

Very Serious Casualty

Investigation n.º 01/2019

Homologated 01/07/2019

## Investigation report / Relatório de investigação

Report by the Portuguese Maritime Accident Investigation and Aeronautical Meteorology Authority Office (GAMA) service of the State Central Administration whose mission is to investigate marine casualties and incidents with the highest efficiency and possible speed, to identify their respective causes, prepare and issue the corresponding reports and make recommendations on maritime safety that reduce maritime accidents.

This report has been prepared in compliance with the standards of the International Maritime Organization (IMO) and following the Common Methodology established by the European Union.

As provisions of Law No. 18/2012, of 07 May, which transposed Directive 2009/18 / EC of the European Parliament and of the Council, the GAMA investigations are independent of regulatory bodies, operators or others.

It is not the purpose of an investigation to determine guilt or liability.

This report should not be used for legal proceedings and not be used in a court as evidence.

The safety recommendations resulting from this report may in no case create a presumption of liability or guilt.

All times are local (UTC) and all positions have the geodetic datum WGS84 reference.

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### **Mv EF Ava, IMO 9389306 REGISTRY - GAMA 2019-012**

#### **1. Summary**

On January 28<sup>th</sup>, 2019, at 23:00 hours, whilst Mv EF Ava was on passage from Argentina (Canada) to Reykjavik (Iceland) under severe weather and sea conditions the Master, who was on watch on the bridge at the time, sustained a fatal head injury.

The bridge team was the Master and one Able-Bodied Seamen (AB). The vessel was under severe rolling, 30º to each side, when the Master lost his balance and sustain a fatal head injury. Despite the crew efforts it was not possible to reanimate the Master. The vessel proceeded to port of destination.



Figure 1 – Mv EF Ava, IMO 9389306, on arrival at Reykjavik

This investigation was carried out jointly with the Icelandic Transportation Safety Board (ITSB) and the Polish State Accident Investigation Commission (SMAIC) who assisted the GAMA in the investigation and collection of evidences.

## 2. Factual elements

### 2.1. Ship particulars

Name	EF AVA
IMO number	9389306
Registry	Portugal – Madeira island
Call sign	CQAA
MMSI	255806123
Length overall	129.59 mts
Max. Breadth	20.83 mts
Gross tonnage	7545
ISM Company	Midocean, Ltd
Classification society	DNV GL
Year of build	2008, China
Hull material	Steel
Type of vessel	Gearless Containership
Crew (voyage)	14
Crew (minimum safe manning)	11
Engine manufacturer	MAK Caterpillar Motoren GmbH&Co.KG
Type of engine	1 Diesel engine, type 7M43C
Propelling power	7000 KW
Main engine stroke type / fuel	4 stroke / HFO

### 2.2. Marine Casualty information and conditions at the time of the accident

Date and time	28/01/2019, at 23:00 hours
Position – Latitude / Longitude	55° 23.9 'N / 037° 50.5' W
Classification / severity	Occurrence with person / very serious
Consequences	One fatal victim
Displacement	107723 tons
Mean draft	6.60 mts
Forward draft	5.96 mts
Aft draft	4.24 mts
Trim	1.72 mts
GM (corrected)	1.238 mts (minimum permissible 0.584 mts)
Cargo on board	230 containers (434 TEUS)

### 2.3. Voyage particulars

Port of departure	Argentia (Canada) - 24/01/2019, 15:06 hours
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Port of destination	Reykjavik (Iceland) – 30/01/2019, 14:48 hours
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**2.4. Weather conditions on 28/01/2019 at 23:00 hours**

Wind 30-35 Kts from West
Waves 6.5 mts
Swell NW 13s – 3.5 mts
Sea W 10s – 5.5 mts
Air temperature 0º C – 32F
Sea Water temperature 5ºC – 41F
Visibility Good
Weather Partly cloud

**2.5. Shore authority involvement and emergency response**

Rescue Coordination Center (RCC) Halifax
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**2.6. Crew on board**

Master	1
Chief Officer	1
Second Officer	1
Chief Engineer	1
Second Engineer	1
Electrical Engineer	1
Able Seaman (AB)	3
Ordinary Seaman (OS)	1
Engine Fitter	1
Oiler	1
Chief Cook	1
Reefer Technician	1

### 3. Narrative

The narrative is a description of the accident as the involved persons perceived it to unfold and it is based on their recollection of the sequence of events.

