



BERMUDA

**Department of Maritime Administration
Ministry of Tourism Development and Transport
Government of Bermuda**

**INVESTIGATION INTO A MISSING CREW MEMBER
FROM PASSENGER SHIP "QUEEN MARY 2"
ON 15TH AUGUST 2015**



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SYNOPSIS

**** (Note that throughout this report all times quoted have been standardised according to ship's time, which was GMT – 1). ****

The “Queen Mary 2”, a large cruise ship operated by Carnival UK of Southampton, England, was on a transatlantic voyage from Southampton, England, to New York, USA, with a call at Halifax, Nova Scotia, en route.

At 0800 hrs on 15th August 2015, the Assistant Chef Fabio Esteban Onate Ordenes, failed to turn up for work. A telephone call was made to his cabin and shortly after that a worker was dispatched to check the cabin, but Mr. Ordenes was nowhere to be found. At 0905 a call was made to the Bridge. The call was received by the Deputy Captain and it informed him that Mr Ordenes had not reported for work that morning and he had not been located. The Master was immediately informed and the company's Missing Person Checklist was put into action.

At 0912 a public address announcement was made by the Deputy Captain requesting Mr Ordenes to contact the Executive Chef. This broadcast was repeated at 0928, 0939 and finally at 1012.

Following the initial broadcast a thorough search of all areas was performed utilizing personnel from all departments. Mr. Ordenes was not located on board.

Whilst the search, on board the ship, was in progress the security team reviewed the Closed Circuit Television (CCTV) records on board, to try and track Mr Ordenes movements of the previous night. CCTV Footage showed that at 0244 hrs on 15th August Mr Ordenes was on the Aft Port side of the Promenade deck of the vessel, coming out of a doorway, without his shirt on. Then he was observed first to climb on the ships side rail, with his left foot on the top rail, and the right foot on the lower rail. His right hand was on the top rail and the left arm used for balance, before holding onto the top rail as he looked outboard. After a period of about 2 minutes he released his grip on the rail and let himself fall overboard.

The Queen Mary 2 proceeded to the probable position where Mr. Ordenes fell overboard which was calculated from the CCTV timings. The Queen Mary 2 initiated a Mayday broadcast which Halifax Joint Rescue Co-Ordination Center (JRCC) responded to. Queen Mary 2 was made the On Scene Coordinator and a container ship, M.V. Milan Express, was requested to assist in the search. A search pattern was executed until, after communication with Halifax JRCC, the search was eventually halted due to fading light and reduced visibility, (Annex 1 shows the Parallel Track Search Pattern while looking for Mr. Ordenes). No body was found.



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1. Introduction

1.1 Queen Mary 2 (QM2) was on day 5 of a 9 day transatlantic crossing and had been at sea since leaving Southampton on the evening of 11th August 2015. The vessel was due to call at Halifax, Nova Scotia on the 17th August before proceeding to New York to complete the voyage. The scheduled date of arrival in New York was 19th August 2015.

1.2 The notification of the crew member missing from the ship was initially transmitted to the Department of Maritime Administration (DMA), Bermuda by the Duty Officer of the UK Maritime & Coastguard Agency, who himself had received notification from the Falmouth Rescue Co-ordination Centre.

1.3 DMA was also contacted by the CID Inspector of the Bermuda Police Services (BPS) advising that the Royal Canadian Mounted Police (RCMP) had informed the BPS of a missing person incident, on board the Queen Mary 2, and they could assist in conducting an inquiry into the incident on the vessel's arrival in Halifax and would providing any findings to the DMA.

1.4 The DMA advised the BPS to request the RCMP to conduct an initial investigation into the missing person on board the QM2, on the vessel's arrival at Halifax, Canada and to forward their findings in due course. RCMP were advised that an Investigating Officer from the DMA would be visiting the ship at New York, in order to conduct the flag Administration investigation into the incident.

1.5 The DMA dispatched an Investigator, to New York, the vessel's next port of call to conduct the flag Administration Investigation according to the requirements of Section 232 of the Bermuda Merchant Shipping Act, 2002.

1.6 The Bermuda Investigator boarded the ship during its scheduled port call to New York on the 19th August 2015 and conducted the inquiry into the above incident.

2. The Ship

2.1 Queen Mary 2 is a large Passenger ship with the following relevant particulars:

• Call Sign	ZCEF6
• IMO Number	9241061
• Port of registry	Hamilton
• Class Society	Lloyd's Register
• GT	148528
• Net Tonnage	98770
• Length Overall	302.64m
• Date of Build (Keel Laid)	1 st March 2002
• Builder	STX Europe, Chantiers de l'Atlantique, St Nazaire, France



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2.2 The ship is arranged with passenger cabins spread over 8 decks, capable of accommodating 2620 passengers, and crew of 1253 persons with their accommodation spread around various decks of the vessel. The ship is powered by internal combustion engines that deliver a total electric power of 117200 Kw to 4 podded thrusters aft, 2 of which are fixed and 2 capable of being rotated through 360 degrees, and has a service speed of 30.0 knots.

