN finished bunker operations for the passenger ship POMERANIA in the port of Copenhagen and anchored on Copenhagen roads in pos. 55°4 3.9' N – 012°39.1' E at 1600 hours.

It was decided that the ship's chief engineer, who had been on leave, should join the ship late in the afternoon on Copenhagen roads, and the master arranged for the chief engineer to be brought from shore to the ship by the launch MARTIN N.

When at anchor, OW COPENHAGEN was heading north and the master decided that the chief engineer was to board the ship at the port side which was the lee side.

The master and the chief mate were on the bridge, and at 1655 hours the master called MARTIN N to check whether the chief engineer was on his way. This was confirmed by the skipper of MARTIN N who said that the rendez-vous would take place approximately 15 minutes later.

The chief officer instructed two deck hands, one able bodied seaman (AB) and one ordinary seaman (OS) to rig the pilot ladder and prepare a lifebuoy, a lifejacket and a heaving line for boarding the ship at the port side and to assist the chief engineer when boarding. The chief officer was in VHF contact with the deck hands whilst they were preparing the boarding.

At 1710 hours, MARTIN N was alongside OW COPENHAGEN. Its freeboard was 0.5 metre and the freeboard of OW COPENHAGEN was 2 metres. The pilot ladder was already lowered. However, on the request of the chief engineer the deck hands lowered it a little further.

MARTIN N was covered with ice and snow on all outdoor surfaces.

The deck hands offered the chief engineer the lifejacket but he shouted: *"I don't want it – take my suitcase!"* He then tried to lift up the suitcase to the AB, but gave up the attempt. The AB then sent down the heaving line and the chief engineer tied his suitcase to the line, whereupon the AB lifted up the suitcase. It weighed approximately 5 kg.

The skipper of MARTIN N was at the helm manoeuvring the vessel, and the chief engineer grabbed the pilot ladder with both hands, but slipped from the vessel into the water without a shout.

The chief engineer lay in the water with his front downwards and not moving, and the skipper grabbed his shoulders, but he could not hold him.

The OS announced to the bridge the “Man Overboard” alert and the AB immediately threw the lifebuoy into the water very close to the right side of the chief engineer’s head.

The chief officer activated the MOB alarm. The AB on deck, the chief officer, the chief engineer to be relieved, the motor man and the 2nd engineer immediately gathered at the rescue boat deck and prepared the boat for launching.

The OS was looking out for the chief engineer and the 2nd officer fetched two sets of resuscitation equipment from the ship’s hospital and placed them in the day room next to the port entrance and on the bridge, respectively. The cook prepared blankets.

The master contacted the Copenhagen Harbour office on VHF requesting a rescue operation. He also contacted the owners and informed them about the situation.

At 1720 hours, the MOB boat was launched and manned with three crewmembers duly dressed with survival suits and holding portable searchlights. The MOB boat headed towards MARTIN N and began searching for the missing chief engineer in the area close to MARTIN N.

The master was in VHF contact with the skipper of MARTIN N who had lost eye contact with the chief engineer in the water. He also instructed the 2nd engineer to start both main engines in order to be ready for manoeuvring and to heave up the anchor.

The Copenhagen Harbour office informed Lyngby Radio about the situation and two pilot boats were sent to assist in the search and rescue operation.

The MOB boat from OW COPENHAGEN searched for 20-30 minutes whereafter the chief officer decided to return to OW COPENHAGEN. The master called MARTIN N to come alongside to pick up two crewmembers to assist with the search.

Two crewmembers boarded MARTIN N and this vessel commenced searching for the chief engineer.

The passenger/ro-ro ship CROWN OF SCANDINAVIA, which had just passed the area, returned and launched its MOB boat to join the search for the chief engineer.

A SAR helicopter arrived at the scene at approximately 1740 hours.

At approximately 1800 hours, the chief engineer was found by a MOB boat from CROWN OF SCANDINAVIA, and he was recovered by the helicopter, whereafter MARTIN N returned to OW COPENHAGEN.

This part is based on the statement from the skipper of MARTIN N:
At 1645 hours, the chief engineer arrived at the boat station bringing his suitcase, and the vessel MARTIN N departed at 1650 hours. He was wearing ordinary clothing and a jacket with lining. At the departure from the quay, it was twilight.

The skipper and the chief engineer spoke together on the way, and the skipper noticed that the chief engineer had a smell of alcohol and a merry appearance.

Only the skipper and the chief engineer were on board MARTIN N, and the chief engineer told the skipper that he was supposed to join the ship on Wednesday and that he was not happy to join it already this day (Monday).

