



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

**Investigation Report 180/15**

**Very Serious Marine Casualty**

**Master of the  
MV HANJIN MIAMI  
missing in the Indian Ocean  
on 16 May 2015**

**26 January 2016**

The investigation was conducted in conformity with the Law to improve safety of shipping by investigating marine casualties and other incidents (Maritime Safety Investigation Law – SUG) of 16 June 2002, amended most recently by Article 1 of 22 November 2011, BGBl. (Federal Law Gazette) I p. 2279.

According to said Law, the sole objective of this investigation is to prevent future accidents and malfunctions. This investigation does not serve to ascertain fault, liability or claims (Article 9(2) SUG).

This report should not be used in court proceedings or proceedings of the Maritime Board. Reference is made to Article 34(4) SUG.

The German text shall prevail in the interpretation of this investigation report.

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## 1 Summary

On the morning of 16 May 2015, the master of the HANJIN MIAMI, en route from Singapore to New York, was reported missing on the high seas in the Indian Ocean. The entire ship was searched four times. The search revealed no concrete evidence of a criminal offence, suicide or an accident. All that was found was a primary key in the galley and a bag that could also be used for post in the vicinity of the port gangway. The vessel turned on a reciprocal course at 1200<sup>1</sup> midday. At this point, the HANJIN MIAMI was already 306 nm away from the position at which the crew last saw the master at about 2000 on the previous evening. The search involving Maritime Rescue Co-ordination Centres (MRCC) Mumbai and Bremen, as well as several ships, was discontinued after three days and the voyage to the Suez Canal continued under the command of the chief officer. Two detective superintendents from the State criminal investigation department, a superintendent from the owner, a case worker from the seamen's mission in Alexandria, the substitute master, a technician to read data from the voyage data recorder (VDR), and a P&I lawyer from the transport insurer boarded in the Suez roadstead. The investigation revealed no further circumstantial evidence that would indicate the reason for the disappearance of the missing master.

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<sup>1</sup> Unless stated otherwise, all times shown in this report are ship's time = UTC + 5 h

## 2 FACTUAL INFORMATION

### 2.1 Photo



Figure 1: Photo of the ship

### 2.2 Ship particulars

|                         |  |
|-------------------------|--|
| Name of ship:           | HANJIN MIAMI   |
| Type of ship:           | Container ship                                       |
| Nationality/Flag:       | Germany  |
| Port of registry:       | Hamburg  |
| IMO number:             | 9290476  |
| Call sign:              | DDZE2  |
| Owner:                  | NSB Niederelbe Schifffahrtsgesellschaft mbH & Co. KG |
| Year built:             | 2005   |
| Shipyard/Yard number:   | Hyundai Heavy Ind. Co. Ltd./H1581                    |
| Classification society: | DNV-GL   |
| Length overall:         | 300.07 m   |
| Breadth overall:        | 42.80m   |
| Gross tonnage:          | 82,794   |
| Deadweight:             | 93,546   |
| Draught (max.):         | 14.5 m   |
| Engine rating:          | 68,520 kW  |
| Main engine:            | 12 K98MC-C   |

|                  |               |
|------------------|---------------|
| (Service) Speed: | 24.0 kts      |
| Hull material:   | Steel         |
| Hull design:     | Double bottom |

### **2.3 Voyage particulars**

|                       |                                  |
|-----------------------|----------------------------------|
| Port of departure:    | Singapore                        |
| Port of call:         | New York                         |
| Type of voyage:       | Merchant shipping, international |
| Cargo information:    | Containers                       |
| Manning:              | 24                               |
| Pilot on board:       | No                               |
| Number of passengers: | None                             |

## 2.4 Marine casualty or incident information

|  |  |
|--|--|
| Type of marine casualty or incident:                           | Master missing   |
| Date, time:  | 16/05/2015, 1200 (UTC+5)   |
| Location:  | Indian Ocean   |
| Latitude/Longitude:  | φ 09°05.4'N λ 070°10.8'E   |
| Ship operation and voyage segment:                             | High seas  |
| Place on board:  | Unknown  |
| Human factors:   | Unknown  |
| Consequences (for people, ship, cargo,<br>environment, other): | Search from 1200 on 16 May 2015<br>to 1700 on 19 May 2015 involving<br>several vessels<br>None |

## 2.5 Shore authority involvement and emergency response

|                    |  |
|--------------------|--|
| Agencies involved: | German Maritime Search and Rescue Service Bremen, MRCC Mumbai, public prosecutor's office and Special Operations Group 1 Stade |
| Resources used:    | Several ships in the search area   |
| Actions taken:     | Entire ship searched four times and search area navigated  |
| Results achieved:  | Nobody found   |