The narrative covers the sequence of events from the time Mv EF Ava departure from Canada until the corps of the ship's Master was stored to be delivered to the Icelandic authorities.

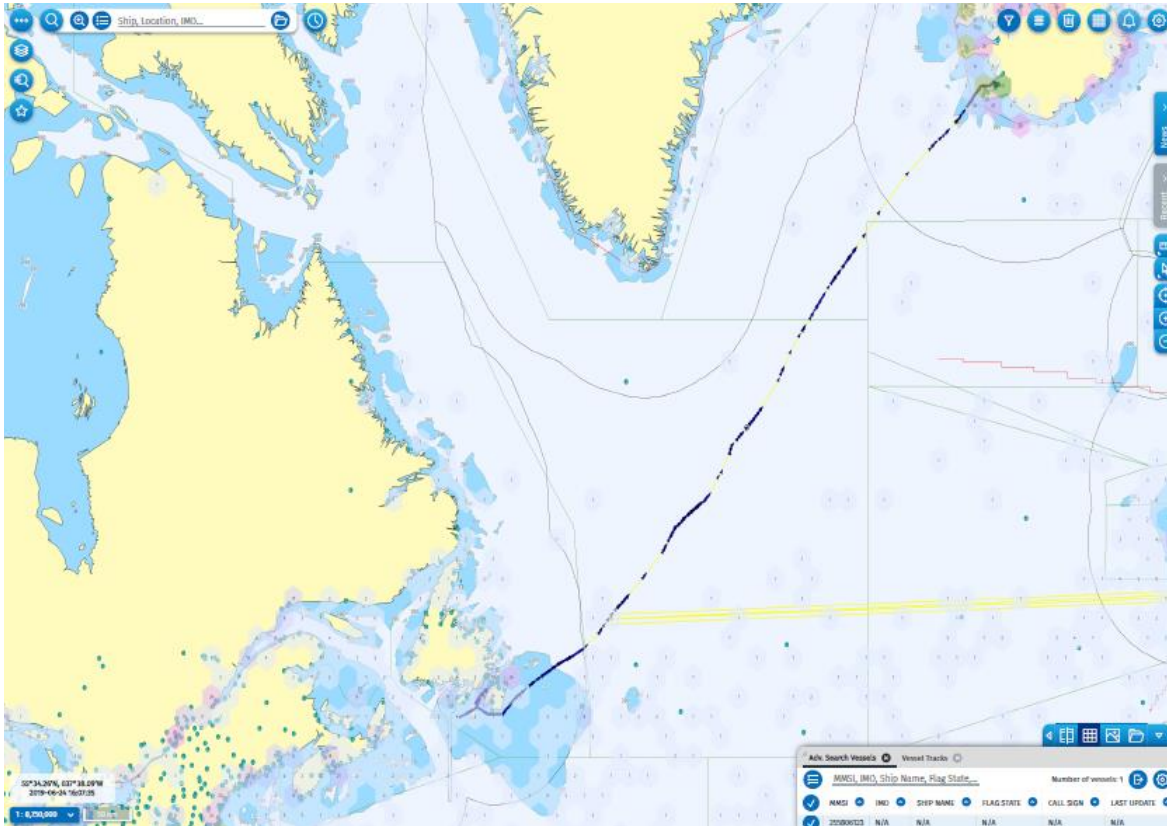


Figure 2 – The voyage from Argientia to Reykjavik

#### 3.1. Background

Mv EF Ava departed from Argientia bound for Reykjavik on the 24<sup>th</sup> January at 15:06 hours with fourteen crew members on board. The Master, the Chief Officer and the Second Officer were the bridge team and whilst on watch they were attended by one AB each.