MARTIN N arrived at OW COPENHAGEN at approximately 1700 hours. Two or three men were ready at the pilot ladder, and the skipper noticed that the ladder was free of snow and ice. He told the chief engineer that it would be a good idea to don a lifejacket.

The chief engineer declined to do so in a condescending way.

The skipper repeated his suggestion, but the chief engineer did not want to use a lifejacket. Thus, the chief engineer left the vessel donned in ordinary clothing. The transfer to OW COPENHAGEN took place via the aft deck on MARTIN N, whilst the skipper was in the wheelhouse to keep the vessel alongside.

The chief engineer went alone to the aft deck with his suitcase which he handed up to a crewmember on OW COPENHAGEN who stepped down a few steps on the ladder fetching the suitcase. One of the men at the ladder of OW COPENHAGEN told the chief engineer that the suitcase had been received and that he should don a lifejacket.

The chief engineer again refused to do so and stepped onto the ladder. He ascended two or three steps whereafter he stopped moving, stiffened shortly and lost his left hand grip. His right hand was still holding onto the ladder, while the chief engineer turned his back towards OW COPENHAGEN and lost his right hand grip and fell upright into the water. The skipper did not see the chief engineer's face during the fall.

As the chief engineer fell into the water, the skipper manoeuvred the vessel slightly astern and went to the deck from where he fetched the chief engineer. It was difficult to grab the chief engineer by leaning over the gunwale. The chief engineer was of a stout stature.

At the same time, a lifebuoy was thrown from OW COPENHAGEN towards the chief engineer.

The skipper held the chief engineer with both hands and the vessel drifted slightly astern due to the current. While the skipper was holding the chief engineer, the chief engineer's head was above the water. The skipper could not see the chief engineer's face nor was he able to establish any verbal contact with him. After the chief engineer fell into the water, he showed no signs of life.

The skipper held the chief engineer for 5 -10 minutes until he could not hold him any longer. Meanwhile, on board OW COPENHAGEN they told the skipper that they would launch a MOB boat to assist him. The skipper said they had to hurry, because it was very hard to hold the chief engineer.

On OW COPENHAGEN, the MOB boat was not launched until the skipper could no longer hold the chief engineer and had to let go of him. The chief engineer then began drifting southwards. The skipper kept his vessel close to the chief engineer and pointed at him with the searchlight that was operated from the wheelhouse. He estimates that this was going on for 15 -20 minutes, but his sense of time had disappeared.

When the MOB boat was approaching from the starboard side of OW COPENHAGEN, the chief engineer and MARTIN N had drifted 20-30 metres astern and the skipper had lost eye contact with the chief engineer, because he wanted to orient himself about the MOB boat. Thereafter the chief engineer had disappeared.

MARTIN N returned to OW COPENHAGEN and received two crewmembers with big hand held searchlights. There was a continuous search until the chief engineer was found approximate one hour later.

This part is based on the statement from the skipper of MARTIN N given to the police:
Just before they departed from the quay, the skipper asked the chief engineer to don a lifejacket. The chief engineer replied that he did not use such things and for that matter he never had done so.

When at OW COPENHAGEN, the skipper of MARTIN N watched the chief engineer leave the vessel safely and subsequently climb up towards the ship's railing approximately 4 metres up.

When the chief engineer was more than halfway up, the skipper noticed that the chief engineer stiffened and suddenly lost his left hand grip and swung out hanging for a short while. Then the chief engineer lost his right hand grip and fell right down into the water with his legs first.

5.7 Scene of the accident

MARTIN N's aft deck viewed from OW COPENHAGEN Photo: OW COPENHAGEN

MARTIN N's aft deck viewed from OW COPENHAGEN Photo: OW COPENHAGEN

MARTIN N's aft deck viewed from OW COPENHAGEN Photo: OW COPENHAGEN

5.8 Search and rescue operation

At 1720 hours, the Admiral Danish Fleet was notified about the accident by the Copenhagen Harbour office, and a search and rescue operation was initiated.

At 1722 hours, the passenger/ro-ro ship CROWN OF SCANDINAVIA, having departed from Copenhagen for Oslo at 1700 hours, received a Mayday distress signal on VHF channel 16.

CROWN OF SCANDINAVIA, in a position approximately 1½ nm to the north-east of OW COPENHAGEN, deviated from its course and returned towards OW COPENHAGEN, while the crew prepared for launching the ship's "Fast Rescue Boat" (FRB) and the "Man Over Board boat" (MOB). Within a few minutes, both boats were launched and their crews received instructions from CROWN OF SCANDINAVIA about the search pattern.

