

# Casualty Report

Date: 22 January 2004

Case: 199935384

File: 01.40.50

**DIVISION FOR INVESTIGATION  
OF MARITIME ACCIDENTS**

## **Occupational Accident**

### **DITTE THERESA**

**On 7 May 2003**

**DANISH MARITIME AUTHORITY**

Vermundsgade 38 C

DK-2100 Copenhagen Ø

Tel. +45 39 17 44 00

Fax +45 39 17 44 16

CVR-no. 29 83 16 10

oke@dma.dk

www.dma.dk



The purpose of investigating accidents at sea is to obtain information about the actual circumstances of the accident and to clarify the causes and the sequence of events that led to the accident in order that the Danish Maritime Authority or others can take measures to reduce the risk of recurrences. The aim of such investigations is not to take a position on the aspects of criminal liability or liability for damages in connection with the accidents.

## 1. The Casualty

---

Type of casualty: *Occupational accident*  
Location of casualty: *36°45'2 N – 012°09'8V*  
Date and time: *7 May 2003 at 1730 hours (ZT-1)*  
Injuries: *An AB died in hospital after an operation*

## 2. Ship Particulars

---

<i>Name of Ship:</i>	DITTE THERESA
<i>Registration No:</i>	
<i>Home Port:</i>	Struer
<i>Control No:</i>	D 3688/O Y B M 2
<i>Call Sign:</i>	
<i>IMO No:</i>	7423732
<i>Type of Ship:</i>	Tank Vessel
<i>Construction year:</i>	1976
<i>Tonnage:</i>	2813 BT
<i>Length/breadth/draft:</i>	83.76 m / 14.50 m / 9.10 m
<i>Engine Power:</i>	2059 kW
<i>Crew:</i>	13
<i>Owner:</i>	I/S Lysgaard Tankers DK-7400 Herning
<i>Classification Society:</i>	Lloyds' Register of Shipping

### 3. Collection of Data

---

The Division for Investigation of Maritime Accidents has received an oral explanation from the master and the chief officer and a report in writing from the master and the pump man.

The Division for Investigation of Maritime Accidents has also received a copy of an e-mail from the owner's agent in Lisbon to the owner informing him about the death.

### 4. The Crew

---

Master	44 years. He holds a Certificate as Master, etc. He holds a Health Treatment Certificate. The owner has employed him for 9 years. He has been sailing as a master for approximately 2 years.
Chief officer	62 years. He holds a Certificate as Master restricted, etc. He holds a Health Treatment Certificate. The owner has employed him for approximately 12 years. He has been sailing as a master for approximately 22 years.
1 <sup>st</sup> mate	
Chief engineer	
1 <sup>st</sup> engineer	
Pump man	48 years – AB – has been employed by the owner for 5 years.
AB (the injured person)	41 years – AB – has been employed by the owner for 2 months.
AB	49 years – AB – has been employed by the owner for 5 years.
AB	45 years – AB – has been employed by the owner for 2 months.
AB	36 years – AB – has been employed by the owner for 6 years.
Motorman	
Junior cook	
Mess man	

The manning was in accordance with the Minimum Safe Manning Documents.

### 5. Summary

---

During a voyage in rough weather, three crewmembers had to empty the emergency fire pump room in the forepart. While a crewmember was down in that room, the breaking sea hit the open hatch and the hatch slammed. The hatch hit an AB standing next to the hatch severely on the upper arm, which he subsequently broke severely.

The AB received first aid on board the ship and he was then evacuated by helicopter to a hospital in Lisbon where he was operated.

The following day, the AB had several heart attacks of which he died.

## 6. Narratives

---

On 7 May 2003, DITTE THERESE was on a voyage from Dakar to Dunkirk, with a full load of groundnut oil, when the alarm sounded at 1730 hours. The alarm indicated high water level in the emergency fire pump room in the forecastle.

They were sailing at reduced speed, 8 knots, because of rough weather causing the ship to take in water in the forecastle. The ship's normal speed when fully loaded is 12.5 knots.

The master was on the bridge together with the 1<sup>st</sup> mate. The master told the mate to find the pump man and the AB on duty to make them empty the pump room. It was not possible to ignore the alarm indicating high water level in the emergency fire pump room because of the electric boards in the room.

The ship's propeller pitch was reduced to 30% and the ship was kept on a northerly course (approximately 25°) because of the weather conditions, northerly wind, force 6 (Beaufort) and corresponding sea. When the mate came back to the bridge, the pitch was decreased to 10%.

The pump man and two ABs went fore to empty the room with an ejector. The ship's speed was 1-1½ knots at that time. They opened the entrance hatch for the emergency fire pump room and secured it in an open position with a hook. The pump man entered the room, while the two ABs remained on deck and prepared to lower the ejector to the pump man. The master could not see the crewmembers because of the deckhouse. He saw two heavy waves coming towards the ship, one wave immediately after the other. This first wave lifted the ship. When the forecastle went down after it had been hit by one wave; it was hit by yet another wave.