2.3 The ship is managed by Carnival UK of Southampton, Hampshire, United Kingdom and is registered under the Bermuda Flag.

3. Narrative of Events

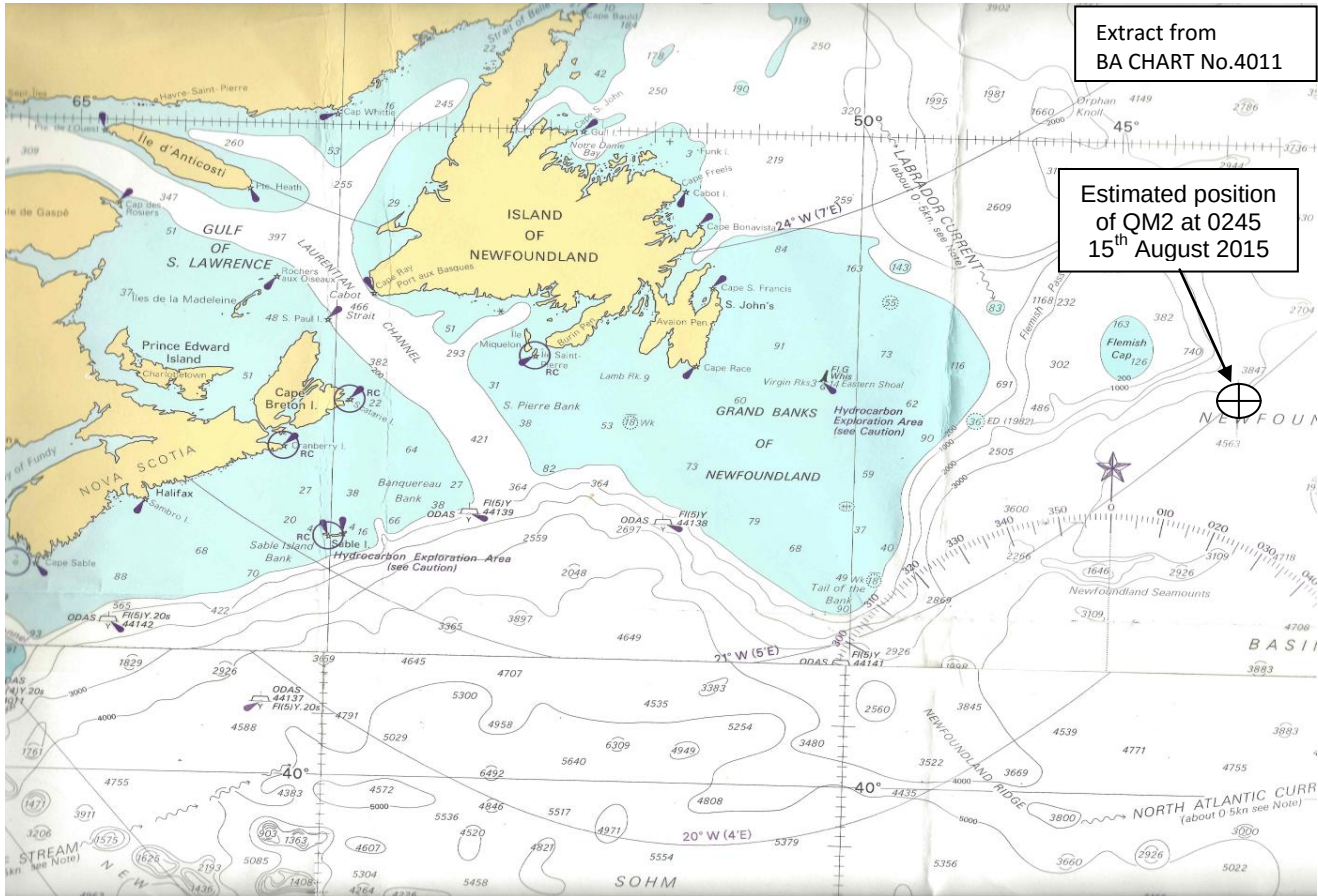
The following narrative has been written using:

Documents and material provided by the ship on arrival onboard, which included;

- a) Witness Statements (audio recordings and written) from relevant crew members – (Already recorded by the Ship's Security Officer);
- b) Copies of the Official and Deck Log Book entries;
- c) Documents and media material provided by the RCMP;
- d) Interview notes of the DMA Investigator;
- e) Electronic records of CCTV footage from various areas of the ship.