Excerpt from Nautical Chart 4073, BSH/ARCS

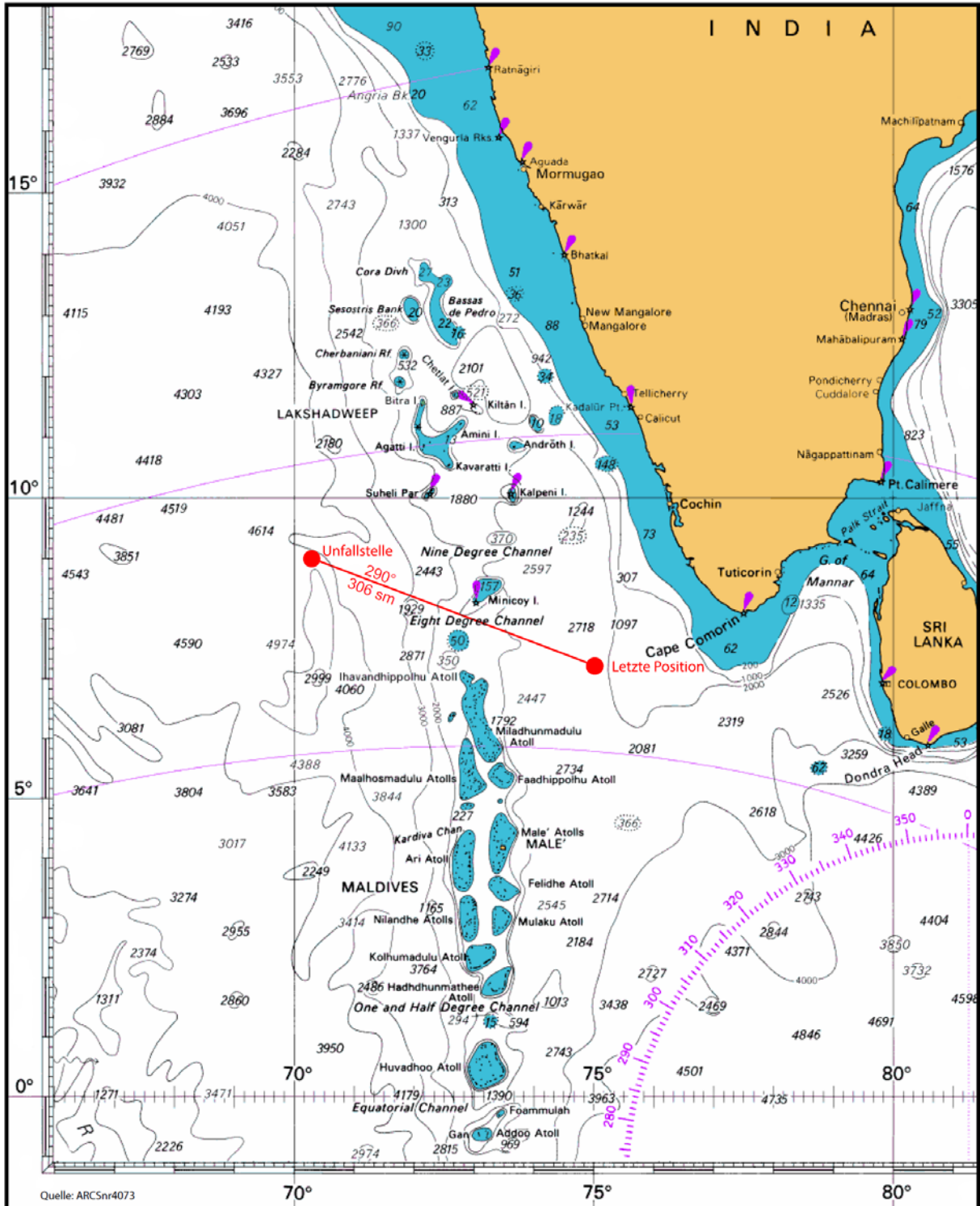


Figure 2: Nautical chart

### 3 INVESTIGATION

At 1320 on Saturday 16 May 2015, the owner informed the BSU via its on-call service that the master of the HANJIN MIAMI, which was en route from Singapore to New York, was reportedly missing on the high seas in the Indian Ocean west of Sri Lanka. After the entire ship was searched thoroughly three times, she took a reciprocal course at 1200 midday. The first emergency call (MOB) was transmitted at 1236 over INMARSAT C. The master did not appear for breakfast and was last seen at about 2000 on the previous day at the position 07°20.9'N 075°01.2'E, 306 nm away from the position at midday, by two crew members outside at the self-built bar on the aft edge of the superstructure. The search involved several ships and was coordinated by MRCC Mumbai. The ship's clock was put back an hour to UTC + 5 h during the night leading up to 16 May.

On 16 May, the HANJIN MIAMI sailed towards the Suez Canal on a chart course of 290° and at a speed of 18-19 kts in moderately agitated sea, force 4 Bft north-westerly winds, and a wave height of 2-2.5 m. No swell was entered in the log book. The wind sea was two points from starboard and the relative wind almost ahead. The air and water temperatures measured on an hourly basis stood at 29-32°C and 30°C respectively. The pattern of the sky was stable in the four hours after 1200 midday and there had been no rainfall. Gusts were observed at about 1600. Heavy cloud formation did not set in until the evening at 2000. Intermittent light rain was observed at 2200. The Moon was waning and a new moon was not due for another three days. The clouds started to scatter at midnight. In the final 12 hours of 16 May, the HANJIN MIAMI had covered 269 nm on a reciprocal course of 109° and at a speed of 22.3 kts. Her position was 07°38.7'N 074°27.8'E. The search area was extended and steered by hand. Showers and gusts occurred during the next 12 hours. The weather was unstable. A south-westerly swell of 5 m in height formed. The wind was backing to SW at 5 Bft.

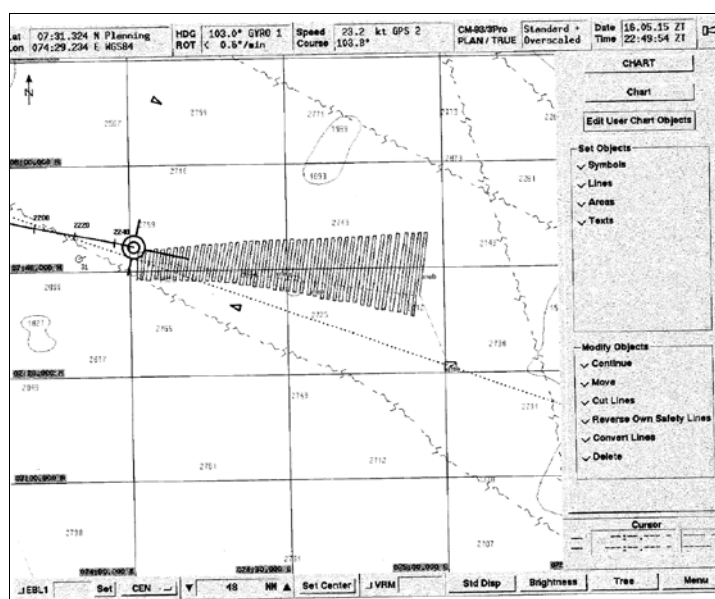


Figure 3: Search pattern; electronic nautical chart

Parallel lanes, each 3 nm from the reciprocal course, were then steered at a speed of 10 kts, as per an IAMSAR<sup>2</sup> search and rescue pattern. This was displayed on the radar system. The northerly displacement also had to be taken into account. The position at midday on 17 May was 07°44.9'N 074°41.8'E. With a day's run at an average speed of 17.17 kts, 412 nm were covered in the process.