At 20:00 hours on the 28<sup>th</sup> January the Master and one AB (Able-bodied Seaman) went on watch on the bridge. The vessel was under way using engine and steering under autopilot at course 040°. The engine room was running unmanned and the speed over ground (SOG) was 8.7 knots (Kts). During the watch the vessel was rolling through about 20° to either side of the vertical – this was occurring since the 26<sup>th</sup> January around noon time due to weather and sea state conditions.

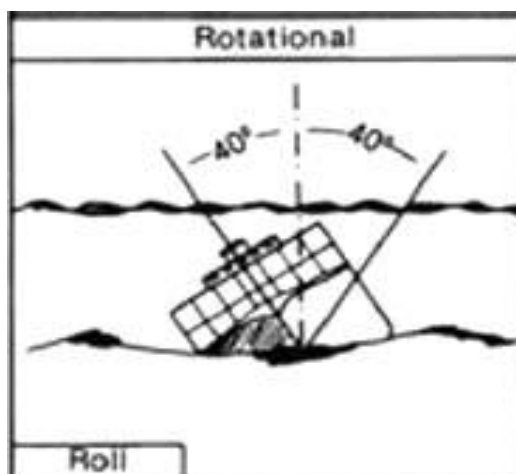


Figure 3 – Rolling acts in the transverse direction

### 3.2. The accident

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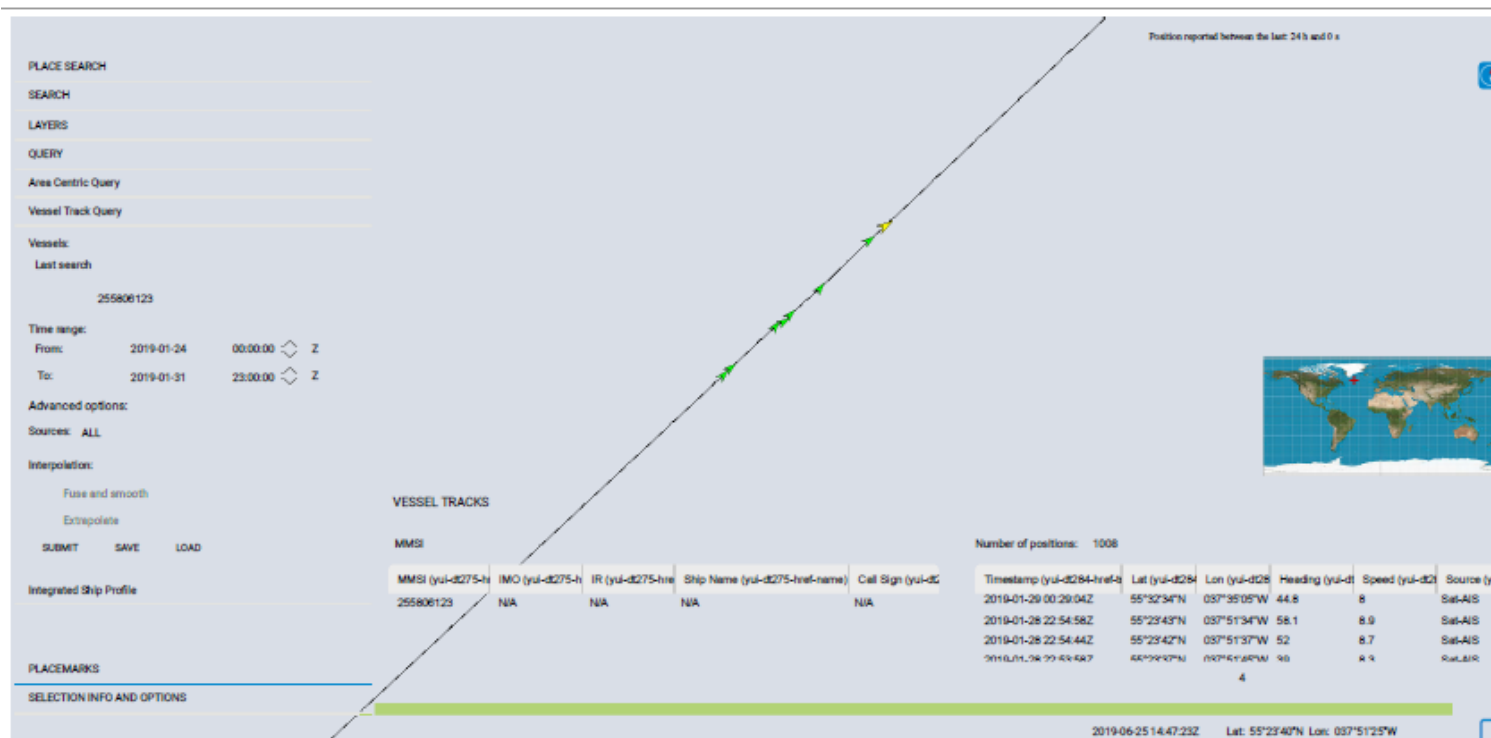