Soon two pilot vessels, a rescue helicopter, two cargo ships, OW COPENHAGEN's MOB boat, MARTIN N and CROWN OF SCANDINAVIA participated in the search and rescue operation with CROWN OF SCANDINAVIA as the "On Scene Commander".

The helicopter and CROWN OF SCANDINAVIA used searchlights, and at 1803 hours a lifebuoy was observed from the bridge of CROWN OF SCANDINAVIA. The lifebuoy had been thrown into the water from OW COPENHAGEN and thus it was a good indication of where the chief engineer might be found. Therefore the FRB and the MOB from CROWN OF SCANDINAVIA were directed to the area near the lifebuoy.

At 1805 hours, the chief engineer was found drifting, lifeless and with his head under the water. He was recovered by the FRB from CROWN OF SCANDINAVIA and rendered resuscitative first aid by the crew. Then within a few minutes, the chief engineer was hoisted into the helicopter.

At 1817 hours, the rescue helicopter landed at the hospital's helicopter platform.

At 1845 hours, the chief engineer was declared dead at the hospital.

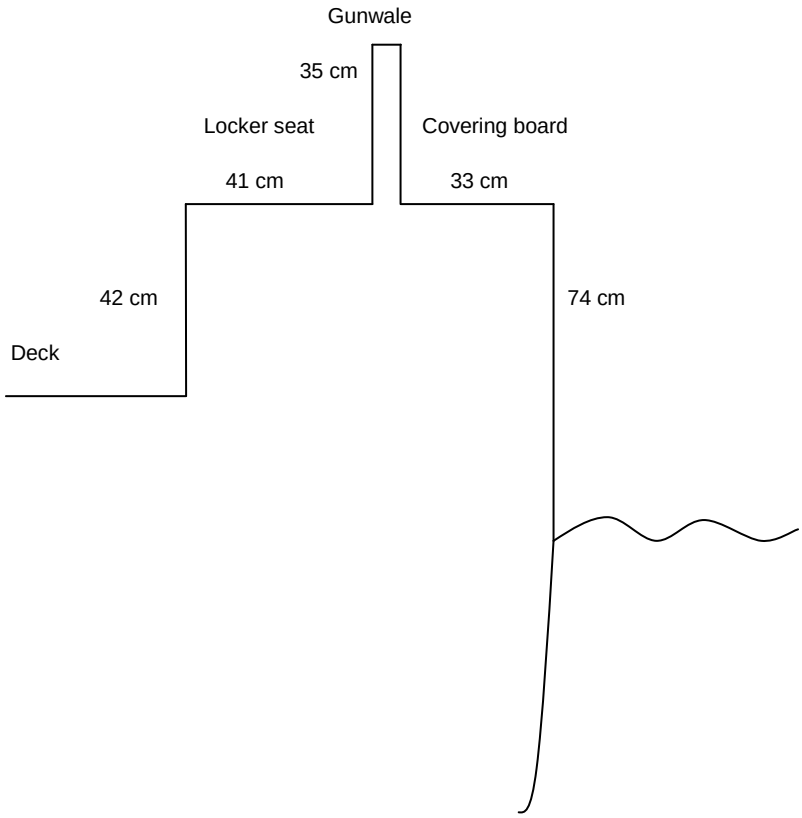
5.9 External factors

Because the skipper was alone on board MARTIN N after the chief engineer had fallen into the sea, he became engaged in manoeuvring the vessel and fetching the chief engineer almost at the same time.

The skipper could not fetch any gear to help holding or lifting the chief engineer out of the water as this meant that he would have to let go of him.

The weather conditions were disadvantageous with seawater temperature at the freezing point and an air temperature of approximately -5 ℃. This made it impossible for the skipper to hold the chief engineer bare-handed but for a short while.

The height of the gunwale on the launch is 77 cm above deck level, and a locker seat and a covering board made it even more difficult to reach a person in the water when leaning over the gunwale (see dimension sketch on the next page).



The visibility was good, but it had become dark, and because the chief engineer did not wear a lifejacket and had no light on, it was very difficult to spot him in the water.

All outdoor surfaces on MARTIN N, including the lifebuoys, were covered by ice and snow.

MARTIN N was equipped with one liferaft, one rescue net, two lifebuoys and 14 life-jackets.