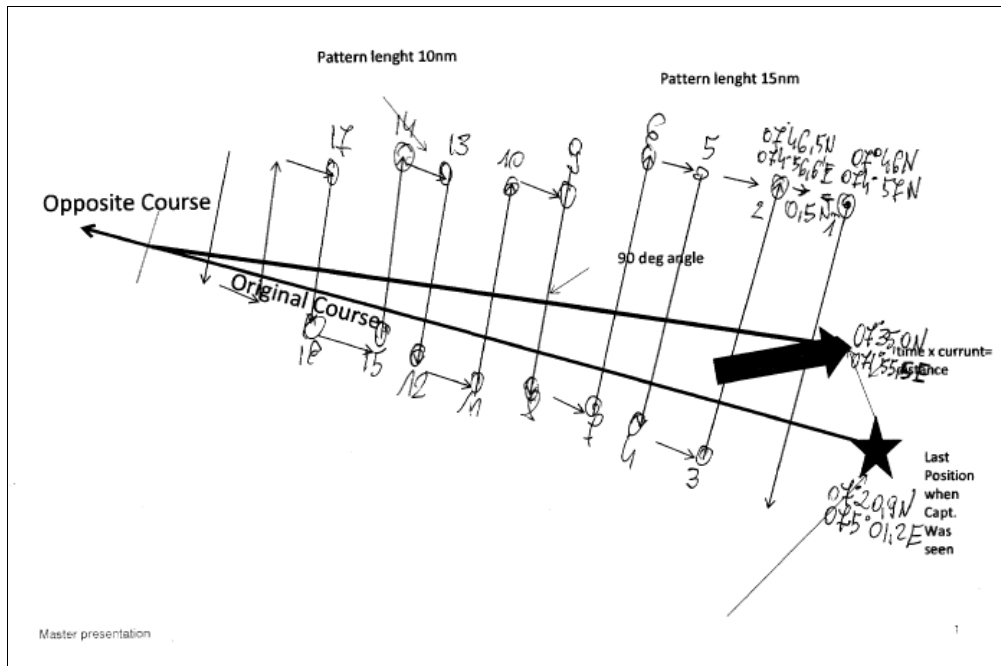


Figure 4: Search area taking into account the displacement

The sky cleared up again during the next 12 hours. The wind blew predominantly from WSW at 5 Bft and the swell dropped. The wind turned NW at 4 Bft and there were showers during the first half of the night on 18 May. A north-westerly swell of 1.5 m in height formed at about midday. The position at midday was 08°09'N 074° 10.7'E. At an average speed of 12.5 kts, the day's run was 300 nm. The wind dropped to 3 Bft WNW during the next 12 hours. A SSE swell of 1.5 m in height formed at about midnight. Shower squalls formed again during the first half of the night on 19 May, which turned into persistent drizzle by midday. The position at midday was 08°34.6'N 073°23.0'E. At an average speed of 12.92 kts, the day's run was 310 nm. The downpour turned into intermittent rainfall during the afternoon. The SSE swell continued at a height of 1.5 m. The joint search was discontinued at 1500. At 1700, the HANJIN MIAMI continued her voyage to the Suez Canal from the position 08°43.0'N 073°09.2'E. The missing master was not found.

<sup>2</sup> International Aeronautical and Maritime Search and Rescue Manual

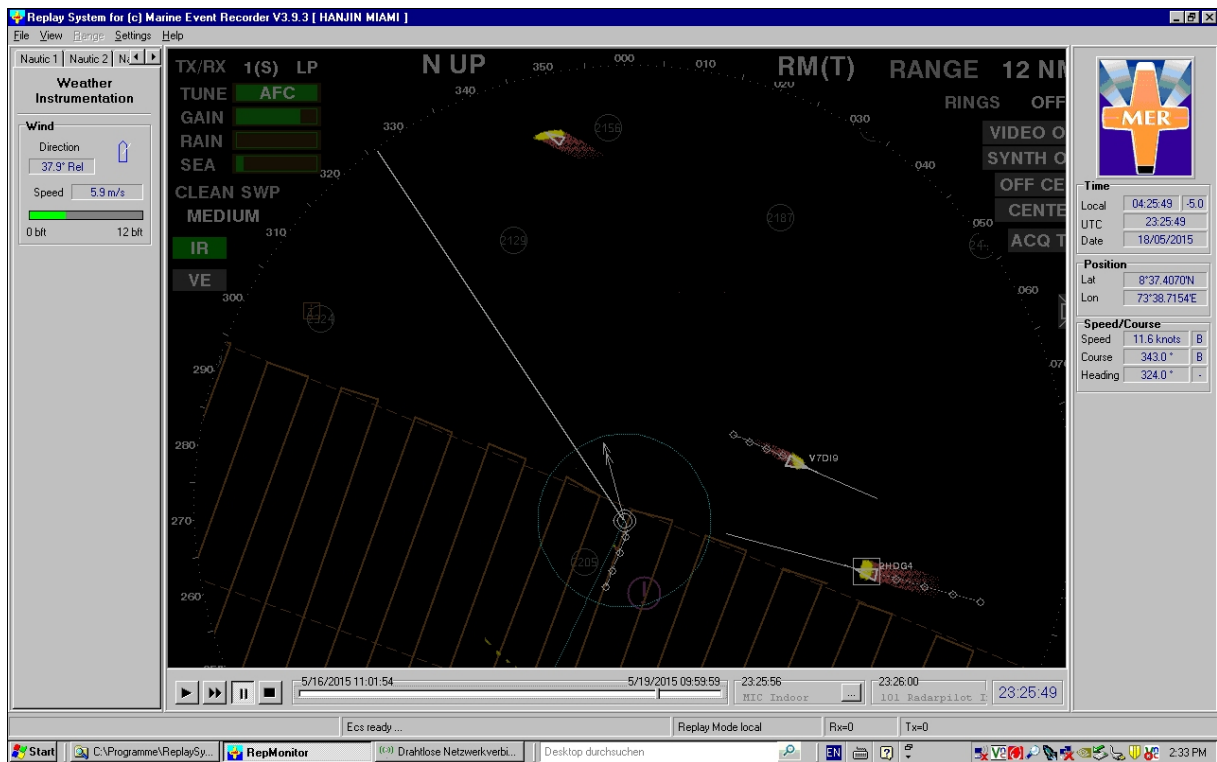


Figure 5: Radar image with search pattern and ships involved

The fleet management of the owner, Special Operations Group 1 from Stade, and the BSU held a meeting on 21 May 2015. In the meantime, the crew had searched the entire ship four times and the master's berth was cordoned off. An account of all the decisions taken in the emergency centre of the owner during the search was provided. The only evidence found was the master's primary key left in the galley, as well as a shipping bag with lanyard and weighed down by a twist lock in the vicinity of the gangway. The possibilities of an accident, a criminal offence or suicide were discussed. There was no sufficient evidence for those three alternatives, meaning only assumptions could be made. It was eventually decided that a superintendent from the owner and two investigators from Special Operations Group 1 Stade would board the HANJIN MIAMI in Suez and investigate while she was underway. Data had to be read from the VDR and other evidence preserved by copying search operation logs, deck log book extracts, as well as the crew list and schedule, inter alia. Furthermore, a new master had to board the ship in Egypt.

Two investigators from the Special Operations Group started the investigation on board the HANJIN MIAMI in the Suez roadstead on 25 May 2015. The owner's fleet manager, the new master, a technician to read data from the VDR, a case worker from the German seamen's mission in Alexandria (Egypt), and a lawyer from the P&I Club boarded at the same time. The case worker and lawyer stayed on board during the passage through the Suez Canal. With the exception of the new master, the others continued to Valletta in Malta, where they were transferred on a boat during a stopover at sea.