Figure 4 – Detail of the voyage record from the time of the accident

The accident occurred at 23:00 hours, the AB was standing by the steering wheel holding the safety grab rails when the ship rolled heavily, about 30° and seemingly fell into resonance – there were a series of



synchronous, heavy rolls. The Master interrupted his work in the radio room, located in the port side of the bridge, and whilst holding a cup of coffee in his right hand walked towards the steering position. When he started moving from the radio room the vessel was heeled to port side and the Master had to start climbing to reach the steering position. When the Master passed behind the AB, the vessel rolled to starboard and the Master started running down to starboard side rapidly and most probably lost his balance and hit his head on the corner of the chart table.

The sound of the Master falling was heard by the AB and he notice that the Master was not moving. The AB also notice that the Master was unconscious and bleeding.

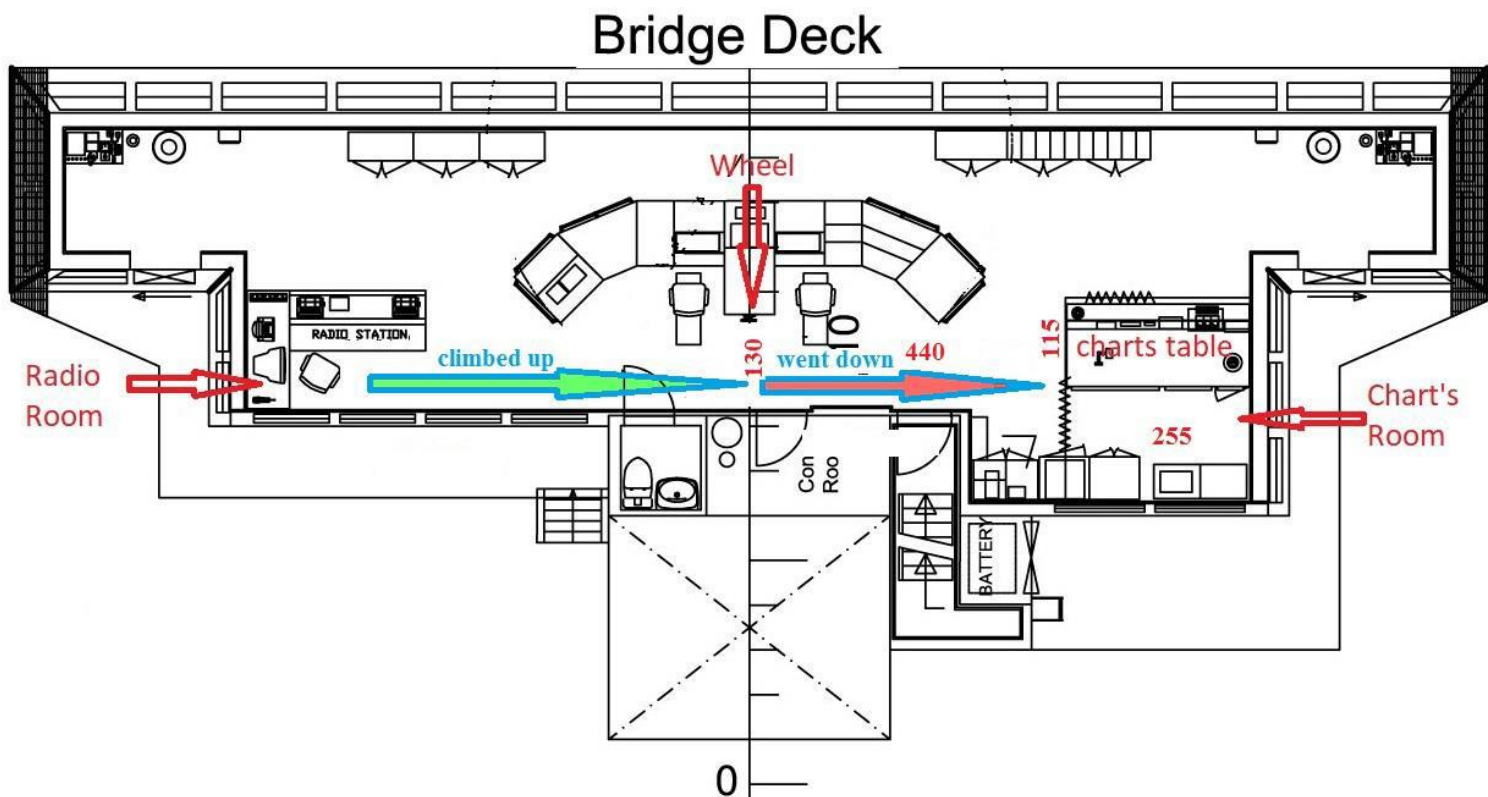


Figure 5 – Mv EF Ava bridge layout

### 3.3. The rescue

The AB called the Master and he did not respond. The AB left the bridge and went one deck down to call the Chief Officer in his cabin and next, one more deck down to call the Second Officer in his cabin. When the Chief Officer arrived on the bridge, he saw the Master facing down on deck and unconscious. He then called the crew using the public address system. When the Second Officer arrived on the bridge, he was instructed by the Chief Officer to fetch the first aid kit from the hospital. During this time, first aid was being given and attempts were made to resuscitate the Master.