5.10 The chief engineer's condition with relation to the accident

A medico-legal post-mortem carried out on 3 February 2010 revealed that the chief engineer had died from drowning.

The post-mortem also revealed that the chief engineer was suffering from a heart decease due to moderate/severe coronary sclerosis.

A blood test of the deceased chief engineer revealed an alcohol content of 2.28 per thousand, making a calculated minimum value of 2.07 per thousand.

The chief engineer held a valid health certificate with no limitations. He was 177 cm tall and weighed 107 kg.

In the spring of 2009, the chief engineer had suffered from shoulder problems that had been treated and subsequently had improved. Later on, he had suffered from pains in his left wrist and hand which, however, had not been treated.

5.11 Normal work performance and safety culture

The skipper of MARTIN N was not employed by the owner, but from time to time he used to lend a hand when needed.

This trip to OW COPENHAGEN was the first trip that day. His last trip prior to this one was three-four weeks previously.

Normally, the vessel is manned by two men, but on this day the skipper was alone because of busyness.

The launch company, operating this vessel only, had no formalized safety system covering the transfer of personnel to and from ships on Copenhagen roads. Normally, the passengers on MARTIN N were instructed in donning a lifejacket, finding the emergency exit, etc., but the crewmembers of the tanker OW COPENHAGEN were regular customers and thus familiar with the routine. Therefore no instruction was given to the chief engineer, and no procedure obliged him to don a lifejacket, an immersion suit or other kind of personal protection equipment when being transferred by MARTIN N.

When transferring persons unaccustomed to the routines, the skipper would have insisted that lifejackets must be donned.

No procedure ensured that the chief engineer donned a lifejacket or an immersion suit or other kind of personal protection equipment when boarding OW COPENHAGEN at open sea.

5.12 Policy on drug and alcohol abuse

The ISM responsible owner/operator of OW COPENHAGEN had a policy on drug and alcohol abuse as a chapter in the ship's SMS manual. The policy stated:

> *"Abuse of drugs and alcohol and its effects is one of the most significant social problems of today and increasing efforts is made everywhere to reduce the problem.*
>
> *Working onboard a ship - no matter what position one may have - is a task of great responsibility.*
>
> *We as managing Owners of the above vessel have one objective only in this respect: Our ship or its equipment must not be operated by crew members impaired by drugs or alcohol (impairment shall in this connection be defined as a blood alcohol content of 40 mg/100 ml or greater). Any breach of this objective will result in immediate dismissal of the crew member in question.*
>
> *To ensure that the above objective is fulfilled delivery of alcohol and legitimate drugs must be controlled so that all crew members are able to respond at any time to an emergency situation and Owners hereby instruct the crew of the above vessels as follows:*
>
> - *Four (4) hour abstinence is required prior to watch-keeping or duty.*
> - *Misuse of legitimate drugs is prohibited.*
> - *Use, possession, distribution or sale of illicit or un-prescribed controlled drugs onboard the ship is prohibited.*
>
> *Special attention is to be given packing warnings on legitimate prescript and over-the-counter medicine.*

In order to be able to prove to third party that the above objective is fulfilled and the above instruction is followed Owners can test and screen the crew members for drugs and/or alcohol abuse during routine medical examinations as well as unannounced testing. Tests to be carried out by "recognised authority" or by the Master of the vessel in case of abuse suspicion."

According to information provided by the ISM responsible owner/operator, a new and more restrictive policy on drug and alcohol abuse for on board personnel is being implemented to be in force from 10 June 2010.

The launch company had no policy on how to deal with any intoxicated passengers.

5.13 Survey

MARTIN N held a sailing permit valid from 11 May 2006 until 31 January 2010, and the vessel was due for survey by the Danish Maritime Authority not later than 31 January 2010 to obtain a new sailing permit.

No planning for the next survey had been made.

6 Analyses

6.1 Unsafe actions

The chief engineer was supposed to board the tanker via a pilot ladder.

The tanker OW COPENHAGEN is equipped with a gangway, which was, however, not prepared for use.

Even though it might be common practice, the Investigation Division finds that the use of a pilot ladder rather than a gangway for boarding the ship may in some cases involve a greater risk of accident.

When the chief engineer boarded MARTIN N, he had a smell of alcohol and a merry appearance.

The deck hands from OW COPENHAGEN, who came on board MARTIN N to assist the skipper, expressed in words their presentiment that the chief engineer was drunk.

A blood test of the deceased chief engineer revealed an alcohol content of 2.28 per thousand making a calculated minimum value of 2.07 per thousand.