The cordoned off berth was visited late in the evening in the presence of the master. An aquarium was in the recreation room. Adjacent to that was the office, separated by a bank of flowers. The computer in the office was switched on. The screen displayed a running image. The ship's ID was valid until 11 May 2016. The bed in the sleeping quarter was made. Short pyjamas were laid on it in two parts. A pair of long trousers and a pair of shorts were on the bedside table and on the desk chair. The bathroom cabinet contained tablets for high blood pressure. The valuables found consisted of a wallet containing foreign currency and credit cards.

The Special Operations Group interviewed 14 crew members (one from Germany, four from Poland, eight from the Philippines, and the substitute master from Sweden) in the days that followed en route from Suez to Malta. The German case worker from the seamen's mission was also present. The statements revealed the following:

The missing person had been engaged by the owner as a master for 20 years. He belonged to the regular crew of the HANJIN MIAMI and alternated the ship's command with a different master – the last time in Singapore, four days before his disappearance. He had been en route from Singapore to New York since then.

The missing master was last seen on the bridge between 1800 and 1900 on 15 May during the chief officer's watch. He was reportedly wearing cream Bermuda shorts and a T-shirt (presumably a light colour). His behaviour was reportedly completely normal. On the morning after, also during the chief officer's watch, the steward reportedly gave the chief officer the master's key at 0550. The cook had reportedly found the key in the galley. The chief officer then reportedly had all the empty compartments searched, briefly pressed the fire alarm, and called the master to the bridge on the ship's intercom. Following that, the entire ship was reportedly searched and the owner informed. The entire ship was searched again at the direction of the owner. At 1200, the chief officer gave instructions to take a reciprocal course and sail to the position where the master was last seen. The ship was searched two more times during this period.

Another watchkeeping officer reportedly saw the missing master at 1500 on the day he disappeared when they took coffee together. He reportedly later carried out his 2000-2400 watch. He was reportedly in the galley after the watch for some food. He did not notice a bunch of keys that may have been lying on the floor. Contrary to his usual practice of reading the latest emails received, the master reportedly did not appear on the bridge at about 2100 that evening. The officer on watch discovered that the master was reportedly missing at about 1000 on the following morning. The entire ship was searched a total of four times.

The last time the chief engineer reportedly saw the missing master was at about 1830 on 15 May outdoors on the port side of the E deck at the so-called MIAMI BEACH BAR with two other crew members. He still had to send an important message to the owner and apart from that had reportedly invited all the officers to attend a barbecue on Sunday 17 May, so that they could get to know each other better.

At about 2130, the chief engineer reportedly noticed that the master's berth was still open and his message had still not been sent. He wanted to remind the master about it and therefore also left the door to his berth open. The two berths were on the same deck. He reportedly only left his berth for a brief period to check the auxiliary diesel generators. A service engineer from a different company was also on board for servicing and the replacement of cylinder liners on auxiliary diesel generator 1. He reportedly did not see the master on the shared deck before going to bed at 0400 in the morning. He reportedly got up when breakfast was served at 0800 and noticed that the door to the master's berth was still open. He then reportedly pulled back the curtains and entered it. The door to the sleeping quarter was open. He could not see the master and reportedly thought that he was on the bridge. He reportedly informed the chief officer that his important message had still not been sent to the owner. He found out that the inbox of the ship's email address was overflowing and had not been dealt with by the master. Furthermore, the master had reportedly failed to attend an appointment with the electrician for the weekly inspection of the fire alarms.

They started to sail the boundary with the risk area for piracy attacks at 0949 on 15 May at the position 06°17.0' N 078°00.0' E. Therefore, a check of all the doors to the outside was made during the night watch to see if they were secured. It was reported that nobody was in the bar from 2000 onwards and reportedly no key was seen in the galley during the period 1800-2400.

An engineer reported that he last saw the master at about 1300 on 15 May in the engine room. He had reportedly worked in and visited the engine room on several occasions since boarding in Singapore on 11 May. At about 1030 on 16 May, the chief officer reportedly visited the engine room and asked after the master. He could not be found, however. During the wider search, the engineer reportedly found a bag near the railing on the gangway that bore the logo of the owner, to which a line with thimble was attached. The bag contained a twist lock weighing about 6.5 kg. He claimed that he had never noticed the bag before. He reportedly secured it and gave it to the chief officer.

The cook reportedly last saw the master at breakfast on 15 May. He reportedly did not visit the mess again for lunch or dinner. He reportedly often visited the galley to prepare something to eat outside the scheduled meal times. At 0555 on 16 May, the cook reportedly noticed a bunch of keys on the floor in front of the sink. The steward took the bunch of keys to the bridge and gave them to the chief officer. The door to the crew's mess was locked, while the doors to the corridor and to the officer's mess were only closed.

Another engineer stated that he and the master could be referred to as friends, as it were. They reportedly both boarded in Singapore and had already been on two to three voyages together. The chief engineer asked him about the master at about 0800 on 16 May. He wanted to carry out the weekly alarm tests with the electrician.

The master had reportedly still not been seen by 1000. The engineer believes suicide is unlikely.

From 1700 onwards on the evening of 15 May, the master was in the HANJIN MIAMI bar with two German crew members, one of whom was a fitter from a different company who was on board to service the auxiliary diesel generators. The chief and second engineers were also present. Apart from the master, everyone had reportedly taken supper by 1830. The master was last seen at the bar at about 2000-2030. It was already dark and the master, as the last person, wanted to switch off the light and then go to the bridge to send the urgent message for the chief engineer. The chief engineer had established that the cylinder liners that had been delivered were the wrong size for auxiliary diesel generator 1. Therefore, new ones were to be ordered and delivered at Suez. Strong alcoholic beverages were reportedly not served in the bar. It is unlikely that each person drunk more than three to four cans containing 0.33 l of American beer throughout the evening. As far as the crew was aware, the master was preparing for a shore-based position as a superintendent engaged by the owner. Therefore, he was often in the engine room so as to demonstrate the necessary services for his certificate of proficiency (engineer officer). He wanted to extend the validity of his certificate of proficiency as a ship's engineer, grade C, which was issued in 1993, for his shore-based work as a nautical/technical superintendent.

Overall, the crew described the master as somebody who was always friendly, informal, and helpful. The crew generally had a good relationship with him. Some described him as the best master they have ever had. After discussions with the crew, the case worker from the German seamen's mission, who embarked in Suez at the request of the owner and was to remain on board until Port Said, concluded that the general consensus is that a crime is ruled out and an accident happened. The crew is unable to explain the NSB bag that was found.