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Estimated Geographical Position of Queen Mary 2, when Mr. Ordenes was last seen on the CCTV

On the evening of the 14th August Mr. Ordenes is reported to have taken a break for about 30 minutes from his work around 1900 hrs, and met with his girlfriend for the dinner, in the crew mess. They had been together as a couple for two weeks. Mr. Ordenes then returned to work. They met again for tea at 2330 hrs. At this meeting Mr. Ordenes spoke of having “a boy’s night out”, playing video games, with his friend. They parted at about midnight and she did not see or hear from him again.

When Mr. Ordenes called his friend, he said he was too tired to meet, so Mr Ordenes went to the Crew Bar and met up with some other crew members.

Over the course of the next hour Mr. Ordenes alternated between the Crew Bar and the Smoking Room which is adjacent to it.



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During his time in the crew bar Mr. Ordenes made two purchases:

Chit # 6211 at 00:17 was for 2 Corona's, total US\$ 2.00

Chit # 6268 at 00:52 was for 4 Jack Daniels, 2 Amaretto and 1 LI Ice tea Crew, total US\$ 11.25.

During the same period another crew member in the group made three purchases:

Chit # 6197 at 00:11 was for 1 Eristoff, 1 Lime Splash, 1 Sauza gold and 1 Red Bull, total US\$4.25

Chit # 6207 at 00:14 was for 4 Malibu, total US\$ 5.00

Chit # 6262 at 00:49 was for 2 Corona, 2 Eristoff, 2 Lime splash, 1 Red Bull, 2 Large Water, 2 Jack Daniel and 1 Pepsi, total US\$ 9.90

During the same period another crew member in the group made three purchases:

Chit # 6274 at 00:56 was for 3 Sauza Gold, total US\$ 3.75

At 0100 on the 15th August the crew bar was shut so some of the group decided to go outside on Deck 13 to continue talking and finish their drinks. At this time, one of the crew members with Mr Ordenes heard him mention that he had some synthetic Marijuana which he wanted to smoke. This is now believed to be a reference to a "legal high".

Mr. Ordenes and the other crew members (Mr. Ordenes, another male and a female crew member), carrying their drinks, took the crew elevator next to Stairway 19, up to deck 12, and from there they walked up to deck 13 via stairway 19. This stair leads to an open deck area which is for crew use only. On their way to the outside deck, the three of them passed another couple who were standing to one side at the top of the stairs inside the doorway. At the top of the stairs is a small unisex toilet, large enough for one person.



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Stairway 19 – Deck 13

Unisex toilet

Door to open Deck – crew area

Recess where couple was standing.

After a period of time out on deck, estimated to be around 30 minutes, witnesses report seeing Mr. Ordenes and his male companion entered the unisex toilet at the same time, and closing the door behind them. They both came out of the toilet after about 5 minutes and proceeded to the open deck area. Once they were outside on the deck, they joined the third crewmember who was the female. This was all witnessed by the couple who were on the stairwell.

Very shortly after they arrived back outside the accommodation, Mr. Ordenes started to roll around the deck, shouting and screaming and started crawling towards the ship's rail. The male crewmember, who is alleged to have been in the toilet with Mr. Ordenes did not take any notice of this dramatic change of demeanor, and remained seated at the table. The female member of the group shouted for help. This call for help was answered by the couple who were standing on the top platform inside the stairwell. Hearing the commotion they came out of the stairwell and onto the deck. They assisted in restraining Mr. Ordenes, and then kept him away from the ship's rails. Later, the couple from the stairwell and the female member of the group, moved Mr. Ordenes off the deck and back inside the ship.



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Open Deck on Deck 13 –
Crew smoking area.

Door onto open Deck

Bench

The couple and the female in the group then stayed with Mr. Ordenes, and tried to get him down to his cabin to calm him down. The male crew member who was part of the original group remained outside on Deck 13. The CCTV footage shows the male witness, physically handling Mr. Ordenes, while his partner and the female crew member were assisting him to get Mr. Ordenes down the stairs from Deck 13 to deck 12. They arrive on deck 12 at 0234 hrs and entered the lift. Mr. Ordenes was bare-chested at this time.

At 0236 hrs, with Mr. Ordenes still being restrained, they were seen to pass through a luggage area on deck 1. Their route took them along the main working alleyway of the ship, and as they passed a set of passenger lifts, Mr. Ordenes broke free of the group, and entered an open lift. He held onto a handrail in the lift and could not be dislodged.

During the course of the next 3 minutes, 8 people walked past the incident in the lift but no-one stopped to help or enquire what was going on. One crew member, who worked with Mr. Ordenes, walked past twice, and after the second time came back. According to his statement, he told the three crew members, who were trying to get Mr. Ordenes out of the lift and take him to his cabin, to leave him alone or he would call security. At this time (0239 hrs.) possibly with the fear of being reported to the Security the three crew members reluctantly left Mr. Ordenes in the lift and went on their way.