The breaking sea hit the upright hatch cover so forcefully that the cover was closed and hit one of the injured AB's arms, which consequently broke. When the water emerged fore, the AB reached, with his right arm, for the anchor chain situated close to the hatch. However, he did not withdraw his left arm in due time and the arm was hit by the hatch.

It was not possible for the master to see the accident happen or see whether the hatch was open, because the deckhouse prevented him. At first, he considered whether more water was coming into the emergency fire pump room. Approximately one minute later, the master saw the two ABs beside the deckhouse on the starboard side. Then he made a signal by the whistle for the purpose of making the crew on deck stop working. He then gave full rudder to port and a little more pitch ahead to get wind and sea on starboard side.

At this point, the master could see from the ABs' expressions and gestures that something had happened. The ABs came aft and the master steered the ship back on a northerly course where the ship would roll less. He sent the 1<sup>st</sup> mate down to see what had happened, and he telephoned the mess where the chief engineer answered the call. The chief officer was also in the mess and the master informed him about the accident and told him to go to the forecastle.

The ABs came in as the chief officer entered the hallway, and the chief officer ran to the injured AB. The AB was wet and his left arm was bleeding profusely. He was wearing rubber boots and a boiler suit. The chief officer cut the boiler suit off the AB. The chief officer saw that the AB had an open wound in his upper arm where it was bleeding profusely. How-

ever, it was not an arterial bleeding. The chief officer put a strap from the medicine chest around the injured AB's left upper arm and they put the AB in a cabin.

The AB was in great pain. When the AB was in bed, the chief officer loosened the strap and it did not make the bleeding heavier. The bleeding had practically stopped and the patient was conscious the whole time. They spoke and the AB said that he was in great pain.

The 1<sup>st</sup> mate returned to the bridge to tell that the AB had injured his arm gravely. The master set course towards Lisbon and told the mate to contact Lisbon Coast Radio. Afterwards, the 1<sup>st</sup> mate went back to make a vein drain (venflon) and a fusion containing sodium chloride ready if it should become necessary. The chief officer controlled the AB's pulse and observed him for shock. His pulse was 68 and the AB was talking with a normal voice.

The chief officer and the master agreed that the mate had to be brought ashore by helicopter. His arm was stabilized on his chest and he was wrapped up. His temperature was normal, though.

Other crewmembers called for the pump man who was in the emergency fire pump room. He had not been injured when the hatch cover had closed.

The master returned to the bridge where the 1<sup>st</sup> mate had made contact with the Portuguese coast radio station. The master informed them about the accident and asked for helicopter evacuation of the injured AB. He was switched over to the Portuguese Rescue Service where he spoke to a doctor. He informed the doctor about the rupture and that the AB had lost much blood. The master repeated that it was necessary to send a helicopter to evacuate the injured AB.

The chief officer asked an AB to stay with the injured AB, while he himself went to the bridge to see if the helicopter was on its way. The 1<sup>st</sup> mate went down to the injured AB.

The chief officer suggested to the master that the ship should go ahead at a slow speed because the AB was in pain when the ship hit the waves. The chief officer took over the watch and the ship continued its voyage with approximately 3½ knots towards Lisbon. At the same time, the master spoke with the coast radio station on MF, but the connection was very poor. The coast radio station informed him, amongst other things, that the helicopter had taken off towards the ship which was situated approximately 150 nautical miles from ashore. The master did not receive any information regarding further treatment of the injured AB. They simply were to wait for the helicopter. They informed the owner about the accident by e-mail in accordance with the ISM-procedure.

There were two men together with the AB constantly. The master and the 1<sup>st</sup> mate took turns. The whole time, the AB was conscious and capable of talking. They were still checking his pulse and his pupil reaction. The AB told them that the hatch hit him before it hit the hatch coaming. The master asked the two ABs and the pump man whether they had put the hook on the hatch, which all three could confirm they had.

The injured AB got the colour back in his cheeks.

At first, an aeroplane flew over the ship and they spoke with the crew on the aeroplane on VHF.

Later, at approximately 2220 hours, the helicopter reached the ship. A man and a stretcher were lowered to the poop deck. The AB preferred to walk by himself to the poop deck, which he did, steadied by the pump man and the master. He was secured to the stretcher. He brought along his personal belongings together with a letter to the hospital informing them which painkilling medicine he had taken. The helicopter flew from the ship bringing along the injured AB at approximately 2245 hours.

They flew the injured AB to the hospital Santa Maria in Lisbon where he was treated for his injuries (fracture on the upper arm). The operation was carried out the next morning on 8 May 2003 at approximately 0800 hours and seemed to be successful. After the operation, the AB had a heart attack – for no obvious reason – and he lapsed into deep unconsciousness – with possible brain damage resulting from the attack.