Singapore was the HANJIN MIAMI's most recent port of departure. Bunkering was also carried out there. No specific procedural instructions exist for Singapore under the International Ship and Port Facility Security Code (ISPS code), i.e. a guard responsible for checking personnel with photographic identification and the purpose of the visit must be posted in the gangway on the upper deck. There is a maximum of two entrances to the superstructure. The pilot ladder is secured to the deck when not in use. On the manoeuvring stations for bow and stern, the lines and anchor chains are secured with metal sheets. They are checked regularly by members of the watch. There were no anomalies in Singapore.

## 4 ANALYSIS

The only possible evidence for the master's disappearance was the primary key found in the galley and a bag with lines attached and weighed down by a twist lock, which was found in the vicinity of the starboard gangway.



Figure 6: Master's primary key

The master normally keeps the primary key on his person. Since he did not appear for supper, it is likely that he went to the galley again to eat supper. This must have happened after 2000 on 15 May. Reportedly, nothing was noticed during the night-time two-hourly rounds of the superstructure by members of the watch.

The primary key was not found until early in the morning at about 0530 on 16 May by the cook, after which the steward took it to the chief officer on the bridge.



Figure 7: Position of the bag

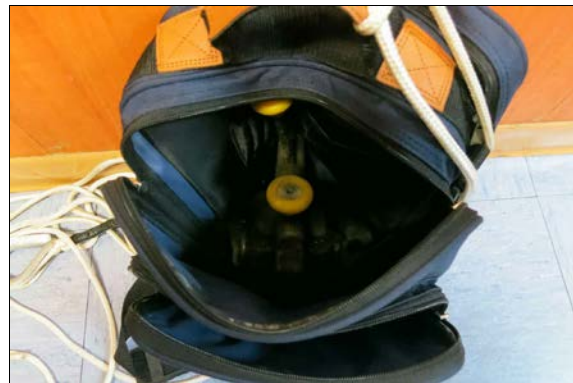


Figure 8: Bag with twist lock

With regard to the bag, the crew had no plausible explanation. It seems obvious that it had not been used for a long time. It could have been a post bag used as a practical means of transferring utensils to smaller boats, for example.



The European Maritime Safety Agency (EMSA) has a global monitoring system in place for ship movements. The HANJIN MIAMI was about 200 nm away from the coast of India. The BSU was able to obtain satellite data from the IMDatE<sup>3</sup> system subsequently. On the high seas data are accessible only at irregular and extended intervals. The directions and positions of the HANJIN MIAMI are evident based on the symbols. The area north of the island of Minicoy was navigated on 19 May, the last day of the search.

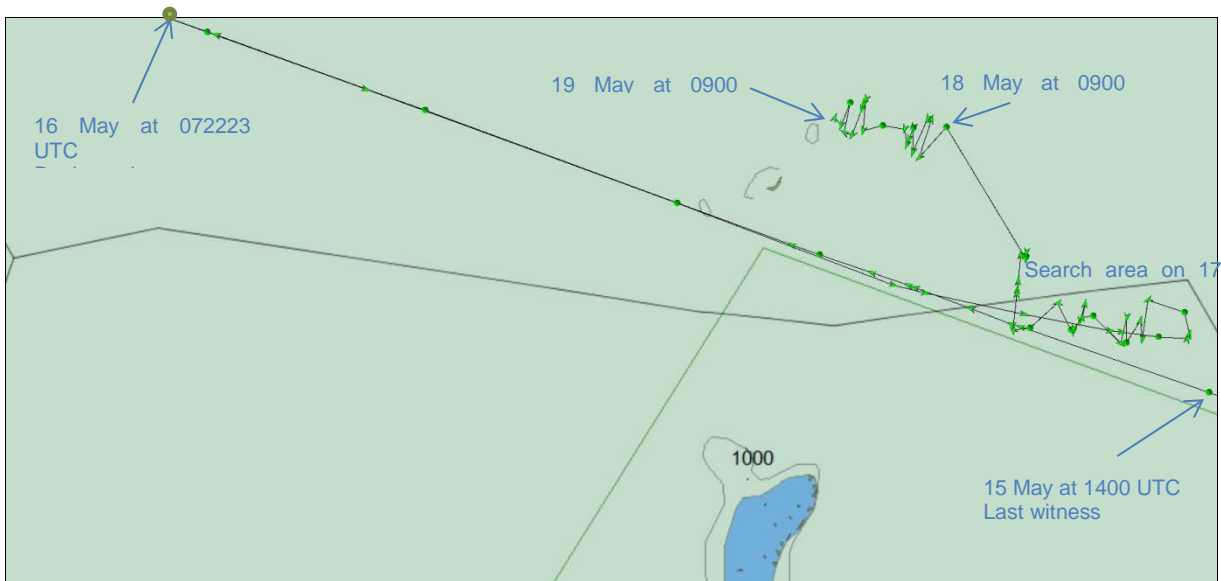


Figure 9: EMSA's IMDatE; tracks from 1400 on 15 May to 0900 on 19 May (UTC)

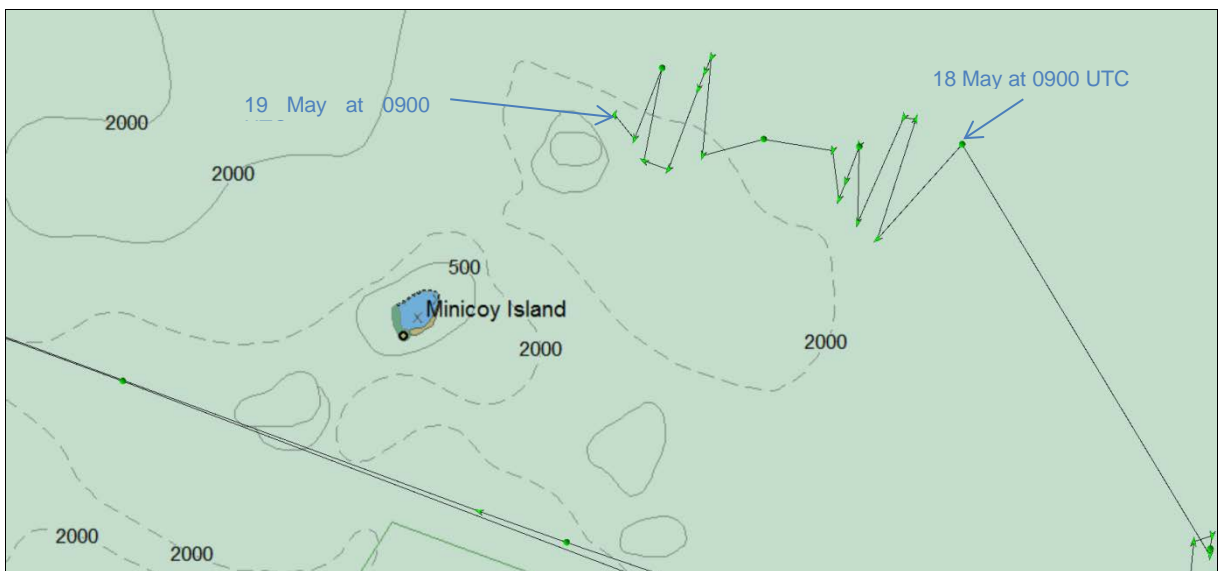


Figure 10: EMSA's IMDatE; tracks from 1400 on 18 May to 0900 on 19 May (UTC)