Mr. Ordenes was left alone in the lift, the crew member who threatened to call the security, was seen talking to Mr. Ordenes and then he also left the scene.

At 0240 Mr. Ordenes walked out of the lift, recovered an item of his clothing which was lying on the floor and walked aft, all his movements were observed on CCTV.



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At 0244 hrs Mr. Ordenes is observed to walk out of a lift, on stairway 19 at deck 7 level. As he came out of the lift he turned briefly towards the starboard side, before turning round and walking over to the port side. He turned aft and almost immediately port again. He walked through a door onto the Promenade deck and, as he walked across the open deck, he dropped his clothing onto a deck chair and climbed onto the ships side railing. This time is recorded on the CCTV as 0245. He remained in a position where he was crouched on top of the side railing, bent over facing outboard. He was gripping the top rail with his right hand while he used his left hand to steady himself. His left foot was on the top rail and his right foot on the inboard side of the middle rail. As he steadied himself he placed his left hand on the top rail. He remained in this pose for nearly two minutes, until 0247 when he let go of the rail, pitched forward over the top railing and let himself fall over the side of the ship.



Deck 7 - Promenade deck
View of door where Favio Ordenes exited onto the open deck.
Railings position

Promenade Deck Port Side



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The view over the side of Queen Mary 2- from deck 7

At 0800 hrs on 15th August, (his usual starting time), Mr. Ordenes, failed to turn up for work. Shortly after a telephone call was made to his cabin, and on receiving no answer a worker was dispatched to check the cabin. Mr. Ordenes was not to be found in his cabin.

At 0905 a call was made to the Bridge. The call was received by the Deputy Captain and it informed him that Mr. Ordenes had not reported for work that morning. The Master was immediately informed and the company's Missing Person Checklist was put into action.

At 0912 a public address announcement was made by the Deputy Captain requesting Mr. Ordenes to contact the Executive Chef. This broadcast was repeated at 0928, 0939 and finally at 1012.

Following the initial broadcast a thorough search was performed utilizing personnel from all departments and in all areas of the ship, as each area was searched a report was made back to the Bridge and Ships Security Officer.

Whilst the ship search was in progress the security team reviewed the CCTV system to try and track Mr Ordenes' movements of the previous evening.

The last confirmed sighting of Mr Ordenes was at 0247 hrs on Deck 7 portside aft, where the CCTV showed Mr. Ordenes standing on the rail and then going overboard.



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At 1013 the vessel altered course to a reciprocal heading to head back to the position where Mr. Ordenes was last sighted on CCTV. Contact was established with another vessel in the area, the Milan Express, IMO # 9112296; Call sign ZCDH7, which was en-route to Montreal. Their assistance was requested in the search, the master agreed, and the vessel turned back to the search area to assist.

At 1051 a MAYDAY relay call was made to all vessels and this was acknowledged by the Halifax Joint Rescue Co-ordination Centre (JRCC) at 1202. At this time the vessel increased speed so as to get back to the search area as soon as possible. At 1242 a Sat C message was received from the JRCC requesting a telephone conversation, this was executed by the Deputy Captain and the ship's Safety Officer.

The Queen Mary 2 was appointed as On-Scene Coordinator by the JRCC and following further instruction from the JRCC a parallel track search pattern was laid out, a copy of this can be found at Annex I (Parallel Track Search Pattern while looking for Mr. Ordenes).

The vessel commenced the search at 1715, members of the ships company were posted all around the vessel and the ship's rescue boats were made ready for immediate deployment. Passengers were also advised they may assist in the look-out duties if they wished. Milan Express was instructed to search an area to the North of Queen Mary 2 and run on parallel tracks.

At 1828 hrs. 15th August, a potential sighting was made in position Latitude 46° 27.2' N and Longitude 042° 04.4' W, and the ship was slowed down and turned to investigate. At 1900 after nothing had been found the ship resumed the search pattern.

At 2043, after a number of legs on the search pattern had been completed, and following discussion with Halifax JRCC, a decision was made to call off the search due to fading light and poor visibility.

Investigation / findings

On receiving notification from the Maritime & Coastguard Agency of the UK of a missing crew member from the Queen Mary 2 the Bermuda Maritime Administration nominated an investigator to undertake an investigation to find the circumstances leading to the disappearance of the seafarer from the ship.

At the same time the DMA requested the RCMP, at Halifax, to conduct a preliminary investigation into the incident on the vessel's arrival in Halifax. The RCMP were requested to forward their findings to DMA.