When the AB woke up, he was examined with a scanner to clarify the cause of the heart attack. After this, he was put into artificial respiration, stabilized and put under observation for two hours.

He was moved to the intensive care unit because his condition deteriorated – changing from stable to unstable. At the unit, he had yet another heart attack. The same night, he suffered several heart attacks. It was possible for the staff at the hospital to restore him to life each time using defibrillator and artificial respiration.

He suffered from his last heart attack in the morning of 9 May 2003, while the hospital staff was making him ready for a new scanning. At this stage, the staff was not able to restore him to life. He was declared dead at the hospital at 1145 hours

## **7. Additional Information**

---

### **Cause of death**

According to the death certificate, the AB died of thrombus in the lung followed by a recent heart attack.

### **The injured AB**

The AB was 41 years old. At the time of the accident, he had been working on DITTE THERESA for approximately 2½ months.

At the time of the accident, the AB had – like the rest of the crew – had a normal day on board the ship – on duty between 0800 and 1700 hours.

The AB had the obligatory medical examinations in Rotterdam on 28 February 2003 and had his health certificate issued without notifications. According to the master's statements, the AB seemed to be in good health and in good shape during his time on board the ship. He was a capable AB according to the chief officer.

### **Health treatment certificate and ship's medicine chest**

Both the master and the chief officer hold a health treatment certificate. The ship's medicine chest (A) was checked in Antwerp in March 2003.

### **Workplace instructions**

They have workplace instructions on board the ship, but not for this kind of work.

**Safety meeting**

Every month, they have a safety meeting on board the ship. After the accident, they had an extraordinary meeting where it was decided that, in the future, they will turn the ship so that the waves will hit the ship aft whenever it is necessary to make this kind of work under the given circumstances.

**Water in the emergency fire pump room**

There were 3-4 centimetres of water in the bottom of the room according to what the pump man had told the chief officer.

Earlier on, there had been water in the bottom of the emergency fire pump room for wide intervals. The water must have entered through the hatch sealing or through the chain locker hatches. Previously, they had emptied the room by means of a portable ejector, but after the accident, they have arranged a drainage going from the room to a cofferdam that can be emptied by the usage of a ballast pump.

### **The entrance hatch**

The hatch is made of steel and it measures approximately 120 x 120 cm. It is fitted with 8 fasteners for battening down purposes and with a counter weight to make it easier to open the hatch cover. It is also fitted with a hook to keep the hatch in an open position. When the hatch was open and the hatch cover was standing in an upright position by the counter weight, there would be a small clearance between the hook and its pad eye on the hatch coaming (see picture) to avoid tension on the hook.





## **8. Comments made by the Division for Investigation of Maritime Accidents**

---

### **The hatch**

The hatch has to be secured in the open position. In this case, the hatch was fitted with a proper hook. It was, however, inexpedient that the hook did not keep the cover sufficiently locked, and thus the movements of the ship and/or the effect from the waves released it.

The clearance between the hook holding the hatch and its pad eye is made at the construction and not by wear and tear.

### **The organization and carrying out of the work**

The work that they were to carry out could be considered to be a bit dangerous because of the weather conditions. The precautions made under the given weather conditions were not adequate to secure the carrying out of the work. They could have secured precise communication with the bridge if a mate had been fore carrying portable VHF. They could also have considered whether it was necessary to do the emptying at this particular time or whether they could have done it when the weather was favourable.

### **Initiatives launched subsequently**

On the ship, they have arranged drainage from the room to a cofferdam, which can be emptied by use of a ballast pump. They have also fitted the hatch cover with a small manhole. Furthermore, it has been decided to turn the ship to get the waves in aft when this kind of work is done.

### **Chain of cause and effect**

The division aims to prove several circumstances that were of significance to a relatively uncomplicated accident and which had profound consequences. The Division for Investigation of Maritime Accidents has listed the chain of cause and effect as follows:

- The alarm indicated water in the emergency fire pump room
- They decided that they were to empty the room because of the electric switch board in the room
- It was not possible to empty the room by means of a fixed pump
- The master told the crew to go to the emergency fire pump room to empty it by means of a portable ejector
- The weather was rough, northerly wind, force 6 (Beaufort)
- The master reduced the ship's speed to steerage way and held it up in the sea considering the ship's movements
- The entrance hatch to the emergency fire pump room was kept in an open position by a hook with some clearance between the hook and the pad eye
- While the AB was standing next to the hatch, the ship was lifted by a wave and hit another
- Breaking waves and/or movements of the ship released the hook slamming the hatch.

## **9. Conclusion**

---

### **Main cause**

The accident happened because breaking waves and movements in the ship made the hook of the hatch cover release from its pad eye in the hatch coaming and thus the cover closed while the AB was standing next to the hatch.

### **Contributing cause**

On the ship, they had not taken the sufficient precautions for the work to be done in an entirely safe manner.

Lars H. Jacobsen  
Ship Surveyor