<sup>3</sup> EMSA's integrated maritime data environment (IMDatE)

A IS Steinsohn G4 VDR is installed on the HANJIN MIAMI. A technician from the manufacturer, Interschalt, read the data from the VDR in Suez. The service report indicates that one backup was made on 16 May and two on 19 May by pressing the emergency button. The oldest backup (in this case that of 16 May) is overwritten when the third backup is made. Consequently, using audio data to reconstruct the periods leading up to the master's disappearance was not an option. When a backup is made to the local hard disk the previous 12 hours are recorded. For the entire period of the three-day search, the data, which were backed up several times, should have been exported to an external storage medium. The backed up data were read at the BSU using the manufacturer's replay system and rendered the periods shown below by data type.



Figure 11: Backups from the HANJIN MIAMI's VDR (replay system)

The owner had set up an emergency centre where contact was maintained with MRCCs Bremen/Mumbai and the HANJIN MIAMI's search area was plotted during the search operation. Four to five other ships were reportedly also tasked, as well as other vessels that passed the island of Minicoy, 200 nm away from the Indian mainland. Minicoy was about 15 nm south of the HANJIN MIAMI en route to the Suez Canal. The owner used the AWT's (Applied Weather Technology, Inc.) Bon Voyage System to calculate the drift. This system can be used to simulate swell and current on the world's oceans. It is also used for voyage planning. The search pattern was determined based on the drift. The system is based on HYCOM (HYbrid Coordinate Ocean Model), which is operated by the NOPP (National Oceanographic Partnership Program) as part of the GODAE (United States Global Ocean Data Assimilation Experiment) on behalf of the NOAA (National Oceanic and Atmospheric

Administration) and the U.S. Navy. HYCOM has a resolution of  $1/12^\circ$  (5 nm).<sup>4</sup> The Bon Voyage System's resolution is between  $1/4^\circ * 1/4^\circ$  within 48 hours or otherwise  $1/2^\circ * 1/2^\circ$  to  $1^\circ * 1^\circ$ . Daily differences in coastlines, water depths, tidal effects, salinity, temperature, wind, waves, and the effect of other currents are taken into account when ocean currents are computed.