The Investigation Division finds that the chief engineer's attempt to shift from the launch to the ship in a heavily intoxicated condition was a contributory factor to the accident.

The chief engineer refused to don a lifejacket when first the skipper of MARTIN N and later also the deck hands at the pilot ladder urged him to do so. Nor had he donned an immersion suit and he used no safety line.

During all the time when the chief engineer lay in the water, he had his face and front downwards.

A medico-legal post-mortem revealed that the chief engineer had died from drowning.

The Investigation Division finds that it was a contributory factor to the death of the chief engineer that he had not donned a lifejacket and an immersion suit.

The chief engineer was difficult to spot in the water because it was dark and he carried no light.

The chief engineer was recovered approximately 50 minutes after his falling into the water.

The Investigation Division finds that a strobe-light fixed onto the chief engineer and the use of a safety line might have contributed to an earlier locating and recovery of him.

6.2 Unsafe surroundings/conditions

The skipper of MARTIN N was alone with no crewmember to assist him in the attempt to recover the chief engineer.

MARTIN N was equipped with two lifebuoys and one rescue net. The skipper was alone on board MARTIN N and he could not fetch any life-saving appliances for holding the chief engineer or lifting him out of the water.

Because of the low temperatures of the air and seawater, the skipper lost his arm and hand motor function very soon during his attempt to hold and recover the chief engineer by hand.

The Investigation Division finds that the low air and seawater temperatures were factors that contributed to the unsuccessful attempt of the skipper of MARTIN N to recover the chief engineer.

The Investigation Division finds that the one-man operating of the launch was a causal factor for the skipper's inability to recover the chief engineer from the water.

6.3 Persons

The master of OW COPENHAGEN stated that the chief engineer grabbed the pilot ladder with both hands and slipped from the launch into the water without a shout.

The skipper of MARTIN N stated that the chief engineer stepped onto the ladder and ascended two or three steps whereafter he stopped moving, stiffened and lost his left hand grip. The right hand was still holding onto the pilot ladder, while he turned his back towards OW COPENHAGEN and lost his right hand grip too and fell upright into the water.

There is a discrepancy between the two statements as regards whether the chief engineer fell from MARTIN N or from the pilot ladder.

However, irrespective of whether the chief engineer fell from the launch or from the pilot ladder, it is evident that the chief engineer suddenly lost his grip and fell into the water without a sound.

When the skipper of MARTIN N tried to hold the chief engineer, there was no verbal contact between them, and the chief engineer seemed lifeless and unable to make any physical attempts of recovering himself.

When the skipper had to let go of the chief engineer, the chief engineer lay lifeless in the water with his face downwards.

The Investigation Division is of the opinion that the chief engineer lost his grip of the pilot ladder and fell into the water as if he suddenly fainted and was indisposed.

Although the chief engineer held a valid health certificate, the post-mortem revealed that he suffered from a heart disease due to moderate/severe coronary sclerosis.

The chief engineer was 177 cm tall and weighed 107 kg.

The Investigation Division finds that the chief engineer's constitution, heart disease and severe intoxication combined with the physical effort in shifting from the launch to the tanker via a pilot ladder at open sea in cold weather may have caused a sudden faint and indisposition.

6.4 The safety systems

A policy on drug and alcohol abuse for OW COPENHAGEN was in force at the time of the accident stating, among other things, that the ship or any equipment must not be operated by persons impaired by an alcohol content of 0.4 per thousand or higher.

According to the ISM responsible owner/operator of OW COPENHAGEN the drug and alcohol policy did definitely cover the situation of a crewmember being transferred from shore to ship by a launch.

The drug and alcohol policy for OW COPENHAGEN did not prevent the chief engineer's attempt of joining the ship in an intoxicated condition.

The Investigation Division notes that the policy on drug and alcohol abuse for OW COPENHAGEN was not effective on preventing the chief engineer's attempt of joining the ship in an intoxicated condition.

The launch company had no policy on how to deal with possibly intoxicated passengers.

The Investigation Division finds that the lack of effective precautions against crewmembers impaired by alcohol joining the ship and the lack of a proper alcohol policy for the launch company were factors that contributed to the chief engineer not being refused admittance in his heavily intoxicated condition.

No safety procedure at the launch company ensured that the chief engineer was wearing a lifejacket. Neither did the drug and alcohol policy for OW COPENHAGEN.

The Investigation Division finds the lack of a safety system at the launch company concerning the transfer of personnel by launch was a causal factor for the chief engineer not wearing a lifejacket and/or other personal protective equipment.