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The Bermuda Investigator boarded the vessel in New York during the vessel's call there and after a brief discussion with the Master met with the Ships Security Officer, who had been taking the witness statements, and had secured copies of the CCTV footage as well. Some of the witnesses had already left the vessel at the last port. The Investigator interviewed some of the other witnesses who were working on board.

The details of the missing crew member are as follows:

Name:	Fabio Esteban Onate Ordenes
Position onboard:	Assistant (Commis) Chef
Date of birth:	2 Jan 1989
Date & place joining the vessel:	3 May 2015 in Southampton
Date & place due to depart vessel:	5 Nov 2015 in Southampton

Mr. Ordenes was on his 4th contract onboard Queen Mary 2 was reported to be a hard worker. His 1st Contract was a galley boy and by his 4th contract he was a Commis (Assistant) Chef, reporting to the Executive Chef. There had been a few occasions in the past when he had been a few minutes late for work, but never anything serious.

Mr. Ordenes had never had any recourse to see the ship's Human Resources Manager about any issues on the ship, or at home, and any visits to the Doctor had only been for the minor physical ailments.

A narrative of events was compiled from interviews, CCTV, evidence and witness statements recorded on board by the Ship Security officer, and documents received from the RCMP, Halifax following their preliminary investigation when the vessel arrived at Halifax.



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4. Analysis

RCMP visited QM2 on her arrival at Halifax and conducted a preliminary investigation in to the missing person. RCMP interviewed a number of witnesses and collected several personal items and other materials from Mr. Ordenes's cabin and from the cabins of some other crewmembers who had been interviewed. Later, these items were provided to DMA, by the RCMP.

Mr. Ordenes's best friend onboard stated that Mr. Ordenes claimed to have taken cocaine whilst on leave, but does not know if he ever took any while onboard the ship. He also said that Mr. Ordenes had told him he had purchased some synthetic substance while on shore leave in Southampton, which he believed to have been a 'legal high'. This might indicate that Mr. Ordenes was familiar with the use of drugs, and may have purchased some with the intent to use.

Mr. Ordenes had anticipated his "boy's night" of playing video games. He had asked his girlfriend if she minded him playing with his friend, and went to find this friend. Mr. Ordenes found that his friend was not willing to play video games with him as he was too tired, so he joined a group of crewmembers in the Crew Bar, where he had a few alcoholic drinks in the bar and socialized. Mr. Ordenes and the two crewmembers, in the group made various purchases (as detailed previously in the Narrative of Events) and included an amount of alcohol. The last purchase was timed at 0056 hrs with the bar closing at 0100 hrs

Once the bar was shut for the day, Mr. Ordenes and two other members of the group, a male and a female, wanted to continue talking and drinking so they went up to Deck 13 to an outside crew area, taking the balance of their drinks with them. The female crew member states that Mr. Ordenes mentioned having some synthetic Marijuana that he wanted to smoke. The threesome listened to some music and smoked some ordinary cigarettes. At some stage, the female crew member reports that Mr. Ordenes and the other male seafarer went inside together. Witnesses then saw them go into the unisex toilet. It is not known what happened in the unisex toilet in stairwell 19 on Deck 13 but they are said to have been inside for around 5 minutes. On returning outside, the female crew member states that Mr. Ordenes started writhing around on the deck, shouting and screaming, and crawling towards the ship's side.

It is possible that the consumption of alcohol, combined with whatever substance they may have taken in the toilet had affected the reasoning abilities of Mr. Ordenes adversely.

The female crewmember who was helping to calm down Mr. Ordenes, stated that she had slapped Mr. Ordenes about the face several times in an attempt to get him to 'snap out of it'; this is recorded on CCTV footage. She had further stated that when Mr. Ordenes was in the lift on Deck 1 she was beginning to think that he was having an epileptic fit due to the way he was behaving. However the unfortunate situation was that nobody consulted the ships medical team or tried to seek any help from the ship's security or from the Bridge.



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The three persons who were helping Mr. Ordenes managed to get him down to Deck 1 where they believed his cabin was located, however they were struggling to get him to go there. At one point he broke away from the three persons who were taking him to his cabin and jumped into an open lift. The three persons were worried about his behavior and attempted to take him out of the lift and take him to his room. As seen on the CCTV, 8 people walked past the incident that was taking place in the passenger lift on Deck 1, but took no notice of them. However, one person decided to get involved but that was only to threaten to call Security if they did not leave Mr. Ordenes alone.

Possibly as a result of the threat of being reported to Security, the three crewmembers that had helped Mr. Ordenes from outside of deck 13 to the lift, and were at that time trying to get him to his cabin, left him alone. The crewmember who had intervened with Mr. Ordenes's helpers, then remonstrated with Mr. Ordenes, from outside the lift and he also left. Mr. Ordenes was left on his own in the lift on Deck 1.