Figure 6 – Radio room, view to the chart room and simulated position of the Master in the chartroom

The Chief Officer called the Company Designated Person Ashore (DPA) informing about the occurrence. A distress call was made on the MF/HF radio at 23:19 hours on 28<sup>th</sup> January.

Halifax Coast Guard contacted the vessel on 2182 KHz and requested to stand by on the satellite phone. The satellite communication was interrupted several times.

The instructions from the Rescue Coordination Center (RCC) were to proceed to Greenland, some 380 nautical miles, where a helicopter would meet the vessel to evacuate and transport the Master to an emergency medical facility ashore.

On January 28<sup>th</sup>, 23:30 hours, the Master showed no vital signs and was cold and pale.

Further communications took place between the vessel, Halifax Coast Guard and the Company and given the fact the Master had passed away it was agreed to proceed to port of destination and to remove the corps to a secure location.

Mv EF Ava arrived at Reykjavik Pilot Station at 14:00 hours on 30<sup>th</sup> January and was berthed at 14:48 hours.

#### 4. Analysis

**This section describes the results of GAMA's investigation of the factual circumstances of the accident. The purpose of the investigation was to establish how the accident occur under what was considered a normal day- to-day activity. Therefore, the starting point of the investigation was to understand how the deck crew normally operated and thereafter, the circumstances resulting in the loss of one life were investigated.**

##### 4.1. The crew

The Master had all the relevant certificates for the command of MV EF Ava, including a medical certificate issued on 26<sup>th</sup> June 2018.