The Investigation Division finds that the lack of a safety procedure for MARTIN N and an effective one for OW COPENHAGEN were causal factors for the chief engineer being transferred from shore to ship without having to don a lifejacket and/or other personal equipment.

6.5 Safety culture

No planning, instruction or procedure for the transfer of personnel had been drawn up for MARTIN N.

There was no established practice in the use of lifejackets, immersion suits or safety lines, and none of these items was used in this case.

The outdoor surfaces on MARTIN N, including the lifebuoys on the top of the wheelhouse and the aft deck and locker seat, were covered by ice and snow and not suitably prepared for the transfer of a person.

The Investigation Division finds that the transfer of the chief engineer from shore to ship was not planned and organized so as to ensure safety and health.

MARTIN N was due for survey by the Danish Maritime Authority not later than 31 January 2010 to obtain a new sailing permit. No planning had been made for the next survey.

The Investigation Division finds that the background and sequence of the accident indicate an insufficient safety culture in MARTIN N not promoting safety in transferring personnel between shore and ship.

The Investigation Division finds that the insufficient safety culture in MARTIN N implied that the chief engineer did not use any personal protective equipment such as a lifejacket, an immersion suit or a safety line.

6.6 Enclosures

Notice (Safety Alert) from the Danish Maritime Authority

Be in control of safety when transferring persons at sea

After a tragic accident in the Sound, the Danish Maritime Authority hereby clarifies what measures to consider when transferring persons at sea.

During the transfer of a crewmember in the roads of Copenhagen on 1 February 2010, he fell into the water and was lost. The crewmember was boarding the ship from a small transport vessel by means of the pilot ladder. The details of the accident are still unknown, but they are being examined by the Division for Investigation of Maritime Accidents.

The accident gives rise to clarifying some important measures to be taken when persons are being transferred at sea. If you observe these measures, you help ensure that the transfer is carried out in a safe and secure way. At the same time, it is important to stress that the necessary safety equipment must be in proper order and be used during the transfer.

The Danish Maritime Authority has drawn up the following list of conditions that should, as a minimum, be considered every time a person is to be transferred at sea.

Preparation:

- Is it necessary to carry out the operation at sea?
- Is the crewmember physically and mentally capable of carrying out the transfer?
- Are the conditions of weather and wind suitable for a safe transfer?

- Is the operation and the way it is carried out agreed and understood in every necessary detail by those involved on board both the transport vessel and the embarked/disembarked ship (the ship)?
- Is it possible to position the ship appropriately so that it provides shelter during the transfer?

- Is the transport vessel suitable for the task; is it, for example, fitted with a fixed platform with railings where the person can be accommodated safely and from where the embarkation can take place without any risk that the person falls into the water or gets jammed between the two ships?

Practical carrying out:

- Does the conning position in the transport vessel provide a sufficient view of the area from where the transfer is to be made?
- Is the area from where the transfer is to be made sufficiently lit?
- Does the ship use a ladder, gangway, etc. suitable for the purpose and have they been fitted correct?
- Are gangways used at passages exceeding 9 metres?
- Are lifebuoys located in an easily accessible position at the place of transfer in both the transport vessel and the ship?
- Are crewmembers ready to provide assistance, both on board the transport vessel and the ship? Are the crewmembers on board the transport vessel who provide assistance during the transfer fitted with a suitable working lifejacket, and has it been considered whether they should also be fitted with a suitable immersion suit or protective suit, in consideration of the season and other conditions?
- Has it been considered whether assisting crewmembers should be secured by means of a safety line, in consideration of the arrangement of the working vessel, the conditions of the transfer and the conditions of weather and wind, etc.?
- Is the person transferred fitted with a lifejacket, and has it been considered – especially in connection with low water temperatures – whether he should also be wearing an immersion suit or protective suit of a type making a safe transfer possible?
- Has it – depending on the conditions – been considered fitting the person to be transferred with a safety line?
- Has it been agreed that luggage is transferred separately by means of a crane, line, etc.?

Emergency preparedness:

- Does the crew of the transport vessel have a size making it possible for it to both manoeuvre the vessel and rescue a person fallen overboard?
- Are the crewmembers on the transport vessel able to supplement each other and, if so, can they take over each other's tasks?
- Are suitable technical facilities available on board the transport vessel for rescuing persons fallen overboard and is the crew trained in the use of these?

Is the crew on board the transport vessel and the ship aware of – and trained in – the alerting of local authorities and other ships in the area in case a person has fallen overboard?