The CCTV recorded that Mr. Ordenes exited from the lift shortly afterwards. He was on the floor of the lift and moved his legs out first, before coming to his feet outside the lift. Mr. Ordenes was cognizant enough at this moment to pick up his clothing from the floor, where they had been dropped on entry to the lift. Mr. Ordenes then is recorded on CCTV passing along Deck 1 to the crew lifts at stairwell 19. At the lobby, he positively called the lift and then entered the lift to exit at Deck 7. As he left the lift on deck 7 he started to move to the right, before remembering the outside door was on the other direction. He turned around and proceeded in the correct direction to the door. Once outside on the Promenade deck he had no hesitation in putting his clothes on a deck chair, and climbing onto the ships side rail. All of the above movements are recorded on the CCTV footage.

RCMP investigators had reviewed the CCTV footage which had been made available to them by the ships security. After seeing Mr. Ordenes's movements over the period, specifically the last footage which showed Mr. Ordenes climbing the hand rails and pitching himself overboard, the RCMP Investigators were convinced that there was no foul play involved and Mr. Ordenes was lost overboard as seen in the CCTV, and those records were conclusive

The handrails on deck 7 are 33m above the sea. A person with a bodyweight of 80 kg falling this distance would impact the water in 2.60 seconds, with a speed of 25.43 m/s, and the consequences would be drastic.

After falling 33m and hitting the water, it was highly unlikely that Mr. Ordenes would have survived being in the cold water for 18 hours. The estimated survival times, (found at annex 2) take into account the water temperature, but not the impact of the fall into the water, or the affects of drink and possibly drugs.

The timeline from the first report of Mr. Ordenes being missing from work at 0800, until the vessel turning at 1013, to head for the last known position to commence a search, did not assist the effectiveness of the search. It would be unlikely that this had an effect on the outcome, as the CCTV shows by that time, Mr. Ordenes would already have been overboard for 5 hours and 13 minutes.



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5. Conclusions

It is concluded that:

- i) Mr. Ordenes showed no signs of abnormal behavior during the previous evening or while he was drinking and socializing in the crew mess with other ship mates.
- ii) Mr. Ordenes acted differently, and out of character, after he returned from the unisex toilet, where he had been with another crewmember. His cognitive abilities seemed to be drastically reduced.
- iii) The other crewmember became reticent and withdrew from the group, after the occurrence in the unisex toilet.
- iv) The influence of the substances which may have been taken were not consistent between crewmembers.
- v) The crewmembers who were attempting to take Mr. Ordenes safely back to his cabin may have been dissuaded from completing their act by the threat of security being called and consequent possible disciplinary action.
- vi) Studying the CCTV footage there is little doubt that throughout Mr. Ordenes' movement alone from Deck 1, to the rails at Deck 7, Mr. Ordenes was determined and confident of the direction he moved. He collected his shirt from the deck, selected the lift call button first time, and knew which direction to take at Deck 7 to get to the outside deck, and the ship's rails.
- vii) Mr. Ordenes climbed onto the ship's rails, contemplated for nearly two minutes on the action he wanted to take and let himself fall outboard of the ship's rails. CCTV recording is conclusive.
- viii) There is nothing to suggest there was any foul play.
- ix) The Master and the crew took appropriate action as per company procedures in searching for, and on confirming the disappearance and notifying the correct authorities.
- x) The effective use of CCTV has been well demonstrated in this case.



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6. Recommendations

- i) It is recommended that particular focus is made to ensure that ship's staff understand and adhere to company policies and procedures; particular focus to be placed on ensuring compliance with the company's drug and alcohol policy.
- ii) It is recommended that the Company reviews the effectiveness of its current drug and alcohol policies in the light of this incident where the implementation of the policies on board the ship may not be effective.
- iii) It is recommended that a more robust system of crew accommodation inspections be applied under the Merchant Shipping (Seafarers' Accommodation) Regulations 2013, (BR123/2013). This can be used as a proactive approach to reinforcement of the above Company's Policies and deterrent for ship's crew bringing on board illicit material.
- iv) It is recommended that the Company continues to further enhance its effective safety culture, in particular the development of measures to reassure crew members that they can report potentially dangerous situations involving fellow crew members, without fear of possible blame and repercussions.
- v) It is recommended that the implementation and effectiveness of EMR-1505-F1 Missing Persons Checklist be reviewed by the Company, to ensure the optimization of response times. In this regard, consideration should be given, if it is safe to do so, to slowing down, stopping or turning the vessel around and heading towards the estimated man-overboard position whilst the missing person searches are ongoing.

Post Script:

Pending completion of the death inquiry and issuing of the inquiry report, the company has implemented enhanced measures on its ships in Southampton for random dog searches of seafarers returning to ship from shore leave, other persons, cabins, stores and the ships in general.