It was his first contract on the MV EF Ava, and it was also his first contract with the Company.

He had been employed as a Master since 2012.

The rest and working time record sheets indicated that the Master had received enough rest before his watch.

The weather conditions, severe since the 26<sup>th</sup> January, may have made it difficult for the crew to sleep properly.

#### **4.2. The Bridge layout**

The layout of the bridge is an important part in the sequence of events leading up to the accident. There are no safety grab rails on the bulkhead behind the centre console (figure below) but there are safety grab rails on the steering console.

The Master was holding a cup of coffee in his right hand. He could only use the safety grab rails on his left side, and he could also grab the chair.



Figure 7 – Middle of the bridge, where the Master most probably lost his balance (No obstructions on the deck)

#### **4.3. The weather**

Mv EF Ava is equipped with a Ship Performance Optimization System (SPOS), designed to enable the bridge team to adjust course and speed based on the weather information and the ship's specific data. The weather forecasts were received twice daily via e-mail and the SPOS calculates the optimum route and sets out alternatives, taking into consideration the conditions, i.e. weather, current, speed curve, fuel curve and the ship characteristics.



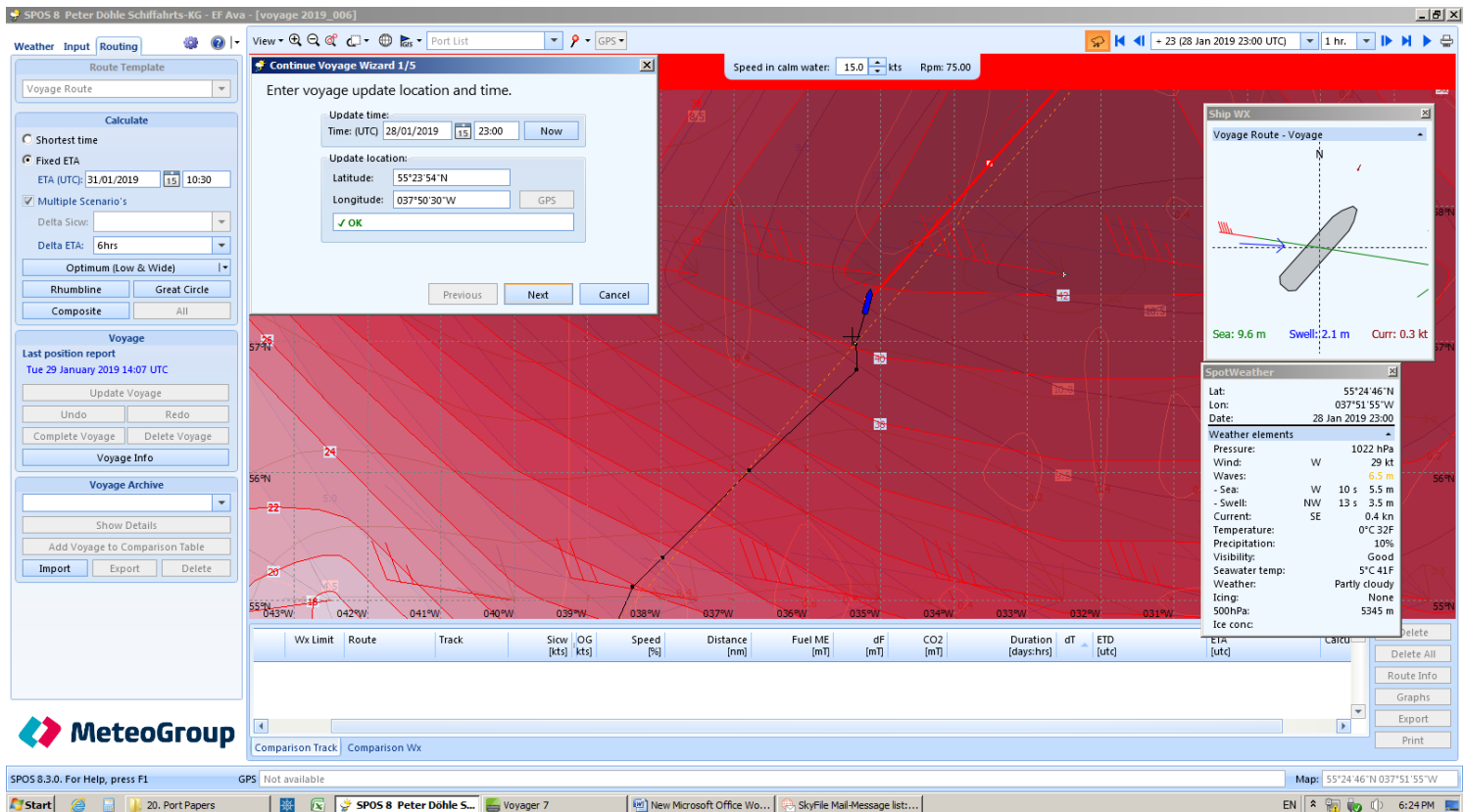


Figure 8 – Passage detail

The vessel was under heavy sea and swell, running with strong wind. The wave heights were estimated to be between six and seven meters, running just abaft the beam, causing the ship to roll heavily. At the time of the occurrence the ship was experiencing synchronous rolling, which may occur when the natural rolling period of a ship coincides with the encounter of the wave period. The solution to avoid synchronous rolling is to alter either the ship's course or speed to change the encounter wave period.

#### 4.4. Emergency procedures and preparedness

The AB who was on watch with the Master immediately informed the Chief Officer who alerted the crew and informed the DPA.

When the DPA was informed he immediately passed the information to the other members of the Company Emergency Response Team (ERT).

Communication was established with the vessel and the occurrence was clarified and accompanied. The ERT informed the Flag State Authorities, the GAMA (Portuguese Marine Accident Investigation Authority), the Lisbon Maritime Rescue Coordination Center (MRCC).