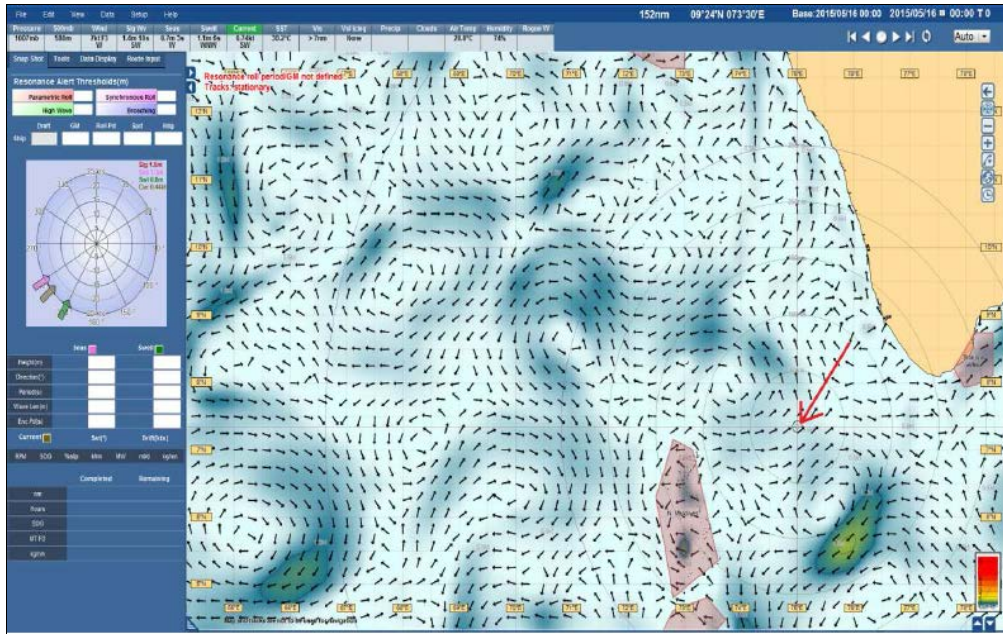


Figure 12: Bon Voyage System; 0000 UTC on 16 May

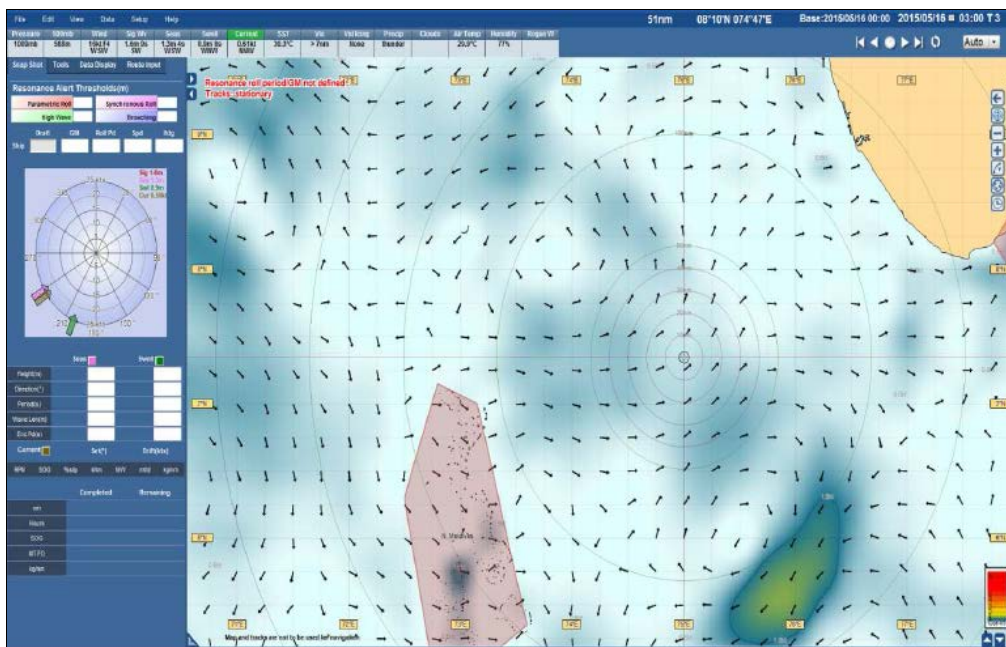


Figure 13: Bon Voyage System; 0300 UTC on 16 May

<sup>4</sup> See the HYCOM data assimilative system, Journal of Marine Systems 65 (2007), p. 60-83, Eric P. Chassignet, Harley E. Hurlburt, Ole Martin Smedstad, George R. Halliwell, Patrick J. Hogan, Alan J. Wallcraft, Remy Baraille, Rainer Bleck

The BSU was unable to obtain information on the search for the missing master from MRCC Mumbai (the search and rescue mission co-ordinator – SMC) or the Indian Coast Guard after corresponding requests. The email sent to the owner at 1733 on 16 May indicates that according to India's SAR regulations, the search must continue for 72 hours and the HANJIN MIAMI must assume the role of on-scene co-ordinator (OSC). Furthermore, a search by the coast guard in an aeroplane was scheduled for 17 May. Other ships passing through the area were called on to keep a sharp look out and assist in the search. The wording of the email follows:

DEAR SIR,  
REQUEST PASS FOLLOWING INFORMATIONS [sic] TO YOUR VESSEL MV  
HANJIN MIAMI

SIR

1. THIS CENTRE HAS BEEN ACTIVATED ISN (EGC) MESSAGE TO ALL THE SHIPS IN THE INCIDENT AREA [Sic.]
2. SHIPS PASSING THROUGH THE AREA ARE INTIMATED [sic] TO KEEP SHARP LOOK OUT FOR SURVIVORS AND RENDER ASSISTANCE
3. MV HANJIN MIAMI TO ASSUME AS ON SCENE COMMANDER FOR THE SAERCH [sic]. AND FORAWRD [sic] FOUR HOURLY SITREP TO THIS MRCC
4. IN ACCORDANCE WITH THE INDIAN SAR REGULATIONS MAN OVER BOARD SEARCH AND RESCUE OPERATION TO BE TO BE HALD [sic] 72 HRS
5. COAST GUARD AIR CRAFT AIR SORTIE FOR SEARCH IS PLANNED AM [sic] 17 MAY 15.
6. REQUEST CONFIRM RECEIPT OF THIS MESSAGE.

REGARDS  
MRCC MUMBAI

The BSU visited a sister ship of the HANJIN MIAMI due to another fatal accident in New York on 22 September 2015. Her master was interviewed, as was the now retired, long-standing second regular master of the HANJIN MIAMI on 12 November 2015 in Germany. The two masters know the area of operation very well and also the actions taken on board when entering the piracy area in the Indian Ocean. Both masters believe that their colleague most likely fell overboard due to a moment of carelessness when doing his final rounds in the evening. The two colleagues place little importance on the primary key deposited in the galley. It may have been used to unlock the galley and then deposited, after which it fell on the floor due to rolling motions. The galley is located on B deck, from where a door leads to the service corridor. From the service corridor it is possible to go outside to the lifeboat stations on A deck via a stairway and from there to the upper deck to start the inspection. The exterior doors should be locked up to D deck.

From D to E deck, steel grating that blocks the way up to the bridge is installed on the stairways when the ship is secured. Fire hoses are deployed at the aft manoeuvring station and depending on instructions, fragments of glass to make entry more difficult. The aft section has the lowest freeboard depth. The actual citadel (shelter for the entire crew) is situated in a secret location. The superstructure is blacked out in the piracy area, i.e. windows are screened and with the exception of the navigation lights, the illumination is switched off. If the officer on watch so orders, an additional member of the watch inspects the superstructure and locks doors if necessary. Depending on the assessment of the risk situation, professional security teams can also be deployed on the vessel. During his inspection, the missing master may have fallen overboard – at one of the two lifeboat stations, for example. It is even possible that he was locked out of the superstructure because the exterior door on B deck had been locked from the inside in the meantime. This would have made it difficult to alert the crew and attract attention without a torch and radio. Then the only option would have been the transverse passageway located in front of the superstructure, which is reached via the lifeboat stations. The two masters interviewed believe that the disappearance of the master must have been caused by an accident.