Safety Recommendations are intended for improving safety of life at sea and shall in no case create a presumption of blame or liability to any party
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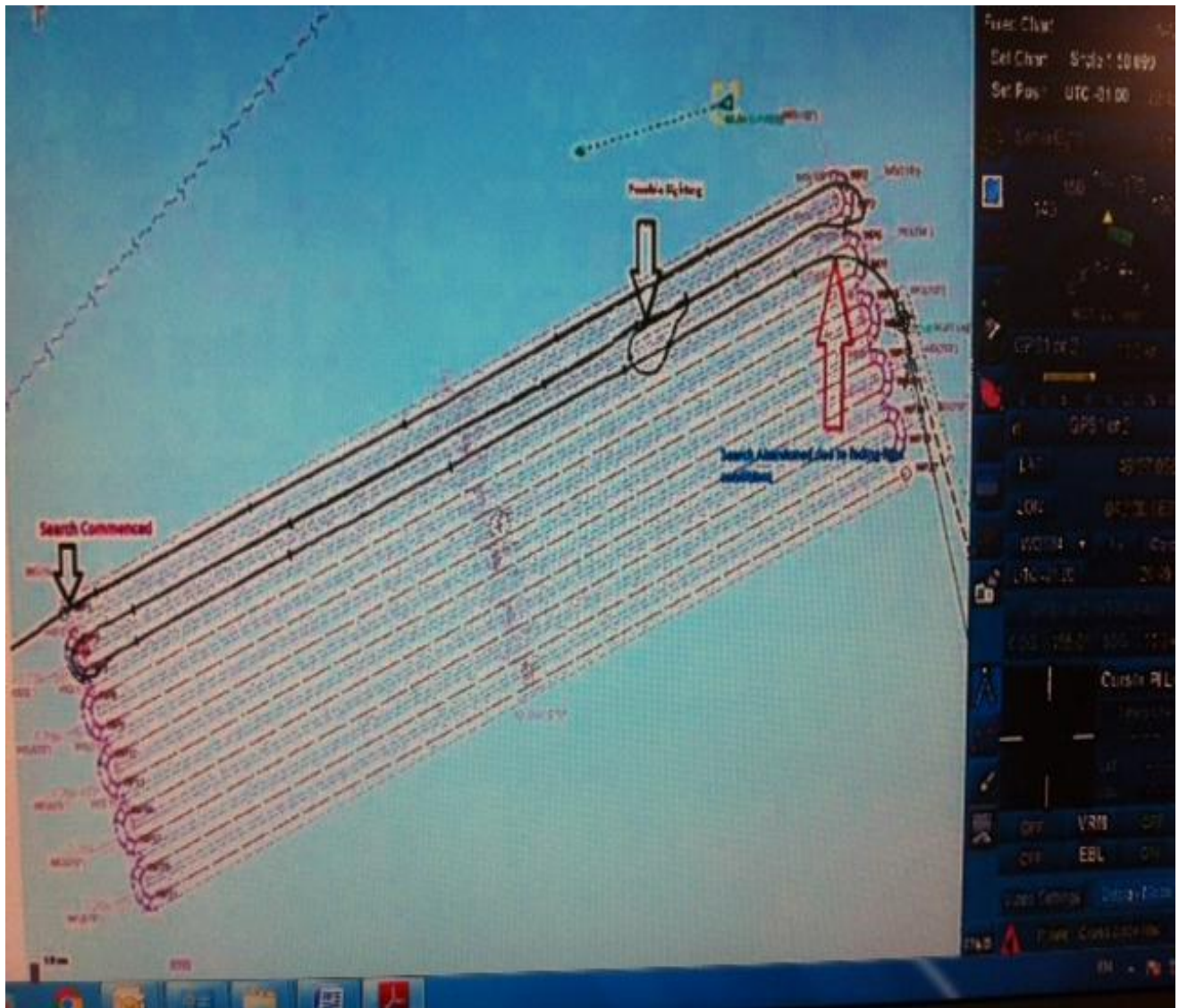
The Department of Maritime Administration
3rd Floor, Global House
43 Church Street
Hamilton HM12, Bermuda