Arrangements were made for the vessel to be met on arrival by a Company's representative and by a Marine Casualty Investigator.

#### 4.5. The fatality

Considering the vessel was experiencing synchronous rolling, the most probably reason why the Master stood up from his chair in the radio room was that he intended to alter the ship's course.



Figure 9 – Place where the Master sustained the head injury

#### 4.6. Actions taken by the Company

Following this accident, the Company issued a Circular to all vessels to be reminded of the dangers associated with synchronous and parametric rolling and decided to review and update the Working on Deck in heavy Weather Company bulletin in order to include general safety information in heavy weather.

### 5. Conclusions on the circumstances leading to the loss of one life on board Mv EF Av and contributing factors

The severe weather conditions may have made it difficult for the crew to sleep properly and to the bridge team to maintain the daily tasks updated.

The speed and course were considered adequate for the weather and sea conditions.

The motion was the result of synchronous rolling as well as a result of the very bad weather.

The fact that the Master had to stand up from the Radio Room chair to, probably, perform a course change instead of requesting to the AB who was already at the centre console holding the safety rail is identified as a contributing factor.

Standing up - after being seated for a period, holding a cup of coffee in his right hand- under severe rolling without consider the possibility of losing balance was identified as a contributing factor.

## **6. Safety recommendations**

Taking into considerations the actions already taken by the Company it was decided not to propose any additionally safety recommendations.

## **7. Circulation of the investigation report**

In accordance with the Portuguese Act, a draft version of the present report was circulated among the interested parties providing an opportunity for the report's scope, factual accuracy and analytical logic to be checked and for comments to be provided.

The correction of factual errors and additions in detail (where relevant) have been included in this final investigation report, where deemed necessary. These reactions are not listed separately.

This report was not written, in terms of content and style, with the intention of being used in judicial actions.

Safety recommendations shall in no case create a presumption of blame or liability.