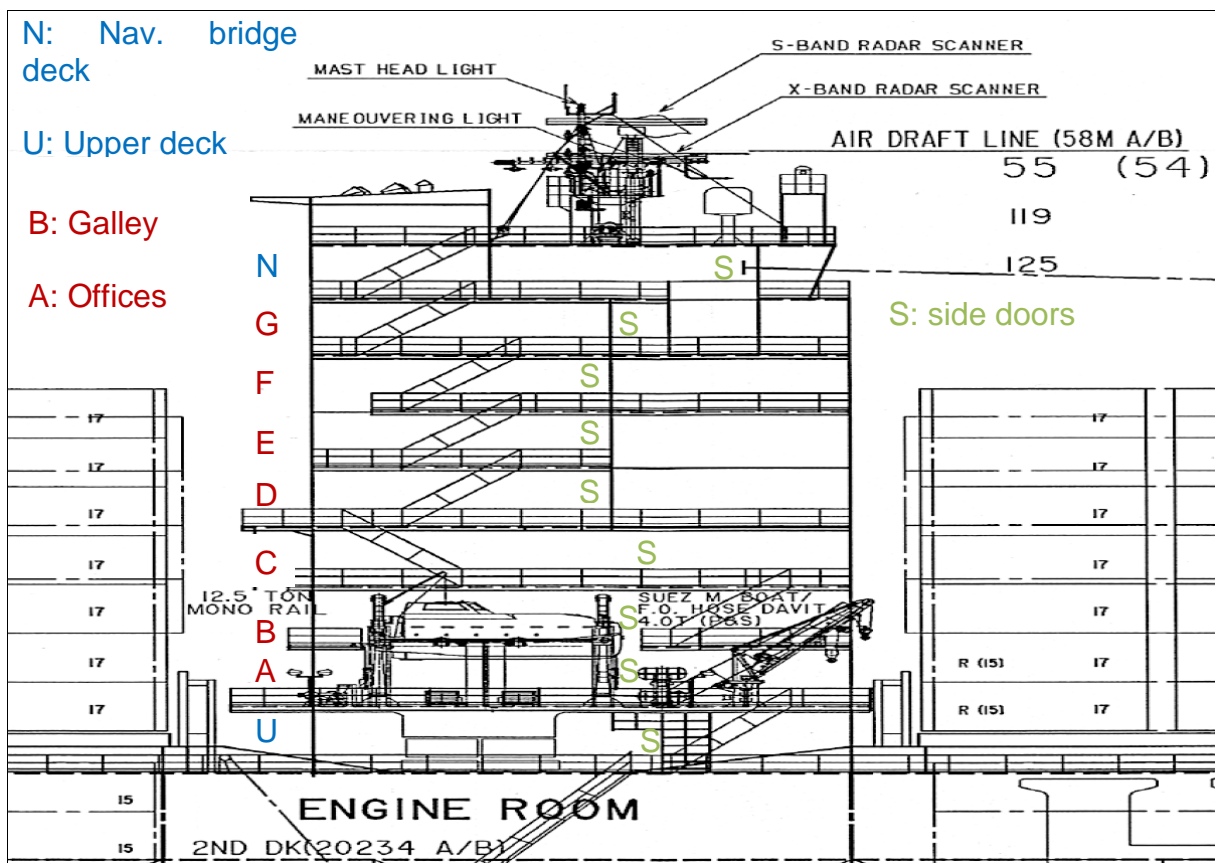


Figure 14: Superstructure

The BSU was sent photographs made on board the HANJIN MIAMI of the aft superstructure. They show the crew's self-built bar and the passageways in the area of the lifeboats, which lead directly to the outboard edges and are not protected by railing in places due to the design. Without the protection of the 1 m-high railing, the master could have fallen overboard there. It should be noted at this point that it was dark and the Moon was waning.



Figure 15: Bar on the port side of E deck



Figure 16: Transverse passageway on the starboard side



Figure 17: Liferafts on the starboard side



Figure 18: Lifeboat on the port side

## 5 CONCLUSIONS

The BSU's investigation of the marine casualty revealed no concrete evidence of a criminal offence, suicide or an accident. The master was last seen by several crew members at the self-built bar on the aft edge of the superstructure on E deck between 2000 and 2030 on 15 May. According to the testimony of several witnesses, the master still wanted to send an important spare parts order for the chief engineer. He intended to clear up after everyone had left the bar and then to go to the bridge to do that.

The BSU was unable to establish the route he took to the bridge. It is unlikely that the master opted for the direct route through the superstructure because his primary key was found in the galley on the morning after. It is therefore possible that he wanted to take supper, which he still had not had, there. He must have left the superstructure afterwards because he did not arrive at the bridge. It is possible that he wanted to carry out one final inspection (round) outside.

Taking the direct route to Suez, the HANJIN MIAMI was situated on the boundary with the presumed piracy area. Consequently, the superstructure was already blacked out, the exterior doors locked, and night-time rounds had been ordered. Going around would have taken the master from the galley through the service corridor on B deck outside to one of the lifeboat stations, where it would be possible to go to the outboard edge without the protection of railing. One reason would be the noises caused by safety lines and lashing on the lifeboats and davits, for example. He may have slipped and fallen overboard while inspecting something there in the dark. It is also conceivable that he had locked himself out of the superstructure because the outside door had been locked again from the inside in the meantime. Then he must have passed one of the lifeboat stations without a torch or radio so as to attract attention on the transverse passageway at the forward edge of the bridge.

As regards the disappearance of the master, the BSU attaches no particular significance to the bag weighed down by a twist lock, which was concealed beneath the lashing rods in the vicinity of the gangway. Since none of the crew members had seen it before, it seems obvious that it was only found during the repeated search for the master. This bag had a line attached and was designed so that it could be used as a post bag to make it easy to move utensils from on board the vessel to a smaller one. The twist lock weighed 6.5 kg and could have been used to stow the bag safely. The disappearance of the master was not discovered until the morning after. It was unusual that the door to his berth had remained open during the night. The crew did not check if anyone was in the berth. The chief engineer, who resides on the same deck, did not go to bed until about 0400 in the morning because he had to oversee maintenance work on the auxiliary diesel generators carried out by an external company in the engine room. However, he was not concerned but rather confident that his important message regarding the delivery of spare parts to Suez had been sent.

After the steward had taken the primary key to the chief officer on the bridge at about 0600 in the morning, the entire ship was searched at least four times. The HANJIN MIAMI eventually went on a reciprocal course under the command of the chief officer at 1200 on 16 May and the search for the master in the Indian Ocean began using a specific search pattern and taking into account the current with the support of MRCC Mumbai and the emergency centre of the owner. According to the documentation provided to the BSU, the HANJIN MIAMI's three-day search was conducted properly and did not merit any criticism. Unlike the official pilot charts issued by hydrographic services, the Bon Voyage System does not deliver mean current and wind data, but rather simulates currents and waves based on the latest weather data. Corresponding data available from MRCC Mumbai was not better.

Special Operations Group 1 Stade investigated the case of the missing master on the HANJIN MIAMI. Two detective superintendents, a superintendent from the owner, a case worker from the seamen's mission in Alexandria, the substitute master, a technician to read data from the VDR, and a P&I lawyer from the transport insurer boarded in the Suez roadstead. Interviews with the crew revealed no concrete evidence. Although there were no specific indications of suicide, the investigators from the Special Operations Group were unable to rule this out. The case worker from the seamen's mission gained the impression from the crew that the master, who was highly appreciated and well liked by all, was the victim of an accident rather than a criminal offence or suicide. The experienced masters interviewed by the BSU and the owner also believe suicide is out of the question.

In the final analysis, the BSU concludes that it is not possible to determine the cause of the master's disappearance from the vessel on the high seas. During an inspection carried out in the dark, possibly at the lifeboats, the master may have fallen overboard while proceeding from the galley to the bridge. After analysing the facts, it believes that this scenario is most likely from a seafaring perspective. There was no credible evidence for a criminal offence or suicide.



## **6 SOURCES**

- Investigations of Special Operations Group 1 Stade
- Written statements
  - Ship's command
  - Owner
- Testimony of the crew
- Expert opinion/technical paper
  - File on investigation against unknown persons, Stade Public Prosecutor's Office
- Nautical charts, pilot chart for the Indian Ocean and ship particulars, Federal Maritime and Hydrographic Agency (BSH)
- Bon Voyage System from Messrs AWT (Applied Weather Technology)