Tel: +1 441 295 7251
Fax: +1 441 295 3718
Email: admin.bermudashipping@gov.bm



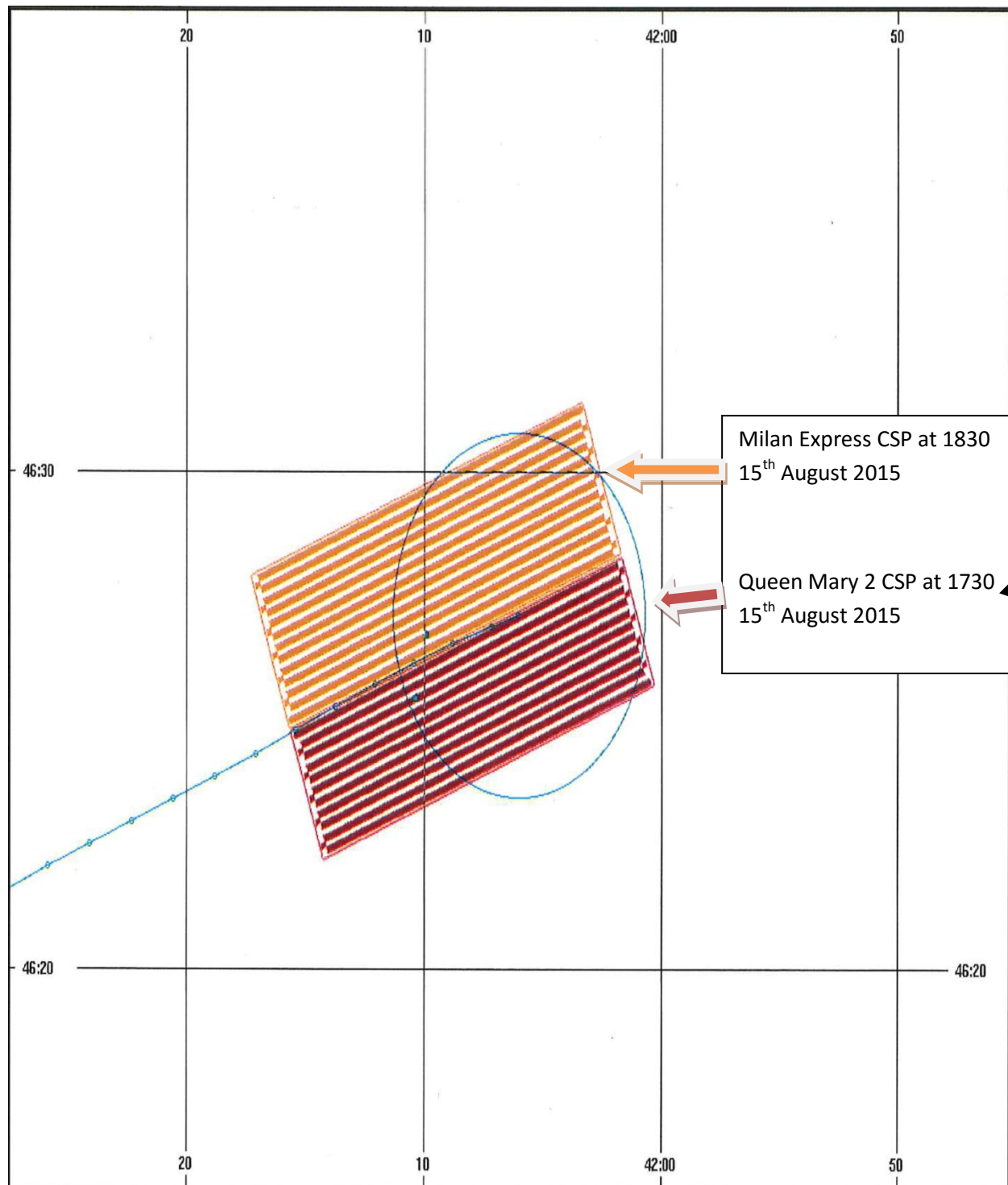
Annex 1

Parallel Track Search Pattern while looking for Mr. Ordenes





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Annex 2

Survival Time

Sea temperature recorded by the Queen Mary in the Official Logbook for 15th August 2015 at 0400 was 13.2 'C (55.8'F).

From the Hyperthermia Rates Table below, the following are obtained:

Loss of Dexterity is 10-15 minutes.

Time to Exhaustion or Unconsciousness is 1 to 2 hours.

Expected Survival Time is 1 to 6 hours.

HYPOTHERMIA RATES

Water Temp	Loss of Dexterity (with no protective clothing)	Time to Exhaustion or Unconsciousness	Expected Survival Time
32.5 °F	Under 2 min.	Under 15 min.	Under 15 - 45 min.
32.5-40 °F	Under 3 min	15 to 30 min	30 to 90 min
40 - 50 °F	Under 5 min	30 to 60 min	1 to 3 hrs
50 - 60 °F	10 to 15 min	1 to 2 hrs	1 to 6 hrs
60 - 70 °F	30 to 40 min	2 to 7 hrs	2 to 40 hrs
70 - 80 °F	1 to 2 hrs	2 to 12 hrs	3 hrs to indefinite
> 80 °F	2 to 12 hrs.	Indefinite	Indefinite